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Editorial.....

It is heartening to note that our journal is able to sustain the enthusiasm and covering various facets of knowledge. It is our hope that IJMER would continue to live up to its fullest expectations savoring the thoughts of the intellectuals associated with its functioning .Our progress is steady and we are in a position now to receive evaluate and publish as many articles as we can. The response from the academicians and scholars is excellent and we are proud to acknowledge this stimulating aspect.

The writers with their rich research experience in the academic fields are contributing excellently and making IJMER march to progress as envisaged. The interdisciplinary topics bring in a spirit of immense participation enabling us to understand the relations in the growing competitive world. Our endeavour will be to keep IJMER as a perfect tool in making all its participants to work to unity with their thoughts and action.

The Editor thanks one and all for their input towards the growth of the **Knowledge Based Society**. All of us together are making continues efforts to make our predictions true in making IJMER, a Journal of Repute

Dr.K.Victor Babu
Editor-in-Chief

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VIEWS ON POVERTY ALLEVIATION OF SUDRAKA AND KAUTILYA

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Abstract :

Poverty is a social disorder that has existed equally since ancient times. Some social reformers are still trying to eradicate this disease from the society as they did in ancient times but as long as there is no social awareness among the people, not only poverty but no disease will be eradicated from this society. This short article discusses the views of Vishnu Sharma, the author of Hitopadesha, Shudraka, the author of Mrichhakatikam, and Kautilya, the author of Arthashastra. Although the opinion of three is mentioned here but the opinion of Kautilya is mainly discussed.

INTRODUCTION :

(a) Definition of poverty: Poverty is a socio-economic phenomenon in which a section of society is unable to fulfill even its basic necessities of life. In view of Sanskrit literatures we can presume that , poverty is a social disease which is incurable and death is better than poverty .For this context Charudatta ,the chief character of the drama Mrichhakatikam by Sudraka ,says -" दारिद्र्याद् मरणाद्वा मरणं मम रोचते "(मृच्छकटिकम् -१/११)। Signifying that ,in between poverty and death he welcomes death not poverty .

(b) Result of poverty : The pictures of harmful effect of the poverty which has been painted by the eminent Sanskrit writers in their various renown are most horrible .About the insufferable sufferings of poverty Bishnusharma says many slokas in his fable literature named Panchatantram . One of them is

“ शीलं शौचं क्षान्तिर्दाक्षिण्यं मधुरता कुले जन्म ।

न बिराजन्ति हि सर्वे वित्तबिहीनस्य पुरुषस्य ” ॥ (हितोपदेश:-५/२)

Meaning of this sloka is ,the virtues without money lose their lustre; character purify, forgiveness, skill, gentility and noble birth- all these fail utterly to lend lustre to an impoverished man .It is a universal truth that ,all will be lost of a man who has been eclipsed by the poverty for a long period .

Not only Pandit Bishnusharma , unkindness of poverty has been strongly depicted by Sudraka in the starting of his 10th act play Mrichhakatikam is ---



“दारिद्र्याद् ह्यियमेति हीपरिगातः प्रभश्यते तेजसो

निस्तेजाः परिभूयते परिभवान्निर्वेदमापद्यते ।

निर्विन्नः शुचमेति शिकविहतो वुद्धया प्ररित्यज्यते

निर्वुद्धिः क्षयमेत्यहो निर्धनता सर्वापदामास्पदम् " ॥ (मृच्छकटिकम् -१/१४)।

The sloka clarifies that ,shame comes from poverty ,weakness comes from shamelessness ,negligence comes from weakness ,despondency comes from negligence ,overwhelmness with grief comes from despondency , mental disorder comes from grief and at last death comes from mental disorder .So poverty is the root of all adversity .

In reviewing these books of sanskrit literature we could say that ,poverty is a social disease which is harmful then death –

" अल्पक्लेशं मरणं दारिद्र्यमनन्तकं दुःखम् ।(मृच्छकटिकम् -१/११)।

LITERATURE REVIEW :

Thought on poverty reduction by the sanskrit scholars is very modern in its outlook .In Mrichhakatikam, Sudraka tries to reduce poverty through financial help .For instance ,in this drama it has been depicted that ,due to his extreme poverty ,Charudatta could not fulfil the requirements of his son ,Rohosen .But as a social worker ,an enrich prostitute Basantasena wants to remove his poverty by giving her very precious ornaments .Not only this ,in this drama ,this prostitute rescued and established a gambler who was going to end his life for his vast debts .In this manner Sudraka illustrates that ,poverty reduction and fiscal growth is possible through financial help.

Simultaneously ,this dramatist also says in this drama that, financial help emaciates poverty provided it is endowed in proper space ,otherwise efforts will be fruitless like that of Charudatta .Charudatta was a very rich man , he also wanted to eradicate poverty of his neighbors through financial help .But he was failed and destroyed himself due to failure of choosing actual man for financial help . So ,in view of this drama ,we can presume that, if financial help or financial inclusion is properly executed , then poverty will be reduced ,but improper efforts would destroy the endowers financial institutions .

Kautilya's View on poverty reduction and financial growth of people within a kingdom :

Kautilya's Arthashastra, a Sanskrit work comprising a period of 321-296 BC., is more known for its contents on economy and polity, but the work also contains information and instructions about various aspects of Financial Management and Administration, which are very relevant in contemporary business management. This is perhaps the oldest book on Management available to the world. The book, written in Sanskrit discusses theories and principles of governing a state. It is not an account of Mauryan administration. The title Arthashastra, means "the science of material Gain" or "science of Polity". According to Kautilya, the ruler should use any means to attain his goal and his actions required moral sanctions . The problems discussed here are the most practical kind. At first ,we should think about the conception of economics of Kautilya . Given the central position of the Mauryan State in directing economic activity and



providing security, the importance is the adequate receipts of wealth for the treasury was stressed. In doing so, Kautilya develops principles of taxation that are to be found in modern texts. His discussion on public economics and finance is extensive. However, he was keenly aware that the fortunes of the Treasury and the prosperity of the nation depends on its development of agriculture, industry, trade and commerce and the efficient functioning of these economic sectors. He suggests various policies that the State should follow to foster their development.

At the heart of Kautilyan economics there exist the obligation of the State to provide for the social security and welfare of the people. The State was required to help the poor and helpless and to be proactive in contributing to the welfare of its citizens. This basic social principle appears to have appealed to many Indians over the centuries. Arthashastra provides much basic knowledge about economics, and several of its conceptions are still relevant. However, the political economy emphasized in it, or the economic system described, is one relevant to Mauryan period. Kautilya did not believe that it would be applicable neither for all times nor to all social settings. In that, as in many other respects, he displayed great wisdom. The 'Arthashastra' consists of detailed analysis of different aspects of ancient Indian economy. The basis of Arthashastra is that one must strive to generate wealth, resources, and money, and share it equitably to create happiness for oneself and others. Such generation of wealth must be nurtured through ethical means, which alone will lead to overall happiness. Good governance in Kautilya's literature is aimed at fulfilling the welfare of the people. **"In the happiness of the subjects lies the happiness of the king, in their welfare, his welfare."** Therefore He said –

“ प्रजासुखे सुखं राज्ञः प्रजानाञ्च हिते हितम् ।

नात्मप्रियं हितं राज्ञः प्रजानां तु प्रियं हितम् ” ॥(हितोपदेशः -१/१९/५)

There is major emphasis in Arthashastra on the duty of the king to assist in ensuring the social security of his subjects and a requirement that the king help the handicapped and the unfortunate. For example, he said that :

“” बाल-वृद्ध-व्याधित-व्यसन्यनाथांश्च राजा विर्भयात् ,स्त्रियमप्रजातां ,प्रजातायाश्च पुत्रान्”

।(अर्थशास्त्रम् -२/१)।

Meaning of this statement is that ,the king shall provide the orphans (bāla), the aged, the infirm, the afflicted, and the helpless with material support . He shall also provide subsistence to helpless women when they are carrying and also to the children they give birth to .

Furthermore, during Kautilya's time, the king had responsibility for food security. Agricultural stocks were kept in the Royal granaries to ward off public distress, and the king directed the retention of half the annual produce for the relief of distress; and provided poor persons with food and seed to enable them to start farming.

The **Article 41** ,in the constitution of India says that “The State shall, within the limits of its economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement, and in other cases of undeserved want” and the **Article 42** says that “The State shall make provision for securing just and humane conditions of



work and for maternity relief ``.Keeping in view of these two fundamental articles Kautilya says that –

"" अल्पकोशं कुप्य-पशु-क्षेत्रादि दद्यात् ,अल्पं च हिरण्यम् ।शून्यं व निवेशितुम् अभ्युत्थितः हिरण्यमेव दद्यात् ,न ग्रामं ग्रामसंजात् –व्यवहार –स्थापनार्थम् । एतेन भृत्यानभृत्यानां च विद्याकर्मभ्यां भक्तवेतनविशेषं च कुर्यात् " ।(अर्थशास्त्रम् -५/३)।

Signifying that ,when in want of money, the king may give forest produce, cattle, or plots of lands along with a small amount of money. If he is desirous to colonize waste lands, he shall make payments in money alone; and if he is desirous of regulating the affairs of all villages equally, then the king would keep them under royal control appointing an adkshya (high official) in charge of these villages ,avoiding any personal land grand . Thus the king shall not only maintain his servants, but also increase their avenues of subsistence and wages in consideration of their learning and work. So ,it is proved that ,Kautilya`s view was to provide basic demands to his subjects by the king .

Not only that ,in view of Kautilya, the sons and wives of those who die while on duty shall get compensation and allowances . Infants, aged persons, or family members of the deceased persons particularly of the deceased servants shall also be shown favour. On occasions of funerals, sickness, or child-birth, the king shall give presentations to his servants concerned therein. He says –

"" कर्मसु मृतानां पुत्रदारा भक्तवेतनं लभेरन् । वाल् –वृद्ध –व्याधिताश्चैषामनुग्राहयाः । प्रेत –व्याधित –सूतिका –कृत्येषु चैषाम् अर्थमान् कर्म कुर्यात् " ।(अर्थशास्त्रम् -५/३)।

On poverty reduction of slaves ,Kautilya says ,A slave shall be entitled to enjoy not only whatever he has earned without prejudice to his master`s work ,but also the inheritance he has received from his father .-

"" आत्माधितं स्वामिकर्माविरुद्धं लभेत ,पितृयं च दायम् " ।(अर्थशास्त्रम् -३/१३)।

.He also says that ,the property of a slave shall pass into the hands of his kinsmen; in the absence of any kinsmen, his master shall take it-

"" दासद्रव्यस्य जातयोः दायदः । तेषाम् अभावे स्वामी" ।(अर्थशास्त्रम् -३/१३)।

For the financial growth of the poor men, kautilya advised to establish labour co-operative. About labour co-operative Kautilya`s view is very clear and prospective .He says that, Guilds of workmen (sanghabhritáh, workmen employed by Companies) as well as those who carry on any cooperative work(sambhúya samutthátarah) shall divide their earnings (vetanam = wages) either equally or as agreed upon among themselves. Cultivators or merchants shall, either at the end or in the middle of their cultivation or manufacture, pay to their labourers as much of the latter's share as is proportional to the work done. If the labourers, giving up work in the middle and supply substitutes, they shall be paid their wages in full –

"" सङ्घभृताः सम्भूयस्मुत्थातारो वा यथासम्भाषितं वेतनं समं व विभजेरन् । कर्षक –बैदेहका वा शस्यपण्यारम्भ – पर्यवसानन्तरे सन्नस्य यथाकृतस्य कर्मणः प्रत्यंशं दद्युः । संसिद्धे तूद्धतपण्ये सन्नस्य तदानीमेव प्रत्यंशं दद्युः "।(अर्थशास्त्रम् -३/१४)।



On rural settlement and the growth of the inhabitants Kautilya says that , those who perform sacrifices (ritvik), spiritual guides, priests, and those learned in the Vedas shall be granted Brahmadaya lands yielding sufficient produce and exempted from taxes and fines (adandkarāni).-

"" ऋत्विगाचार्य –पुरोहित –श्रोत्रियेभ्यो ब्रह्मदेयानि अदण्डकरणि अभिरूपदायकानि प्रयच्छेत्"।(अर्थशास्त्रम् -२/१)।

Lands prepared for cultivation shall be given to tax-payers (karada) for life (ekapurushikāni). Unprepared lands shall not be taken away from those who are preparing them for cultivation. Lands may be confiscated from those who do not cultivate them; and given to others; or they may be cultivated by village labourers (grāmabhritaka) and traders (vaidehaka), lest those owners who do not properly cultivate them might pay less (to the government). If cultivators pay their taxes easily, they may be favourably supplied with grains, cattle, and money –

""करदेभ्यः कृतक्षेत्राण्येकपुरुषकाणि प्रयच्छेत् । अकृतानि कर्तृभ्यो नादेयात् । अकृषतामाच्छिद्यान्येभ्यः प्रयच्छेत् .।ग्रामभृत्यक –वैदेहका वा कृषेयुः। कृषन्तो अवहीनं ददयुः।धान्य –पशु – हिरण्यैश्चैनाननुगृह्णीयात् तानि अनु सुखेन ददयुः"(अर्थशास्त्रम् -२/१)।

Kautilya says that ,the king shall bestow on cultivators only such favour and remission (anugrahaparihārau) as will tend to swell the treasury, and shall avoid programme that will deplete it- "" अनुग्रहपरिहारौ चैभ्यः कोशवृद्धिकरौ दद्यात् । कोशोपघातिकौ वर्जयेत् "(अर्थशास्त्रम् -२/१)।।

He shall regard with paternal kindness those who have passed the period of remission of taxes.

In addition, various public activities, such as the building of water reservoirs and the construction of irrigation works, were parts of policy to avert famines. Where the State did not directly undertake such works, it provided subsidies to those who were involved with such activities .In general the prime objective was to improve the economic development of the nation and, therefore, the nation's wealth as well as to provided the people with increased economic security. Furthermore, security was provided by the king's effective defense of the realm and the enforcement of just legal system at home, which is justified from the perspective of the time. In this context he says --""

सहोदकम् आहार्योदकं वा सेतुं वन्धयेत् । अन्येषां वा वध्नतां भूमि –मार्ग –वृक्षोपकरणानुग्रहं कुर्यात् , पुण्यस्थानारामाणां च । सम्भूयसेतुवन्धादपक्रामतः कर्मकरः वलीवर्दाः कर्म कुर्युः । व्ययकर्माणि च भागी स्यात् , न चांशं लभेत " (अर्थशास्त्रम् -२/१)।

CONCLUSION

It is universal truth that ,poverty is a social incurable disease but it is also well-known that reduction of poverty is possible .For this context Sanskrit literatures, above all Kautilya's Arthasashtra ,says many ways to reduce poverty .So ,If Government takes Kautilya's policy and we help the Government to fruitful those policies , then poverty will be reduce .



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MODULATION OF AGNILEPA IN THE MANAGEMENT OF AMAVATA

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ABSTRACT

Amavata (Rheumatoid arthritis) is one among systemic disorder, which affects the locomotor system resulting severe tenderness and inflammation in affected joints. To overcome from the tenderness and inflammation the topical applications like *Lepa* (topical applications) are explained which may help in the remission of symptoms instantly and may also act as local analgesics. Extensive references regarding *Lepa* (topical applications) are available in the classical texts of *Ayurveda* from immemorial time, which are used in limited circumstances due to the tedious work in the preparation of *Lepa Dravya* and its minimal shelf life.

Among these concepts of *Lepa*, *Agnilepa* is one among folklore practice of *Lepa Kalpana* (local applicators) which is practiced in southern part of Karnataka state in the management of different musculoskeletal and neuromuscular disorders. It is proved to be effective in the management of *Sama* (toxins from undigested food) and *Avarana* (to obstruct) conditions of *Pakshaghata* (Paralysis). In the management of *Amavata* (Rheumatoid Arthritis) also primary importance is given for *Amapachana* (digestion/liquification of toxic substances) to reduce the severity of illness. Hence *Agnilepa* (topical applications) which is having 10 herbal drugs as ingredients is selected and modified into the form of amalgam, which is having shelf life of one year. This is designed to use as local applicator in the management of *Amavata* (Rheumatoid Arthritis) over affected joints.

Key Words: *Amavata*, Topical applications, Amalgamation

INTRODUCTION

Amavata (Rheumatoid Arthritis) is a disease caused by the vitiation of *Vata Dosha* and accumulation of *Ama* (toxins) in the joints resulting in symptoms like *Angamarda* (pain all over body), *Aruchi* (loss of taste), *Trishna* (thirst), *Hrillasa* (lack of enthusiasm), *Gaurava* (heaviness), *Jwara* (fever), *Apaka* (indigestion), *Shunangata* (swelling in joints)^[1].

In our classics, under *Sthanika Chikitsa* (local treatments) and *Sarvadaihika Chikitsa* different modalities of treatment have been explained for the management of *Amavata*. In *Sthanika Chikitsa* mainly the *Kalpana*'s (formulations) which are going to reduce the uneasiness of affected part are explained and *Lepa Kalpana* (topical application) is one among them. *Amavata* is a chronic disorder when compared to generalised symptoms like *Angamarda* (pain all over body), *Aruchi* (loss of taste), *Hrillasa* (lack of enthusiasm), *Gaurava* (heaviness) there will be more pain, swelling, local rise temperature and stiffness in the affected joints. Topical applications like *Lepa*

may help in the *Pachana* (digestion) of the *Dosha's* locally and may act as local analgesics. *Agnilepa* which is having 10 herbal drugs as ingredients will be converted into amalgam form. This will be used for the local application over the affected joints. It is also proved to be effective in the management of *Sama* (toxins from undigested food) and *Avarana* (to obstruct) conditions of *Pakshaghata*^[2] (paralysis).

HISTORICAL BACKGROUND: Description of *Lepa* is scattered in the classics and different classification of *Lepa* can be seen based on the necessity. *Sushruta* made the classification based on the method of application where as *Vagbhata* and *Sharangadhara* in addition classified on the basis of their effect. *Charaka* has given more importance to the drugs than the thickness of *Lepa*. Congregating all these information *Lepa* can be classified into different varieties based upon the

1. Method of Application,
2. Effect of *Lepa*
3. Use of heating modality and ingredient

TABLE NUMBER 01:- Classification of *Lepa*

Sr.No	Method of Application ^[3]	Effect of <i>Lepa</i> ^[4,5]	Use of heating modality and ingredient
1.	<i>Pralepa</i>	<i>Doshagna</i> (mitigates <i>dosha</i>)	<i>Ushna</i> (Hot)
2.	<i>Pradeha</i>	<i>Vishagna</i> (mitigates the toxicity)	<i>Sheeta</i> (Cold)
3.	<i>Alepa</i>	<i>Varnya</i> (enhances the complexion)	

METHODOLOGY OF *LEPA* APPLICATION^[6]:

Lepa should be gently rubbed in an upward or reverse direction of the hairs over the skin to make the action of application more quick & effective.

Thickness of *Lepa*

Sharangadhara has directly mentioned the thickness of *Doshagna*, *Vishagna* and *Varnya Lepa* in *Anguli Pramana* as 1/4 , 1/3 and 1/2 *Angula* (unit of measurement) respectively.

Sushruta^[7] states that

- *Pradeha* is the thickest form of *Lepa*.
- *Alepa* is of medium thickness.
- *Pralepa* is the thinnest form of *Lepa*.

Sushruta opines that the thickness of *Lepa* application on the skin should be equal to the thickness of a buffalo's skin. Thickness of fresh buffalo's skin before tanning is given in the range of 2.8 to 3.2 mm thick.^[8] Considering *Pradeha* thickness as equal to buffalo's skin, the thickness of *Alepa* and *Pralepa* can be said as follows

TABLE NUMBER 02: Thickness of the *Lepa*



1.Pradeha	\geq Ardra Mahisha Charma (wet buffalo's skin) (2.8 – 3.2 mm)
2.Alepa	In Between Pradeha and Pralepa (2.4 - 2.8mm)
3.Pralepa	$<$ Alepa $>$ 2.4 mm

Time of Lepa application :

1. *Lepa* should be applied in the morning.
2. In case of *Pitta* and *Rakta* involvement and for *Vishagna* purpose *Lepa* should be applied in the morning.^[9]
3. *Lepa* should not be applied at nights because at night all the *Srotas* (channels) in the body are closed,^[10] and the heat of the body comes out through the skin pores (*Roma Kupa*) at nights normally and *Lepa* blocks skin pores obstructing the transfer of body heat.^[11]

Precautions during the application of Lepa:

- Dried *Lepa* should not be reused. Because dried *Lepa* loses its potency.^[12]
- It should not be allowed to stay after drying except to cause *Peedana* effect.^[13]
- If dried *Lepa* sticks to the skin then it should be made *Ardra* (moist) and removed.^[14]
- One *Lepa* should not be applied over another *Lepa* because it will produce *Vedana* (pain) and *Daha* (burning sensation) due to its *Ghanatva* (thickness).^[15]
- After the application of *Lepa* *Atibhaashya* (excessive talking), *Atihaasya* (excessive laughing), *Krodha* (anger), *Shoka* (grief), *Rodana* (crying), *Swedana Karma* (sudation), *Atapa Sevana* (exposure to sun rays), *Divaswapna* (day sleep) should be avoided. If not it may lead to *Kandu* (itching), *Twak shosha* (dryness of skin), *Pinasa* (running nose), *Drishti upagathata* (affects the eye sight).^[16]

Method of preparationTABLE NUMBER 03: Ingredients of *Agnilepa*

NAME	LATIN NAME	FAMILY	OFFICIAL PART
<i>Kshudra Agnimantha</i>	<i>Clerodendrum phlemoidis</i>	Verbenaceae	Leaves
<i>Vana Tulasi</i>	<i>Ocimum basilicum</i>	Labiatae	Leaves,
<i>Nirgundi</i>	<i>Vitex nigundo</i>	Verbenaceae	Leaves
<i>Papata</i>	<i>Pavetta indica</i>	Rubiaceae	Leaves
<i>Bhandha</i>	<i>Bradelta scandes</i>	Euphorbiaceae	Leaves
<i>Lashuna</i>	<i>Allium sativum</i>	Liliaceae	<i>Kanda, Taila</i>
<i>Lavanga</i>	<i>Syzygium aromaticum</i>	Myrtaceae	<i>Pushpaalika</i> (flower bud)



Marica	Piper Nigram	Piperaceae	Fruits
Sarshapa	Brassica campestris	Cruciferae	Seeds.
Haridra	Curucuma longa	Zingiberaceae	Rhizome

Method of preparation of *Lepa*^[17]:

“Dravyam Ardram Shila Pistam Shushkam Va Sadravam Tanu

Dehe Pralepanartham Thath Lepa Ithi Uchchate Bhudaihi”

Wet drugs are made into paste form by grinding. If the drugs are in dry state they are converted into paste form by adding little quantity of water (Milk and *Sneha Dravya* depending on the need). This paste is applied over the body is called as *Lepa*.

Preparation Agnilepa by the method amalgamation

All wet drugs should be taken double the quantity of dry drugs (fresh leaves of *Kshudra Agnimantha*, *Vana Tulasi*, *Nirgundi*, *Papata*, *Bhandha*) cleaned and made into bolus form. Wet drugs should be taken double the quantity of dry drugs. Other herbal fine powders along with the paste of *Lashuna* should be added. All the drugs should be taken in ceramic container and will be mixed homogenously. Vessel should be closed and kept for 3 days without stirring the mixture. Two parts of emulsifier - non reactive MRZ Solution need to be added and mixed vigorously by using blender; by 60 rotations per minute for the minimum period of one hour. Such prepared mixture is called amalgamated *Agnilepa*. The paste can be applied over affected joints with the thickness of 2.6mm approximately.

DISCUSSION:

Amavata is a disease of *Madhyama Rogamarga*, involving *Sandhi* (joint) mainly; therefore it is *Krichchhra Sadhya* (difficult to cure). Vitiated *Vata Dosha* in association with *Ama* circulating in all over the body gets lodged in the *Sandhi* and exhibits the symptoms.

In the *Sama* stage of *Amavata* one should plan the treatment which pacifies the *Vata* and does *Pachana* (digestive) of the *Ama* (toxins from undigested food) in local and in systemic level considering the strength of the patient. Hence with other treatment modalities, *Agni Chikitsa Lepa* with the drugs possessing *Ushna* (hot), *Teekshna* (penetrating) and *Ruksha* (causes dryness) properties does the reduction of *Ama* and *Vata* without hampering the *Bala* (strength) of patient. The drugs used for this process are having *Vedanasthapaka* (alleviation of pain) *Shothahara* (removes swelling) and *Kaphavatahara* (mitigates *Kapha* and *Vata Dosha*) properties, which may relieve the cardinal symptoms of *Amavata*, i.e., joint inflammation, tenderness and stiffness by *Samprapti Vighatana* (breakdown of pathophysiology) due to their direct action at the *Sandhi* (joint).

From the pharmaceutical point of view, *Lepa* is a form of *Kalka Kalpana*. Only the purpose for which it is used, decides its nomenclature. As per the classical preparation of *Lepa* fresh drugs need to be collected each time, also the prepared drugs need to be used within 24 hours of duration. In the contrary amalgamated *Agnilepa* will



be having quicker absorption easy to use and there will be no drug wastage. There will be batch control over the potency of drug.

TABLE NUMBER 04: Advantages of Amalgamated form and disadvantages of *Lepa*

Sr.No	Advantages of Amalgamated form	Disadvantages of <i>Lepa</i>
1.	Easy for application	Difficulty to maintain uniformity
2.	Shelf life upto 1 year	Minimal shelf life
3.	No need of collection fresh wet drugs during each time of preparations	Need to collect fresh wet drugs every time
4.	Batch control over the drug	No batch control
5.	Easy for storage	Can store upto 1 day

CONCLUSION:

By going through all advantages and disadvantages it's need of hour to modify the classical concepts of *Lepa Kalpana* without altering the basic concepts of *Ayurveda* in the management of *Amavata* effectively.

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PROFESSIONAL ACCOUNTABILITY IS THE FORM OF GOOD GOVERNANCE

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INTRODUCTION

“Accountability is a statement of personal promise, both to yourself and to the people around you, to deliver specific defined results”

-Brian Dive

The word “accountability” is used in different parts of society perhaps most often in the realm of government and politics. The word has also been increasingly employed in the field of corporate governance. In fact the Corporate Governance structure under the Companies Act, 2013 is standing on five pillars, namely transparency, accountability, responsibility, independency and fairness. Keeping in mind the Vision New ICSI-2022, this article talks about one such pillar i.e.

MEANING OF ACCOUNTABILITY

Accountability is recognized as a complex word and is frequently used in different parts of society. The meaning of accountability is mistakenly considered equivalent to the words such as responsibility. The concept of accountability is closely related to the word responsibility, but if it is used interchangeably it will be a source of confusion.

Responsibility is an obligation to act or make a certain decision i.e. it includes personal or moral ethics. Accountability on the other hand depicts the relationship that exists between the person who confer responsibilities and the other who ensure that the responsibilities conferred are delivered. It also involves reporting back to the person who has conferred the responsibilities. Schedler (1999) had summarized the meaning of accountability as :-

1. Introduction
2. Justifications and
3. Sanctions

Accountability is defined as a ‘process of being called to give account to some authority for one’s actions’ or a process of giving an account’. Thus accountability can be seen as ‘answerability. It is the relationship that exists between an actor and a forum in which the actor is under an obligation to explain and to justify his or her conduct, the forum has the right to pose questions and the actor may face consequences. From the above definition it is clear that the word accountability has an element of control, which in fact is a term used in the literature before the term accountability took over.

Accountability is said to relate to expectations but it is not synonym of discipline or blame. It is general expectation that Supervisors have from their employees or for that

matter stakeholders have from their company that the task that was allotted to them will be completed satisfactorily. It is the duty of Supervisors or stakeholders to ensure that the professionals or the company do not define accountability as blame or discipline, but rather, an opportunity for growth and recognition. It is also pertinent to note that Supervisors or for that matter stakeholders will recognize efforts that exceed expectations, not just meet them.

Webster's Third International Dictionary defines accountability as follows:-

- 1- The state of being accountable.
- 2- The state of being liable.
- 3- The state of being responsible.

Management and educational literature present many views with regard to accountability. Accountability can be viewed as an obligation, as a commodity in an exchange relationship and it can also be viewed as a set of procedures leading to a better performance. In fact it can often be used as a synonym for "good governance".

PHASES OF ACCOUNTABILITY

There are three phases of accountability, first, the information phase, second, the debating phase, third, the consequences or sanction phase. Information is a crucial tool in accountability arrangements. In fact in all phases of accountability process, information first has to be gathered, processed and then finally it has to be communicated. The range and format in which the information has to be provided depends on the type of accountability in question. By providing information to the accountee, the accountant acknowledges the accountability relationship that exists between them.

The dialogical nature of accountability can be seen in debating phase i.e. process of questioning and answering phase. The accountee has the authority to demand answers for the performance of the accountant whereupon the accountant has to provide additional information. This phase is important because it offers the greatest information to emerge because information provided face-to-face allows immediate feedback, allowing direct verification of the correctness of the information provided.





WHY ACCOUNTABILITY IS IMPORTANT IN CORPORATE GOVERNANCE?

0Accountability is important in corporate governance for the following reasons.

1. **Corporate Performance:** Accountability is the key to measure performance of the company. Improved accountability towards stakeholders helps in quality decision making which further enhance the long term prosperity of the companies. This long term prosperity of the company in terms of profitability leads to better corporate performance and thus retaining the trust of the investors.
2. **Combating Corruption and Fraud:** Companies which are transparent in its dealing with stakeholders i.e. companies which provide high level of disclosures to their shareholders and various other stakeholders about the performance of the company are in better position as compare to the companies which do not provide such disclosures. Such disclosures provide an environment where corruption will certainly fade out. The Companies Act, 2013 and with Securities and Exchange Board Of India (Listing Obligation and Disclosure Requirements) Regulation, 2015 prescribe several principles governing disclosures and obligations of board of directors, committees and professionals towards stakeholders i.e. board of directors, committees and professionals are made accountable to shareholder and other stakeholders, thus preventing fraud and corruption to some extent.
3. **Enhanced Investor Trust:-** Investors who are provided with high level of disclosures regarding company's performance tire likely to Invest openly in such companies. Disclosure is considered as one of the component of accountability thus accountability presupposes disclosure. It is generally seen that global institutional investors are ready to pay up to 40 percent for shares in Companies which have good corporate governance practices which include accountability as one of the aspect.
4. **Enhanced Enterprise Valuation :-** Investors expectations and confidence on management and organization are fulfilled through enhanced management accountability. This is return increases the value of the organization.
5. **Agency Theory :-** Principal-agent theory means interactions between at least two contract partners principal and agent. The agent acts on behalf of principal i.e. Professionals like Company Secretary act on behalf of shareholders. The theory presupposes two things, first principal's access to information is limited, second, principal cannot perfectly monitor the performance of his agent. Hence this agency problem is solved when agent i.e. the professional provides complete and transparent information to its principal i.e. the shareholders. Due to the principal-agent relation that exists between the shareholders and the professionals, a professional is obliged to disclose true and fair position of the company on regular basis to all its shareholders in order to maintain good investor's relations. Good corporate governance further creates an environment whereby professionals cannot ignore their accountability towards shareholders of the company.



ABOUT THE ICSI

It is one of the premier national professional bodies set up under an act of Parliament, the Company Secretaries Act, 1980. The institute functions under the jurisdiction of the Ministry of Corporate Affairs, Government of India.

Vision: “To be a global leader in promoting Good Corporate Governance”

The focus of Vision New ICSI -2022 has to be its stakeholders, external and internal, and meeting their aspirations and expectations.

Mission: “To develop high caliber professional facilitating good Corporate Governance”

There are following causes of Accountability of a Professional as under.

1. Corporate fraud for the company by the Employers: Employers can commit fraud by increasing profits by inflating sales. Price fixing is also one of the ways to commit fraud. Cheating customers through short weights and measures, short counts and substituting cheaper materials for more profits, false advertising is also included in cheating. Violating government regulators by evasion of taxes, political corruption and padding costs on government contracts.
2. Corporate fraud against the company by the Employees: Employees can commit fraud by forging signatures and endorsement on a cheque, misappropriation of assets, by manipulation in receivables like fake vendor invoices, false expense vouchers, fake suppliers, fake contractors etc, they can commit fraud by manipulation in salary and wages payments like payment to bogus employees, less payment to employees, or excess salary to senior executives who are relative of owners.
3. Consequences of Fraud committed by Employers and Employees:
 - ✓ **Stakeholders:** One of the major consequences of fraud is loss of trust and confidence of investors in the organization, loss of credibility of the organization, loss of employees due to switching over, non payment to creditors, and decreases in value of investment.
 - ✓ **Economy:** Fraud results in loss of confidence of foreign investors, reduction in employment, adverse effect on overall growth, higher cost of projects, imposition of more government controls, there will also be negative impact on the investment climate in the country.
 - ✓ **Organization:** Because of fraud there is an adverse effect on Banker's attitude in providing loans to the organization, loss of reputation and decrease in value of shares, loss of customers and dedicated employees, etc.

CONCLUSION

Corporate frauds are not new to Corporate India. In the year 2007 a study was conducted by a Pune based forensic consultancy service. The study was named as “Early Warning Signals of Corporate Frauds. Some shocking findings regarding frauds in India were first, in the year 2007, near about 1200 companies who are listed on BSE and over 1300 companies listed on NSE have manipulated their financial statements. Second, manufacturing sector is a hub of frauds and then follows the real estate and



public sector. The KPMG India Fraud Survey Report (2008) present that to over 80 percent of the respondents said that, fraud is a serious problem and also that the procurement, sales and distribution are mostly prone to frauds. Sutdy by Kroll in 2015 is also in the same line and states that the globalization of business increases fraud risk. The survey also indicates that biggest fraud threat to companies comes from within the organization. With the increase number of frauds, the role of professionals like statutory auditor, internal auditor, cost auditor and Company Secretary comes into picture. It is their responsibility to detect and investigate such frauds.

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A REVIEW ON MEDICAL ASTROLOGY WITH RESPECT TO ARISHTA LAKSHANA

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Abstract-

Astrology is the branch of science explaining with mathematical calculations of predicting or determining the influence of the planets, stars and their rotational effects on human beings in various stages of life span. Both *Ayurveda* and Astrology explains a way of life in India since time thousands of years ago as pumsavanam, jatakarma, suthika snana, namakaranam, annaprashanam, upaveshanam, karna vedhana, upanayan like this many samskaras time, date and day are decided on astrology, advanced knowledge related to Astrology on medicine is preserved in Indian scriptures and practised from generation to generation. Although both Astrology and medicine were developed as a part of Vedas in India, astrological principles related to prevention, health care and relief from illness were applied as religious ceremonies. An astrologer guides for some patients for taking planned Shodhana therapies like vamana, virechana suitable time for treatments efficacy, timings for planned shalya procedures, pathya Sevana vidha and kala, at suitable time for collection, preservations of herbal medicines which enhances their efficacy. Toxic effects of jangama or sthavara visha dravyas can be predict with their nakshatra, time and day, duta lakshanas with astrological methods. . Astrology and *Ayurveds* are related to each other,. Astrology helps to ayurvedic physicians to note the patients status with respect to health, time, period to plan the different and suitable modalities of treatments. In a case where a physician is unable to understand the pathogenesis of the disease and to treat, the patient depends upon Astrology. Harita samhita explains about sadhya asadhyatwa of diseases and arishta lakshanas can be unknown with help of good and bad deeds during this life and previous lives, their consequences of health or ill health during the life which orderly, when, what and how will be clearly known through Astrology. It gives guidelines about welfare not only to human being but also to whole creation and also indicates about calamities and their solutions as possible extent. Hence a concise astrological evaluation related to prevention, health care, diagnosis and treatment of diseases is being presented in this article.

Key words: Astrophysics, Bad Prognosis, Lagna ,Nakshatra

Introduction

Medical astrology is an earliest medical system that connects various parts of the body, karma of the person, as both Ayurveda and Astrology believes in karma siddhant, which causes illnesses and their treatments as under the effect of the sun, moon, and planets, laterally with the twelve astrological symbols. Each of the astrological signs



(along with the sun, moon, and planets) is linked with dissimilar parts of the human body. The fundamental basis for medical astrology briefly explained here. The importance of kala, nakshatara, muhurta, with respect to health of human beings, prognosis of diseases can be assessed with astrological calculations from stars, planets places and rotations, well explained in books like muhurt nakshatra chintamani prakaran, vashishta samhita, atharva jyotishya, brihat jataka arishta adhyaya, manasagari, laghavakara, and etc. Medical astrology is also supportive in elective surgery. A lot of literature is available on astrology related to medicine. So it is also essential that a physician should study the astrology for medical purpose like prevention, health care, diagnosis, treatment and its limitations. More research is essential in the lines of Medical Astrology through astrological classics, which can help the medical science, ultimately to the humanity. Important aspects of astrology related to medicine. A horoscope is a chart of planetary position at a specific time, it consists twelve houses. These houses rule over all the conceivable aspects of the life, including the tendencies of the past lives and prospects for any future life also. The first house is known as the *lagns*. It is the most important house of the horoscope. The remaining houses are studied only as they are related to the *lagna*. These twelve houses of the horoscope rule over various parts of the body, related to the health and various diseases in different organs or regions." So an astrologer must consider the following factors while studying the birth-chart about health, probable diseases and their treatment.

1. Prevention
2. Health care
3. Timing of disease occurrence
4. Diagnosis
5. Severity
6. Treatment

1. Prevention

The planets those are harmful to the health should be propitiated by astrological remedies as sacrament after birth in the early stage of life and childhood because "prevention is better than cure". The harmful planets, which can create adverse effects to the health, can be prevented through propitiation. The *Gadannta-nakshatra-shanti-smaskara* [sacrament for propitiation of evil *nakhstras* (constellation)] in specific auspicious moment according to the horoscope of the child eliminates afflictions of the infants those are born in malefic *nakhstras* (*Jyestha*, *Mula*, *Revati*, *Ahsvini*, *Ashlesha* and *Magha*) for his healthy and long life.

2. Health care

It is better for health and long life of the child that profitable factors like the *lagna*, the Lord of the *lagna*, the Sun, the Moon, the Lord of the eighth house should also propitiate from adverse effects in infancy for child welfare in the health and family welfare programmes. If harmful planets did not propitiate in infancy, then these adverse factors can also be propitiated in future even when they cause some problems to the person. An experienced astrologer can advise the astrological remedies in this situation.

3. Timing of disease occurrence

This is the strong area of an astrologer to predict a future illness. An astrologer can able to indicate the time when a person is liable to fall ill with analysis of *Vimshottari:dasha* (which involves a cycle of 120 years) and *Yogin) dasha* (involving a cycle of 36 years).



He may help in taking some preventive steps, especially the astrological precautions and remedies to prevent the disease.

4. Diagnosis of the disease

A sound astrologer may diagnose about the nature of disease after examination of horoscope of a person. But there is a need of research for specific diagnosis of diseases through astrology with the help of medical science.

5. Severity of the disease

An efficient astrologer is able to indicate the severity and outcome of illness by strength of adversely effected planets, houses and *nakshtras* with a fair amount of accuracy, sometimes better than the physician.

6. Treatment

The treatment of well-developed medical science is superior, more reliable and easily available than any astrological remedies today. But astrology is also helpful when adverse planetary influences indicate the incident of a disease in future dates, where as medical science understandably has no clue about it. Then astrology may help in the treatment by astrological remedial procedures, those apply for propitiations of planets. Sometimes astrology can indicate surgical intervention is going to help or not and probable time.

An experienced astrologer is able to point out the diseased organ or region without doubt, when the physician is finding it difficult to locate the site of illness. Circumstances those are indicating good health various factors those are indicated for good health are available in *Ayurveda* and Astrology also.

Acharya Charak mentioned in Charak samhita

That human life depends on comprehensive situation of body, mind and soul, I

Sattvamatma shariramcha trayamettatridandavat.

Loksstistheti samyogattra sarvsm pratisthism. (Ca.Su.1146)

The Sun is representative of soul", the Moon is representative of mind" and the *lagna* is representative of body) in Astrology. So it is essential for health that the Sun, the Moon, the *lagna* and the Lord of the *lagna* may be strong, associated with beneficial effect and less with maleficent effect. It is also co-operative for health that Lord of the sixth house or other malefic planets (the Sun, Mars, Saturn, *Rahu* or *Ketu*) are situated in the sixth house, because health should be in better position without pathogenetic condition in this conditional planetary situation. Various factors those lead to good health are being mentioned below.

Aim- To know the prognosis of diseases in the complicated cases with help of medical astrology

Objectives- to assess the severity of diseases with help of medical astrology which helps to both patients and doctors

Methods- To study the planetary places in horoscope of patients to analyse the condition of patient and disease.



Methodology -

Adverse affected planets those are situated in the *lagna* create diseases in the following organs or *dhatu* (bodily elements). The term *lagna* refers to the preferable planet which is dominantly present during birth or at the time of birth.

Table-1

SL- Planets	System affected	Site in Body
1-Sun	Eyes, Heart, Bones	Bones
2- Moon	Mind, Lungs, Blood	Blood
3-Mars	Muscles, Marrow	Muscles
4-Mercury	Voice, Hearing, Skin	Skin
5-Jupiter	Abdomen. Intestine, Liver, Fat	Fat
6-Venus	Eyes, Urine, Semen	Semen
7-Saturn	Feet, Nerve	Nerve

Ref--Bhuvnesh Kumar Sharma, P.V.V. Prasad,& A. Narayana, CONTRIBUTION OF ASTROLOGY IN MEDICINE - A REVIEW, Journal Ind. Inst. Hist. Med. VO!.XXXVII - 2007. pp 45 to 62

If the Lord of the *lagna* placed in debilitation sign and the *lagna* or if there is malformation of the Lord situated in *lagna* it produce following diseases.'

TABLE-2

SL NO	Lagna	Lord of Delilitation	Placement	Diseases
1	Mesha(Aries)	Mars	Cancer	Heart and lungs
2	Vrashabha(Tarus)	Venus	Virgo	Abdomen
3	Mithuna(Gemini)	Mercury	Pisces	Stabing pain in knee
4	Karka(Cancer)	Moon	Scorpio	Dropsy
5	Simha(Leo)	Sun	Libra	Ears
6	Kanya(Virgo)	Mercury	Pisces	Asadhya vyadhi

Ref--Bhuvnesh Kumar Sharma, P.V.V. Prasad,& A. Narayana, CONTRIBUTION OF ASTROLOGY IN MEDICINE - A REVIEW, Journal Ind. Inst. Hist. Med. VO!.XXXVII - 2007. pp 45 to 62

These will help to know the condition of patient and diseases, for example patient presenting with unknown causes of diseases, unknown symptoms, chronic with multiple doshas and *dhatu* involvement of diseases which will be considered as *asadhya vyadhis*.



Discussion

Circumstances those lead to ill health

There are various factors those indicates ill health. Combinations for ill health are opposite of those indicated good health also. The factors, those lead to ill health are being concisely mentioned below.

1. Situation and association of the Lord of the sixth house

The Lord of the sixth house is most important factor for pathogenesis. Pathogenetic condition develops by situation and nature of the Lord of the sixth house.' The Lord of the sixth house creates disease in the representative organ of particular house. (a) Where it is situated. (b) Associated with the Lord of that house.

2. Situation of beneficial planets in the sixth house

The beneficial planets create disease, when they are situated in the sixth house by their nature.' They develop disease in that particular organ, which is represented by them.

3. Situation and association of the Lord of the eighth and the twelfth house

The Lord of the eighth and the twelfth house are also responsible for pathogenesis.' They also create disease in the representative organ of that house where they are situated or associated with the Lord of that house.

But the Sun, the Moon and the Lord of the *lagna* do not create disease, when that is the Lord of the eighth house,. If the Lord of the twelfth house may be trine also, that does not create disease.'

4. Weak *lagna*

The weak *lagna* is most important factor for ill health.' The *lagna* becomes weak in the following situations.

(a) **Occupation by the malefic planets** - The *lagna* becomes weak, when occupied by the malefic planets. It is the indication of ill health.

(b) Occupation by the enemies of the Lord of the *Jagna* - When the enemies of the Lord of the *lagna* are situated in the *lagna*, it becomes weak by reverse effect of enemies.

(c) Aspect of the malefic planets - Aspect of the malefic planets on the *Jagna* is an adverse effective situation. The *lagna* becomes weak by aspect of malefic planets.

(d) Presence of adverse *yoga* in the *Jagna* - When the adverse *yoga* is present in the *lagna*, the *Jagna* becomes weak. It causes ill health.

5. Weak Lord of the *Jagna* Weakness of the Lord of the *lagna* is also most important cause for ill health."When the Lord of the *lagna* becomes weak, it is a great indication of ill health. The Lord of the *lagna* becomes weak in following circumstances.

(a) Debilitation- When the Lord of the *lagna* is debilitated, it is a symbol of weakness. A debilitated Lord of the *lagna* is responsible cause for ill health.'

(b) Combustion- When planets close to the Sun tend to lose their strength and vitality and are considered to be combust. A combust planet loses its capacity to do well and produce adverse results.' It is also specific sign of illness when the Lord of the *lagna* is combust.

(c) Retrogression - The planets become retrograde when they appear to move in a reverse direction during their movement. A retrograde planet produces unexpected results and generally adverse for health.' The retrograde Lord of the *lagna* is also specific cause of illness.



(d) Occupied an adverse house like the 6th or the 8th or the 12th - The sixth, the eighth and the twelfth houses are particularly adverse for health.' So when the Lord of the *lagna* occupies one of these houses, it becomes weak and it is a specific indication for ill health.

(e) Association with the malefic planets - When the Lord of the *lagna* associated with the malefic planets, it becomes weak by adverse effect of the malefic planets.

(d) Aspect by the malefic planets - When the Lord of the *lagna* aspect by the malefic planets, it is a cause for sickness due to weakness of the Lord of the *Jagna*.

(g) Placement in the house of an enemy - When a planet placed in the house of an enemy, it becomes weak. So placement of the Lord of the *lagna* in the house of an enemy is also an indication of sickness.

Relations between Nakshatra and prognosis of diseases-

Mrutyu kara nakshatra -The nakshatras during patient gets disease the leads to death ,as Magha, bharani, hasta, mula

Sadya nakshatra- ashwini, rohini, pushya, mrigashira, jyeshta during these nakshatra if patients gets diseases then it will be easily curable.

Kashta sadhya nakshatra- purva, swati, chitra,aardra, punarvasu, shravana, dhanishta, mula, vishakha, kritika, ashlesha, anuradha.

According to nakshatras –concepts of diseases can be assessed as

Table-3

NAKSHTRA	AMSHA duration 1	AMSHA duration 2	AMSHA duration 3	DISEASE remarks
Kritika	10 days	10days	5 days	Tivra jwara and pittaj vyadhis
Rohini	9 days	12days	10-10days	Any diseases
Mriga shira	5 nights	12 days	1 month	Diseases suffering ending with death
Ardra	15days	12days	death	Any disease
Punarvasu	15 days	7 days	25 days	Jwara
Pushya	7 days	20 days	21 days	Any disease
Ashlesha	Survive with difficulty	death	death	Jwara
Magha	7 nights	10 days	20days	Disease with difficulties
Purva phalguni	5 nights	12 days	30days	Jwara
Uttara phalguni	14 days	7 days	9 days	Disease with difficulties
Hasta	7 days	4 days	5 days	Disease with difficulties
Chitra	death	3 months	13 days	Jwara
Swati	17 days	21 days	death	Any disease
Vishakha	48 days	12 days	12 days	Any disease
Dhanishta	20days	2 months	1 month	Any disease
Purvabhadra	45 days	6 months	16 days	Chronic ailments
Uttara bhadra	15 days	1 month	28 days	Any disease
Revati	8 days	16 days	30 days	Any disease
Ashwini	1 month	5 days	7 days	Any disease
Bharani	7 days	death	3 months difficulties	Any disease
Ref – Harita samhita –second sthana- 6 th chapter				



Conclusion-

The explaining or predicting about the patient's strength, diseases are difficult task. The sadhya asadhyta of diseases can be predicted by positions of the nakshatra during anifestation of diseases, further rotation of planets indicating shubha and ashubha lakshanas, its believed that even though vaidya having all rasa aushadhis with him, sometimes not possible to prescribe for required patient which leads to complications of disease leading to arishta lakshana and death. Sadhya asadhyta lakshanas can also be predicted with help of duta, nimitta, indriya, bala, arishta lakshans. these will help the physician to diagnose the diseases and its probable complications, from which can plan or prescribe the treatment beneficial to patient.

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ONLINE CAR PARKING SYSTEM

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Abstract

Stopping framework in the city has been a significant issue at present. testing for an accessible stopping room in a blocked or cumbersome parking area in life are fundamental worries of our consistently lives. The challenges that we face in our ordinary glisten one of the generally an unavoidable tests always halts the vehicle anywhere we go. During hit the most elevated point hours a lot of the held for possible later use stopping question gets full. Online Car Parking System is intended to advance to it simpler for successive to tome leaving seats on the web, the arranged framework will give the clients with ongoing leaving, assurance and leaving data.

Catchphrases: Metropolis, Unavoidable, Masses, Quite.

I. INTRODUCTION

A kind of occasions turns up as we trip a variety of freely available sitting room like shopping malls, 5-star hotels, and cinema complex cinema halls. A substantial portion of the state of affairs we allow to die to locate a free room for Stopping Searching for a available parking place in a municipal corner is the day after day affair for nearly everyone citizens and it is time consuming. The system strongly relies on individual interaction with the physicalroom and entity. Novel technology has fashioned a diversity of new solutions and techniques in this respect. The assignment be able to apply new forecast trends and creative technological solutions which tin alleviate alleviate the strain of the problem. for the reason that car parking solutions are not an finish in itself, but to a certain extent a income of achieving largergroup of people goals in regulation to expand built-up haulage and knock together cities supplementary fit for human habitation and efficient. In sale to elucidate this problem, the implementation of Online Vehicle recreational area Reservation System in this capital for administration parking seats is mandatory.

In this paper, we aim and put into action a prototype of Online Parking System to afford reservation once-over as quantity of user-targeted service, The drivers know how to retrieve parking in order and formality their most wanted unoccupied through an internet.

II.METHODOLOGY

There are different techniques accessible for Undertaking Execution, yet we can pick the system as indicated by our venture and experience. We are new and can't cure the problem just in a moment.



Along these lines, we will utilize RAD Model to execute the venture, in this strategy we can check and confirm each progression on various occasions and furthermore can return to audit the more established phase of the task Stage 1..

Stage 1. Characterize and conclude venture necessities

During this progression, partners sit together to characterize and conclude venture prerequisites, for example, venture objectives, desires, courses of events, and spending plan..

Stage 2: Start building models

When you wrap up the task, you can start improvement. Architects and engineers will work intimately with customers to make and enhance working models until the last item is prepared.

Stage 3: Assemble client criticism

In this progression, models and beta frameworks are changed over into working models. Engineers at that point assemble input from clients to change and improve models and make the most ideal item.

Stage 4: Test, test, test

This progression expects you to test your product item and guarantee that all its moving parts cooperate according to customer desires. Keep fusing customer criticism as the code is tried and retested for its smooth working.

Stage 5: Present your framework

This is the last step before dispatching is done.

MODULES

This framework includes 8 Modules

1. Administrator login
2. Client Registration and Login
3. View Parking Slots (Nearby or User Specific)
4. Stopping Booking Online
5. Stopping Cancellation
6. Criticism

1. Administrator Login

The framework permits administrator to login and deal with the web application and perform different undertakings as follows:

- a. Include Sections
- b. Include spaces
- c. View Booking
- d. View Users

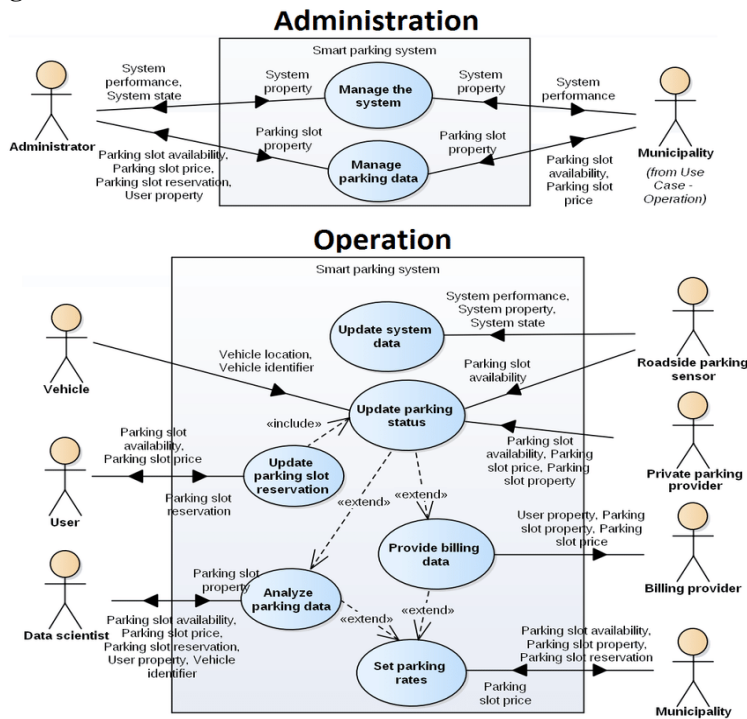
2. Client Registration and Login

To get to the framework, the client needs to initially enlist themselves by furnishing required subtleties and may proceed with login.

3. View Parking Slots (Nearby or User Specific)

The client can tap on spaces to see the accessibility. On the off chance that space is as of now reserved there will be composed inaccessible and the accessible ones will have a tag of accessible.

4. Booking Online



III. IMPLEMENTATION

(A)Registration Of New User



The screenshot shows a web interface for a "PARKING ZONE" with the slogan "Parking Doesn't Need to be Painful". The registration form includes the following fields:

- Email:
- Name:
- Password:
- Re-Password:
- Middle:
- Date of Birth: at: mm/yyyy
- Gender: ☐ Male ☐ Female
- Driving License No:

A "Register" button is located at the bottom of the form. Below the form is a decorative banner with the text "Car Park" and various parking-related icons.

Entering personal details for registration and creating user account

(B)Searching for Space



(C)Checking for Number of Booking



Booking ID	Section ID	Section Name	Slot ID	Slot Name	Email	Vehicle No	Booking Date	Parking Date
4	1	SF1	1	T1, 8AM to 9AM	amdeep@rediffmail.com	UP123333	2019-11-26	2019-11-30
5	2	SF1	3	T2, 8AM to 12 Noon	amrit@yahoo.com	ap55678	2019-11-29	2019-12-01
6	2	SF1	4	Morning 6 to 9, 3Hours	abhi@gmail.com	UP123333	2020-02-07	2020-02-08

IV. RESULTS AND DISCUSSION

In this paper, we get industrial a new perfect of smart parking management system based on favourable parking reservation . In this system, we execute the reservation serviceproviders and users require to equalize the repayment of parking. Furthermore, we maintain existing a in depth test design, implementation and devaluation.This throw was designed to get stronger on the recent Vehicle Parking Reservation systems by creating Online vehicle reservation system which enables the client/driver to hardback parking liberty online.

Online vehicle parkingreservation system improves the obtainable system since we are in mechanical world. With this new system is mandatory, it enables the addict of the system to salt away a parking lotonline andthis reduces the manslaughter of time of the clients looking for anywhere to park, boost the security of the belongings since the parking set is numbering.



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THE EFFECT OF LEADERSHIP AND WORK ENVIRONMENT ON EMPLOYEE PERFORMANCE IN SMEs IN BALI

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ABSTRACT: This study aims to analyze the influence of leadership and work environment on employee performance in SMEs in Bali. The study population was 90 employees of UKM in Bali. This study uses multiple linear regression analysis to determine the effect between variables. The hypothesis test used is the t-test to test the partial effect, while the F-test to test the simultaneous effect of the independent variable on the dependent variable. The regression equation obtained: $Y = 10.442 + 0.526X_1 + 0.211X_2$. This model shows that: 1) there is a positive and significant influence of leadership on employee performance, 2) there is a positive and significant influence of the work environment on employee performance, and 3) there is a positive and significant influence of leadership and work environment on employee performance in SMEs in Bali, 4) The magnitude of the influence of leadership and work environment on employee performance in SMEs in Bali is 72.6%, and 5). Leadership is a variable that has a dominant influence on employee performance in SMEs in Bali. This study provides consideration to the leaders of SMEs in Bali in order to pay attention to leadership and work environment so that employee performance can be improved.

Keywords: Leadership, Work Environment, Employee Performance.

I. INTRODUCTION

In maintaining the performance of human resources, the company must pay attention to several things in managing its human resources. Nitisemito (2002) revealed that there are two factors that can affect employee performance, namely internal and external factors. Internal factors are factors related to the nature of a person who comes from within include, attitude, personality, physical nature, desire or motivation, age, gender, education, work experience and other variables. External factors are factors that affect employee performance originating from the work environment, leadership, coworkers' actions, rewards or rewards, participation, pride or satisfaction and material. When this is not maintained properly, it will contribute negatively to employee performance (Pradhan and Jena, 2017). The authority to maintain and realize employee performance is the leadership process in the organization (Sellers, 2017; Wen et al., 2019).

Leadership does not only talk about the distribution of tasks and delegation of tasks but also how to make someone want to do the tasks delegated without any burden and want to carry it out with all their abilities (Sart, 2014). Leadership has a close relationship with employee performance. Good and decisive leadership will have an impact on improving employee performance (Kinicki et al., 2011; Sharma and Jain, 2013). Employees will be excited if they have good leaders, are assertive, and pay attention to employees.

In addition to leadership, the work environment where the employee works is equally important in improving employee performance (Hamid and Hassan, 2015; Al-Omari and Okasheh, 2017). A good work environment can support the implementation of work so that employees have a passion to work and improve employee performance (Samson, Waiganjo and Koima, 2015; Patil and Kulkarni, 2017). To create high performance, it is necessary to increase optimal work and be able to utilize the potential of human resources owned by employees to create organizational goals, so that it will contribute positively to the development of the organization.

The object of this research is SMEs in Bali, where after observing the phenomenon found by SMEs in Bali, namely business management is still very simple, traditional (Kusumawijaya and Astuti, 2013), so far behind other businesses in various regions in Bali. The limited human resources of business managers, both in quality and quantity have triggered the lack of professionalism in managing SMEs in Bali (Kusumawijaya, 2019). This shows the lack of entrepreneurial spirit in running SMEs in Bali, both the leadership process, the work environment used to improve the performance of SME employees in Bali.

1.1 Research Objectives

Based on the background of the problem and the problem formulation that has been mentioned, the objectives of this research are:

1. To determine the effect of leadership on employee performance in SMEs in Bali.
2. To determine the effect of the work environment on employee performance in SMEs in Bali.
3. To determine the effect of leadership and work environment on employee performance in SMEs in Bali.
4. To find out the magnitude of the influence of leadership and work environment on the performance of SME employees in Bali.
5. To find out the dominant variables that affect the performance of SME employees in Bali.

II. LITERATURE REVIEW

2.1 Theoretical Basis

Leadership is the way a leader influences the behavior of subordinates to want to work together and work productively to achieve organizational goals (Yamoah and Arthur, 2014; Harper, 2012). Leadership is a process of directing and influencing activities related to the duties of group members (Sharma and Jain, 2013; Kinicki et al., 2011). Leadership is the nature or character, or activities of superiors to persuade affect the behavior of a group of employees positively, guiding and directing it to work smoothly, in accordance with the tasks given so that the goals of the agency or organization can be achieved. According to Nitisemito (2004), leadership indicators include: planning, organizing, monitoring, delegating, guiding, managing conflict, and building networks.

The work environment is anything that is around workers who can influence themselves in carrying out the tasks assigned (Blanchard et al., 2009; Raziq and Maulabakhsh, 2015). Work environment is the regulation of workplace lighting, control



of air, workplace cleanliness and work safety regulations. The work environment is anything that is around the employee at work both physically and non-physically, directly or indirectly, which can affect him and his work at work (Tio, 2014). The work environment is divided into 2 (Sedarmayanti, 2001), namely: (a) Physical Work Environment, namely: the physical work environment is all physical forms that exist around the workplace that can affect employees both directly and indirectly. (b) Non-Physical Work Environment, namely: non-physical work environment is all conditions that occur relating to work relationships, both relationships with superiors and fellow co-workers, or relationships with subordinates. This non-physical environment is also a group of work environments that cannot be ignored.

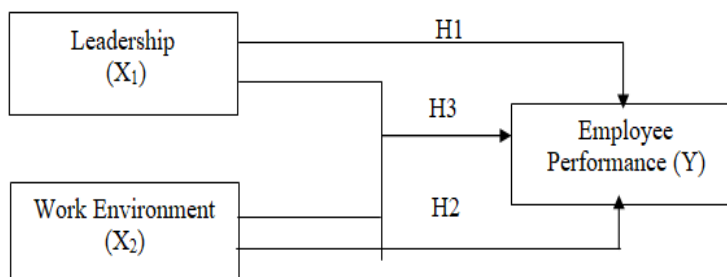
Employees are able to carry out activities well and achieve optimal results, if supported by work environment conditions so that employees can carry out activities optimally, healthy, safe, and comfortable (Taiwo, 2010). Mismatched work environments require more energy and time and design inefficient work systems. Work environment indicators (Sedarmayanti, 2001) are: lighting / light, temperature, air circulation, noise, odors, color, safety, communication between employees.

Evaluation material for leaders in managing organizations is employee performance. Employee performance can be defined as work results in quality and quantity that can be achieved by an employee in carrying out tasks in accordance with the responsibilities given to him (Mangkunegara, 2001). Brahmasari (2008) states that: Employee performance is the achievement of organizational goals that can take the form of quantitative or qualitative outputs, creativity, flexibility, dependability, or other things desired by the organization. Employee performance is the work achieved by employees in carrying out tasks that are charged in accordance with the responsibilities to achieve organizational goals (Muda, Rafiki and Harahap, 2014; Aima, Adam and Ali, 2017). Performance measurement and evaluation is an organizational or institutional process in evaluating the performance of its employees. To see how far the performance of employees, it is necessary to have a measurement. Measurement is the initial activity of an assessment process. Rivai (2004) defines performance measurement as the giving of numbers (numeric) to an object or event according to certain rules that cause numbers to have a quantitative meaning.

Performance appraisal has a very important role in realizing employee successes and responsibilities to realize work unit goals (Hiiemäe, 2012; Pradhan and Jena, 2017). To facilitate the measurement and assessment of the performance of subordinates, the assessment is carried out by superiors to subordinates. Evaluation of subordinate's performance is an effort to find out the maximum skills possessed by subordinates regarding the process and results of the work carried out on the basis of certain criteria (Hermina and Yosepha, 2019). Employee performance can be measured by several indicators as stated by Rivai (2004), namely: quality of work, quantity of work, knowledge of work, loyalty, ability to cooperate, adaptability, initiative, independence, creativity.

2.2 Conceptual Framework and Hypothesis

Based on the theoretical studies that have been described, the conceptual model of the impact of leadership and work environment on employee performance is as follows:



RESEARCH CONCEPTUAL FRAMEWORK

Based on the background of the problem, theoretical study and empirical study, the following hypotheses can be formulated in this study:

1. Leadership has a positive effect on employee performance in SMEs in Bali.
2. The work environment has a positive effect on employee performance in SMEs in Bali.
3. Leadership and work environment have a positive effect on employee performance in SMEs in Bali.

III. RESEARCH METHOD

The variables in this study consisted of independent variables namely leadership (X1) and work environment (X2), and the dependent variable (Y) was employee performance. Techniques used to collect data in this study include: observation, interviews, documentation and questionnaires (Arikunto, 2002). The population to be examined in this study is permanent employees of UKM in Bali as many as 90 UKM with the determination of the sample using a proportional random sampling technique (Sugiono, 2004).

The analysis technique uses descriptive variable analysis which is used to determine the characteristics of respondents, both from gender, age, and years of service and using the validity and reliability test of research instruments to test data quality with the help of the SPSS (Statistical Package for Social Science) program 17.0 for windows (Algifari, 2000).

Multiple regression analysis is used to test and show the nature of the relationship between the independent variable and the dependent variable. In the multiple linear regression test classical test assumptions must be met, namely: data normality test, multicollinearity test, heteroscedasticity test, and t-test analysis and F-test analysis, coefficient of determination (R²) (Algifari, 2000).

IV. RESULTS AND DISCUSSION

4.1 Test Results of Validity and Reliability of Research Instruments

Following is the recapitulation of the validity and reliability test which is the result of the calculation of each statement in the questionnaire obtained with the help of SPSS 17.0 for Windows.

**TABLE OF RECAPITULATION TEST OF VALIDITY AND RELIABILITY**

Variable	Cronbach's Alpha	Indicator	Coefficient of Correlation	Description
Leadership (X ₁)	0,883	X1.1	0,614	Valid
		X1.2	0,646	Valid
		X1.3	0,777	Valid
		X1.4	0,654	Valid
		X1.5	0,719	Valid
		X1.6	0,780	Valid
		X1.7	0,517	Valid
Work Environment (X ₂)	907	X2.1	0,675	Valid
		X2.2	0,662	Valid
		X2.3	0,563	Valid
		X2.4	0,724	Valid
		X2.5	0,794	Valid
		X2.6	0,740	Valid
		X2.7	0,704	Valid
		X2.8	0,771	Valid
Employee Performance (Y)	0,929	Y1	0,732	Valid
		Y2	0,720	Valid
		Y3	0,755	Valid
		Y4	0,719	Valid
		Y5	0,735	Valid
		Y6	0,732	Valid
		Y7	0,727	Valid
		Y8	0,748	Valid
		Y9	0,801	Valid

Source: Data processed, 2020

Based on the recapitulation of the results of the calculation of the product moment correlation value of each statement item in the above table, the results obtained are above 0.3. This means that all the statements in the questionnaire can be said to be valid. Based on the recapitulation of the results of the calculation of the Cronbach's alpha value of each variable in the table above, the results obtained amount above 0.60. This means that all variables in the questionnaire can be said to be reliable.

4.2. Classic Assumption Test Results

Test results for normality using the Kolmogorov-Smirnov one sample test using a significance level of 0.05 show the following results:



TABLE OF DATA NORMALITY TEST RESULTS

One-Sample Kolmogorov-Smirnov Test				
		Leadership	Work_Environment	Employee_Performance
N		90	90	90
Normal Parameters ^{a,b}	Mean	28.79	32.62	38.01
	Std. Deviation	3.841	4.496	4.379
Most Extreme Differences	Absolute	.106	.124	.221
	Positive	.099	.068	.221
	Negative	-.106	-.124	-.112
Kolmogorov-Smirnov Z		1.010	1.174	2.100
Asymp. Sig. (2-tailed)		.259	.127	.110
a. Test distribution is Normal.				
b. Calculated from data.				

Source: Data processed, 2020

From the table above it can be seen that the significance value for the three variables is greater than 0.05 so it can be concluded that the variables are normally distributed.

Multicollinearity test is used to determine the linear relationship between independent variables in the regression model. The prerequisite that must be fulfilled in the regression model is the absence of multicollinearity. In this study, the multicollinearity test was performed by looking at the value of the inflation factor (VIF) in the regression model. Multicollinearity test results can be seen in the following table:

TABLE OF MULTICOLLINEARITY TEST RESULTS

Coefficients^a

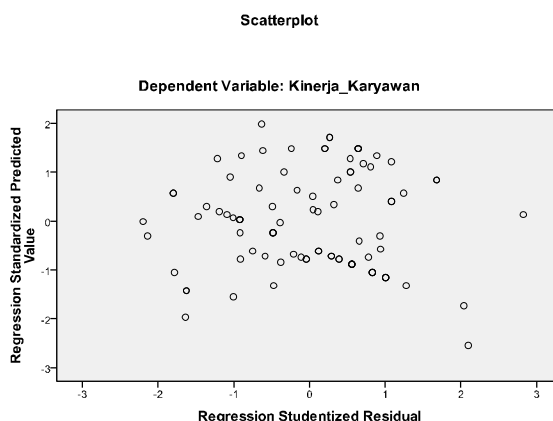
Model		Collinearity Statistics	
		Tolerance	VIF
1	Leadership	.108	4.283
	Work_Environment	.108	4.283

a. Dependent Variable: Employee_Performance

Source: Data processed, 2020

From the table above it can be seen the value of the variance inflation factor (VIF) of the two variables, namely leadership and employee performance is 4.283 smaller than 10, so it can be concluded that between independent variables there is no multicollinearity problem.

This heteroscedasticity test is used to test if the regression model occurs in variance between the residuals of an observation to another observation. A good regression model is homoscedasticity or heteroscedasticity does not occur. This test is done by looking at the plot graph between the predicted value of ZPRED with the residual SRESID. Detection of the presence or absence of heteroscedasticity can be done by looking at certain patterns on the scatterplot graph between SRESID and ZPRED where the predicted Y axis and the X axis are residual (the predicted Y to the actual Y has been standardized).



IMAGES OF SRESID AND ZPRED SCATTERPLOT IMAGES

Source: Data processed, 2020

From the picture above it can be seen that the pattern of plot graphs between the predicted values of ZPRED and the residual SRESID are scattered within the boundaries of the predicted Y and Y values, and there is no data beyond that limit. This indicates that there was no heteroscedasticity on the data of the research results.

4.3 Results of Multiple Regression Analysis

To answer the research problem and test the hypothesis, the analysis tool used is multiple regression analysis which is processed with the SPSS 17.0 for Windows program package. The analysis results obtained, can be seen in the following table:

TABLE OF STATISTICAL ANALYSIS RESULTS TABLE

Dependent Variable	Independent Variable	r (Partial)	R (Simultan t)	b	β	t _{Count}	Sig. t
Employee	Leadership (X ₁)	0,667	0,852	1,629	1,429	8,354	0,000



Performance (Y)	Work Environment (X ₂)	0,372		0,622	0,639	3,104	0,000
$R^2 = 0,726$ Constanta = 11,397 Regression Equation: $Y = 11,397 + 1,629 X_1 + 0,622 X_2$ $T_{table} (0,05 : 87) = 1,663$ $F_{Count} = 115,132$ Sig. F = 0,000 $F_{table} (0,05 ; 2 ; 87) = 3,1074$							

Source: Data processed, 2020

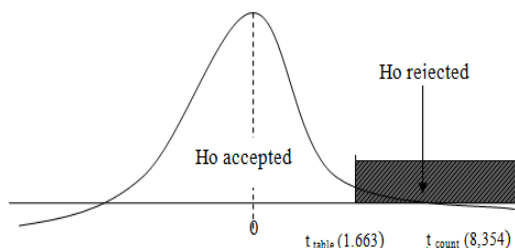
The information obtained from the table above is that there is a fairly strong partial relationship between leadership (X₁) and employee performance (Y) of 0.667 if the work environment (X₂) is controlled (constant). In addition, the partial correlation coefficient between the work environment (X₂) and employee performance (Y) of 0.372 indicates that there is a very weak relationship if leadership (X₁) is controlled (constant).

Further information obtained from the table above is that there is a very strong relationship simultaneously (together) between leadership (X₁), and work environment (X₂) on employee performance (Y) of 0.852. This shows that the performance of employees at SMEs in Bali will be even greater if management pays attention to leadership and the work environment simultaneously than if management only pays attention to leadership and work environment separately (one by one).

4.4 Discussion

4.4.1 The partial influence of leadership (X₁) on employee performance (Y) on SMEs in Bali.

To determine the effect of leadership (X₁) on employee performance (Y) on SMEs in Bali, it can be analyzed through multiple regression coefficients (b). Regression coefficient b_{1X1} of 1.629 means that any increase in attention to leadership (X₁) can improve employee performance (Y), so that it can be concluded that leadership has a positive influence on employee performance in SMEs in Bali. This is confirmed in the first hypothesis testing with the formula H_0 = there is no partial positive influence between leadership (X₁) with employee performance (Y), and H_a = there is a partially positive effect between leadership (X₁) and employee performance (Y), indicating The results show that the regression coefficient b_{1X1}: $t_{count} = 8.335 > t_{table} (0.05: 87) = 1.663$ and Sig. $t = 0,000$ ($p < 0.05$). This shows that H_0 was rejected and accepted H_a , and had a significant effect. This means that there is a positive and partially significant influence between leadership (X₁) on employee performance (Y) on SMEs in Bali. For more details can be seen in the following picture:



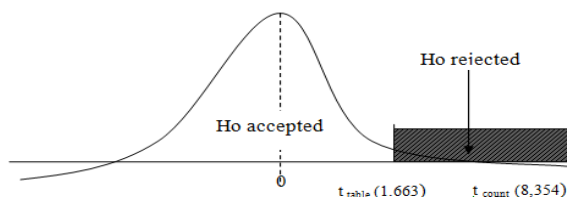
DESCRIPTION OF HYPOTHESIS TEST LEADERSHIP EFFECT (X1) DISTRIBUTION TOWARD EMPLOYEE PERFORMANCE (Y)

Source: Data processed, 2020

Based on the results of the analysis above, the hypothesis which states that there is a positive and partially significant effect between leadership and employee performance in SMEs in Bali can be accepted and proven.

4.4.2 The partial influence of the work environment (X2) on employee performance (Y) on SMEs in Bali.

To determine the effect of the work environment (X2) on employee performance (Y) on SMEs in Bali, it can be analyzed through multiple regression coefficients (b). Regression coefficient b_{2X2} of 0.622 means that any increase in attention to the work environment (X2) can improve employee performance (Y), so that it can be concluded that the work environment has a positive influence on employee performance in SMEs in Bali. This is confirmed in the second hypothesis testing with the formula H_0 = there is no positive partial effect between work environment (X2) and employee performance (Y), and H_a = there is a partially positive effect between work environment (X2) and employee performance (Y), shows the results that the regression coefficient b_{2X2} : $t_{count} = 3.733 > t_{table} (0.05: 87) = 1.663$ and $Sig. t = 0.000 (p < 0.05)$. This shows that H_0 was rejected and accepted H_a . This means that there is a positive and partially significant effect between the work environment (X2) on employee performance (Y) on SMEs in Bali. For more details can be seen in the following picture:



DISTRIBUTION CURVE IMAGES OF HYPOTHESIS TEST EFFECT OF WORK ENVIRONMENT (X2) ON EMPLOYEE PERFORMANCE (Y)

Source: Data processed, 2020

Based on the results of the analysis above, the hypothesis which states that there is a positive and partially significant effect between the work environment on employee performance in SMEs in Bali can be accepted and proven.

4.4.3 Simultaneous Effects of Leadership (X1) and Work Environment (X2) on Employee Performance (Y) on SMEs in Bali.

In the simultaneous analysis, it can be proven through the leadership regression coefficient (b_1) of 1.629 and the work environment (b_2) of 0.622 showing that leadership (X1), and work environment (X2) simultaneously positively influence employee performance (Y) on SMEs in Bali. This is confirmed by testing the hypothesis using the statistical test F (ANOVA) obtained $F_{count} = 115.132 > F_{table} = 3.104$ with Sig. $F = 0,000$ ($p < 0.05$), so that a decision can be taken that the null hypothesis (H_0) is rejected and accept the alternative hypothesis (H_a). This has a statistical meaning that the data used prove leadership (X1), and work environment (X2), simultaneously and have a significant positive effect on employee performance (Y). For more details can be seen in the following picture:

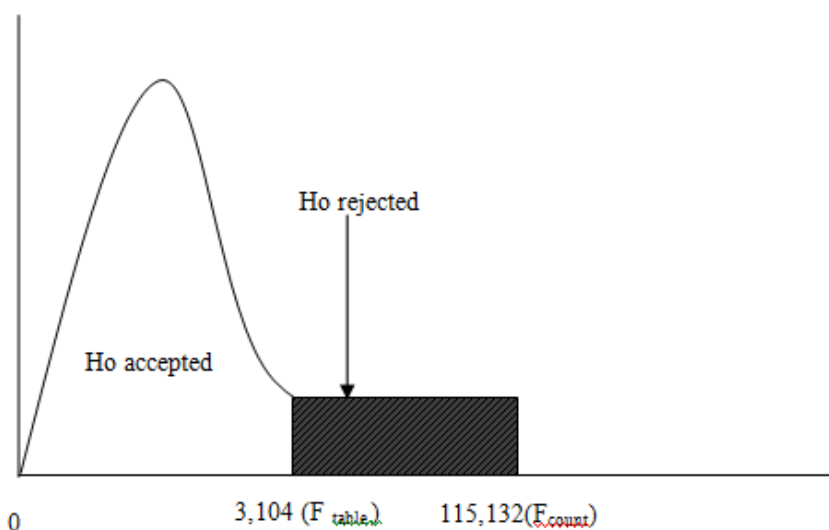


FIGURE OF HYPOTHESIS TEST DISTRIBUTION EFFECT OF SIMULTAN LEADERSHIP (X1) AND WORK ENVIRONMENT (X2) ON PERFORMANCE OF EMPLOYEES (Y)

Source: Data processed, 2020

Based on the results of the above analysis it can be decided that the hypothesis which states there is a positive and significant effect simultaneously between leadership and work environment with employee performance in SMEs in Bali can be accepted and proven.

4.4.4 The Amount of Effect of Leadership (X1) and Work Environment (X2) on Employee Performance (Y).

Based on the results of multiple linear regression analysis obtained R² value of 0.726. This value indicates that leadership and the work environment have an effect of 72.6% on employee performance in SMEs in Bali, while the remaining 27.4% is influenced by other variables not discussed in this study.

4.4.5 Independent Variables that Influence the Most Dominant Against Dependent Variables.

From the regression analysis results obtained information that leadership (X1) has a dominant influence on employee performance (Y) on SMEs in Bali when compared to the work environment (X2). This can be seen from the standardize regression coefficient β (Beta) for leadership (X1) of 1.429 while the work environment (X2) is equal to 0.639. So it can be concluded that leadership is the most dominant variable affecting the performance of employees in SMEs in Bali.

V. CONCLUSIONS

From the results of the analysis and discussion described in the previous chapter, a conclusion can be drawn as follows:

1. Partial leadership has a positive and significant impact on employee performance in SMEs in Bali. This means that any increase in leadership will lead to an increase in employee performance.
2. The work environment partially has a positive and significant impact on employee performance in SMEs in Bali. This means that any improvement in the work environment will lead to an increase in employee performance.
3. Leadership and the work environment simultaneously have a positive and significant impact on employee performance in SMEs in Bali. This means that any improvement in leadership and work environment together can improve employee performance.
4. The magnitude of the influence of leadership and work environment on employee performance in SMEs in Bali is 72.6%.
5. Leadership is a variable that has a dominant influence on employee performance in SMEs in Bali.

Based on the results of research that has been done, it can be given some advice to the management of SMEs in Bali to be able to apply it as a policy implication, especially in an effort to improve the performance of employees as follows:

1. In an effort to improve employee performance it is necessary to consider the factors that influence it. Leadership is a factor that needs to be considered in improving employee performance, so that the management of SMEs in Bali need to think of ways to develop leadership that can make employees motivated to work, so as to improve employee performance.
2. The work environment is also one of the factors that can affect employee performance. If the management of SMEs in Bali can provide a conducive work environment and in accordance with their needs in completing their work, then employee performance will be improved.



3. For the next researcher, in order to develop this research by adding the number of variables used, or expanding the research object so that it will be able to obtain better and more useful results.

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MOVING FORWARD WITH REVERSE CIRPS: DISSECTING FLAT BUYERS ASSOCIATION VS UMANG REALTECH

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Introduction

The relationship between the IBC and the Homebuyers has been an astute one, emerging from the 2018 amendment to the Code¹, which implied that “Allottees” of a real estate project are to be considered as financial creditors.² This enabled the Homebuyers to approach the Adjudicating Authority (hereinafter AA)³ when the Real Estate developers defaulted in their delivery. CIRPs are one of the core mechanisms of the IBC and are aimed at maintaining the interests of all stakeholders.

As of March 2020, a total of 757 CIRPs have been initiated in the real estate sector.⁴Based on the observations (refer to Table 1), the Adjudicating Authorities have been able to keep up with the continuous rise⁵ at a closed CIRP rate of approximately 40% until March 2020.

Year	Number of CIRPs		
	Admitted	Ongoing	Closed
March 2018	120	92	28
December 2018	235	148	87
December 2019	665	404	261
March 2020	757	450	307

Table 1

The AA's acknowledge the unextraordinary rate and the challenges of following a “normal course”⁶ in this sector. Especially when several CIRPs are initiated against the real estate companies, where the projects are dragged into insolvency even when they are close to successful completion. One such case, which we will discuss, is that of Flat Buyers Association v. UmangRealtech Pvt. Ltd,⁷ and how the NCLAT delivered a game-changer judgment and the implications it carries with the introduction of “Reverse CIRP” to provide equity for all stakeholders.

¹ Section 5 (8) (f) of the Insolvency and Bankruptcy Code 2016

² Section 5 (7) of the Insolvency and Bankruptcy Code 2016

³ Section 7 of the Insolvency and Bankruptcy Code 2016

⁴ The Quarterly Newsletter of Insolvency and Bankruptcy Board of India. Jan-March 2020, Vol.14.

⁵ CIRPs commenced between December 2018 and December 2019, tripled

⁶ Judgment of Flat Buyers Association v. UmangRealtech Pvt. Ltd. MANU/NL/0077/2020. Company Appeal (AT) Insolvency No. 926 of 2019.

⁷ Ibid.



Background of the Case

This case involved an application filed under Section 7 of the Insolvency and Bankruptcy Code by two home allottees (Financial Creditors) to initiate CIRP against the project developer, M/s UmangRealtechPvt. Ltd. (Corporate Debtor). The NCLT accepted the application, and passed an order directing the Financial Creditors (hereinafter FC) to deposit a monetary sum of INR 2 lakhs with the IRP to meet the daily expenses of the Corporate Debtor (hereinafter CD). Soon after the CIRP was initiated, the CD offered possession of flats to the homebuyers, including the two applicants of the case.

The developments led the Flat Buyers Association to appeal before the NCLAT claiming the CD should be allowed to finish the project. Also one of the outside Promoters, *Uppal Housing Pvt. Ltd.* agreed to act as a lender to the CD for the completion of the project and was promised by the CD to be paid from the remaining amount received from the Homebuyers. The Appellants also argued that all the assets of the CD should not be maximised since there may be other projects of the same CD with different plans, allottees, authorities and financial institutions which should remain independent of the locus of the resolution affecting the CD in the particular project.

NCLAT's Judgment

Owing to the arguments and concerns of the Appellants, the NCLAT decided to carry out a “Legal Experiment” within the existing methods of the Insolvency Resolution Process. The Tribunal ordered for the completion of the existing project by the CD and immediate delivery of possession of flats to the Allottees. This was done in pursuit of the interest of all stakeholders to the project including the CD, as stated in the Judgment,⁸

“In the interest of the allottees and survival of the real estate companies and to ensure completion of projects which provides employment to large number of unorganized workmen.”

Challenges to the Regular Process of CIRP in Real Estate Sector

In the regular process of the CIRP, moratorium is obligated, essential goods and services are suspended/ terminated, claims of Creditors are verified and resolution plans are either approved-leading to an amicable suspension of proceedings, or rejected by the Committee of Creditors (hereinafter CoC)- leading to company liquidation.

The problem with this process when it comes to the Homebuyers is that, although they are FCs, they possess limited voting rights and lack commercial expertise to assess

⁸ Ibid.



the sustainability of the CD⁹, unlike the other FCs i.e., the Banks, NBFCs or other financial institutions. So, when the resolution plan is approved by the CoC, it is binding on all the stakeholders including the Allottees who usually do not receive adequate compensation for their monetary investment. Like in the instant case, the CD has offered Allottees possession of the flats, and if the CIRP is to continue as normal, the Allottees would be at a loss either the CD goes into liquidation or reach a resolution.

Concept of Reverse CIRP

The reverse CIRP proposed by the NCLAT is a novel idea to the mechanism offered by the IBC. It goes in an opposite direction from the normal CIRP in this case, by allowing the CD to continue the project work so that the Allottees may bear the fruits of their investment while the Insolvency Resolution Professional maintains the company, allowing for the project to be completed within a specific mode, manner and timeframe, set to June 2020¹⁰ by the intervening Promoter, Uppal Housing Pt. Ltd, and saving the employment of unorganised workmen.

In defending its unprecedented decision, the NCLAT referred to the 2019 Supreme Court judgement in the Swiss Ribbons case¹¹, wherein it held that the IBC is an economic legislation which in a broader sense deals with the Indian economy as a whole and “to stay experimentation in things economic is a grave responsibility, and denial of the right to experiment is fraught with serious consequences to the nation.”¹² Thus, NCLAT has experimented and worked out a win-win situation for all the stakeholders.

Implications of the Judgment for:

1. Secured and Unsecured Creditors

The NCLAT acknowledged the essential need of equitable and effective asset distribution to different classes of creditors, i.e. the secured and unsecured creditors. That need was reasoned by referring to the case of Pioneer Urban Land and Infrastructure Co Ltd. v. Union of India¹³, where the Allottees were upheld to be unsecured creditors, but the Supreme Court mentioned that they held a “vital interest in the amounts that are advanced for completion of the project, maybe to the extent of 100% of the project being funded by them alone.”¹⁴ Hence the asset preference of secured creditors such as Banks or NBFCs over the Allottees is unjust.

⁹Reverse Corporate Insolvency Process allowed by the National Company Law Appellate Tribunal in case of real estate infrastructure developers and builders. Lexology. Apr 11, 2020.

¹⁰Flat Buyers Association v. Umang Realtech Pvt. Ltd. MANU/NL/0077/2020. Company Appeal (AT) Insolvency No. 926 of 2019.

¹¹ 2019 SCC OnLine SC 73

¹² Ibid.

¹³ 2019 SCC OnLine SC 1005

¹⁴ Ibid.



2. Resolution Plan Independent of Other Projects

In paying due consideration to the arguments of the Appellants, the NCLAT set a precedent to be followed for subsequent cases dealing with similar issues where all the assets of the CD will not be maximised keeping in consideration that there may be other projects of the same CD with different plans, allottees, authorities and financial institutions which should remain independent of the resolution plan affecting the CD in the particular project.

Comparative Analysis of IBC, RERA and CPA

It is important to note that one of the major implicit reason behind the NCLAT's new concept of Reverse CIRP is the confusion between the real estate Investors on the conclusive authority/legislation for seeking remedy. Insolvency proceedings are initiated under the IBC even when the remedy for the petitioner might lie within the Consumer Protection Act (CPA) or the Real Estate (Regulation and Development) Act (RERA). A comparative analysis of mechanisms under RERA, CPA & IBC (refer to Table 2) suggests that for a Homebuyer who seeks return of monetary investment the best remedy would be IBC, and for any other remedies sought such as performance of statutory obligations or compensation, the more appropriate and fulfilling legislations would be RERA or CPA. The Supreme Court judgment in the case of Pioneer Urban Land and Infrastructure Limited and Ors. Vs. Union of India and Ors.¹⁵ further cleared the trilemma of the Homebuyers by stating that RERA and IBC would run concurrent to each other, and in case of a conflict, the IBC would prevail over RERA.¹⁶

	RERA	CPA	IBC
Case Timeline	A few months to years	5-6 years (Avg.)	6 months- 1 year
Accessibility	1-2 offices per State	District Forums in each District	1 NCLT per State. Practically, 16 Benches in the country
Relief Provided	Fine imposition, Project deregistration, Direct Project completion	Executes its own orders. Typically, a swift process	IRP is appointed until Resolution or Liquidation is reached
Appellate Authority	Real Estate Appellate Tribunal (REAT)	State forum or National commission	NCLAT

Table 2¹⁷

¹⁵Ibid.

¹⁶ Ibid.

¹⁷ IBC for Homebuyers – Opportunities & Challenges Ahead. IBC Laws. Apr 28, 2020. <https://ibclaw.in/ibc-for-homebuyers-opportunities-challenges-ahead-by-santosh-kumar/>



Conclusion

IBC has undergone various changes over the years to provide adequate resources and medium for the real estate sector to seek recourse in matters of insolvency and bankruptcy. Despite the pro-active approach of the Central Government with IBC, the NCLT/NCLAT process has not been majorly successful in terms of percentage of resolution¹⁸ (refer to Table 1) or adequate monetary return for Homebuyers. But the sheer determination of IBC's Adjudicating Authority to provide equity for all stakeholders via reverse CIRP might just tip the scale of more closed resolutions/cases. The legal experiment by NCLAT might just be what is needed to achieve the harmony between stakeholders, but it should also be kept in mind that the IBC does not have any provisions pertaining to the judgment passed in the Flat Buyers Association case. For this reason, the NCLAT restricted the applicability of this experiment to this case.

A few suggestions which would be beneficial going forward pursuant to the remarkable NCLAT judgment would be:

- Adding a mandatory provision in IBC, making IBC the last legal option available for Homebuyers, if not seeking renumeration of monetary investment, after exhausting the remedies under the RERA and CPA, so reverse CIRP would not be necessary since it falls outside the current IBC ambit.
- Clarification to be provided in the IBC where Unsecured Creditors are classified as a separate class of Financial Creditors, to ensure they receive their due weightage (thus due pecuniary returns) of voting rights in the Committee of Creditors during CIRP.

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¹⁸ Based on observations of Table 1, at 40%



CONSUMPTION PATTERN AND ITS INFLUENCE ON LIFESTYLE AMONG IT PROFESSIONALS IN KERALA

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Abstract

The IT profession which is emerged to be the so called modern high tech job is a new field of opportunity for the educated youths. It satisfies almost all the job expectations of modern youth. By providing high salary and high quality working environments, it attracts the youth into its commands. The present study reveals the consumption pattern and its influence on the life style among IT professionals in Kerala. The sample size consist of 400 IT professionals from two IT hubs (info park Ernakulam and techno park Thiruvananthapuram) in Kerala. Quantitative analysis was used and questionnaire was the tool of data collection. The study revealed that the IT professionals follow definite pattern of consumption practices. The analysis of consumption pattern reveals certain characteristic including the brand consciousness, preference towards shopping malls and super markets and plastic money consumerism. The study also showed that the consumption practices of IT professionals have a profound influence on their lifestyle.

Key words: Consumption Pattern, Consumerism, IT Professionals, Life Style

Introduction

Advances in information communication technologies have contributed to a wave of change that is sweeping around the world, pushing men and women to create new relationships and new forms of organizations that facilitate their use of new technologies (Wilson, 2004). This new society is denoted by different names like post-industrial society, information society and knowledge society. The term which has universally accepted and popularized by Peter Drucker in his book 'the age of discontinuity' and is 'knowledge economy'. It refers to an economy in which ideas, information, and forms of knowledge underpin innovation and economic growth (Giddens, 2006).

India is a major IT service contributor to the world. In 1990's through the New Economic policy, India entered into a new episode of progress known widely as globalization and liberalization. As part of this a number of notable changes were taken place in the Indian society. This include increasing income among people, opening of domestic market and increase in domestic competition, access to foreign goods, diversification of service professions and increase in consumption practices. The most important achievement of India in her entry to the global market was the development of software outsourcing industry.

From the 1970's on words, Kerala has taken steps for the promotion of electronic industry which is a predecessor of modern IT industry. KELTRON (The Kerala State



Electronics Development Corporation) was first among these. Apart from this numerous IT initiatives like FRIENDS, Akshaya, KSWAN (Kerala State Wide Area Network), state data center, mobile service delivery platform, CSC (Citizen Service Centre) etc. were introduced to provide the basic IT infrastructure to the state. The state also announced IT policies in the years 1998, 2001 and 2007. These IT policies were considered to be the back bone of Kerala's IT development.

Today Kerala is emerged to be the most preferred IT destination in India. IT is considered to be the most human friendly and environment friendly industry. The government also introduced various incentives, concessions and special financial schemes for the IT investors for promoting Kerala as a favorite IT destination. Kerala also introduced software technology parks and software complexes in the leading cities including Thiruvananthapuram and Ernakulam. The Techno Park in Thiruvananthapuram is a pioneer in India. Chief Minister of Kerala is acting as the head of high power committee constituted for managing and coordinating IT in all sectors. IT sector in Kerala is a leading employment generator than any other sector. It is estimated to have created almost 40000 direct employments in Techno Park and Info Park and an approximate of 2, 00,000 indirect employment opportunities in its initial stages itself.

IT Professionals, Consumption Behaviour and Life style

Consumerism emerged to be the focal point of world economies. Consumer culture permeates with every aspect of modern life. We define ourselves based on the consumption pattern. It infuses into the social networks and redefines our requirements. Now needs are substituted with wants and we are buying goods with no concern for its true utility. Today people want to be identified with the goods they possess or the material wealth they displayed in front of others. From very early 90's onwards Kerala is acclaimed as a consumerist state. It is importing essential products from the neighbouring states. The aspiration for comfort and luxury were considered to be the intention of Keralites in today's market scenario. This type of desires was instilled in people through the modern media and advertisements. The media and advertisements have taken the consumerism to new heights. The advertisements persuade people to purchase new goods and it is often accompanied by information regarding the quality of the products and technical sophistication.

IT professionals are belonging to a highly paid work force; they array a lifestyle of spending pattern, contrary to other service sector workers. Their nature of work and work requirements differs from their contemporaries having same educational level and qualifications. IT professionals represent consumerism as a means to maintain themselves as a distinctive class within the centre of information society.

Review of Literature

Carol Upadhy (2009) in her research explains that apart from this, the most significant socio-economic characteristics of this new category of globalized technical workers are the high salaries they command, compared to others in the equivalent occupations and of similar age and educational background. The rising demand for qualified personal and the expansion in the number of companies and the size of their work forces in important cities are pushing their salaries ever higher. The substantial purchasing power of IT professionals allows them to engage in high levels of consumption (Lange & Meier,



2009). Moreover they achieve this economic status at relatively young ages. Given this, one would then expect them to engage with the new consumerism life style.

C. J. Fuller and HaripriyaNarasimhan(2007) conducted a research on “Information Technology Professionals and the New-Rich Middle Class in Chennai (Madras)” The study revealed that the IT industry has emerged to be a latest hope of the Indian middle class. Most of the Middle-class people in Chennai believed that IT professionals are overpaid; they are greedy, and materialistic (Fuller &Narasimhan, 2007).

Hellmuth Lange, Lars Meier, and N.S. Anuradha (2009) undertook a research titled “Highly Qualified Employees in Bangalore, India: Consumerist Predators”. This paper discusses the lifestyles of the upper tier of the Indian new middle classes. Its members can be seen as a pilot group which is about to adopt a “Western” way of life (Lange & Meier, 2009).

Another important characteristic of IT Professionals is their exposure to global lifestyles, due to frequent 'onsite' assignments and foreign travel for work as well as their imbrications in transnational production/ service networks even while working from offshore locations. Their experiences of other countries and culture also shape their subjectivities and orientations to consumption (Lange & Meier, 2009).

Thus, one's life style is a reflection of their consumption pattern. Definitely consumption pattern influences our life style. A life style oriented with consumerism will always display affluence and extravagant spending pattern. Here needs were subjugated with wants and people want more and more. Goods were purchased not based on the utility but as a craze.

Relevance of the study

The IT profession has emerged to be promising field for the youngsters in the present century. The IT professionals were presumed to be most susceptible in the case of consumerism. Being represented as the icons of modern youth, this profession fascinates almost all youngsters by providing attractive salary and high-quality working environment. A lifestyle oriented towards consumer practices is considered to be characteristic feature of modern man. Such a life style will presumed to be prestigious and enhance status of the individual. But it has other dimensions too. The preference towards consumption and affluence leads to the weakening of human values and interpersonal relationships. Consumerism also instigates materialism and disregard for the value of money. The attraction towards high levels of consumption is a warning to the society as it could lead to skewed economic relation. The high levels of consumption patterns, unveiled a new notion that ‘earning is for spending’. This also points to the changing nature of life style poised with materialistic mentality which will be further intensified by the intense pursuit towards luxury and comfort.

Methodology

Descriptive research design is used in this study. The quantitative method was used and questionnaire was the tool for primary data collection.



Objectives

1. To understand the personal profile of the respondents.
2. To find out the consumption pattern among IT professionals
3. To evaluate the consumerist tendency and its influence on their life style

Theoretical Background

The study is based Pierre Bourdieu's view on consumer taste formation (1979). In his book 'Distinction', Bourdieu's states that people express their identity through consumption. Because consumption tastes are the one way we distinguish ourselves from others. Consumption practices differentiate both within and between classes. In this way consumption both establishes and expresses social difference (Woodward, 2004). It is clear from the study that consumption is a way to establish identity. The IT professionals buy different kinds of goods as a technique to boost their social status and there by establish a symbolic social difference(Allen, Anderson, F., & Douglas E., 1994) by creating a separate identity through their life style based on consumption pattern.

Population and sample

The population of the study constitutes all the IT professionals working in Techno Park, Thiruvananthapuram and Info Park, Ernakulam in Kerala. The Sample size was fixed as 400 IT professionals, of which 200 IT professionals were males (100 male IT professionals each from Techno Park and Info Park) and 200 were females (100 female IT professionals each from Techno Park and Info Park).

Results

The findings of the study is revealed in three sections. The first section deals with the analysis of personal profile of the respondents. It is revealed from the section that majority of respondents 241/400 (60.3 percent) were belong to Hindu religion and 215/400 (53.8 percent) were married. 52.8 percent (211/400) of them belonged to general category. Majority of respondents i.e.239/400 (59.8 percent) comes under the age group 20-29. This clearly represents that most of the IT professionals working in Kerala were youngsters. 54.3 percent were in the income group Rs. 50,000-1lakh.

The second section deals with the consumption pattern among IT professionals in Kerala. The chi-square test for goodness of fit in a single population is applied to find the significant preferences.

Table 1: Buying preferences of IT professionals

Preference	Yes	No	Chi-square	P
Clothes / Apparels	281(70.2)	119(29.8)	65.61	0.000**
Cosmetics	104(28)	296(74)	92.16	0.000**
Electronic Items	231(57.8)	169 (42.2)	9.61	0.002 ^{ns}
Food Items	251(62.8)	149(37.2)	26.01	0.000**

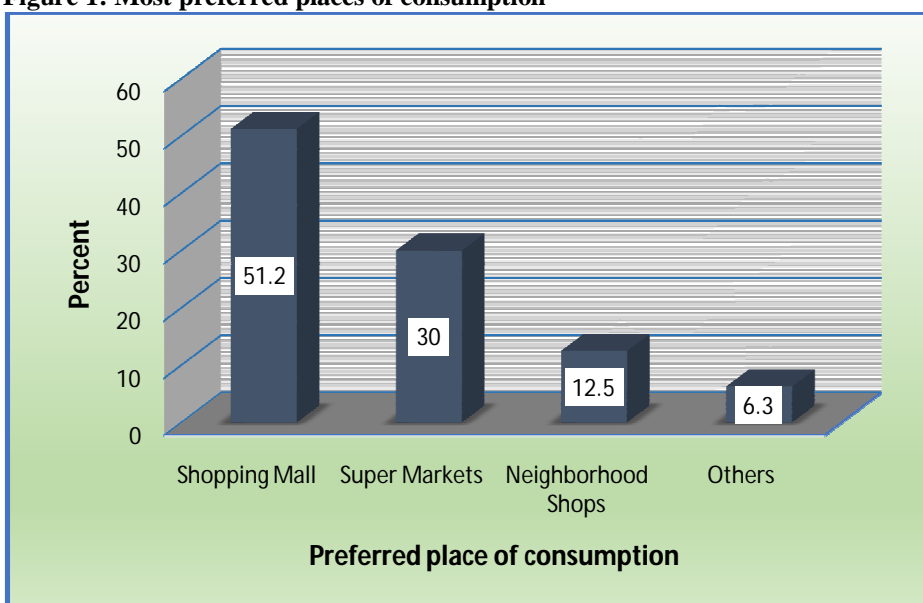


Jewelers	134(33.5)	266(86.5)	43.56	0.000**
Automobiles	77(19.2)	323(80.8)	151.29	0.000**

****Level of significance = $P < 0.01$ (ns- No Significance)**

From table chi-square test revealed that IT professionals show significant buying preference to clothes and apparels (chi-square = 65.61, $P < 0.01$) and also to food items (chi-square = 26.01, $P < 0.01$) while no such significant buying preferences were noted in cosmetics (chi-square = 92.16, $P < 0.01$), Jewelers (chi-square = 43.56, $P < 0.01$) and Automobiles (chi-square = 151.29, $P < 0.01$). Electronic Items (chi-square = 9.61, $P > 0.01$) showed no significance regarding the buying preferences of the IT professionals.

Figure 1: Most preferred places of consumption



It is clear from the figure 1 that majority of IT professionals prefers to go shopping Malls and super markets as their places of consumption. 120/400 (30 percent) prefer supermarkets. 50/400 (12.5 percent) prefer neighborhood shops and only 25/400 (6.3 percent) were interested in other shops. Majority of respondents 222/400 (55.5 percent) were using credit card/debit card for purchases.

Table 2: Purchase Branded Items

Branded Items	Frequency	Percent
Yes	351	87.8
No	49	12.3
Total	400	100.0

It is clear from the table that 351/400 (87.8 percent) were interested in purchasing branded Items. 49/400 (12.3 percent) were not interested in purchasing branded Items.

The third section of the study evaluates the influence of consumerism on the life style of IT professionals and it is clear that Majority of IT professionals 249/400 (62.3 percent) were purchasing new products before seeing used by others. 92/213 (43.2 percent) buy unnecessary things for trial use. 263/400 (65.8 percent) purchase products on experimental basis.

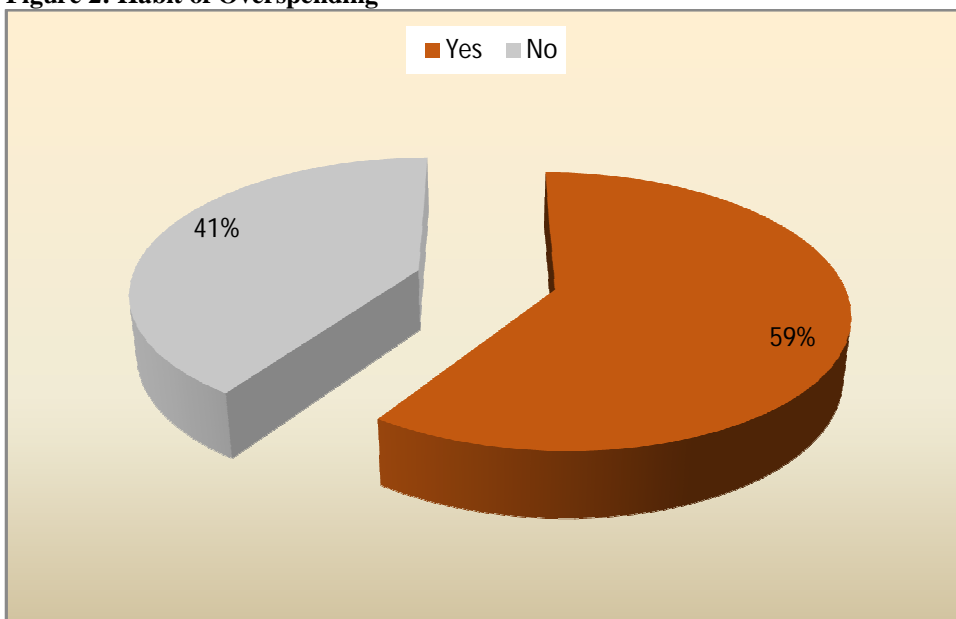
Table 3: Admire People Owning Expensive Homes/Car and Products

Admire people	Frequency	Percent
Yes	232	58
No	168	42
Total	400	100

Chi- square = 10.240 ****Level of significance = $P < 0.01$** P = 0.001**

IT professionals have appreciation towards the people owning affluent items like cars and homes. The chi square test for goodness of fit also applied and this clearly revealed the conspicuous mentality of the IT professionals for exhibiting their material wealth as a sign of their status.

Figure 2: Habit of Overspending



From figure 2 it is revealed that 238/400 (59.5 percent) have the habit of overspending while shopping. Whereas 162/400 (40.5 percent) were not overspending in nature. Among the IT professionals 182/400 (45.5 percent) were frequently attending parties and receptions and 358/400 (89.5 percent) of them prefer to go for holiday trips. Majority of IT professionals' i.e. 241/400 (60.3 percent) were buying goods for updating the trends.



Discussion

The study analyzed various aspects related to consumption pattern among IT professionals in Kerala. It clearly shows that consumption has become the central feature of IT professionals' life style. This denotes the aspiration of modern youth to follow the new patterns of consumption practices. The study clearly revealed that IT professionals belonged to a better socio economic profile. Most of the IT professionals show homogeneity with regard to various socio economic variables. The consumption pattern of IT professionals showed that consumerism is prevailed among the IT professionals. The IT professionals have brand preference and they believed that purchase of branded items will enhance their status, and also they purchase expensive textile, cosmetic, jewelry and electronic gadgets. Majority of IT professionals were using credit card/debit card for purchases. This means that IT professionals have an attraction towards plastic money consumerism because it removes the difficulty of keeping liquid cash in shopping. In fact most of them think it is more comfortable and convenient than keeping liquid cash. Modern mode of payments like credit card and debit card facilities removed that restrictions imposed by cash. IT professionals' consumption patterns are intentionally oriented to improve their status and exhibit their wealth to others.

Thus, Shopping is emerged to be an act of entertainment and leisure activity for the IT professionals. Majority of IT professionals prefer to go shopping malls and super markets as their places of consumption. The shopping malls and supermarkets provide convenient shopping atmosphere and there the respondents can select any product based on their convenience. Apart from this many supermarkets were providing different types of offers and discounts. Shopping malls can cater other needs like dining out, and watching movie. The preference for branded items showed that IT professionals were using branded items as a means to demonstrate their social status. The purchase of branded items can be viewed as a status symbol among the IT professionals.

Today, every individual links their personal identities and socio economic potentials with the available consumer choices and material goods. Consumption is now become synonymous with development and acquisition of expensive goods is a part of our material wellbeing. The great advantage of modern consumer goods was that, they made our life easier and provided better entertainment.

Conclusion

Thus from the study, it is clear that IT professionals have a fascination towards comfort, lavishness and luxury. They follow a life style which is oriented towards consumerism. They explore happiness in life from the goods purchased and used. They often dine out, interested to attend parties and receptions and also enjoys life by going for holiday trips. Thus it is concluded from the study that, IT professionals were consumerist in nature. For them consumerism is an aspect of personal and professional well-being. Through consumerism they were getting personal satisfaction and it does not affected their financial stability and it now become a part of their life style.



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EVOLVING AND ENHANCED DIMENSIONS OF DIGITAL MARKETING STRATEGIES DURING CONTEMPORARY SCENARIO OF COVID -19

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Abstract

This research study is specially conducted to study the impact of COVID -19 pandemic and its effect on digital marketing. The nationwide lockdown has impacted various areas of economy specially the corporates and small business houses. It is the need of the hour to work rigorously on the marketing strategies of company to create and maintain a customer contact. Due to lockdown traditional marketing cannot be successfully implemented, so digital marketing should be given more importance and hence a study on all important dimensions of digital marketing has been carried out to improve the effectiveness of marketing during contemporary times.

Keywords – Lockdown,COVID-19,Digital Marketing,SEO

Introduction – The mankind is facing one of the most dangerous medical and biological tragedy of all times which is a well known pandemic COVID-19.This tragedy has impacted all areas of society in a very tremendous manner.These areas include economy,social life,education etc.The most important impact of covid-19 is observed on economy of nations.Corporate sector and business houses are impacted severely specially through lockdown.Social distancing and restriction for going out to the customers has disconnected the company and customers.The only way through which a connect can be maintained is through online and digital marketing.Advertisements are also gaining much importance during these times.Whether they are TV Ads ,newspaper Ads or online digital Ads.Because the customers are spending approximately 15- 18 hrs onscreen or online,these are the only medium through which a contact can be maintained with them.

Digital Marketing refers to using online marketing tools, such as Google AdWords campaigns and SEO practices in order to keep your brand in the public eye. You can often segment your customers to make your campaigns more targeted .

II. Scope of digital marketing during COVID_19

- a) Increased Screen time of customers - A lot of nations around the world are currently under some form of lockdown due to the coronavirus (COVID-19) outbreak. The quarantine measures put in place to contain and control the virus has disrupted the free and uninterrupted flow of people, goods and services. This, in turn, has sent shockwaves across the world economy & markets. There is currently a great feeling of uncertainty among the global workforce and business world as to what the future holds. Many business owners are now faced with the need to make tough decisions in regards to cost cuts. One of the areas that are most likely to experience spending cuts is marketing (both digital and print). Global digital and alternative media revenues grew an estimated 11.6% in 2018, amounting to \$496.08 billion in total!

Not only will B2B digital commerce revenues double in 2020, accounting for around half of all B2B revenues; but also, by 2021 global revenue from offline commerce channels will decrease by almost 20%. [1]

- b) Replacing traditional marketing with digital strategies of Marketing -Digital Marketing has seen a huge boom in the last couple of years and has already become something that you cannot ignore no matter what you are selling! Right from small to big brands, everyone is turning to it. Most of the people are online right now than in their cars or walking on the road. Search traffic has increased significantly over the past week and will continue to climb, as we deal with the after-effects of the outbreak. We're all glued to our computers and phones looking for updates and trying to stay connected via social media - our window to the world right now. So this is the best time to realign and refocus on marketing efforts to reach out to a maximum audience by including Digital Marketing in a corporate s portfolio.

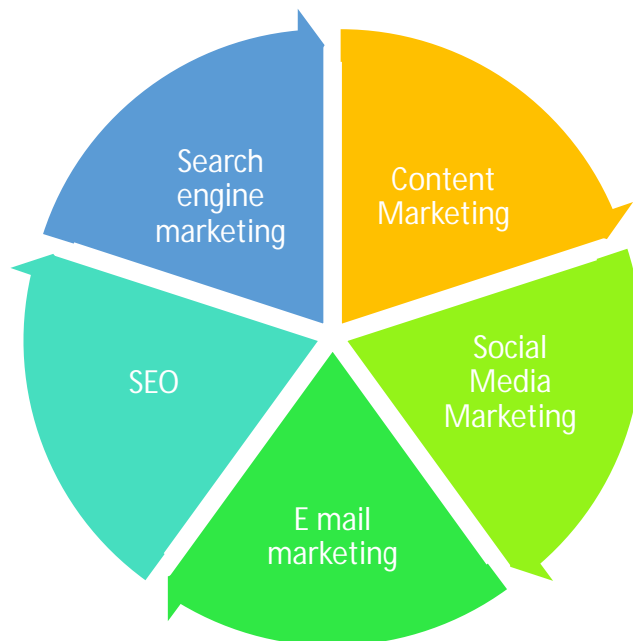


Fig 1 – Modes of digital marketing

- c) Maintaining Brand identity - All advertisers are increasingly using digital and alternative media such as smart-technology advertising, micro-influencer marketing, and video advertising to market their products today. Digital advertising includes email marketing, social media marketing, SEO, social PPC, content marketing, and display marketing and much more.

The launch of LinkedIn, was a greatest achievement in social media in 2002. It is a host of social networks. In fact, social media is so huge in today's world, over 2 billion people are using various networks across the globe, and as device usage surges, this number is expected to grow. When businesses use social media channels in a creative and clever ways, they can expect to yield incredibly positive results.

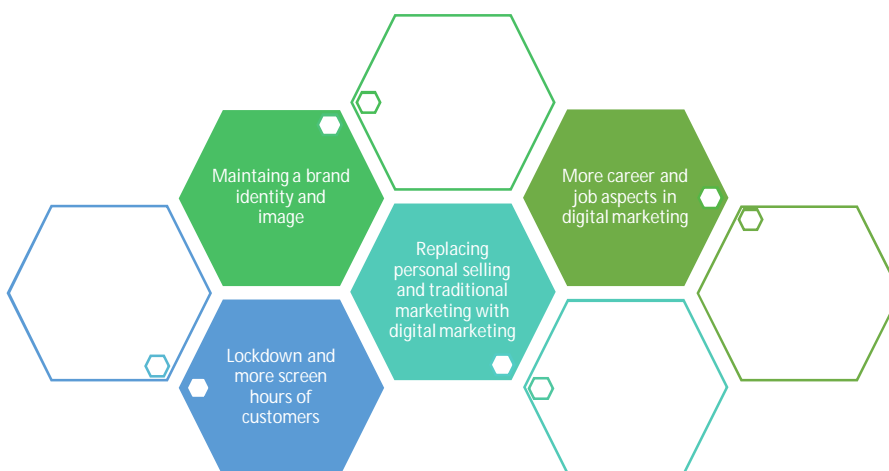


Fig 2 –Detailed scope of Digital Marketing

Facebook has dominated the social media market for a decade, but emergence of new platforms like TikTok (which is touted to be the fastest growing social media app and used by more than 200 million users in India every month) and EduTok (TikTok's recently launched Education limb), Podcast, Telegram, etc. are fast changing the social media scene and giving some of the old channels a tough fight. TikTok has also managed to efficiently penetrate a lot of small towns and rural parts in India.

- d) More career and job prospects in digital marketing –The scope and applications of Digital marketing has increased incredibly during last few months due to restriction of customers at home and more screen time of customers. Even there is a huge demand supply gap in SEO and digital marketing jobs in India. A lot of demand for SEO analyst and digital marketing will increase in the coming times

III. Transition in the digital marketing strategy dimensions during covid -19

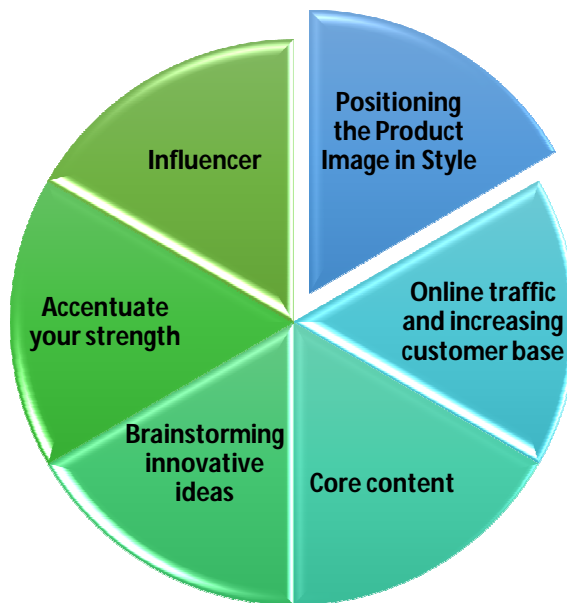


Fig 3 – Dimensions of Digital marketing strategy

1. Positioning the product in style

During the Pandemic it is important to add a social message and relate image of product with general wellbeing. It is important to conduct an online marketing research and competitor's research to know about the product and their competitive markets. Following this process would be creating a Brand/Product Image that would represent the key message of the company, where it adopts a certain style of creating convincing messages to attract their target audience through key words, placing on relevant sites and web properties. In short-"Develop Great Content and Work with it smartly"

2. Online traffic and increasing customer base -

Platforms like google analytics help you assess your customer base .Creating a demand for the content that needs to be published is an Art. There are several e-Commerce web design tools to enhance the potential Web Traffic for a particular brand. Keyword research plays a vital role in increasing the Web traffic to a particular site. Striving to deliver quality content to the audience would enhance the mind share of the site and enhance growth of the Audience with company's new idea.

3. Effective Core content-

Relevant images and unique content in a consistent fashion enhances the growth of the audience. Professional Content writers and Digital Marketing Agencies have a crucial



role in moulding the image of the Product. The content displayed should advocate your audience to share and propagate your message to the broader society.

4. Brainstorming innovative ideas-

Whether In-house or Outsourced teams do your Digital Marketing, the focus must always be to bring forth New Ideas and Fresh Thinking into your advertising media. Motivated teams work hard on Brainstorming their team members for bringing about new ideas to promote their product. The main concern here would be in keeping the targeted audience in mind, while working on such content that drives the emotional or essential needs of the audience to fulfill their desires/demands.

5. Ongoing Reach of Targeted audience

In order to create and retain new and existing audience it is essential there is concerted effort in developing new content on regular basis in terms of blogs, newsletters, video, articles, press releases and so on, to keep the audience well informed of the latest developments related to the Product.

6. Accentuate your Strength -

Building a brand image for the Product takes a lot of careful planning, therefore the prior concern on Accentuating the Uniqueness of the Business, Product and Key messages could pull in the target audience you have been working for. Discovering a unique idea and standing for the cause without fear while driving the point consistently would make your company popular among the populus (Eco-friendly concept). Highlighting the unique selling points on your websites, social media and banners could bring in the desired target audience.

7. Influencer- essential in growing digital media

Bringing about alliances with Companies and other Influencers contribute to the growth of your presence in the digital media. Brand Ambassadors and Social Media Networks work efficiently at this effort in pulling the best alliances to advertise your product.

Conclusion –

The coronavirus (COVID-19) outbreak has triggered a global health and economic crisis. While no one can say for sure when everything will return to normal, we have to follow the guidelines of the government and stay safe. With the various forms of digital marketing, you can easily attract new potential customers. Depending on the medium you use, you can also track and measure your performance levels. This way you can identify the best performing marketing campaigns and strike out the ineffective ones.

Even if your product or service is not in high demand at this point in time, the exposure will help to keep your brand in the thoughts and minds of potential prospects.

Your focus should not only be on attracting and converting new customers but also on retaining them. It is also important that you leverage the opportunity of the COVID-19 lockdown, by using the internet to increase your brand exposure. Improving and maintaining your brand's visibility online puts your products and services at the forefront of consumers who might need them. This way you can still remain in business and grow despite the current circumstances



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CHEMICAL ANALYSIS AND PHARMACOLOGICAL ACTIVITIES OF SOME IMPORTANT MEDICINAL AROMATIC PLANTS : A REVIEW

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Abstract:

Plant are considered to be a valuable source of Natural products. The use of plant & plant product for pharmaceutical purpose is increasing day by day in India and in entire world. It was also proved that herbal medicines are more efficient & effective against the disease in comparison to other forms of medication.

So, the present work is therefore the detailed review of chemical analysis and pharmacological activities of different Medicinal Aromatic Plants (MAP) along with the reducing power of antioxidant, acute and sub acute toxicities, analysis of essential oils, identification of components, kinetic study of SFE & MAE extraction and study of superficial fluid extraction.

Introduction:

The average man is likely to consider himself as a being apart from the rest of the organic world, enabled by reason of his superior intellect to lead a self-sufficient and independent existence. He loses sight of the fact, or is ignorant of it, that he is absolutely dependent on other organisms for his very life, and his material happiness as well. His superior intelligence has made him more dependent rather than less so. Although various animal and mineral products contribute to his welfare, it is the plant kingdom that is most essential to man's well-being. Man's dependence on plants for the essentials of his existence has been paramount importance in his life since the human race began. Primitive man probably had few needs other than food and a little shelter. Civilization, however has brought with it an ever-increasing complexity, and has increased man's requirements to an amazing degree. The man of today is no longer content merely to exist, with food and shelter as his only wants. He desires other commodities as well, and raw materials that can be converted into the many useful articles and products which contribute to his enjoyment of life, and which incidentally increase his debt to plants. The three great necessities of life—food, clothing, and shelter—and a host of other useful products are supplied in great part by plants. An adequate food supply is and always has been, man's most outstanding need. In the last analysis all his food comes from plants. To be sure he may eat the flesh of animals, but these lower animals are just as dependent on plants as man himself, and they are equally unable to manufacture any of their food from raw materials. Clothing and shelter, the other prime necessities of life are derived in

great part from plant fibers and from wood. Wood is one of the most useful plant commodities in the world today, and it played an even greater role in the past. Aside from its use as a structural material, wood is valuable as a source of paper, rayon, various chemicals, and fuel. Other types of fuel, such as coal, and petroleum, make available for man the energy stored up by plants that lived and died ages ago. Drugs used to cure disease and relieve suffering are to a great extent plant products. Industry is dependent on plants for many of its raw materials. Cork; tanning materials and dyestuffs: the oils, resins and gums used in making paints varnishes, soap and perfumes; and rubber one of the most outstanding materials of modern civilization, are but a few of the valuable products obtained from plants.

Therefore the detailed review of chemical constituent and pharmacological activities of Medicinal Aromatic Plant (MAP) is seems to be an essential.

Study of Some natural products :

The phenolic extracts from the olive leaf extract could be used as a source of potential antioxidant and antimicrobial agents¹. Palmitic acid improves the oxidative stability of soybean oil, and can also be used to produce trans-fat-free shortening, margarine, and cosmetic products. However,



this saturated short-chain fatty acid is undesirable for nutrition because its consumption results in an unfavorable lipoprotein profile in blood serum.² Lipid oxidation in food systems can be caused by oxygen free radicals or reactive oxygen species. Free radicals are molecules with one or more unpaired electrons that work independently to cause oxidation.³ Plants generally produce many secondary metabolites which were constituted an important source of many pharmaceutical drugs.⁴ Purification and isolation of bioactive compounds from plants is a technique that has undergone new development in recent years.⁵ The effects of *Cyperus rotundus* rhizome on cellular lipogenesis and non-alcoholic/diet-induced fatty liver disease, and the molecular mechanism of these actions. It appeared that the hexane fraction of *Cyperus rotundus* rhizome reduced the elevated transcription levels of sterol regulatory element binding protein-1c (SREBP-1c) in primary hepatocytes following exposure to the liver X receptor α (LXR α) agonist. The SREBP-1c gene was a master regulator of lipogenesis and a key target of LXR α . CRHF inhibited not only the LXR α -dependent activation of the synthetic LXR response element (LXRE) promoter, but also the activation of the natural SREBP-1c promoter. Moreover, the hexane fraction of *Cyperus rotundus* decreased (i) the recruitment of RNA polymerase II to the LXRE of the SREBP-1c gene; (ii) the LXR α -dependent up-regulation of various lipogenic genes; and (iii) the LXR α -mediated accumulation of triglycerides in primary hepatocytes. Furthermore, the hexane fraction of *Cyperus rotundus* ameliorated fatty liver disease and reduced the expression levels of hepatic lipogenic genes in high sucrose diet (HSD)-fed mice. CRHF did not affect the expression of ATP-binding cassette transporter A1, another important LXR target gene that was required for reverse cholesterol transport (RCT) and protected against atherosclerosis. Accordingly, these results suggested that the hexane fraction of *Cyperus rotundus* might be a novel therapeutic remedy for fatty liver disease through the selective inhibition of the lipogenic pathway⁶. The n-hexane fraction of an ethanol extract of *Cyperus rotundus* rhizomes was found to inhibit cell growth in ovarian cancer (A2780, SKOV3 and OVCAR3) and endometrial cancer (Hec1A and Ishikawa) cells. Among the thirteen sesquiterpenes isolated from the n-hexane fraction, some patchoulane-type compounds, but not eudesmane-type compounds, showed moderate cytotoxic activity in human ovarian cancer cells. In particular, the patchoulane sesquiterpene 6-acetoxy cyperene had the most potent cytotoxicity. Propidium iodide/Annexin V staining and terminal deoxynucleotidyl transferase dUTP (deoxynucleotide triphosphate) nick end labeling assay were performed to study cell cycle progression and apoptosis. 6-acetoxy cyperene induced apoptosis, as shown by the accumulation of sub-G1 and apoptotic cells. Furthermore, treatment with 6-acetoxy cyperene stimulated the activation of caspase-3, caspase-8 and caspase-9 and poly (ADP-ribose) polymerase in a dose-dependent manner. Pretreatment with caspase inhibitors neutralized the pro-apoptotic activity of 6-acetoxy cyperene.⁷ Anti-HBV active constituents was isolated from the rhizomes of *Cyperus rotundus*. Five new patchoulane-type sesquiterpenoids, namely cyperene-3, 8-dione, 14-hydroxy cyperotundone, 14-acetoxy cyperotundone, 3 β -hydroxycyperenoic acid and sugetriol-3, 9-diacetate, along with 32 known sesquiterpenoids were isolated from the active fractions of *Cyperus rotundus*. Nine eudesmane-type sesquiterpenoids significantly inhibited the HBV DNA replication with IC50 values of 42.7 \pm 5.9, 22.5 \pm 1.9, 13.2 \pm 1.2, 10.1 \pm 0.7, 14.1 \pm 1.1, 15.3 \pm 2.7, 13.8 \pm 0.9, 19.7 \pm 2.1 and 11.9 \pm 0.6 μ M, of which, 4 compounds possessed high SI values of 250.4, 125.5, >259.6 and 127.5. Two patchoulane-type sesquiterpenoids effectively suppressed the secretion of HBsAg in a dose-dependent manner with IC50 values of 46.6 \pm 14.3 (SI=31.0) and 77.2 \pm 13.0 (SI=1.7) μ M. Other 6 compounds possessed moderate activities against HBsAg secretion with IC50 values of 162.5 \pm 18.9 (SI=13.3), 399.2 \pm 90.0 (SI=10.6), 274.7 \pm 70.8 (SI=5.2), 313.9 \pm 87.5 (SI=7.2), 334.0 \pm 70.4 (SI=9.9) and 285.3 \pm 20.9 (SI=15.5) μ M.⁸

Study of some *Cyperus rotundus* :

The antibacterial properties of *Cyperus rotundus* root extracts (petroleum ether, acetone, methanol and water) was investigated against three Gram-positive and two Gram-negative



bacteria causing respiratory tract infections. Results showed that methanol extract was the most active as comparison to other extract. The maximum inhibition was noted against *H. influenzae* (18.4 ± 0.07 mm) followed by *S. pyogenes* (17.3 ± 0.13 mm), *P. aeruginosa* (16.2 ± 0.07 mm) and *S. pneumoniae* (15.5 ± 0.15 mm) and the minimum activity was recorded against *S. aureus* (15.3 ± 0.05 mm) respectively.⁹ Methanolic extract of the fresh aerial part of the *Cyperus rotundus* was fractionated by column chromatography method using petroleum ether, chloroform, ethyl acetate and methanol. The invitro antibacterial activity was carried out against (*Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa*) for all fractions. The ethyl acetate fraction showed potent antibacterial activity compared to control and standard commercial antibiotic tetracycline.¹⁰ The efficacy of topical *Cyperus rotundus* oil to decrease hair growth, was evaluated by an open-label pilot study. Eligible participants ($n=65$) with unwanted axillary hair were assigned randomly to 3 study groups: topical *Cyperus rotundus* oil (group 1), saline (group 2), and Alexandrite laser (group 3). Three methods were used to evaluate the results: hair counts, observations of independent professionals, and patient self-assessments. Overall results did not differ significantly between *Cyperus rotundus* oil and the Alexandrite laser ($p>0.05$). However, statistically significant differences were noted with respect to decrease of growth of white hair ($p<0.05$), favoring the oil. This finding was evident by all 3 methods (hair counts, observations of independent professionals, and patient self-assessments) of assessment. No side effects were detected.¹¹

Pharmacological activities & chemical analysis of *Cyperus rotundus*:

Treatment of MDA-MB-231 cells with an ethanol extract (EECR) and a methanol extract of *Cyperus rotundus* rhizomes (MECR), but not a water extract of *Cyperus rotundus* rhizomes, resulted in potent antiproliferative activity. The activity of the EECR was higher than that of the MECR and was associated with the induction of apoptosis. The induction of apoptosis by the EECR was associated with upregulation of death receptor 4 (DR4), DR5 and pro-apoptotic Bax, as well as down-regulation of anti-apoptotic survivin and Bcl-2. EECR treatment also down-regulated Bid expression and activated caspase-8 and -9, the respective initiator caspases of the extrinsic and intrinsic apoptotic pathways. The increase in mitochondrial membrane depolarization was correlated with activation of effector caspase-3 and cleavage of poly (ADP-ribose) polymerase, a vital substrate of activated caspase-3. Blockage of caspase activation by pretreatment with a pan-caspase inhibitor consistently inhibited apoptosis and abrogated growth inhibition in EECR-treated MDA-MB-231 cells. Although reactive oxygen species (ROS) increased following treatment with the EECR, inhibiting ROS with a ROS scavenger did not attenuate EECR-induced apoptosis. Furthermore, inhibitors of phosphatidylinositol 3-kinase (PI3K)/Akt and mitogen-activated protein kinase (MAPK) signaling pathways failed to reverse EECR-induced apoptosis and growth inhibition. These results revealed that the pro-apoptotic activity of the EECR may be regulated by a caspase-dependent cascade through activation of both intrinsic and extrinsic signaling pathways that was not associated with ROS generation or the PI3K/Akt and MAPK pathways.¹² DPPH assay was used to measure the antioxidant activity for plant extraction while using in vivo and vitro methods in order to measure the anticancer activity. The results confirmed that some natural products from Egyptian flora have the potential for use as therapeutics for diseases such as cancer.¹³ According to the Ayurveda, *Cyperus rotundus* rhizomes were considered astringent, diaphoretic, diuretic, analgesic, antispasmodic, aromatic, carminative, antitussive, emmenagogue, litholytic, sedative, stimulant, stomachic, vermifuge, tonic and antibacterial.¹⁴ The toxicity and biochemical screening of crude ethanolic extract of *Cyperus rotundus* in mice and rats. The extract was given at the dose of 10, 100 and 1000 mg/kg. None of the group exhibited any sign of toxicity at these doses. However, at the dose of 1000 mg/kg, motor activity was slightly decreased. The effects of the extract of *Cyperus rotundus* were also investigated on different biochemical parameters (glucose, lipid profile, cardiac enzymes, liver enzymes and kidney function test). Liver enzymes were found normal, However, non significant



increase in serum bilirubin, gamma-GT and SGPT was recorded. Hematological studies also showed non significant toxic changes. Histopathological examination also confirmed that the drug was safe and non toxic.¹⁵ Apple pomace has mainly been used as a major source of polyphenols such as chlorogenic acid.¹⁶ a new microwave-assisted extraction (MAE) process, which converts energy to heat, thereby cooperating with solvents in order to extract a specific compound.¹⁷ The antimicrobial activity of some Algerian plants. The result reveled that it is mainly effective against gram positive bacteria.¹⁸ The Physicochemical parameters of *Cyperus rotundus* rhizome (w/w): moisture 9%, total ash 8.06-12.87%, acid insoluble ash 2.23-4.56 %, water soluble ash 5.1-6.4%, sulphated ash 9.56-10.22%. Extractive values of *Cyperus rotundus* rhizome: water soluble extract 9.01-15.15 % alcohol soluble extract 7.63-21.27%. Successive extraction (petroleum ether (60 –80°C) 1.27-1.53%, chloroform 2.52%, n-hexane 1.79%, acetone 1.82, alcohol (90%) 1.78 %, aqueous 1.47%). Loss on drying, 3.57% and crude fiber content 39.98%.¹⁹ Total flavonoids contents in methanol extracts of *Cyperus rotundus* (8.15-18.25 mg CE/g of dry matter) were higher as compared to ethanol extracts (6.44-13.77 mg CE/g of dry matter). Total phenolic contents in methanol extracts of *Cyperus rotundus* (27.40-37.85 mg GAE/g of dry matter) were also higher as compared to ethanol extracts (25.21-30.23 mg GAE/g of dry matter).²⁰ Phenolics like caffeine, p-coumaroyl quinic, arbutin, p-coumaric acids, and especially flavonol procyanidins have been mentioned as constituents of apple pomace.²¹ Many advantages of MAE, including lower solvent consumption, shorter extraction times, and higher sensitivity towards target molecules.²² Herbs have always been used for flavor and fragrance in the food industry, and some of them have been found to exhibit antimicrobial properties.²³ The antiplatelet activities of *Cyperus rotundus* ethanolic extract (CRE) and evaluated its eight constituent compounds were evaluated by examining their effects on rat platelet aggregations *in vitro* and *ex vivo*, and on mice tail bleeding times. During the *in vitro* platelet aggregation study, CRE showed significant and concentration dependent inhibitory effects on collagen-, thrombin-, and/or arachidonic acid (AA)-induced platelet aggregation. Of its eight components, (+)-nootkatone was found to have the most potent inhibitory effect on collagen-, thrombin-, and AA-induced platelet aggregation. In addition, CRE- and (+)-nootkatone-treated mice exhibited significantly prolonged bleeding times. Furthermore, (+)-nootkatone had a significant inhibitory effect on rat platelet aggregation *ex vivo*. In studying the effect of *Cyperus rotundus* on the hemorrheological changes in normal rats, *Cyperus rotundus* can improve all hemorrheological indexes, such as the whole blood specific viscosity, the plasma specific viscosity, erythrocyte electrophoresis, etc.²⁴ *Cyperus rotundus* was used for gastrointestinal spasms, stomach disorders, nausea, vomiting, intestinal parasites, food poisoning, indigestion and irritation of bowel. It was also used for treating fevers, to treat wounds, bruises and carbuncles, malaria, cough, bronchitis, renal and vesical calculi, urinary tenesmus, amenorrhoea, dysmenorrhoea, deficient lactation, loss of memory, insect bites, dysuria, bronchitis, infertility, cervical cancer and menstrual disorders, while, the aromatic oils are made of perfumes and splash.²⁵ *Cyperus rotundus* rhizomes petroleum ether, chloroform, ethanol and water extracts were evaluated against six important pathogenic microbes (*Staphylococcus epidermidis*, *Bacillus cereus*, *Pseudomonas aeruginosa*, *Escherichia coli*, *Aspergillus niger* and *Candida*). The antibacterial and antifungal activities were performed by both agar well diffusion and serial dilution methods. The ethanolic extract exhibited highest activity against the tested bacteria. However all extracts were ineffective against fungal strains. The inhibitory effect is very similar and comparable with that of standard drug.²⁶ The anticonvulsant effect of *Cyperus rotundus* roots and rhizomes against PTZ and PTX induced convulsions may be mediated, at least partly, through GABAA-benzodiazepine receptor complex.²⁷ The anti-dysmenorrhea effect of the essential oil of the rhizome of *Cyperus rotundus* (EOC) was investigated in mice. Mice were divided into four groups: Group 1 served as control and group 2, group 3, group 4 were given low, middle and high dosage (0.01g/kg, 0.02g/kg, 0.1g/kg) of EOC respectively. The animals were first given diethylstilbestrol for 12 consecutive days (2mg/kg/day) by intragastric administration



to create dysmenorrhea animal model. Different dosage of EOC and equivalent saline were given to animals in each group during the last three days. 30 mins after the last drug administration, the mice were injected intraperitoneally with 0.1ml oxytocin injection and distortions were observed and recorded in 15 mins and 30 mins. EOC obtained from rhizome of *Cyperus rotundus* was subjected to column chromatography for fractionation, six fractions were obtained, namely F1-F6. EOC and its fractions F2 - F6 significantly reduced distortion times in 15 mins, 30mins after ip oxytocin injection; F4 performing the best among the fractions, it was contained spathulenol as well as β -caryophyllene oxide and isoaromadendrene oxide according to GC-MS analysis. Accordingly, EOC and its fractions F2 - F6 showed significant anti-dysmenorrhea. More than one components were attributed to anti-dysmenorrhea effect according to the GC-MS analysis of EOC and its fractions F2 - F6.²⁸ The protective effects of *Cyperus rotundus* on gastric mucosal damage induced by ischemia and reperfusion was studied in rats. Ischemia/reperfusion model was designed as 30 min ischemia followed by 60 min reperfusion by clamping the celiac artery. The *Cyperus rotundus* extracts were given at the doses of 100 or 200 mg/kg to prevent postischemic gastric mucosal injury. Antioxidant enzymes activity such as malondialdehyde and glutathione-peroxidase were measured in the gastric tissue. Histopathological sections were examined for ischemic injury. The mean ulcer index of rats treated with 200 and 100 mg/ kg *Cyperus rotundus* were significantly lower ($p<0.05$) than that of control rats. The activities of antioxidant enzymes were significantly enhanced ($p<0.05$) by treatment with *Cyperus rotundus* extracts.²⁹ The first application of microwaves was to heat up objects that can absorb a part of the electromagnetic energy and convert it into heat. Commercial microwave instruments commonly use the frequency 2450 MHz, which corresponds to an energy output of 600–700 Watts.³⁰ Green technology is necessary to protect the environment from toxic substances.³¹ Plants found in arid zones in order to determine the antibacterial efficiency. The result observed at ethanolic extract of *Tinospora cardifolia* L inhabited *Bacillus cereus* and *Staphylococcus aureus*.³²

Study of other important Medicinal Aromatic Plant (MAP):

UAE is known to be one of the easiest extraction techniques because it uses common laboratory equipment such as an ultrasonic bath. In this technique, a smashed sample is mixed with the suitable solvent and placed into the ultrasonic bath, while temperature and extraction time are controlled.³³ *Tabernaemontana divaricata* L. to determine the phytochemical and free radical scavenging activities in vitro. The results indicated that the antioxidant activity was the same in both ethanol and water extracts, but less in petroleum ether.³⁴ The antimicrobial activity of an ethanolic extract of *Anethum graveolens* was better than the aqueous extract.³⁵ Conventional methods using various solvents presented less antioxidant activity and phenolic content than MAE.³⁶ Some medicinal plants of the south eastern slopes of the Western Ghats.³⁷ *Memecylon malabaricum*, *Cochlospermum religiosum*, and *Andrographis serpyllifolia* have been tested for their possible antimicrobial activity.³⁸ The chemical composition and antioxidant activities of *Smilax lanceifolia* by isolating the flavonol glycoside and steroidal saponin, which showed high antioxidant activity.³⁹ Isolated tannins and saponins from some Indian medicinal plants, and also tested their antibacterial activity against *Klebsiella pneumoniae*.⁴⁰ *Schrebera swietenoides* Roxb to measure the effectiveness against human pathogenic bacteria.⁴¹ The rhizome of the lotus (*Nelumbo nucifera* Gaertn.) has been measured for its antioxidant activity in various solvent extracts using α -Carotene bleaching and DPPH methods.⁴² MAE has attracted the attention of researchers as a technique to extract bioactive compounds from a wide variety of plants and natural residues.⁴³ *Oxalis corniculata* L. in order to measure the antioxidant and anti-inflammatory activity employing methanol as a solvent. The IC 50 values of DPPH and nitric acid were about 93 and 73.07 g/mL, respectively.⁴⁴

Pharmacological activities of other important Medicinal Aromatic Plant:

Andrographis serpyllifolia L. to have significant antimicrobial activity against tested organisms in methanol extracts of both aerial parts and root. A positive effect of pumpkin has



been observed by investigating its antimicrobial activity against *Staphylococcus aureus*, *Bacillus subtilis*, *Escherichia coli*, and *Pseudomonas aeruginosa*. Three different solvents were used to prepare the extracts: water, chloroform, and alcohol. The results showed that the alcohol extract was more powerful than both water and chloroform extracts. *Staphylococcus aureus* was sensitive to all extracts. Recently, the novel antimicrobial activity of ultrasonicated spinach leaf extracts using random amplification of polymorphic DNA (RAPD) markers and electron microscopy against both Gram-positive and Gram-negative bacteria has been revealed.⁴⁵ The Anti-inflammatory, anti-arthritis and analgesic of *Cyperus rotundus* essential oils using anti-inflammatory (carrageenan induced), antiarthritic (formaldehyde induced) and analgesic (formalin induced writhing) in rats. The results showed dose dependent activity, indicated by reduction in paw edema in anti-inflammatory and antiarthritic activity. When compared with the control, treatment with *Cyperus rotundus* significantly ($p < 0.01$) reduced the paw edema from 2nd hr after carrageenan injection. Pretreatment with *Cyperus rotundus* at doses of 250 and 500 mg/kg showed a dose dependent effect. The assessment of anti-arthritis activity on the 10th day showed that, treatment with *Cyperus rotundus* (500 mg/kg) significantly reduced ($p < 0.01$) the swelling in the injected (left) hind paw as compared to Diclofenac sodium treated group. On the 10th day the % inhibition of paw edema exhibited by *Cyperus rotundus* (500 mg/kg) was 75.54%. Analgesic effects was evaluated on both first (0–5 min) and second (15–30 min) phases of formalin induced pain. The phases corresponded to neurogenic and inflammatory pains, respectively. Essential oil inhibited both, neurogenic and inflammatory pain ($p < 0.01$) at dose of 500mg/kg, whereas lower doses of essential oil significantly $p < 0.05$ blocked the inflammatory pain.⁴⁶ The antibacterial activity of *Pongamia pinnata* leaves by using methanol and ethyl acetate extracts to confirm its ability against certain pathogenic bacteria.⁴⁷ Soybeans provide 56% of the world's oilseed production. However, the percentage of saturated oil is very low in seed plants (about 10%), if compared to unsaturated oil (about 90%).⁴⁸ Methanol and ethanol extracts for *Hopea parviflora* Beddome showed very high antimicrobial activity against *Staphylococcus aureus*.⁴⁹ The Chickrassy Chukrasia tabularis A. Juss leaves to confirm its ability to inhibit lipid peroxidation and showed that there was a large inhibition considering its high content of phenolic compounds.⁵⁰ 55 medicinal plants to measure the antimicrobial activity. The higher antibacterial activities were in the extracts of *Madhuca longifolia* L., *Parkia biglandulosa* L., and *Pterospermum acerifolium* L. compared to the other plants screened.⁵¹ *Pandanus odoratissimus* L. in order to determine its antioxidant activity. The result reveal that it poses very high anti oxidant activity.⁵² The names of Motha grass are *Chlorocyperus rotundus* (L.) Palla, *Cyperus olivaris* Targioni Tozzetti, *Cyperus purpureovariegatus* Boeckeler, *Cyperus stoloniferumpallidus* Boeckeler, *Cyperus tetrastachyos* Desf., *Cyperus tuberosus* Roxb, *Pycreus rotundus* (L.) Hayek.⁵³ *Tricholepis glaberrima* L. (Asteraceae), has been investigated for antioxidant activity using different kinds of extracts.⁵⁴ The chemical diversity of natural products from plants in order to test their ability to work as anticancer and antioxidant agents.⁵⁵ *Artemisia pallens* L. has been studied for its antimicrobial activity against seven species of bacteria.⁵⁶ *Hygrophila spinosa* Andres leaves showed significant antibacterial activity when collected between September to October, with less activity seen during other months.⁵⁷ Fruit consumption has also been linked to a reduction in the risk of many diseases.⁵⁸ Bark and leaf extracts of *Wagatea* sp. exhibited high scavenging action against super radicals.⁵⁹ The use of ultrasound to extract phenolic compounds from rosemary.⁶⁰ The use of ultrasound in different industries because of its positive effects in the extraction of capsaicinoids of hot peppers.⁶¹ Plants containing beneficial phytochemicals may supplement the needs of the human body by acting as natural antioxidants.⁶² UAE of various organic and inorganic samples can use a wide range of solvents. Common equipment used in ultrasound-assisted extraction includes an ultrasonic bath and an ultrasonic probe system. Unfortunately, ultrasonic probe has two main negative properties mainly related to experimental repeatability and reproducibility.⁶³ *Stevia rebaudiana* Bertoni to measure its antimicrobial properties against 10



pathogens. The finding confirmed that its methanolic extract has higher antimicrobial than the aqueous extract.⁶⁴ Ethanolic extracts of Ivorian plants extracted concentrations/amount of phenolics compared to acetone, water, and methanol.⁶⁵ Some important medicinal plants to show the antibacterial activity on human pathogenic bacteria.⁶⁶ The mixtures of the plant natural products have been screened in order to study their effect on human leukemia cells.⁶⁷ B-carotene, lutein, violaxanthin, and neoxanthin are the major carotenoids in raw Spinach.⁶⁸ Panax exhibited strong iron chelating and weak superoxide scavenging. Ajila et al. carried out bioactive compounds and antioxidant activity of mango peel extract.⁶⁹ The antioxidant activity of kale (*Brassica oleracea* L.) has been screened after removing a fat fraction from the samples.⁷⁰ The antioxidant properties of ethanolic extracts of *Areca catechu* and showed that *Areca catechu* had the highest antioxidant activity when compared to other eudicots like *Centella asiatica*, *Punica granatum*, and *Glycyrrhiza glabra*.⁷¹ *Cyperus rotundus* inhibited cariogenic properties of *S. mutans*.⁷² Antioxidants from trees can also be measured. Phenolics from almond hulls (*Prunus amygdalus* L.) and pine sawdust (*Pinus pinaster* L.) have been extracted employing various methods in order to determine the gram fresh yield of polyphenol compounds and antioxidant activity.⁷³

Chemical Composition & antioxidant activity of MAP:

The antioxidant activity and free radical scavenging capacity of dried guava leaves and fruit. The results confirmed that guava leaf and guava tea extracts had the ability to inhibit oxidation by 94–96% at a concentration of 100 μ g/mL. Fruit extracts exhibited less activity compared to leaf extracts, while the scavenging effect increased with an increase in the concentration.⁷⁴ The antibacterial ability of the ethanol extract effectively inhibited *Bacillus subtilis*, *Salmonella typhi*, and *Klebsiella pneumoniae*, but was less effective against *Pseudomonas* species and *Staphylococcus aureus*.⁷⁵ The chemical composition and antioxidant activity of water-soluble Moldavian balm (*Dracocephalum moldavica*) in vitro by using DPPH, ABTS, and superoxide activity.⁷⁶ *Achyranthes bidentata* Blume to determine its phytochemical content and antibacterial activity. The result revealed that ethanolic extract have more antimicrobial activity.⁷⁷ *Moringa oleifera* may have the potential for use as a natural treatment for diseases such as cancer. The findings mentioned that the metabolites for the willow extract could inhibit tumors, thereby enhancing apoptosis and causing DNA damage. The anticancer activity of different extracts from the leaves of the drumstick tree (*Moringa oleifera*) was screened in order to test against leukemia and hepatocarcinoma cells in vitro.⁷⁸ The results showed higher antioxidant activity related to quench DPPH and identified these active compounds successively.⁷⁹ The antioxidant and antiradical activity of fenugreek (*Trigonella foenum ssp. graecum*) seeds in vitro; the results showed that there was a positive relationship between the antiradical activity and phenolic compound content in the extract.⁸⁰ The antioxidant activity of *Arnebia densiflora* Ledeb and observed that polar extracts had a higher antioxidant activity compared to non-polar extracts.⁸¹ The antimicrobial activity of *Piper ribes oides* L. from methanolic root extract against *Staphylococcus aureus* the result indicates highest presence of antimicrobial in its leaves.⁸² Horsegum (*Macrotyloma uniflorum* Lam.) seeds to measure the antioxidant and free radical scavenging activity.⁸³ The antioxidant activity of 32 herbs belonging to 21 different families. The finding confirmed that there was a positive correlation between the total antioxidant activity and total phenolic content.⁸⁴ The nitric oxide and superoxide scavenging activity of green tea.⁸⁵ Methanol extraction had a higher DPPH scavenging activity than acetone. *Helichrysum pedunculatum* has been tested to determine the antioxidant activity, and total phenolic and flavonoid content.⁸⁶ *Acorus calamus* to estimate antioxidant activity and total phenolic contents.⁸⁷ The biological efficacy of *Cyperus rotundus* tubers extract on weight control in obese Zucker rats. Administration of 45 or 220 mg/kg/day of *Cyperus rotundus* tubers hexane extract for 60 days in Zucker rats induced a significant reduction in weight gain without affecting food consumption or inducing toxicity.⁸⁸ *Caesalpinia pulcherrima* (L.) in a small amount of 3.125 mg/mL was

enough to inhibit harmful bacteria. Leaf extracts of *Caesalpinia pulcherrima* (L.) showed higher antioxidant activity in water and ethanol extracts and lower antioxidant activity in petroleum ether extracts.⁸⁹ Acetone and N,N dimethylformamide (DMF) are highly effective at extracting antioxidants, while Koffi et al. found that methanol was more effective in a large amount of phenolic contents from walnut fruits when compared to ethanol.⁹⁰ Extensive research has been performed in order to increase stearic acid content oil production in the most widely consumed legume crop in the world, soybeans. By employing induced mutagenesis, seed stearic acid content was increased by up to 7 times.⁹¹ Among the fractions, tested at 250 mg/kg, the petroleum ether fraction and residual methanol fraction of *Cyperus rotundus* showed antidiarrhoeal activity, the latter being more active as compared to the control. The ethyl acetate fraction did not show any antidiarrhoeal activity.⁹² The antioxidant and free radical scavenging activity of *Phyllanthus* species from India in an aqueous extract.⁹³ According to analytical chemistry, spinach is a source of violaxanthin and neoxanthin antioxidants that cannot be commercially produced.⁹⁴ Lipid oxidation in food systems can be caused by oxygen free radicals or reactive oxygen species. Free radicals are molecules with one or more unpaired electrons that work independently to cause oxidation.⁹⁵ Approximately 20% of known plants have been used in pharmaceutical studies, impacting the healthcare system in positive ways such as treating cancer and harmful diseases.⁹⁶ The antioxidant activity of leaf extracts of *Annona* species in vitro reveals that *Annona muricata* possessed a higher antioxidant activity compared to *Annona squamosa*.⁹⁷ The chloroform extract was a more powerful inhibitor of pathogenic bacteria.⁹⁸ The major bioactive compounds obtained were chlorogenic acid and phloretin glycosides; however, Vitamin C was a minor fraction in apple juice.⁹⁹ The consumption of fruits and vegetables has been linked with several health benefits, a result of medicinal properties and high nutritional value.¹⁰⁰ Cancer has been increasing throughout the world. It is the main cause of mortality from year to year. There were 10.4 million new cancer cases registered in 2015, and scientists predict that the number of cancer cases per year will double by 2030.¹⁰¹ The activity of many bioactive compounds by releasing them from grape pomace, and demonstrated that bioactive compounds have the ability to significantly inhibit LDL oxidation in the human body.¹⁰²

Reducing Power of Antioxidant :

The antioxidant activity of *Salvia miltiorrhiza* and *Panax notogenseng* the result showed that *Salvia miltiorrhiza* had higher reducing power and scavenging activities against free radicals.¹⁰³ The antioxidant activity of *Dillenia Indica* fruit using different kinds of solvents using DPPH, phospho-molybdenum, and carotene bleaching methods.¹⁰⁴ The mutagenic and antimutagenic effects of aqueous, total oligomers flavonoids (TOF), ethyl acetate and methanol extracts from aerial parts of *Cyperus rotundus* were assayed by *Salmonella typhimurium* assay system. The different extracts showed no mutagenicity when tested with *Salmonella typhimurium* strains TA98, TA100, TA1535 and TA1538, either with or without the S9 mix. On the other hand, the results showed that all extracts possessed antimutagenic activity against aflatoxin B1 (AFB1) in TA100 and TA98 assay system, and against sodium azide in TA100 and TA1535 assay system. TOF, ethyl acetate and methanol extracts exhibited the highest inhibition level of the Ames response induced by the indirect mutagen AFB1. Furthermore, ethyl acetate and methanol extracts exhibited the highest level of protection toward the direct mutagen, sodium azide, induced response. In addition to antimutagenic activity, these extracts showed an important free radical scavenging activity toward the 1, 1-diphenyl-2-picrylhydrazyl (DPPH) free radical with IC50 value of 15, 14 and 20 g/ml, respectively.¹⁰⁵ The stability of the antioxidant activity of ethanolic extracts for Holy basil and galangal using DPPH, superoxide, carotene bleaching, reducing power, and iron chelation methods.¹⁰⁶

Acute and sub acute toxicities :

The acute and subacute toxicities of the ethanol extract from *Cyperus rotundus* in rats. A single oral administration of the ethanol extract at a dose of 5000 mg/kg did not produce signs



of toxicity, behavioral changes, mortality and differences on gross appearance of internal organs. In subacute toxicity, all rats were received a repeated oral dose of 1000 mg/kg of the ethanol extract over 14 days. The satellite group was given the ethanol extract in the same period but kept for further 14 days without dosing in order to detect the delayed effects or reversibility of toxic effects. The results showed that the extract did not cause changes in terms of general behaviors, mortality, weight gain, hematological and clinical blood chemistry parameters. The results of gross and pathological examinations showed normal appearance of the internal organs as compared to those of the control group.¹⁰⁷ Stearic acid does not exhibit these cholesterolemic effects on human health.¹⁰⁸ An increasing awareness of the negative effects of synthetic preservatives, there has been increased demand for the use of nontoxic, natural preservatives, many of which are likely to have either antioxidant or antimicrobial activities.¹⁰⁹ The evaluation of *Vitex negundo* Linn seed antioxidant activity using different methods such as superoxide, hydroxyl, and DPPH scavenging activity has been carried out.¹¹⁰ Many bioactive molecules have been isolated and purified by using paper thin-layer and column chromatographic methods. Column chromatography and thin-layer chromatography (TLC) are still mostly used due to their convenience, economy, and availability in various stationary phases.¹¹¹ Antioxidant property of methanol extracts of *Mucuna pruriens* L. (Fabaceae) seed extracts has been investigated in vitro using the DPPH radical scavenging method. The results obtained showed a positive correlation between the antioxidant activity and the total phenolic compounds.¹¹²

Analysis of essential oils of *Cyperus rotundus*:

Cyperus rotundus essential oil was significantly active against Gram-positive microorganisms (*Staphylococcus aureus* and *Streptococcus* species), moderately active against *Sarcina lutea*, *Bacillus subtilis* and the acid fast *Mycobacterium phlei* and fungi (*Candida* species). The oil is completely inactive against Gram-negative microorganisms.¹¹³ The extraction time of phenolic compounds from strawberries with other extraction methods such as solid-liquid, subcritical water, and microwave-assisted method.¹¹⁴ The antioxidant activity of juniper (*Juniperus communis*) fruit extracts has been investigated in vitro.¹¹⁵ The antioxidant activity and phenolic content of various fruit seeds.¹¹⁶ Plants are able to produce a large number of diverse bioactive compounds. High concentrations of phytochemicals, which may protect against free radical damage, accumulate in fruits and vegetables.¹¹⁷ Deterioration of food due to either bacterial or fungal infection has always been a major concern, causing huge losses to food industries and societies throughout the world.¹¹⁸ Purple nutsedge populations and shoot dry biomass were reduced in cotton and soybean rotation and continuous soybean by 72 and 92%, respectively, whereas in continuous cotton, purple nutsedge populations increased by 67% and shoot dry biomass was reduced by 32% after 4 yr. Reductions in purple nutsedge populations also occurred in soybean when cotton was rotated with soybean (CSCS and SCSC), compared with continuous cotton.¹¹⁹ Grape seeds are an amazing source of polyphenol compounds including monomers such as catechin, epicatechin, and gallic acid, and polymeric such as procyanidins.¹²⁰ Nine other extracts of Bolivian plants have been measured for radical scavenging and antioxidant activity using the DPPH and carotene bleaching methods.¹²¹ The bioactive compounds of *Rhodiola rosea* extracted in methanol showed a significant yield of phenolics, about (153 ± 2 mg/g).¹²² Increasing the consumption of fruits and vegetables has been recommended by many agencies and health care systems throughout the world.¹²³ The antibacterial activity of *Punica granatum* extracts has been investigated by using various solvents.¹²⁴ Four sesquiterpenes (beta-selinene, isocurcumenol, nootkatone and aristolone) and one triterpene (oleanolic acid) were isolated from the ethylacetate fraction of the rhizomes of *Cyperus rotundus* and tested for their ability to modulate gamma-aminobutyric acid (GABA)-benzodiazepine receptor function by radioligand binding assays using rat cerebrocortical membranes. Among these compounds, only isocurcumenol was found to inhibit [³H]Ro15-1788 binding and enhance [³H]flunitrazepam binding in the presence of GABA. The results suggested

that isocurcumenol may serve as a benzodiazepine receptor agonist and allosterically modulated GABAergic neurotransmission via enhancement of endogenous receptor ligand binding.¹²⁵

Analysis of rhizomes of *Cyperus rotundus*:

The phenolic content and antioxidant activity of parsley (*Petroselinum crispum*) and cilantro (*Coriandrum sativum*) have been tested.¹²⁶ The antioxidant activity of the extracts from various parts of Mengkudu (*Morinda citrifolia* L.), including the leaves, fruits, and roots, using different solvents such as methanol and ethyl acetate.¹²⁷ The capabilities of automated HS sampling in the GC-MS analysis of volatile compounds from *Origanum vulgare*.¹²⁸

Chemical constituent in some important MAP:

With the aid of MAE the extraction of puerarin from *Radix puerariae* took 1 min only when water was used as the extraction solvent, because water not only absorbed the microwaves efficiently but also readily dissolved the polar active constituents (iso-flavone compounds) of this important Chinese herb.¹²⁹ *Salvia officinalis* (L.) for its antioxidant activity and polyphenol content and reported that rosmarinic acid and various catechols were responsible for the radical scavenging activity and caffeic acid was responsible for the xanthine oxidase (EC 1.17.3.2) inhibition.¹³⁰ More recently, replacement of the fiber needle with a stir-bar, a new sampling technique known as stir-bar sorptive extraction (SBSE)¹³¹. The effect of the fiber coating in HS-SPME-GC analysis of aromatic and medicinal plants has been investigated in depth. It was founded that fibres consisting of two compartments, a liquid polymeric for less polar analytes and solid polymeric for more polar analytes¹³². 9.68 μg of ascorbic acid and 10.3 μg of total polyphenol can equally reduce activity in 1 mg of dulse extracts. The reducing activity was correlated with aqueous/alcohol soluble compounds due to the presence of functional groups such as hydroxyl, carbonyl, etc., which lead to reduced or inhibited oxidation¹³³. The reducing activity was correlated with aqueous/alcohol soluble compounds due to the presence of functional groups such as hydroxyl, carbonyl, etc., which lead to reduced or inhibited oxidation¹³⁴. In addition to endogenous active components in medicinal plants, the usefulness of SPME as a sampling tool. The ability of procyanidins to work as oxygen radical scavengers, superoxides, and hydroxyl radicals was estimated. Despite the low content in total phenols in apples obtained by using acetone 70%, it has shown strong antioxidant activities towards oxidation of linoleic acid¹³⁵. In the determination of the enantiomeric purity of atropine (a tropane alkaloid with significant medical interest found in plants of the Solanaceae family), found that SFE induced less racemization than classical liquid-solid extraction procedures¹³⁶. Red algae are aquatic plant species considered one of the oldest groups of eukaryotic algae. The antioxidant activity of a red alga, *Palmaria palmate*, has been studied. The results reported that 9.68 g of ascorbic acid and 10.3 g of total polyphenol can equally reduce activity in 1 mg of dulse extracts.¹³⁷ A simple and rapid method for determination of mercury in TCM¹³⁸. SFE conditions can be finely tuned for selective extraction of an antioxidant fraction with almost no residual aroma from rosemary plants. It has also been shown, by operating under sub-critical temperature and pressure conditions, that CO_2 fluid can be used as solvent for the selective extraction of essential oils¹³⁹. Although many pigments may be present, pigments such as carotenoids can be masked by chlorophyll in greenish vegetables such as spinach¹⁴⁰. "Herbal cocktails" can act in a synergistic manner within the human body, and can provide unique therapeutic properties with minimal or no undesirable side-effects¹⁴¹. The disadvantages of commonly used sample-preparation techniques such as distillation and liquid solvent extraction are that they usually require large amounts of organic solvents and manpower; these methods also tend to be destructive in nature (i.e. significant artifact formation can occur owing to sample decomposition at high temperatures)¹⁴². Quality-related problems (lack of consistency, safety, and efficacy) seem to be overshadowing the potential genuine health benefits of various herbal products, and a major cause of these problems seems to be related to the lack of simple and reliable analytical techniques and methodologies for the chemical analysis of herbal materials¹⁴³. Hydroxycinnamic acids do not contribute to the



inhibition of lipid peroxidation of the liver using plums and peaches because hydroxycinnamic acids had weak ability to scavenge hydroxyl radicals¹⁴⁴. *Cyperus rotundus* contained many secondary metabolites such as sesquiterpenes (with diverse skeletons such as patchoulane, rotundane, eudesmane, guaiane, cadinane and caryophyllene types), quinones, flavonoids (visnagin, khellin, ammiol, isorhamnetin, and triclin), saponins, alkaloids, phenolic acids (salicylic acid, protocatechuic acid, caffeic acid and p coumaric acid), coumarins and steroids (steroidal glycoside, sitosterol-(6'-hentacontanoyl)- β -D-galactopyranoside).¹⁴⁵ Herb analysis by automatic HS-GC on determination of the saffron content from different *Asarum* species from China and Europe had been carried out¹⁴⁶. 170^o C was the most effective temperature for extracting phenolic compounds from Chinese tea. In addition, increasing the extraction temperature beyond this point resulted in a reduced extraction yield¹⁴⁷. Many antioxidant compounds can be found in fruits and vegetables including phenolics, carotenoids, anthocyanins, and tocopherols¹⁴⁸. Stearic acid is less likely to be incorporated into cholesterol esters and has a neutral effect on the concentration of blood serum LDL cholesterol¹⁴⁹. The on-line SFE-SFC analysis of the active compounds (magnolol and honokiol) in *Magnoliae* cortex can be completed within 5 min¹⁵⁰.

Identification of components in MAP:

By using silica gel as the trapping and separation column and sodium sulfosuccinate as the counter-ion for ion-pair formation, the same research group recently showed that the on-line coupling of ion-pair SFE-SFC enabled the rapid analysis (within 10 min) of berberine and palmatine (positively charged active species) in *Phellodendri* cortex¹⁵¹. Beta carotene, ascorbic acid, and many phenolics play dynamic roles in delaying aging, reducing inflammation, and preventing certain cancers¹⁵². Headspace (HS) sampling is well suited for the fractionation of volatile compounds from complex solid matrices such as plant materials¹⁵³. Metal ions, especially those of iron and copper, effectively catalyze these reactions. Lipoxygenases (EC 1.13.11) can also act, causing oxidation to produce the peroxides in food materials that contain lipids. Hydrogen peroxide is one of the primary products of the oxidation, and it is very unstable and easily converts into secondary products.¹⁵⁴ Lipid molecules, especially those carrying polyunsaturated double bonds (i.e., linolenic acids), readily undergo oxidation within foods. Oxidatively stable oil with high melting temperature is necessary for solid fat application, and thus, highly saturated seed oil (palmitic acid and stearic acid) would be suitable for this end use¹⁵⁵. The use of medicinal plants (herbs) has a long history throughout the world and herbal preparations, including herbal extracts, can be found in the pharmacopoeias of numerous countries¹⁵⁶. Faster extraction kinetics were achieved by employing factorial design to optimize experimental variables such as temperature, pressure, modifier concentration, static extracting time, and CO₂ dynamic extracting volume¹⁵⁷. During optimization of SFE conditions for extraction of active ingredients from *Curcuma zedoaria*, found that the density of the CO₂ and the fluid volume passing through the plant matrix are the most important factors affecting extraction efficiency, whereas increasing the temperature has little effect¹⁵⁸. Although volatile compounds (essential oils) in ginger were expected to be strongly influenced by heat treatment, possibly as a result of hydrolysis, oxidation, and rearrangement, a very low concentration of gingerol degradation products were, however, found after SFE of Australian-grown ginger, which attested to the mild nature of the extraction procedure¹⁵⁹.

Kinetic Study of MAE & SFE Extraction :

A kinetic study of the effects of these conditions on the MAE extraction of plant materials with medicinal significance, i.e. leaves from rosemary and peppermint. Their results indicated that for a sample matrix such as a plant, which usually contains water as a component with dielectric loss (a measure of the efficiency of converting microwave energy into heat), the use of pure, microwave-transparent solvents such as hexane could result in the rapid extraction of essential oil components¹⁶⁰. A novel and effective approach, known as solid-phase microextraction (SPME)¹⁶¹. A classic example is aspirin, which was initially discovered as



salicylic acid in willow bark and leaves¹⁶². Taxol was recently proven to be effective against breast and ovarian cancers, which was initially discovered in bark of yew trees¹⁶³. Swelling of the plant matrix, as a result of interaction between modifiers and matrix, was an important factor in enhancing extraction recovery and kinetics in SFE. Also, by use of different conditions of pressure and temperature¹⁶⁴. The rate of extraction of volatile active components (essential oils) from plant matrices by SFE seemed to be governed by analyte– matrix interaction rather than the bulk solubility of the analyte in pure CO₂, because the extraction rates were found to increase greatly due to an addition of organic modifiers¹⁶⁵. Researchers have tended to focus on advanced methods to isolate and measure the activity of antioxidant compounds such as flavonoids, phenolic acids, tocopherols, carotenoids, and ascorbic acid¹⁶⁶. The application of new techniques on an analytical scale has started to attract wide interest for sample preparation before chromatographic analysis¹⁶⁷. The active compound of feverfew, i.e. the sesquiterpene lactone parthenolide (well known to be unstable and to degrade during storage), can be efficiently and selectively extracted from dried feverfew by SFE without thermal degradation¹⁶⁸.

Study of superficial Extraction fluid :

Supercritical fluid extraction (SFE) has been used for many years for the extraction of volatile components, e.g. essential oils and aroma compounds from plant materials, on an industrial scale¹⁶⁹. Lipid oxidation can occur during the processing, shipping, and storing of many foods. Lipids (such as triglycerides, sterols, and phospholipids) readily become oxidized with exposure to an oxidative environment¹⁷⁰. Phenolic compounds including anthocyanins, tannins, polymer dyes, and phenols form complexes with iron that have been detected by the ultraviolet/visible (UV-Vis) spectroscopy¹⁷¹. UV-visible spectroscopy can be performed for qualitative analysis and for identification of certain classes of compounds in both pure and biological mixtures. Preferentially, UV-visible spectroscopy can be used for quantitative analysis because aromatic molecules are powerful chromophores in the UV range. Natural compounds can be determined by using UV-visible spectroscopy¹⁷². Stearic acid is less likely to be incorporated into cholesterol esters and has a neutral effect on the concentration of blood serum LDL cholesterol¹⁷³. Stearic acid does not exhibit cholesterolemic effects on human health¹⁷⁴. The nut-grass produces a dry, single-seeded fruit, which is up to two millimetres long, and brown to black with a network of grey lines.¹⁷⁵

Study of Herbal Medicine:

Herbal medicine is the oldest form of medicine known to mankind. It was the mainstay of many early civilizations and still the most widely practiced form of medicine in the world today¹⁷⁶. WHO has estimated that perhaps 80% of the inhabitants of the world rely chiefly on traditional medicines for their primary health care needs. In the developed countries, in the USA, for example, 25% of all prescriptions dispensed from community pharmacies from 1959 to 1980 contained plant extracts or active principles prepared from higher plants¹⁷⁷. Ethanol has been used to estimate the antioxidant activity of sun-dried cashew nuts (*Anacardium occidentale* L.) skin. First, bioactive compounds were extracted with a protocol including lipid peroxidation, ABTS, and DPPH methods to measure the capability to inhibit oxidation. The results found that epicatechin was the major polyphenol in the extract, which was responsible for antioxidant activity.¹⁷⁸ Fruit consumption has also been linked to a reduction in the risk of many diseases¹⁷⁹. Moulds were used by Chinese & Egyptians for the treatment of ulcer and wounds¹⁸⁰. About 10,000 Indian plants are being used in Medicines¹⁸¹. Herbal medicines are considered to be more safer than synthetic drugs¹⁸². There is a need to incorporate certain parameters of the pharmacological evaluation of moderns on modern lines¹⁸³. Garlic and ginger are very effective against cardiovascular drug¹⁸⁴. *Texus bevitoli* [taxaceae] are very effective against treatment of cancer. The quality of herbal medicine is implication in efficacy and safety¹⁸⁶ and standardization of all these factors is necessary to meet the current standards of quality, safety and efficacy¹⁸⁷. These are some contamination like dust, SO₂, H₂S, CO₂, Ar, moisture etc. may decrease the

quality of Herbal medicines¹⁸⁸. Validation consists minimally two lab validation using the same procedure, samples and reference standard¹⁸⁹. The pharmacognostic content, the diagnostic microscopic features and numerical report could be suitable monograph for its proper identification¹⁹⁰. WHO has also taken job to develop monographs for herbs and traditional medicines like posology¹⁹¹. There are number of medicinal plants which are being used traditionally and are mentioned in “Chakra Samhita”¹⁹²⁻¹⁹³. Their types and specific uses are also mentioned¹⁹⁴ which are more relevant¹⁹⁵.

Study of momoradica monadelpha [Tilkor]

The ethanolic extract of fruit of Tilkor showed the presence of phytochemicals like, lipid, Taunins, Flavanoids, Acid, Alkaloids, phenol, cardiac glycoside, proteins, saponins and carbohydrate. The compounds which are isolated from the extract of Fruit are characterized as β -sitosterol-3-0-B-D glucoside and n-tetracontane-7-one. They also found to have antimicrobial activity¹⁹⁶. The methanolic extract of leaves of Tilkor contain phytochemicals like terpenoid, saponins, tannins, flavonoids, alkaloids and steroids. They also show anti microbial activity and compounds like stigmasterol and triacontanet are present in the methanolic extract of leaves of plant¹⁹⁷. Mucilage obtained from fruit of the this plant contain phytochemicals like fats, proteins, phytosterols, carbohydrates. The mucilage also shows antimicrobial activity and is very effective against staphylococcus aureus. Compounds like quercetin also found to be present in the mucilage of Tilkor¹⁹⁸. The methanolic extract of flower of Tilkor showed the presence of phytochemicals like alkaloids, flavanoid, tanins, saponins, cardiac glycosides steroids, phenol, protein, lipids, acid, carbohydrate. It also showed antimicrobial activity and compounds like n-dotricontane – 15 – one and n – hexadecanyl oleate present in methanolic extract flower of the plant¹⁹⁹. The antibacterial activity of methanolic extract of leaf, steam and root of momoradica monadelpha (Tilkor) against S. Typhi, S. Aureus and E. coli showed variable magnitude of inhibition zone. The sensitivity of bacterial species against the extract was observed to be in decreasing order of S. Typhi > S. Aureus > E. coli. The order of plant's part which showed antibacterial activity was Root > Leaf > stem²⁰⁰.

Conclusion :

Inspite of lots of purposeful uses in our daily life, plant also serves its utility for the treatment of diseases. So in our study, we have find from literature that out of Lakhs of spices of plant, more than 10,000 spices have medicinal value. However chemical analysis and clinical trial of most of the species have not been carried out yet to established their pharmacological activities but many of them are being chemical standarised. They showed very wide range of pharmacological activities and also found to be more safer than synthetic drug. They contains photochemicals as well as high value bioactive components.

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ONLINE LEARNING DURING LOCKDOWN PERIOD FOR COVID-19 IN INDIA

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Abstract

Covid-19, as a global pandemic, has called for social distancing. It has made people mandatory to sit indoor and sitting idle indoor may lead to mental stress. Hence to keep people engaged and free from mental stress, online learning can play important role. Online learning is the best solution during this pandemic situation. Teachers can use virtual classrooms to teach from home with all necessary tools which makes the online sessions as effective as traditional ones. Pandemics often compel the learners to stay at home for long period of time and obstruct teaching-learning process. This article emphasizes on how online learning is beneficial during times of crises like work absences or pandemics. Therefore, some tools and techniques for online learning which can ensure the continuity of learning are highlighted. Some emerging approaches of Government of India for online learning are presented. Merits and demerits of online learning platform are also discussed. Perceptions of learners and educators on Online Learning system during lockdown are pointed.

Keywords: Online Learning, Online Platforms, Perceptions Of Learners & Educators.

Introduction

Most Governments around the world have temporarily closed educational institutions to control the spread of the Covid-19 pandemic. With an increasing number of states, provinces and even whole countries closing institutions of learning and over 91% of the world's students population are not attending schools/colleges (UNESCO). Several other countries have implemented localized closures impacting millions of additional learners. UNESCO is supporting countries in their efforts to slower the immediate impact of school closures particularly for more vulnerable and disadvantaged communities and trying to facilitate the continuity of education for all through remote learning. The World Bank is also actively working with ministries of education in several countries in support of their efforts to utilize educational technologies to provide remote learning opportunities to students while the educational institutions are closed due to Covid-19 pandemic. "The corona virus pandemic has led to an unprecedented rise in present time," said Global Partnership to End Violence Executive Director Dr. Howard Taylor. "School closures and strict containment measures mean more and more families are relying on technology and digital solutions to keep children learning, entertained and connected to the outside world, but not all children have the necessary knowledge, skills and resources to keep themselves safe online" (UNICEF). In this pandemic situation of Covid-19, learning can now be realised online and knowledge can be transferred virtually using multiple media. Online learning is the best solution during this crisis. Online learning is a learning environment that takes place over the Internet. It is often referred to as e-learning. An online educator compensates the lack of physical presence in the virtual classroom by creating a supportive environment where all



students feel comfortable to participate in online class (Joshua). It plays a significant role in transforming our lives to digital world by providing flexible places, class timings and quality contents. It provides a way to the development of humanity at the time physical isolation due to pandemic. Online learning is beneficial because it is instantly accessible and offers flexible scheduling. In this system, learners use Internet technology to communicate virtually with their teachers and fellow learners through E-mail, WhatsApp, Videoconferencing, Instant messaging or using other tools. However Videoconferencing may be effectively used in online learning to enhance group collaboration with sense of community between learners which may replace face to face class room learning to some extent. In the past, students of rural areas were missing many of the opportunities that their urban and suburban peers had taken for granted. Connecting these rural students for online learning via video conferencing can dramatically improve the quality of their learning experience. This enables the rural/disadvantaged learners to both attend school/college from home and gives them access to the experts. Videoconferencing is a synchronous model for interactive voice, video and data transfer between two or more groups/people (Wiesemas & Wang, 2010). Videoconferencing is just one of the technological systems that can be used in online learning. The value of online learning is being recognized by more organizations, since it is a cost effective way to deliver a large number of people. It can produce significant results by not only decreasing costs, but also by improving performance. Online Learning is encouraged due to following reasons during lockdown period for Covid-19.

- One can acquire knowledge staying at home and can maintain social distancing.
- Outbreak of Covid-19 can be minimised due to social distancing
- It offers highly effective learning environments.
- It offers complementary interactive support that allows students to study 24/7 and work at their own pace.
- It offers flexible scheduling.
- It is available in any location, with an internet connection and students can attend using their devices (mobile, computers, tablets, etc.).
- Deals with real-time student monitoring as well as reporting.
- Improves the image of institution by offering technological solutions that solve real problems

Objectives

The objectives of the study are to:

- Study the measures taken by Government of India to support online learning process during the lockdown period for Covid-19.
- Enlighten various online tools/platforms adopted by educational institutions during the pandemic Covid-19.
- Highlight some merits and demerits of Online Learning and put suggestions for improvement.
- Enlist the views of learners and educators on online learning system during lockdown.

Methodology

Some journals and e-contents relating to online learning system are studied to find out the problems associated with online learning system especially during pandemics.



Measures taken by Govt. of India to support online learning process during the lockdown period for Covid-19 are collected from website. Author has undertaken some online counselling classes and conducted online induction meetings with fresh January 2020 learners of different Learner Support centres (LSCs) under Indira Gandhi National Open University(IGNOU) Regional centre, Bhubaneswar during the lockdown period of India. The perceptions/views of learners and educators of LSCs under IGNOU Regional centre, Bhubaneswar are collected while conducting online counselling classes and online induction meetings using videoconferencing software ZOOM/Google Meet. The collected data are analyzed to study merits and demerits of Online Learning system during lockdown and proposed better methods to make it effective for the learners.

Initiatives of India for online learning during lockdown

Since countries all over the world have gone into lockdowns due to Covid-19, educational institutes have been no exception. During the Covid-19 outbreak in the entire nation, the country is facing major crisis in many sectors but the worst hit sector is the education sector, as most of the exams have been cancelled during the final assessments. Students and teachers are struggling to have access to uninterrupted and seamless quality of internet connection. At the same time, the country should not compromise student's much desired academic progress. Hence, educational institutions should adopt smart solutions to overcome the endemic crisis by adopting the online mode of education. Many State Governments of India are also exploring online learning platform for accessing online educational resources, during the ongoing lockdown. They are looking to design ways to help students continue with their learning during the nationwide lockdown due to Covid-19. The aim is to effectively continue with the academic cycles of the students and not let the lockdown affect their learning. They are planning for students to provide audio and video based content along with self-assessment exercises. Special doubt- clearing sessions on important topics may be held for students. People of India need to continue with coordinated and collective efforts to fight Covid-19 and also make productive use of their time during the current situation by adopting Information and Communication Technology (ICT) for teaching learning process and contribute towards the intellectual wealth of the nation. Online classes have been promoted across the different universities by the University Grants Commission (UGC) during the lockdown phase in order to make sure that the students do not miss out on the classes during the time. While speaking to the media on 13.04.2020 (DD news), UGC Chairman declared that the UGC has constituted two committees to promote online learning during Covid-19 lockdown. One of the committees has been formed for the examinations and academic calendar, while the second committee will work on students, teachers and the education system. Based on the suggestions of the committee and in consultation with the Ministry of Human Resource Development (MHRD) the guidelines for the universities may be issued by the UGC very soon. UGC has advised all higher educational institutes in the nonfiction dated 11th April 2020 to take preventive and precautionary measures for maintaining social distancing, staying in the confines homes/hostels and utilise the time productively by engaging in on-line learning during the lockdown period for Covid-19. The resources, which are in the form of digital platforms, can be accessed by the teachers, students and researchers in



Universities and Colleges for expansion of their knowledge. To ensure that there is no break in the education and students get full-access to classes, like before, MHRD advises students to carry on with their studies using the online learning platforms. The online learning platforms help the students not only get full access to the study material but also allow them to engage in online classes and interact with the teachers like the physical classroom setting. Following is the list of some of the digital initiatives of MHRD & UGC along with their access links for school students as well as UG and PG level education:

1. **SWAYAM online courses:** provides access to best teaching learning resources which were earlier delivered on the SWAYAM Platform may be now viewed by any learner free of cost without any registration. Students/learners who registered on SWAYAM (swayam.gov.in) in the January 2020 semester can continue their learning as usual. Link-<https://storage.googleapis.com/uniquecourses/online.html>
2. **UG/PG MOOCs:** hosts learning material of the SWAYAM UG and PG (Non-Technology) archived courses.
Link- https://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php.
3. **e-PG Pathshala:** hosts high quality, curriculum-based, interactive e-content containing 23,000 modules (e-text and video) in 70 Post Graduate disciplines of social sciences, arts, fine arts and humanities, natural & mathematical sciences.
Link- epgp.inflibnet.ac.in
4. **e-Content courseware in UG subjects:** e-content courseware in 87 Undergraduate courses with about 24,110 e-content modules is available on the CEC website at <http://cec.nic.in/>.
5. **SWAYAMPRAKSHA:** is a group of 32 DTH channels providing high quality educational curriculum based course contents covering diverse disciplines such as arts, science, commerce, performing arts, social sciences and humanities subjects, engineering, technology, law, medicine, agriculture etc to all teachers, students and citizens across the country interested in lifelong learning. These channels are free to air and can also be accessed through your cable operator. The telecasted videos/lectures are also as archived videos on the Swayamprabha portal.
Link- <https://www.swayamprabha.gov.in/>
6. **CEC-UGC YouTube channel:** provides access to unlimited educational curriculum based lectures absolutely free. Link- <http://www.youtube.com/user/cecedusat>
7. **National Digital Library:** is a digital repository of a vast amount of academic content in different formats and provides interface support for leading Indian languages for all academic levels including researchers and life-long learners, all disciplines, all popular form of access devices and differently-abled learners.
Link- <https://ndl.iitkgp.ac.in/>
8. **Shodhganga:** is a digital repository platform of 2,60,000 Indian Electronic Theses and Dissertations for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access.
Link- <https://shodhganaa.inflibnet.ac.in>
9. **e-Shodh Sindhu:** provides current as well as archival access to more than 15,000 core and peer-reviewed journals and a number of bibliographic, citation and factual



databases in different disciplines from a large number of publishers and aggregators to its member institutions including centrally-funded technical institutions, universities and colleges that are covered under I2(B) and 2(f) Sections of the UGC Act.

Link- <https://ess.inflibnet.ac.in/>

10. **Vidwan:** is a database of experts which provides information about experts to peers, prospective collaborators, funding agencies policy makers and research scholar in the country. "It is hoped, that these ICT initiatives, which cover a broad range of subjects and courses and have been prepared by experts, will provide an excellent learning experience to all. Link- <https://vidwan.inflibnet.ac.in/>

Emerging approaches of Govt. of India for online learning

In a press release put out by the MHRD on March 21, 2020, the Union HRD Minister shared various free digital Online Learning platforms for students to continue their learning during Covid-19 based school closures. The World Bank is also sorting emerging approaches undertaken by different countries, and storing all related information which may be useful to others. The emerging approaches of India shared by World Bank are as listed below.

- **The DIKSHA** portal contains online learning content for students, teachers, and parents aligned to the curriculum, including video lessons, worksheets, textbooks and assessments. Under the guidance of its national board of education (CBSE) and NCERT, the content has been created by more than 250 teachers who teach in multiple languages. QR codes in textbooks encourage students to go beyond the book. The app is available to use offline.
- **e-Pathshala** is an online learning app by NCERT for classes 1 to 12 in multiple languages. The app houses books, videos, audio, etc. aimed at students, educators and parents in multiple languages including Hindi, Urdu, and English.
- **The National Repository of Open Educational Resources (NROER)** portal provides a host of resources for students and teachers in multiple languages including books, interactive modules and videos including a host of STEM-based games. Content is mapped to the curriculum for classes 1 – 12, including aligned resources for teachers.
- **Swayam** hosts 1900 complete courses, including teaching videos, weekly assignments, exams and credit transfers, aimed both at school (class 9 to 12) and higher education (undergraduate and postgraduate) levels. Subjects are aligned to the curriculum and include engineering, humanities, social sciences, law and management courses including robotics.
- **Swayam Prabha** is a group of 32 Direct To Home (DTH) channels devoted to telecasting of educational programs round the clock and accessible all across the country. The channels air courses for school education (class 9-12), higher education (undergraduate, postgraduate) as well as for out-of-school children, vocational education and teacher training. Subjects include arts, science, commerce, performing arts, social sciences, humanities, engineering, technology, law, medicine, and agriculture. Schedules for the television broadcast as well as archived programs are available on the website.



Some free external repositories of distance learning solutions

UNESCO has suggested the list of educational applications, platforms and resources below with an aim to help parents, teachers, schools and school administrators facilitate student learning and provide social care and interaction during closure of educational institutions. Most of the solutions are free with multiple language option. They are categorized based on distance learning needs, but most of them offer functionalities across multiple categories.

- **Brookings** – A catalogue of nearly 3,000 learning innovations. Not all of them are distance learning solutions, but many of them offer digital education content.
- **Common Sense Education** – Tips and tools to support school closures and transitions to online and at-home learning.
- **Commonwealth of Learning** – List of resources for policymakers, school and college administrators, teachers, parents and learners that will assist with student learning during the closure of educational institutions.
- **Education Nation** – Nordic countries have opened up their learning solutions for the world for free, supporting teachers and learners during the school closures.
- **EdSurge** – Community-driven list of edtech products, including many distance learning resources for students, teachers and schools, covering primary to post-secondary education levels.
- **Global Business Coalition for Education** – List of online learning platforms, information sharing platform and communication platforms.
- **Keep Learning Going** – Extensive collection free tools, strategies, tips and best practices for teaching online from a coalition of USA-based education organizations. Includes descriptions of over 600+ digital learning solutions.
- **UNHCR** – An extensive list of over 600 distance learning solutions from the United Nations agency for refugees.

Free online platforms that support live-video communication

There are many live-video communication platforms are available in web, but some of the free online platforms are as listed below which can be used by learners of all categories:

- **Zoom** – Cloud platform for video and audio conferencing, collaboration, chat and webinars.
- **Google Meet** – Video calls integrated with other Google's G-Suite tools. Video meeting recordings, Screen sharing, Join calls using Google Calendar
- **Skype** – Video and audio calls with talk, chat and collaboration features.
- **Facebook Live** – is a great fit for businesses, influencers, or individuals who are looking to broadcast demos, videos, or showcase their company culture while streaming live, followers on Facebook can comment and chat live, schedule videos ahead of time to gain excitement.
- **YouTube Live** – is a platform for demonstrating a product with live interaction, hosting an educational session to teach audience with screen sharing or using a whiteboard, having features with Location tags and advanced scheduling.



- **UberConference-** Unlimited Video and audio calls with talk, chat and collaboration features
- **FreeConference** is ideal for smaller teams or meetings, feature include Screen sharing, Document sharing, Text sharing etc.
- **Dingtalk** – Communication platform that supports video conferencing, task and calendar management, attendance tracking and instant messaging.
- **Lark** – Collaboration suite of interconnected tools, including chat, calendar, creation and cloud storage, in Japanese, Korean, Italian and English.
- **Teams** – Chat, meet, call and collaboration features integrated with Microsoft Office software.
- **TrueConf Online**-HD video with Collaboration tools (screen sharing, remote desktop control, recorded calls, file transfer and shared virtual whiteboard).
- **Slack Video Calls-** is good for teams looking for a supplementary video calling solution for small teams, features include individual calls and messenger services.
- **Lifesize Go-** No restrictions on meeting length, preferred for small group conversations.

Merits of online learning during lockdown

- Online Learning encourages more productive use of time which keep individuals safe from pandemic situation like spread of Covid-19.
- It has greater access to experts/specialists (nationally and internationally) and learners can access 24/7 at their own pace and time. It allows geographical reach even to rural or remote locations.
- It is a cost-effective technology which is quite affordable and enhances communication between educators and students. One educator can teach various virtual classes simultaneously which reduces travelling to various places. It can accommodate more learners at a particular time.
- Online class/conference session can be saved in website for future reference e.g. class notes can be saved and distributed via network for references by students. The digital recordings of the classes/meetings can be uploaded in website to review later.
- In order to conduct exams, institutions may consider using online examination software which may help for conducting online examinations. This will prevent institutions in facing delays in its annual academic calendar for lockdown.
- Very useful to some emergency service personnel like police, doctor and nurses etc. who are unable to spare a specific time to learn during lockdown can use the online recordings and pursue their education.
- Useful to women and physically handicapped learners who can learn at home.

Demerits of online learning during lockdown

- Not all children have the necessary knowledge, skills and resources to keep themselves safe online. Spending more time on virtual platforms can leave children vulnerable to online sexual exploitation.
- Learners from low-income families and disadvantaged groups are the more likely to suffer during online learning as they may not afford high-speed internet connection



and required technical gadgets. It widens gap between privileged and unprivileged learners.

- It may lead to laziness with some students being at their home and may lack self discipline.
- The atmosphere of a face-to-face meeting is lost. Interpersonal relationship between students and teachers or between students may hamper.
- The security of personal data may be compromise as one can hack the digital devices without latest software updates and antivirus programs.

Perception of learners on online learning during lockdown

- Felt happy due to utilisation of time in attending online classes during the lockdown period. Initially, faced some difficulty in joining online classes but got acquainted later on.
- Feeling lonely and unable to share feelings with peers. Observed poor audio/video quality in some locality due to poor network.
- Some emergency service personnel like police, doctor and nurses etc. who do not get much time to interact in online classes make use the recordings of online classes to pursue their study during the lockdown have shown their satisfaction.
- Requesting to facilitate practical based classes through virtual laboratories.
- Requesting to upload all recordings of online classes in website for further reference of the learners as well as educators as per their requirements. Using the online recordings of classes/meetings learners are able to revise the concepts again and again to clarify their doubts for better understanding the subject.
- Online teaching should be delivered in local/regional languages so that everybody could interact comfortably.
- Improved required technical skills due to Online Learning programme and requesting for provision of online examination during lockdown period.
- Online learning is felt to be less effective, less systematic and less organized than the conventional system of education. So, face to face classes for the same courses may conducted again after the end of lockdown
- Very effective for women and physically handicapped learners who can learn at home.
- Do not receive prior information on online class or induction meeting schedule and cannot attend.
- Feeling unhappy for not having required technically knowledge to join online learning and unable to afford required technical gadgets with high speed internet for online learning.

Perception of educators for online learning during lockdown

- Felt happy due to utilisation of time in conducting online classes during the lockdown period. Initially, faced some difficulty in conducting online classes but got acquainted later on and conducted the classes smoothly.



- Ensuring prior information on online class or induction meeting schedule would help the educators in better preparation of subject matter for efficient delivery of online classes/induction meetings.
- All recordings of online classes should be uploaded in website for further reference of the learners as well as educators as per their requirements.
- As the lockdown was declared unexpectedly, most of the institutions could not decide the rates of remuneration of educators for online classes. So, the financial issue relating to remuneration and expenditure towards internet data package should be clarified by the host institutions.
- As the learners are present at scattered places during online classes, it becomes difficult for an educator to monitor their activities in real time. It is also difficult to draw their attention towards the subject matter during the online classes.
- Very poor attendance and less interaction of learners are observed in online classes. Sometimes poor video and audio quality obstruct in smooth functioning of online classes.

Suggestions

Some useful steps for smooth functioning of Online Learning are as suggested below:

1. Online platforms with enhanced safety and safeguarding measures, especially for virtual learning tools should be ensured. The devices must have the latest software updates and antivirus programs otherwise the security of personal data may be compromised as one can hack the digital devices.
2. High speed internet connectivity should be ensured in order to improve smooth access for all including learners of disadvantaged groups and low-income families.
3. All should follow the new guidelines released by UNICEF and partners to keep kids safe during online classes.
4. Schools should monitor good online behaviours of children while conducting online classes.
5. Parents should ensure that children's devices have the latest software updates and antivirus programs. They should work with children to establish rules for how, when, and where the internet can be used. They should also speak to their children on how and with whom they are communicating online.
6. Social networking platforms should enhance online platforms with more safety measures, especially while using virtual learning tools.
7. Government should take necessary steps to train all stakeholders of education on online learning platform to tackle such crisis of lockdown during any pandemics. Government should create awareness on online education with safety measures for children and take measures to create awareness on cyber security.
8. Online learning is not affordable for all including the poor and disadvantaged groups of the society. So necessary steps should be taken by Government/educational institutions to minimise this gap between privileged and unprivileged learners.
9. Learners and educators must be familiar with Web-based interactions such as email, discussion boards and chat rooms before joining online classes.



10. Government/educational institutions should adopt the policy to provide free internet and free digital gadgets to all learners in order to encourage online learning as a result of which people would get engaged themselves during lockdown and remain safe from pandemics.

Conclusions

Online Learning is the most common method of distance learning today. During the lockdown period for Covid-19, online learning is the best platform to keep learners/educators engaged and safe by maintaining social distancing. Govt. of India has initiated different online learning platforms to continue educational activities during lockdown period which are also been recognised by UNESCO and World Bank. Online Learning method utilises various applications of the internet to distribute classroom materials and help learners and educators interact with one another. Using the various technologies available for Online Learning, educators can provide a more interactive distance learning experience by delivering real-time, synchronous video conferencing. Online learning is considered as future learning process and this platform has a potential of overall change in pedagogy of teaching learning in the modern world. However, necessary steps must be taken to train all stakeholders of education on online learning platform. Government/educational institutions should adopt the policy to provide free internet and free digital gadgets to all learners in order to encourage online learning as a result of which people would get engaged during lockdown and remain safe from pandemics. Online Learning is the best method of learning at this time of lockdown due to the outbreak of Covid-19 and further in-depth statistical study may be undertaken on impact of online learning during lockdown period.

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JOHN STEINBECK: MAN AND HIS WORKS

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Abstract

John Steinbeck (1902-1968) was a renowned American novelist who received Nobel Prize in 1962, especially for his keen social perception. His reputation extends worldwide. Yet at home, although Steinbeck has been widely read, he occupies a controversial position. He is unquestionably an author greatly concerned with the struggle of the American working class. He also receives an abundance of doubt because the radical tradition often required authors to sacrifice the quality of their art for the sake of propaganda. He was mostly unwilling to make such sacrifices, and while one could argue that he maintained his artistry while also living up to the notion that 'the proletarian novel is motivated by didactic aims,' the resounding conclusion is that his works are works of art, not propaganda. In order to examine Steinbeck's relationship with the radical tradition, we must first acknowledge that these two halves of the equation are not irresolutely divided. In addition, while there is certainly some division between radical novels and novels influenced by radical principles, both of these forms are representative of the literary movement to the left that took place in the United States until the end of World War II. This serves as an adequate cutoff point not only because war often serves to separate historical periods, but also because the rapid expansion of capitalism during the industrial boom created by the war effort put an end to the economic restriction that had been lingering since the depression.

Key Words: Social Perception, Controversial Position, Radical, Capitalism, Depression.

As the author of multiple searing portraits of society such as *The Grapes of Wrath*, *Of Mice and Men*, and *In Dubious Battle*, Steinbeck is often classed within the school of American naturalism. Such a classification, however, also prompts a debate about just what naturalism is, particularly the American version, and how far Steinbeck subscribed to its tenets. The 'naturalist' tag certainly seems set to stay with Steinbeck, however, as it has done from his time to ours, and as such it is worth examining his work in the light of another writer generally credited as being a founder of the American literary naturalist movement at the beginning of the twentieth century, Frank Norris.

We can begin with a brief consideration of what "naturalism" could mean. Historically, there has not been too much agreement on this, among either European or American observers. What is beyond dispute, however, is that naturalism has its roots in the idea of scientific determinism, which gained currency in the late nineteenth century in the wake of rapid social changes, such as industrialization and urbanization, and the rise of new scientific and philosophical ideas (most notably



Darwin's Theory of Evolution) that threw traditional religious beliefs into question. Put simply, the naturalists believed that individuals' lives and characters are governed and determined by impersonal natural laws and forces, such as social conditions, the environment, and heredity. They took their cue from Darwin and played up the biological and hereditary factors that constrained individuals as well as the idea that life is a struggle and only the fittest survive. To this end, many naturalists focused their work on those who are worst off in society, emphasizing the role of instinct in survival and depicting realities, such as ex, that, at the time, seemed sordid. The French novelist Emile Zola remains perhaps the single best-known exponent of the school. The naturalists ostensibly tried to treat their material scientifically. They aimed to strip their fiction of all illusion and dispassionately record the objects, actions, and forces of their societies. But few if any of the naturalist authors successfully executed this program; after all, as has often been noted, it works against the very ideas of fiction and of art, which necessarily require a degree of artifice. Furthermore, as Jackson J. Benson, an eminent Steinbeck biographer, notes, the idea that all human beings are doomed at every moment to act or be acted upon according to circumstances external to them, such as birth and class, hardly makes for interesting fiction: 'That man can act, that he has a measure of free will, and that the choices he makes are from genuine alternatives . . . this is what we call a story' (Benson 1984: 106-7). The naturalist writers believed it their duty to have an unflinching fidelity to the harsh realities that rarely intruded into nineteenth-century realist novels, but they realized that their fiction needed to be something more than mere documentation. For many naturalist writers, the movement in fact provided a new scope for a different kind of tragedy, fatalism under a new scientific name, and their art, they argued, became a search for the great fundamental truths about the human condition that they felt that the prevailing mode of realism could not encompass, as it merely scratched the surface of things. In America, naturalism included alike Jack London's tales, which were set in the wilderness, away from the protection of civilization, and included both human and animal characters; Stephen Crane's and Theodore Dreiser's stories, which centered on the elemental passions at the very edges of society that peeped through the thin veneers of duty and convention; and Norris's stories, which depict the struggles of common men and, in some cases, the slow reversion of a man to a brute.

The examination of John Steinbeck as a novelist of social concern encompasses decades of evolution for both America as well as for the author himself. By examining three of Steinbeck's most left bound novels it becomes clear that his works not only adopt leftist principles, but also exhibit an ongoing struggle for Steinbeck to define his own philosophical and political views, which happen to share several common themes with Marxism. *In Dubious Battle* was published in 1936 and illustrates Steinbeck's disagreement with the communist movement of the period. The novel demonstrates the burgeoning of Steinbeck's interest in the phalanx, and analyzes the group-man phenomenon in relation to the labour organizations of the 1930's. *The Grapes of Wrath*, published in 1939, illustrates the blending of radical sub-genres and other mediums of the period, as well as the evolution of Steinbeck's communal vision. The Joads illustrate the continuation of Steinbeck's philosophy of the phalanx, and serve as the space in which he works out these beliefs from multiple perspectives. *Cannery Row*, published in 1945 as World War II came to a



close, displays a more fully developed vision of communal existence that exemplifies Steinbeck's own leftist beliefs. The denizens of *Cannery Row* provide Steinbeck with the means to treat a small group as representative of his anti-capitalistic communal vision for society as a whole (Aaron 1992:55).

Running throughout all of these novels there are a few recurring elements to be analyzed. Steinbeck's beliefs appear parallel to Marxism in several ways. An analysis of these similarities will help to illustrate where Steinbeck aligns with the radical tradition, as well as where he does not. Secondly, each novel contains a character or characters seemingly in tune with Steinbeck's own leftist beliefs, and an analysis of these characters yields a thorough depiction of Steinbeck's own political and philosophical development. The transition that takes place brings Steinbeck from texts like *In Dubious Battle* that allow him to work with the idea of the group-man as part of their narrative, to texts like *Cannery Row* that are designed with the philosophy of the phalanx at the forefront. This evolution of Steinbeck's concern with the phalanx, or the group-man phenomenon, will form the core of this argument. This is the most important point of consideration, and the analysis of Steinbeck's Marxist content and the use of mouthpieces will revolve around this discussion of the group-man concept. This philosophy of the phalanx forms the heart of Steinbeck's radical vision. Steinbeck's preoccupation with collectivity is also what serves to set him apart from many of the other radically concerned authors writing in the same period, as well as what places him in a closer proximity to a more collectively concerned organic communism.

While Steinbeck's novels are repeatedly concerned with the concept of the group-man and the idealism of a communal existence, other authors of the period such as John Dos Passos were constructing an image of a far more fractured and isolationist United States. The majority of the novelists known to be aligned with leftist beliefs were illustrating the principle Lukacs sets forth in *The Theory of the Novel* that, 'to be a man in the new world is to be solitary' (Lucas1978:36). In the U.S.A. trilogy Dos Passos' characters interact through a series of business dealings and sexual liaisons, but none of them ever form any lasting relationships, either platonic or romantic, that provide even a modicum of the dependable reliance that exists between many of Steinbeck's characters. Steinbeck presents his own commentary on the isolation felt by the cogs of the proletariat in *Of Mice and Men*, when George and Lenny form a rare and inexplicable bond that is forced to dissolve, leaving their communal vision of the American dream lying bloody in a riverbed a few miles south of Soledad—a location that drives home the message of a solitary existence. The explanation of Steinbeck's approach in contrast to other authors of the period may stem from the notion that radical authors tended to address these social issues either from a position supporting the working man, or one condemning the lifestyles of the upper class. Steinbeck relies almost entirely on the first of these two options. Sherwood Anderson's *Poor White* nicely blends critiques of the workingman's struggle and the upper class's luxury, but Anderson's characters still remain divided individuals. Even in marriage Hugh McVey is denied the sense of belonging he seeks throughout the novel. While *In Dubious Battle* is not an overly optimistic novel, as his vision evolves Steinbeck leaves behind some of his cynicism and becomes more singularly concerned with group-man and the hope that collectivity offers



both as an escape from isolation and a way out from under the grinding yellow heel of capitalism (...ibid:37.).

Sinclair Lewis was also concerned with the need for leftist literature, even though he was skeptical of the Communist Party's influence over the genre. The novel *Babbitt* demonstrates his critique of capitalist society, although, like Steinbeck, Lewis does so in a rather unique style. George Babbitt lives a solitary lifestyle, in which his friendships are shallow, his business relationships are superficial, and his familial connections have run cold. Babbitt cannot even find solace in the arms of another woman. There is no place in which he can find a sense of belonging, because he is unable to make even the most basic of human connections. Lewis does a masterful job of depicting Babbitt as a solitary figure even when he is in the company of others. The novel may not focus on the working class, but George's awkward middle-class position denies him the ability to belong either above or below, forcing him to become an outsider. *Babbitt* does not conform to almost any notion of the radical tradition, except for this basic isolation that serves as a symptom of existing within a capitalist system. Steinbeck incorporates this theme as well, but he does so while providing the image of collectivity as an alternative. Lewis, Dos Passos, and Anderson all depict a lamentation of isolation, rather than a hope for collectivity.

This analysis of Steinbeck's novels must also be mindful of how his foray into radical literature is shaped by other texts produced by radical novelists, and the fact that what may in fact be his most radical text is not produced until he begins to write in a style that is more uniquely his own. The examination of these novels will illustrate the way that Steinbeck's brand of leftist philosophy is controversial because the parallels between his works and the concerns of the Communist Party set forth by Marxist principles result from an organic agreement between Steinbeck and the foundation of leftist philosophy. Steinbeck strives to act according to his own principles, as he is reluctant to be spoon fed communism, but left to his own devices his philosophy remains similar to a more fundamental set of Marxist beliefs. The separating factor in this relationship comes down to the mysticism laced within Steinbeck's moral philosophy, which Marx would most likely consider to be a display of naivete. Steinbeck's vision is one of hope for humanity through reliance on one another, and the communal vision that develops over the length of his career is what makes him a truly radical novelist, even if not by the usual standards of the radical tradition as set forth by critics like Rideout and Foley. As a whole, Steinbeck conveys love and tolerance for human foibles, compassion for suffering and loneliness. His is the spiritual beacon of connection.

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ANTI-HYPERGLYCAEMIC STUDIES OF *STEVIA REBAUDIANA* FOR DIABETIC PATIENT

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Abstract

In this study tried to observe the effect of *Stevia rebaudiana* dry leaf powder on patient (male and female) who suffering from diabetes of non-identical age group. *Stevia* dry leaf powder was taken under daily vegetarian non-oily diet and half an hour exercise and comparison has been made with medicine of diabetes, without medicine and with *Stevia* dry leaf powder consume. *Stevia* dry leaf powder has been replaced with sugar. *Stevia* dry leaf powder was consuming two times a day with tea or coffee or milk and finally observed that fasting blood sugar and post prandial blood sugar was decreased while taking *Stevia* with medicine.

Key words: *Stevia*, Anti-Hyperglycaemic, Stevioside, FBS, PPBS.

1. Introduction

Stevia rebaudiana is a source of non-caloric natural sweetener (stevioside) belongs to family Asteraceae. *Stevia* is grown in whole world. *Stevia* is known as for its sweet leaves. *Stevia* has been cultivated at-first in Paraguay. And then cultivated since long time in Southeast Asia and China. In international market one of the major cultivators of the *Stevia* has been India. Steviol-glycoside is evaluated to be 250-300 times sweeter than sugar (Kolb et.al. 2001). It is now in cultivation for the production of its sweetening compounds. It contains two major glycosides i.e. Stevioside and rebaudioside-A. Stevioside has non-caloric and sweetening property, which is responsible for gaining attention as low-sugar food alternatives (Kalpana et al., 2009). In india and in whole world diabetic patient are growing gradually in numbers. Evaluation by World Health Organisation, there will be about 270-300 million cases of diabetes all over the world by 2025(Friedman, 2002).

Stevia powder and extracts used for diabetes mellitus treatment in whole world (Kingham and Soejarto, 2002). Examined by Susuki *et al* (1977) confirmed the anti-hypoglycemic effect of stevioside. Different type of drugs is available in whole world's market for control diabetes. Allopathic drugs cause different side effects and prevention of diabetes without side effect is impossible for medical community. There are various traditional herbs are available and consumed by the Indian control and prevent diabetes. Some traditional antidiabetics herbs or plant who control diabetes. Giloy (*Tinospora cordifolia*), Gudmar (*Gymnema sylvestre*), Methi seeds (*Trigonella foenumgraecum*), Kurri patta (*Murraya koenigii*) and *Sadabahar* (*Vinca rosea*) are the best plants for decrease blood sugar level. But they all have bitter in taste. The eating habit of Indian people is major problem of incurable diabetes. Gudmar, Giloy and Methi were used alternate to prevent type I and type II diabetes mellitus. It is used less because of the



bitter taste. Indian peoples prefer vegetarian and non-vegetarian diets and tea with sugar three to four times in a day. Many researchers observed that *Stevia* is best antidiabetic herb and sweeter than sugar. *Stevia* is a natural alternative of sugar and diabetes controller. (Preethi et.al. 2011; N.Bharati 2003).

Diabetes is a silent killer. There are two type of diabetes, Type-I is Insulin dependent diabetes mellitus (IDDM) and Type-II is Non-insulin dependent diabetes mellitus (NIDDM) (Lokesh D. Et al., 2006; Yarborough PC. Et al., 2001). Both type of diabetes lead to high blood sugar levels, this condition called hyperglycemia and a chain of subordinate complications caused by low level of insulin. Over a long period of time, hyperglycemia damages eye retina, kidney's blood vessels, nerves, liver, heart and other blood vessels.

In now days' scientific experiments shows that *Stevia* herb is the best for health. *Stevia* leaves contain phyto-chemical constituents that help to prevent blood sugar, cholesterol, obesity and blood pressure and heart disease. Chlogenic acid is one of the best compounds of *Stevia* leaf. Conversion of glycogen to glucose, blood sugar level and absorption of glucose reduced by chlogenic acids. *Stevia* is used as an enhancer of flavour, taste of food and anti-bacterial properties. In world *Stevia* used widely in Jams, Jelly, chocolates, Sauces, Confections, Ice-creams, Sweets, Beverages, Alcoholic beverages, Pharmaceuticals, Cosmetics and Dental products. It is also used in tea, coffee and all dairy products in high range. On dry basis leaf have stevioside of 8% to 10%. 100gm of *Stevia* leaf replace 2000gm of can-sugar. There is no effect of heat, pH, fermentation and no changed while cooking of *Stevia*.

2. Material and Methods

Stevia rebaudiana leaves were collected from Medicinal Garden of Department of Plant Physiology, College of Agriculture, Jawaharlal Nehru Krishi Vishwavidhyalaya, Jabalpur, (M.P) and dried leaves were grinded in mixer and sieve. than stored in damp proof polythene bags. 1gram of *Stevia* dry leaf powder was consumed with tea/coffee or milk in replaced with sugar.

Experiment were applied on Ten patients who were vegetarian, out of ten, five patients were women and five patients were men and the age group was 40-65 years. During the experimental period it was advised to take balanced vegetarian non-oily diet and do half an hour exercise and said that for regular check-up in pathology (by pathologist) or home (by glucometer). Before the experiment medical history and diabetic reports of patients were examined. Experiment trial was for 80 days. First 20days patient was given medicine and their fasting and post prandial diabetic level were measured, then for next 20 days they were not given any medicine under normal vegetarian non-oily diet and their prandial and fasting glucose level were measured and then for further 20 days they were given medicine with *Stevia* leaf two times a day with tea/coffee and their glucose level were measured, then for next 20 days they were given only *Stevia* leaf dry power (without medicine) under normal vegetarian non-oily diet and their prandial and fasting glucose level were measured.

3. Result and Discussions

A normal range of FBS is 70-100 (mg/dl) and PPBS is 100-140 (mg/dl) in a normal healthy person. During the experiment all patients were followed the all instruction related food and exercise. In experiment at first, patients were taking medicine for 20 days regularly as they were taking under normal vegetarian non-oily diet and noted their Fasting blood sugar (FBS) was 103.14 and Post prandial (PPBS) blood sugar was 146.64 (Table 1). For next 20 days patient were stop taking medicine under normal vegetarian non-oily diet and in the supervision of physician and checked their FBS was 134.08 and PPBS was 305.6 respectively. There is significant difference in both FBS and PPBS which shows that while taking medicine their FBS and PPBS were under control (Table 1). For further 20 days patients were given *Stevia* leaf powder (1g to 3g) two times with tea and taking regular medicine And FBS and PPBS were checked which was 92.31 and 124.12. There was significant decrease in the FBS and PPBS level while consuming *Stevia* leaf powder with medicine (Table 2). And the last 20 days we tried to observe that diabetic patients were consumed only *Stevia* leaf powder without medicine in while considering both FBS & PPBS. There is FBS and PPBS significant decrease with *Stevia* consumption but not given satisfying result. Their FBS and PPBS 101 was 139.07. (Table 2).

Table1: Fasting and postprandial blood sugar with and without medicine for 20 days under normal vegetarian non-oily diet

S.No.	Patient	Gender	Age	Fasting blood sugar (mg/dl)	Post prandial blood Sugar (mg/dl)	Fasting blood sugar (mg/dl)	Post prandial blood Sugar (mg/dl)
				With medicine After 20 days	Without medicine After 20 days	With medicine After 20 days	Without medicine After 20 days
1	A	M	42	108.4	145.2	128.3	315.5
2	B	M	48	99.6	142.9	129.4	257.6
3	C	M	53	94.7	149.4	145.6	196.4
4	D	M	64	119.4	157.3	134.5	289.5
5	E	M	55	112.6	149.5	155.7	487.6
6	F	F	51	93.3	158.7	159.3	267.8
7	G	F	59	104.4	156.6	130.2	233.2
8	H	F	62	88.3	134.9	113.5	376.7
9	I	F	47	107.5	132.8	119.1	245.4
10	J	F	45	103.2	139.1	125.2	386.3
Mean				103.14	146.64	134.08	305.6

**Table2: Fasting and postprandial blood sugar medicine with *Stevia* and without medicine with *Stevia* for 20 days under normal vegetarian non-oily diet**

S.No.	Patient	Gender	Age	Fasting blood sugar (mg/dl)	Post prandial blood Sugar (mg/dl)	Fasting blood sugar (mg/dl)	Post prandial blood Sugar (mg/dl)
				With medicine + with <i>Stevia</i> After 20 days		Without medicine + with <i>Stevia</i> After 20 days	
1	A	M	42	100.2	121.2	101.9	132.4
2	B	M	48	94.3	142.1	95.5	142.6
3	C	M	53	88.8	124.4	90.5	141.3
4	D	M	64	103.3	134.7	105.4	137.5
5	E	M	55	101.4	127.6	103.6	139.6
6	F	F	51	86.6	132.8	89.6	145.8
7	G	F	59	89.9	136.7	112.7	129.9
8	H	F	62	80.8	112.5	98.2	138.1
9	I	F	47	92.3	103.3	104.7	143.3
10	J	F	45	85.5	105.9	107.9	140.2
Mean				92.31	124.12	101	139.07

4. Conclusion

In the above results we observed that *Stevia* dry leaf powder effected both fbs and ppbs blood sugar levels positively but not statistically significant. It can be concluded that various chemical constituents present in *Stevia* leaf. Taking *Stevia* leaf powder with medicine reduces diabetes level. Stevioside is helpful in reducing the effect of type I and type II diabetes. Continuous use of *Stevia* will reduce the amount of medicine gradually.

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MANAGEMENT OF E-RESOURCES AND PRINT SUBSTANCE IN LIBRARIES

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Abstract of the Paper

New technologies and the increase in availability of information have led to a significant shift in users expectations for libraries. Users want fingertip access 24/7 availability and ease in finding and using Print and Electronic Resources. University libraries are an essential organization to collect printed materials such as books, journals, magazines, newspapers, Periodicals, references, theses and electronic resources such as audio and visual resources like CD s, DVD s, E Journals, E books, Online Databases and other type of E Resources The advent of IT has made a clear and pervasive impact in almost every area of library services. As such, the library environment has undergone a rapid changes leading to new generation of libraries with an emphasis on e- resources. Moreover, as the popularity of e-resources increases, the librarians and staff are also concerned about e-resources, their methods accessing, evaluation, selection, organization etc. The present paper is an aim to know how to manage e-resources in the modern LIS for better digital information services and challenges facing with e-resources.

Keywords : E-resources, Visual Resources, Electronic libraries, Consortia, Information Technology.

INTRODUCTION

Libraries function as a crucial technology hubs, not merely for free web access, but for those who need computer training and assistance. Library business centers help support entrepreneurship and retraining.

Prof. Scott Turow

Library is the heart and soul of the College. Libraries were the store house of knowledge centres (Granthalayalu Vignana Bandagarulu). Since age old information has been passed on to the progeny through oral by word of mouth and recitation by students, then as centuries passed on different means were employed to communicate previously papyrus, clay stones, thala patra, Burj patra and from there evolved and transformed to paper based information society. Now 21st century is witnessing the new scenario of paperless information or what we call the e-resources. The development of information Technology has in evidently helped in globalising the information flow from any part of the world. The huge amount of Information generated using ICT has created an information explosion. In order to maintain and retrieve the information resources generated from various sources and for various purposes has to be streamlined and made available to the users living in any part of the world has become a challenge.



New technologies and the increase in availability of information have led to a significant shift in users expectations for libraries. Users want fingertip access 24/7 availability and ease in finding and using Print and Electronic Resources. University libraries are an essential organization to collect printed materials such as books, journals, magazines, newspapers, Periodicals, references, theses and electronic resources such as audio and visual resources like CD s, DVD s, E Journals, E books, Online Databases and other type of E Resources. The Library Managers are required to cope up with the increasing demands of faculty, students and researchers against all odds like dwindling budget and decreasing staff. Librarians are forced to work together due to economic realities and technological possibilities paving the way for forming subscription clubs for e-journals, not just clubs but strategic alliances with broad based objectives. The consortia can be defined as a strategic alliance of institutions having common interest. The main aim of a consortium is to achieve what the members of the group cannot achieve individually. The developments in information retrieval system and faster access technologies have enabled the libraries to come together for licensing the information available in digital form.

The University libraries are supporting teaching, learning, research, promoting educational activities and providing a high quality information to its user. Information technology, especially the Internet has profoundly changed the ways of publishing. Newspaper, magazines and periodicals have for years been published in Print and Electronically all kinds of texts are now available in digitized form. Publishing is changing with the increasing importance of computer technology. Publications are appearing with mixed media and increasingly in a completely electronic format.

The e resources are found in various formats like E-books, E-journals, Online databases, CD-ROMs, Reference sources etc. We found that the uses of e-journals are very popular in academic institutions. The other web resources like Online databases are also using in various libraries, but the printed books are not replacing with e-books as compared with e-journals. There are several reasons like technological limitations, tendency of user etc. An attempt has been made here to highlights some issues of e-books and its uses in academic environment. University libraries are changing dramatically by adopting new technology in all activities and services of print to electronic media like Print Journals to E Journals.

Over the past few years, libraries and information centers have been greatly affected changes in IT, and the rate of changes still is still accelerating in this era. IT is now able to create:(i) new products, processes and machines that can be used independently, customized information packages, video cassettes, home information products, personals computers and reprographic equipments (ii) external dependents, database online information system (iii) cooperative library information networks and (iv) electronic information processing system such as the electronic book. IT has been able to abridge time and space dimension in communication .In order to cope with the



present development in IT, modern libraries are now adopting various electronic resources for its collection developments to fulfill the requirements of different users in a better way. However to achieve the goals of an ideal information system there is a need to select, evaluate and organize the e-resources in the best possible way as to provide maximum ease, both to the users and the staff for its access and retrieve at all times.

E-RESOURCES

E-resources are those electronic products that delivers a collection of data, be it text referring to full text basis, e-journals, image collection, other multimedia products and numerical, graphical or time based, as a commercially available till that has been published with an aim to being marketed. These may be delivered on CD-ROM, on tap via the Internet and so on. According to Barker, there are three types of documents used in digital resources. Static- Static are the most basic, they contain fixed information and never change their form (such as traditional online data). Dynamic-Dynamic documents also contain fixed information but also able to change their outward form, the way embedded material is presented to users (such as multimedia CD-ROMs). Living - Living documents are able to change both their form (outward appearance) and these embedded information (such as information contain on the web.)

Electronic publishing has led to new era of communications and information sharing .It creates opportunities for users as well as authors and publishers. Many of the electronic books or electronic publishers ' web site freely permit and encourage readers to provide feedback on works, often directly to the author rather than to the publisher. Nevertheless users may establish their own accounts, charge services to credit cards or pay by prearranged method, and have requested material delivered directly to them by fax, e-mail, etc. Today, libraries of all kinds have been spending larger and larger shares of their budgets to adopt or gain access to electronic resources from publishers and vendors. This is due the fact that e-resources have enabled libraries to improve services in a variety of ways. First, most e-resources come equipped with powerful search-and-retrieval tools that allow users to perform literature searches more effectively and efficiently. Moreover, since most relevant e-resources are now available through the web, users can have desktop access to them 24 hours a day. And also the users can navigate directly from indexing databases to the full text of an article and can even follow further links from there. Nevertheless, the emergence of e-books and e-journals followed the widespread adoption and use of electronic mail, list servers and discussion groups to disseminate information quickly to large audiences.

SELECTION OF E-RESOURCES

Selection is not a new term to librarian and staff as they have been doing it since long back the libraries started acquiring printed material. However libraries are now focusing to adopt e-resources information technology approaching towards the e-resources rather than printed materials as technology developed. In fact, the emergence of Internet, particularly, the www (World Wide Web) has a triggered proliferation of



web based full text online resources as a new media of information delivery. As the web has grown, not just in popularity and use, but also in content, librarians are trying to meet the needs of the user and identify new resources, such as online databases, web based resources, collections in digital library, ebooks, e-journals etc.

The selection process should be done in relevant with the demands of the users, committee, focus group, users recommendation etc. Apart from this, it should taken into consideration the following steps:

- to identify library needs;
- to identify content and scope of the e-resources;
- to evaluate quality of that particular resource and search capabilities;
- to estimate the cost;
- to check either subscription based or web based when acquiring;
- to evaluate the systems and technical support;
- to review licensing agreements;
- to evaluate application software and installation, updated sporadically or in regular schedule; and
- to check the facilities for educational support and training.

EVALUATION OF E-RESOURCES

Evaluation of resources assumes a greater importance due to the large e-resources such as e-journals, database, e-text, etc available on the net. Authority, currency, intended audience, ease of use accuracy etc are some responsible criteria for evaluation of e-resources. Moreover, extensiveness of the content, accessibility, quality of technical support, cost, conditions of licensing agreement are also other responsible factors which should taken into account.

With the evaluation of e-resources the followings should be should be considered to identify the electronic version have the retrospective data (as mostly electronic resources do not include data prior to some year); to determine particular source of information of e-resources offer any special features which are not available in other print version; to check the content of the e-resources with relevant to the users as well as to the collection as a whole; to check whether the information is often updated or not; to determine the e-resources have affordable price or not though offered diverse pricing system by the publishers; to identify the method of accessing of e-resources available; to identify the e-resources needed to maintain and redesign the library website identified; to check the staffing needs for training of recruiting with the existing technology.

In any Library Information System (either traditional or modern library system), organization of resources is also one of the important and crucial works to function smoothly the library services. As such, the system manager should have good professional skills to organize the available resources effectively. In a modern digital library information system, the professional should have skills like computing, database



management, networking, and other management skills relating to IT environment. Therefore, the system manager should keep in mind the following points while organizing the e-resources: to include those resources either in OPAC or to make different list for browsing; to organized accessing under a separate authority; to provide access either by alphabetical or under specific subject headings; to organize the e-resources within the context of other resources and websites; to check the method of access to e-resources, abstracting or full . Since most of the users search the resources under subject heading predominantly, organization of eresources should be in such a way that the users could be able to retrieve different sets of information or records.

CHALLENGES FACED WITH E-RESOURCES MANAGEMENT

The adoption of e-resources has made great advantage over the library services. In fact, most of the users are satisfied with such facilities since they can easily retrieve their required information within a short period of time. However, libraries face a number of challenges as they seek to continue offering the high level of services that users have come to expect. Some of the challenges facing with e-resource management are discuss below.

Preservation- Though the e-resources are enabling information to be created, manipulated, disseminated and located with increasing ease, preserving access to this information poses a great challenge. Unless, preservation of digital information is actively taken, the information will become inaccessible due to changing technology platform and media instability.

Lack of professional skills- Due to lack of management and technical skills, the library professionals is not able to handle the e-resources. The professional staffs are required to constantly update their own knowledge and skill base so as to work in today's rapidly changing digital environment.

Inadequate library fund- Most of the libraries have inadequate fund for acquiring e-resources and so the users do not get their needy information at the right time. Libraries are at a disadvantage when acting alone in this environment and there is need for cooperative purchasing through library consortia.

Technical infrastructure- In a digital information service system, infrastructure such as software, hardware, internet facilities and other physical equipments are required to provide easier, faster and comprehensive access to information. Therefore, libraries in the digital age need to enhance and upgrade current technical architecture to accommodate e-resources.

Lack of cooperation of staff members- The support and cooperation of staff members, programmers and technical staff are very essential to provide effective service in a digital environment. As such, the library staff should not only be technically competent but should also user-friendly-approach.



CONSORTIA SUBSCRIPTION TO E-RESOURCES

It is known that libraries and information centers are not able to procure, organize and disseminate vast amount of information due to lack of adequate fund and budget. Nowadays, consortia subscription to e-resources through consortia of libraries is a viable solution to increase the access to e-resources at a lower cost. Library consortia refer to cooperation, co-ordination and collaboration among the libraries or institution for the purpose of resource sharing. The libraries all over the world are forming consortia of all types and at all levels with an objective to take advantage of global network to promote better, faster and most cost effective ways of providing e-resources to the information seekers. The collective strength of consortia members facilitates to get the benefit of wider access to electronic resources at affordable cost and at the best terms and conditions.

CONCLUSION

With the rapid advancement in computer technology along with information technology, libraries and information centers have been blessed with electronic materials and therefore libraries are gradually shifting towards the electronic libraries with electronic resources. As such, libraries therefore are now increasingly involved in creating and acquiring e-resources. The availability of IT based electronic resources has exerted ever-increasing pressures on libraries and there is no doubt that e-resources are expanding rapidly. However, in order to meet the ever increasing demand of the user community in a digital environment, libraries have to develop ways to manage access to materials available in electronic format and to effectively share them much as they have shared print resources for over a century through inter library lending.

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WORKING CAPITAL MANAGEMENT EFFICIENCY AND RETURN ON CURRENT ASSETS WITH REFERENCE TO NATIONAL STOCK EXCHANGE OF INDIA LISTED METAL INDEX FIRMS

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ABSTRACT

The present study is on efficiency of working capital management in NSE of India Metal Index firms of India. The study was based secondary data which is derived from CMIE prowess package for NSE Metal Index firms. The data for ten companies are collected through convincing sampling method for the period of five years from 2014-18. To measure the efficiency of working capital management an efficiency index is constructed and compared with firm's profitability, and Return on Current Assets is used as proxy for measuring the firms' Profitability. The paper used statistical tools like correlation, and regression model, with diagnostic tests for justification of accuracy of the model. The study highlights that selected firms doesn't have significant relationship with earnings of the firms.

Keywords: Working Capital Management Efficiency, Efficiency Index, Return On Current Assets

II. INTRODUCTION

The concept of working capital management is one of the important functions of finance manager and all decisions of finance managers are related to efficient management of working capital. The accounting strategy of the management which is plotted to observe and utilize the current assets and current liabilities in a significant way is called as working capital management. The theoretical aspect towards significance of working capital management is more emphasized in many text books and research papers. ^[i](Wahieda et al. 2016) suggested that the efficient working capital management of plays a significance role in sustaining of smooth operations of any business with enhanced performance. ^[ii](Dinga, Guariglia & Knight, 2012). Heighted that an effective working capital management of will boost the firms to reduce the effects of financing compulsion on fixed investment.

An efficient working capital management ensures improvement in the credit policies and solvency status of the company. ^[iii](Aktas, & Croci, & Petmezas, 2015). Highlighted, efficient working capital management resolves the problem of under utilisation of fixed assets of the business. The metal industries are highly capital-intensive industries and the adequate supply of working capital is a significant move to improve operations of the business. The earnings of very business are dependent on smooth functioning of operational activities and overall operational efficiency is relied on sufficient supply of working capital. A very few attempts were made to understand the relationship between to WCM efficiency and ROCA in metal industries.



III. REVIEW OF LITERATURE

A study conducted by ^[iv](Filbeck and Krueger, 2002) has revealed that there is an existence of significant inverse relationship between profitability and liquidity of companies in United Kingdom. ^[v](Samilogu and Demirgunes, 2008), also states, that there exists a linkage between the management of working capital and firm's profitability and they found that the cash conversion cycle has no effect on firm's profitability. ^[vi](Van Horne 1969). WC has been financed from internal as well as external sources. If the liquid assets are at high level then there will be greater chances of not meeting the current payables. ^[vii](Arunkumar O.N. and T. Radharamanan, 2012). The correlation analysis shows that profitability has negative correlation debtor payment period, and inventory period and creditor's payment period. ^[viii](Raheman A, Nasr M, 2007) there is a significant and negative relationship between net operating profitability and the inventory conversion period in days. It specifies that shortening the number of days of inventories turnover can maximize the firm profitability and hence create shareholder wealth. ^[ix](Azhagaiah Ramachandran & Muralidharan Janakiraman, 2009), they highlighted that paper industry have less profitability and due to which this firm waits for longer period to declare their dues.

IV. RESEARCH METHODOLOGY OF THE STUDY

The present study is based on the secondary sources data, which are selected from CMIE prowess (package) software from Central University of Karnataka. The data which is collected are analyzed and used with due care as per the requirement of the analysis. The sample size for the study is ten firms from group of thirteen firms. The samples are chosen on convenience sampling method, and the data collected for 2014-2018 period. The endogenous variable of the study is Return on Current Assets as measure of firm's earnings (firm's profitability) and exogenous variable is Efficiency Index. The study used descriptive statistics, Mean, Standard Deviation, Minimum, Maximum, Correlation, Panel data regression model, Hausman test, Breusch and Pagan Lagrangian multiplier test.

V. OBJECTIVES OF THE STUDY

- The prime objective of the study is to evaluate the relationship between the WCM efficiency and ROCA of the metal index firms of NSE in India by using the Efficiency Index.
- The secondary objective of the study is to analyze the performance and utilisation of current assets for the given period, by using the Utilisation Index and Performance Index.

VI. DATA MEASUREMENT

Correlation coefficient analysis is used to analyze the relationship between the two variables such as dependent variables. ^[1]Panel data analysis is a statistical method, widely used to analyze cross sectional and longitudinal in panel data. The data are usually collected over time and over the same individuals and then a regression model is

¹Wikipedia contributors. (2018, September 17). Panel Analysis. In Wikipedia, The Free Encyclopedia. Retrieved 10:22, August 29, 2019, from https://en.wikipedia.org/w/index.php?title=Panel_analysis&oldid=859933867

run over these two dimensions.^[2] In fixed effect model heterogeneity or individuality is allowed in all firms of sample analysis by allowing to have its own intercept value, the term fixed effect is due to the fact that although the intercept may differ across all the data, but intercept does not vary over time, that is the time invariant. In case of the random effect model all the data have common mean value for the intercept.^[3] Breusch and Pagan Lagrangian multiplier test is used to test for heteroskedasticity in a linear regression model. It assesses whether the variance of the errors from a regression model is dependent on the values of the independent variables. Hausman test, this test evaluates the consistency of an estimator when compared to an alternative, the Hausman test can be also used to decide whether fixed effects model or random effects model is significant in panel data. For the measurement of working capital management efficiency, the paper has adopted the index developed by^[x] (Bhattacharya, 1997). He suggested that instead of using the accounting normal ratios; he developed the utilization index, performance index and efficiency index for measurement and evaluating of working capital management efficiency. Following are the three-index developed by Bhattacharya

^[4] **Performance Index (PI):**

$$\text{Where, } PI_{WCM} = \frac{I_s \sum_i^n I \frac{W_{it}(t-1)}{W_{it}}}{N}$$

I_s = Sales index defined as: S_t / S_{t-1} ,

W_i = Individual group of current assets

N = Number of current assets group

And, $i = 1, 2, 3 \dots N$

Utilization Index (UI):

Where, I_s = Sales index defined as $\frac{S_t}{S_{t-1}}$

$$\text{Where, } UI_{WCM} = \frac{A_{t-1}}{A_t}$$

A = Current assets / Sales

In this study Current Assets includes, namely inventories, account receivable, other current assets as stated in the firm's annual reports.

Efficiency Index (EI):

Where: $EI_{WCM} = PI_{WCM} \times UI_{WCM}$

Return on Current Assets

Where, $RCA_{WCM} = \frac{PAT_{it}}{CA_{it}}$

PAT_{it} : Profit after Tax; CA_{it} : Value of Current Assets;

(Current Assets include, namely inventories, account receivable, other current assets as stated in the firm's annual reports.)

²Wikipedia contributors. (2018). Panel Analysis. In Wikipedia, The Free Encyclopedia. Retrieved 10:22, August 29, 2019, from https://en.wikipedia.org/w/index.php?title=Panel_analysis&oldid=859933867

³Wikipedia contributors. (2019). Breusch–Pagan test. In Wikipedia, The Free Encyclopedia. Retrieved 10:57, August 29, 2019 from https://en.wikipedia.org/w/index.php?title=Breusch%E2%80%93Pagan_test&oldid=897232675

⁴Bhattacharya, H., (1997). Total Management By Ratios, New Delhi, Sage Publication India Pvt. Ltd.,

VI. (a). Hypothesis of the study

H_1^0 : The paper industry as a whole does not have the ability to utilise all the CAS for the purpose of generating sales.

H_2^0 : The metal Industries, as whole does not have efficiency in WCM

H_3^0 : There is no significant relationship between WCM efficiency and ROCA of the Metal industry in India

Following equation is formulated for the measure of ROCA

To test the above-mentioned hypothesis and to understand the relationship between firm's profitability the study has taken Index's constructed by Bhattacharya, and they are Performance Index, Utilization Index and Efficiency Index and they are taken as exogenous variable to define on the endogenous variable i.e. Return on Current Assets. In the model return on Current assets is a proxy for firm's profitability.

$$\log RCA_{it} = C + \beta_1 (PI_{it}) + \beta_2 (UI_{it}) + \beta_3 (\log EI_{it}) + \varepsilon_{it}$$

Where, ROA_{it} = Return on Total Assets (i at time t; i = 1, 2, 10 companies); C= Constant term; PI_{it} =performance Index; UI_{it} = Utilization Index; EI_{it} =Efficiency Index; and ε = Error term.

VI. (b). Correlation coefficient

Correlation coefficient analysis is used to analysis the relationship between the two variables such as dependent variables (endogenous variable) and independent variables (exogenous variables). The value of correlation coefficient 'r' and it is ranged from -1.00 to +1.00.

VI. (c). Pooled Ordinary Least Square model (OLS)

^[xi](Oscar Torres-Reyna, 2007), Panel data is a statistical tool which is used in econometrics to measure cross sectional attributes and longitudinal attributes of the data. ^[xii](Pooled OLS assessment is an OLS method run on Panel data). In the OLS method all individual effects are completely ignored. ^[xiii](Random effect model is used in the analysis panel data); it helps controlling of the heterogeneity is constant over time and not correlated with independent variable. Fixed effect model is used to aid in controlling of unobserved heterogeneity, when this heterogeneity is fixed for given period of time. Hausman test is used to decide whether fixed effect model is significant or random effect model is significant. Whereas Breusch-Pagan Lagrange multiplier is used to decide between random effect model or Pooled Ordinary Least Square model is significant. In a Breusch and Pagan Lagrangian multiplier test the null hypothesis stipulates variance of error term is constant, $H_0: \sigma^2 = 0$. If null hypothesis is rejected, then random effect model is more significant than the pooled regression model for the research study.

VI. (d). ⁽⁵⁾Breusch and Pagan Lagrangian multiplier test:

It is accustomed check for heteroscedasticity in a very linear regression mean model. It tests whether or not the variance of the errors from a regression is relies on the values of

⁵Jakpar S, Tinggi M, Siang TK, Johari A, Myint KT, et al. (2017) Working Capital Management and Profitability: Evidence from Manufacturing Sector in Malaysia. J Bus Fin Aff 6: 255. Retrieved from doi: 10.4172/2167-0234.1000255

the freelance variables. The Breusch and Pagan Lagrangian Multiplier Test are applied to know whether random effect model or pooled regression model is appropriate. In a Breusch and Pagan Lagrangian multiplier test the null hypothesis stipulates variance of error term is constant, $H_0: \sigma^2 = 0$. If null hypothesis is rejected, then random effect model is more a significant then the pooled regression model for the research study.

$$H_0: \sigma^2_{\lambda} = 0$$

$$H_A: \sigma^2_{\lambda} \neq 0$$

VI. (e). ⁽⁶⁾Durbin–Wu–Hausman test:

This hypothesis test is used to test whether fixed effect or random effect regression model is appropriate. It states that, the null hypothesis has no co variance between the firm's specific effects and the regressor. $H_0: Cov(\lambda, x_{it}) = 0$. If null hypothesis is rejected, then fixed effect model is more appropriate than random effect model for the study. $H_0: Cov(\lambda, x_{it}) = 0$. If null hypothesis is rejected, then fixed effect model is more appropriate than random effect model for the study. The following is the Hausman hypothesis.

$$H_0: Cov(\lambda, x_{it}) = 0$$

$$H_A: Cov(\lambda, x_{it}) \neq 0$$

VII. DATA ANALYSIS

VII. (1). Performance Index

PI_{WCM} it represents for average performance index of current assets. If the PI_{WCM} value is higher than standard statistics "1" it indicates that company have proper working capital management. Table -1 shows that selected NSE Metal Index firms have PI value of lesser than '1', where it refers to all the firms have under performance of current assets to generate adequate required sales target. Throughout the study no firms have made to higher PI value. It indicates that required rate of sales are not generated by using sufficient working capital funds. The table shows that best performed firms are National Minerals development corporation (NMDC), APL Apollo Tubes. Ltd., and Coal India with mean value of ($\mu=0.141$), ($\mu=0.135$.) and ($\mu=0.153$.)

VII. (2). Utilisation Index

H_1^0 : The NSE Metal industry as a whole does not have the ability to utilise all the CAS for the

purpose of generating sales.

UI_{WCM} is a measure that shows, how firms are utilizing the current assets to generate given sales. A proportionate increase in the current assets leads to same proportionate increase in sales this shows productive utilisation of current assets. Table - II, show that selected NSE Metal Index firms have proper utilisation of current assets. National Minerals Development Corporation (NMDC) ($\mu=1.411$), Coal India, ($\mu=1.179$), Sesa goa ltd ($\mu=1.179$) and National Aluminum Ltd, (NAIL) ($\mu=1.085$) have good utilisation index value. From the table it is clear that average utilisation of current

⁶Jakpar S, Tinggi M, Siang TK, Johari A, Myint KT, et al. (2017) Working Capital Management and Profitability: Evidence from Manufacturing Sector in Malaysia. J Bus Fin Aff 6: 255. Retrieved from doi: 10.4172/2167-0234.1000255

assets is 1.078 of all firms in the industry, which is higher than the standard statistics value of '1', this shows that industry have good practices of utilisation of current assets to meet the required sales. Therefore, Null hypothesis is rejected and we can conclude that NSE Metal industry as a whole, have the ability to utilise all the CAS for the purpose of generating sales.

VII. (3). Efficiency Index

H_2^0 : The metal Industries, as whole does not have efficiency in WCM

Efficiency index is an outcome of performance index and utilisation index, which measure the efficiency level of working capital management of firms. Based on the estimation of efficiency index from the table-1, which represents all firms have less efficiency level in managing of working capital. Table-1 highlights all firms have EI index value of less than '1' except National Minerals Development Corporation which have EI value of greater than '1' ($1.10 > 1$). Thus, results show that selected firms do not efficiently utilise the working capital funds in producing required of sales. The results show that performance Index is poor performed and it has greater influence on efficiency Index in declining of efficient working capital management. From the table it is clear that average Efficiency level of current assets is 0.1345 of all firms in the industry, which is lower than the standard statistics value of '1', Therefore, Null hypothesis is accepted and we can conclude that NSE metal Industry as whole does not have required level of efficiency to utilise the current assets of the firms.

VII. (4). Return on Current Assets

H_3^0 : There is no significant relationship between WCM efficiency and ROCA of the Metal industry in India

In the study, ROCA is proxy for earnings of the firms. ROCA is tool to measure the efficiency level of working capital management with earnings. The ROCA is measured in terms of percent with given earnings of the firms for the given period. Higher ROCA indicates higher utilisation of current assets and higher efficiency level of current assets and leads to efficient utilisation of working capital funds. From the Table -II, it is clear that only TATA Steel Ltd has achieved 55% level of returns in current assets and other firms have less than 45% level of returns in current assets. In addition, firms like SAIL ($\mu = -0.024$) have negative returns on currents. It indicates that all firms have poor efficiency in achieving the better returns in utilizing of current assets and it leads to poor management of working capital funds. Therefore, from the table-II, it is clear that the average return on current assets is 0.1213 (12.13%) which is very lower than the required average. Therefore, the null hypothesis is accepted on this ground of statistics value and we can conclude that there is no significant relationship between WCM efficiency and ROCA of the Metal industry in India.

VII. (5). Correlation Analysis

From the table-II, it is clear that the proxy of earning log ROCA have positive correlation with Efficiency Index, Utilisation Index and Performance Index, because the calculated value of Log ROCA with Log Efficiency Index is ($r = 0.1383$), Utilisation Index ($r = 0.0973$) and Performance Index ($r = 0.2404$) which have less significant relationship between the variables.

VII. (6). Pooled Ordinary Least Square Regression Analysis (OLS)

H_0 : EI, UI, and PI does not jointly influence Earnings (ROCA)

H_{11} : EI, UI, and PI jointly influence Earnings (ROCA)

The regression model is used to analysis the results for the profitability of the firms which is measured by Log Return on Current Assets (log ROCA) is being the dependent variable and independent variable are Performance Index, Utilisation Index and Efficiency Index. From the table-III, Log-EI is has a P-value of 0.445 (44.50%) which is more than 5 % level of significant, that means log-EI is not significant to explain the log ROCA and sign of coefficient value (-0.2354289) is negative, according to the theory, the sign of coefficient should be positive because when there is increase in efficiency level of operation in the firm, that leads to increase in sales, as a result there is increase in earning of the business. Therefore, according to theory earning dependents on efficiency level of the business and it is also true to the point,

Further from the table-III there exists negative coefficients hence, the results are not accepted. Whereas in case of performance Index variable (PI) is insignificant to explain the relationship, because the P-value is 5.1% which is more than 5% level of significance and coefficient sign of PI is positive. According to theory, efficiency factor dependence on performance factor and utilisation factor. That is, proper utilisation of assets leads to better performance of the assets, i.e., in turn leads to better efficiency level of the business. In addition, Utilisation Index is insignificant to explain the relationship with earnings of the business because the P-Value is 37.2% which is more than 5% level of significance and coefficient value is also a negative. According to the model most of the independent variable are negative and insignificant to dependent variable. As a result, the model is not good to accept, because the model is not following the theory. In the above model R-Square has 9.86% variation in earnings which is caused by EI, UI and PI factors and other 90.14% is explained by error term and R-Square value is very less, that means the model is not fitted well to explain the earnings. Whereas EI, UI and PI jointly insignificant to explain the earnings, because from the table value of $F(3, 46) = 1.68$; and $(\text{Prob} > F = 0.1851)$ here the P-value is higher than 5% level of significance. The model also points out that the intercept of the equation is -1.2602 which shows that the earnings are expected to decrease by (126.02 %), when the entire variables are remained constant. Therefore, null hypothesis is rejected at 5% level of significance.

VII. (7). Swilk Residuals: Shapiro - Wilk W test

H_{02} : Residuals are normally distributed

H_{12} : Residuals are not normally distributed

Swilk -Wilk W test is used for checking of residual are normally distributed in the model or not,

From the table-III, it is clear that probability value of Shapiro - Wilk W test is 27.075% which is greater than 5% level of significance, therefore null hypothesis is accepted, which means that residuals are normally distributed in the model. In the model, null hypothesis is desirable.



VII. (8). ⁽⁷⁾ Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H₀₃: Residuals are homoscedastic (constant)

H₁₃: Residuals are heteroskedastic

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is used for to detect whether the variance of error are constant or not, if variance of error are constant then it is called Homoskedasticity and if the variance of errors are not constant in the regression and which are dependent on independent variable then the model is effected by heteroskedasticity. From the table-IV, it is clear that probability value of Breusch-Pagan / Cook-Weisberg test is 0.9604 which is greater than 5% level of significance, therefore null hypothesis is accepted, which means Residuals are homoscedastic in the regression model. In the model, null hypothesis is desirable.

VII. (9). ⁽⁸⁾ Durbin's alternative test for autocorrelation

H₀₄: Residuals are not serially correlated

H₁₄: Residuals are serially correlated

Durbin's alternative test for autocorrelation test is used for to detect autocorrelation in the lag1 of the residuals for the regression model. From the table-IV; it is clear that probability value of Durbin's alternative test is 0.0015, which is lesser than 5% level of significance therefore, the null hypothesis is rejected, which means that the residuals are autocorrelated in the regression analysis.

VII. (10). VIF test (Multicollinearity)

Variance Inflation factor test is used to detect the liner relationship between independent variables in regression model. From the table-V; the probability mean value factor of VIF is 4.56 which is lesser than 10 statistics value, therefore the independent variables have less collinearity, which is acceptable in analysis.

VII. (11). Random Effect GLS Regression Model analysis

Table –VII; represents for the random effect GLS regression analysis, from the table it proved that according to random effect model coefficient determination, the overall R-Square value is 0.0963 this means that 9.63 percent of the variation in return on current assets is explained by the independent variables, The model also represents that the intercept of the equation is -0.8896 which shows that the ROCA is expected to decrease by 88.96 percent when the entire variables are remaining constant and unchanged. Furthermore, from the model there exists the high P-value of (0.701 > 0.05) with Efficiency Index, which indicates that there exists an insignificant relationship between EI and ROCA. In addition, the overall statistics of the model is (Prob > chi2=0.4130) which is greater than 5% level of significance.

VII. (12). Fixed Regression Model analysis

Table-V, represents for the fixed effect model, were R-Square is 0.2714 this means that 27.14 percent of the variation in return on current assets is explained by the independent variables. The model also represents that the intercept of the equation is -0.8063 which

⁷Richard Williams, (2015). Heteroskedasticity. Retrieved from <https://www3.nd.edu/~rwilliam/stats2/t25.pdf>

⁸Wikipedia contributors. (2019, September 24). Durbin–Watson statistic. In Wikipedia, The Free Encyclopedia.

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shows that the ROCA is expected to decrease by 80.63 percent, when the entire variables are remaining constant and unchanged. The model has overall statistics P-value ($\text{Prob} > F = 0.5882$), Furthermore, from the model there exists the high P-value of ($0.808 > 0.05$) with efficiency Index, which indicates that there exists an insignificant relationship between logEI and ROCA.

VII. (13). Breusch and Pagan Lagrangian Multiplier Test for Random Effects

H_{05} : there are no random effects

H_{15} : there are random effects

From the table–VI, the Breusch and Pagan Lagrangian Multiplier test estimates that, the probability (P) value ($\text{Prob} > \chi^2 = 0.0000$) is less than 5% of level of significance. Therefore, the null hypothesis is rejected that means Pooled ordinary least squares (OLS) is not appropriate then the random effect model i.e. Random effect model is significant and appropriate in conveying the relationship between variables in the model. In the Pooled ordinary least squares (OLS) model the error term is not constant hence it has direct effect on the model

VII. (14). Durbin–Wu–Hausman test analysis:

H_0 : Random effect model is appropriate

H_1 : Fixed effect model is appropriate

Form the table –VII, it is confirmed that the P-Value ($\text{Prob} > \chi^2 = 0.0000$) is lesser than 5 % level of significance. Therefore, the null hypothesis is rejected. That is random effect model is insignificant than the fixed effect model in influencing the relationship between the variables of the model. Based on the estimated results of the model, we can come to conclusion that random effect model is not appropriate to explain the empirical study. Hence after the both models' analysis, the fixed effect model is more appropriate to explain the empirical study for the panel data.

VIII. CONCLUSION

The main objective of this research paper is to investigate the relationship between the working capital management efficiency and firm's profitability. Hence a sample of 10 highly capital-intensive manufacturing firms were chosen for the period of five years from 2014-18. The data was obtained from CMIE prowess package and NSE Metal Index firms. To estimate and analysis the data, the descriptive statistics, correlation analysis, panel regression model were used.

From the descriptive analysis, we prove that measurement tools like EI, PI and UI are not significant to relate the earnings and working capital management of the firms. Performance index proved that all the firms have under performance of current assets to generate adequate required sales target, where as utilisation index proved that, proper utilisation of current assets and whereas efficiency index is combined index of performance Index and Utilisation Index, results show that selected firms do not efficiently utilise the working capital funds in producing required of sales. In case of return on current assets analysis, it proved that there is no significant relationship between earnings and WCM with reference to Efficiency Index measurement tool.

From the overall observations, the model is not proved the theoretical theories, because from the model's observations it proved that there exists an insignificant relationship of working capital management with earnings of the firms.



Hence, we can conclude that working capital management is not the only factor in determining the major changes of the earnings of the firms.

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XII; TABLES AND FIGURES

Table-1- Sample Distribution (2014-2018)	
Manufacturing Firms	Number of firms selected
Basic metal products	09
Raw material extraction 01	01
Total firms	10



Table-2

Correlation Analysis

	Log-EI	PI	UI	Log-RCA
Log-EI	1.0000			
PI	0.8832	1.0000		
UI	0.8090	0.8156	1.0000	
Log-RCA	0.1383	0.2404	0.0973	1.0000

sources: estimates from stata 14.2

Table-3

Pooled Ordinary Least Square Regression Analysis (OLS)

Sou rce	SS	DF	MS	Number of obs = 50	
Mo del	1.09605835	3	0.365352784	F(3, 46)	= 1.68
Resi dual	10.0221931	46	0.217873763	Prob > F	= 0.1851
Tot al	11.1182515	49	0.226903091	R-squared	= 0.0986
				Adj R-squared	= 0.0398
				Root MSE	= 0.46677
Log- RCA	Co ef.	Std. Err.	T	P> t	[95% Conf. Interval]
Log- EI	-0.2354289	0.3053203	-0.77	0.445	-0.8500068 & 0.379149
PI	5.667329	2.825527	2.01	0.051	-0.0201623 11.35482
UI	0.2661363	0.2954754	-0.90	0.372	-0.8608975 0.328625
Cons	-1.260207	0.7663211	-1.64	0.107	-2.802732 0.2823169

sources: estimates from stata 14.2

Table-4

Swilk Residuals: Shapiro - Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
Residuals	50	0.97169	1.331	0.611	0.27075

sources: estimates from stata 14.2



Table-5	
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
Ho:	Constant variance
Variables:	fitted values of LogRCA
chi2 (1):	= 0.0000
Prob > chi2:	= 0.9604
sources: estimates from stata 14.2	

Table-6			
Durbin's alternative test for autocorrelation			
lags(p)	chi2	df	Prob > chi2
1	10.059	1	0.0015
H ₀ : no serial correlation			
sources: estimates from stata 14.2			

Table-7			
Breusch-Godfrey LM test for autocorrelation			
lags(p)	chi2	df	Prob > chi2
1	9.135	1	0.0025
H ₀ : No serial correlation			
sources: estimates from stata 14.2			

Table-8		
VIF(Multicollinearity)		
Variable	VIF	1/VIF
PI	5.25	0.190387
Log-EI	5.09	0.196472



UI	3.34	0.299088
Mean VIF	4.56	
sources: estimates from stata 14.2		

Table-9					
Random-Effects GLS Regression					
Group variable: INDEX		Number of obs = 50			
R-Sq:		Number of groups =10			
within = 0.0498		Obs per group			
between = 0.2830		Min = 5			
overall = 0.0963		Avg = 5.0			
		Max =5			
Corr (u_i, X) = 0 (assumed)		Wald chi2(3) = 2.86			
		Prob > chi2 = 0.4130			
LogRC A	Co ef.	Std. Err.	z	P> z	[95% Conf. Interval]
Log-EI	- 0.09206 65	0.2398546	-0.38	0.701	-0.562173 0.3780399
PI	3.09344 4	2.212112	1.40	0.162	-1.242216 7.429104
UI	- 0.15430 72	0.2309784	-0.67	0.504	-0.6070166 0.2984022
_cons	- 0.88968 21	0.6141593	-1.45	0.147	-2.093412 0.314048
sigma_u	0.35261 207	(fraction of variance due to u_i)			
sigma_e	0.34073 602				
rho	0.51712 354				
sources: estimates from stata 14.2					

Table-10	
Fixed-Effect Regression Model	
Group variable: INDEX	Number of obs = 50
R-Sq:	Number of groups = 10
within = 0.0500	Obs per group
between = 0.2714	Min = 5



overall = 0.2714			Avg = 5.0			
Corr (u_i, Xb) = 0.2003			Max = 5			
			F (3,37) = 0.65			
			Prob > F = 0.5882			
LogRC A	Co ef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Log-EI	-0.0602165	0.2465371	-0.24	0.808	-0.559748	0.4393151
PI	2.504365	2.272067	1.10	0.277	-2.099281	7.10801
UI	-0.1286354	0.2372171	-0.54	0.591	-0.6092829	0.352012
_cons	-0.8063167	0.6214419	-1.30	0.202	-2.065478	0.4528443
sigma_u	0.36568543	(fraction of variance due to u_i)				
sigma_e	0.34073602					
rho	0.53527403					
F test that all u_i=0: F(9, 37) = 5.48				Prob > F = 0.0001		
sources: estimates from stata 14.2						

Table-11		
Breusch and Pagan Lagrangian Multiplier Test for Random Effects		
LogRCA [INDEX, t] = X _b + u[INDEX] + e [INDEX, t]		
Estimated results:		
	Var	Sd = Sqrt(Var)
LogRCA	0.2269031	0.4763435
e	0.116101	0.340736
u	0.1243353	0.3526121
Test: Var(u) = 0	chibar2(01) = 18.90	Prob > chibar2= 0.0000
sources: estimates from stata 14.2		

Table-12				
Hausman Test Analysis				
---- Coefficients ----				
	(b) fixed	(B) -	(b-B) Difference	Sqrt (diag(V _b -V _B)) S.E.
Log-EI	-0.0602165	-0.0920665	0.0318501	0.0570113
PI	2.504365	3.0934440	-0.5890792	0.5185078
UI	-0.1286354	-0.1543072	0.0256717	0.0540454
b = consistent under Ho and Ha; obtained from xtreg				
B = inconsistent under Ha, efficient under Ho; obtained from xtreg				
Test: Ho: difference in coefficients not systematic				
chi2(3) = (b-B)'[(V _b -V _B) ⁻¹](b-B) = 1.31				
Prob>chi2 = 0.7260				
sources: estimates from stata 14.2				



ARUN JOSHI: THE NOVELIST

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Abstract

Arun Joshi, who is ranked with the great masters of contemporary Indian fiction in English, belongs to the coterie of modern novelists who believe that reality lies within the consciousness of isolated individuals. As a writer, Joshi does not focus on social or political problems. Nor does he try to escape from the world of human conflicts and seek aesthetic pleasure in an imaginary world. An artist of great psychological perception, Joshi probes deep into the hidden contours of human psyche in order to elicit the mysterious truths of human existence. As put forward by Shyam Asnani, Joshi's works may not have the depth and solidity of Raja Rao, the comic vein or brooding intensity of R.K.Narayan, he may even be making no attempt, like Anand or Bhattacharya or Nahal, to give a cross section of society as a whole, yet his torch seems to light up the darkness in every direction with its fitful illuminations. One gets an extraordinary sense of the infinite ramifications of human life, its unpredictableness, its conclusiveness.

Key Words: Contemporary, Modern, Consciousness, Isolated, Social, Political.

Joshi depicts the chastity and simplicity of an authentic life in a primitive society, the virtues of which may "act as a corrective to our money-based culture." Interpreting this novel, Joshi remarks: It is very difficult to explain this novel. Tribals are very civilized according to mine and Billy Biswas's understanding. It is the post-Independence pseudo-Western values that he rejects. The book 'is about a mystical urge, a compulsion which makes Billy go away. In a number of our legends and religious texts people go away to forests to heal themselves spiritually. Possibly that's what I am suggesting, though not consciously.... Billy's death is metaphorical. The modern Indian city is disoriented and kills sincerity. A woman who enjoys dancing might be married off to a person who does not let her dance after marriage. This kind of killing goes on when the social organism does not know its values. We only understand the value of money and power.¹ Joshi's third novel, *The Apprentice* is a severe indictment of the tyranny of a society without norms, without direction and without, perhaps, a purpose. It is a novel totally different in tone from his other novels. In this novel, the narrator-protagonist Rathan Rathore exposes his own perfidious character in the form of an internal monologue. Joshi has also introduced an imaginative listener whom the narrator addresses frequently, so as to relieve the readers of the tedium of sustained narration. Rendered in the confessional form, this novel has received the most critical attention. It delineates the plight of the contemporary Everyman, and as a "fictional study of the anatomy and dynamics of the almost omnipresent corruption in the country, *The Apprentice* is a powerful indictment. The human story and the stark message both come



through."² But some critics accord with the idea that, from the characterization point of view, the narrator-protagonist fails to evoke sufficient interest in himself. "He is full of bland platitudes with no trace of humour whatsoever The language lacks freshness and immediacy.... The frequent use of either a romantic reverie or stream of consciousness device makes the narrator's soliloquies sound like ravings of maniac. "³ This novel is reminiscent of Camus' *The Fall*, but the atmosphere created by Joshi seems to be unrealistic and melodramatic. In the words of Mr.P.P.Mehta, the "sustained monologue is attractive and interesting, but the sentiments sound a false note."⁴ The protagonist, Rathan Rathore, who finds himself alienated from his own true self in an attempt at adapting to the ways of the world, differs from the other heroes Sindi and Billy in so far as his intellectual level is much lower. Joshi acknowledges that this novel with its cause-and effect structure gave him the maximum trouble, especially where language was concerned: "I felt awkward putting English in the mouths of the characters who don't normally speak it and had to develop a structure where the reader is not distracted by language. I chose the monologue it is a difficult style."⁵ Rathan's life is a journey, from "innocence to experience and also from self-love to self-remorse."⁶

The Last Labyrinth pursues the theme which Joshi has earlier dealt with--alienation and the crisis of identity. We find Som Bhaskar, a twenty five year old modern millionaire who is guided by reason and not by faith, haunted by mysterious voices. He suffers from voids within, as he puts it in the narrative, and he finds himself existentially alone, even though he has a beautiful and understanding wife, and two children.

Arun Joshi's novels thus re-enact the dilemma of the modern man, groping through the dark alleys of life and reality. His heroes--Sindi, Billy, Rathan and Som--are all 'foreigners' and 'outsiders' making desperate attempts to reach a rapport with the world. Prof. Srinivasa Iyengar considers Joshi's novels as almost a single work in progress. While the outer semblance undergoes chameleonic changes, the hapless individual remains basically the same. His heroes, for all their affluence and education, are but prisoners of their predicament. They, in fact, represent the "universal man, alienated, fumbling in the dark for a spiritual oasis."⁷ Joshi has, as a writer, been influenced by the Bhagavad Gita and the teachings of Mahatma Gandhi, the influence of the Western existentialist writers like Sartre and Camus notwithstanding. He admits that he has read *The Plague* and *The Outsider* and has been influenced by them. Joshi is also attracted to the figure of Christ, and is interested in Christian thought.

The ethos of Arun Joshi is intrinsically Indian. Joshi personally feels that his earlier novels--*The Foreigner* and *The Strange Case of Billy Biswas*--are primarily concerned with religious issues, the problems of an essentially Hindu mind. This is to some extent true of his next two novels also. Whereas *The Apprentice* extols the philosophy of the Hindu scriptures and also that of Mahatma Gandhi, reinforcing the value of humility and self-purification, *The Last Labyrinth* "assimilates the existential anxiety, the Karmik principles, the longing for the vitals of life in the mystical urge of Som Bhaskar."⁸ Joshi clearly states that there are two things that he has consciously tried to convey through his novels: I strongly believe that individual actions have effects on others and oneself. So one cannot afford to continue with an irresponsible existence but has to commit oneself at some point. From that angle one can say that Hinduism is a



highly existentialist-oriented philosophy since it attaches so much importance to the right way to live (to exist). Secondly, it is very difficult to steer one's way through life without God, or at least concepts like right or wrong. This can be considered as a political novel reflecting the Indian reality, though the author has chosen an imaginary locale as its setting. The story revolves around the Grand Master who is ascertained to become the unchallenged king of the city, which he rules by the river. The information given to him by the palace Astrologer about the existence of an old prophecy which predicts the arrival of a king invigorates his determination. He issues a decree from the palace, announcing the beginning of a new era to be known as 'The Era of Ultimate Greatness'. It enjoins the people to beware of the enemy within and the enemy without, and they are filled with fear and foreboding.

The prophecy, however, is read quite differently by the Hermit of the Mountain, who is the Astrologer's fellow disciple. He believes that there is nothing inevitable about the prophecy: "The hand that made it believes, above all, in man's capacity to change his fate. So even if it speaks of the coming of a king, men can so conduct themselves, so choose, that the king does not come. Or the king that comes is of the right kind."⁹ He presumes that God is the king of the world which He has created. The fulfillment of the Grand Master's dream is debilitated, to some extent, by his own councilors who are interested in the pursuance of their own intents and purposes. It is further complicated by the defiance of men like Bhumiputra and his supporters, and by the rebellion of the boatmen who forswear the supremacy of the Grand Master. The boatmen consider themselves to be the "children of the river, and to the river, and river alone do they hold allegiance. They believe, unfortunately, with their hearts, and for their beliefs they are willing to die."¹⁰

Although acclaimed more as a novelist, and his novels more popular, Joshi is an accomplished short story writer as well. At any rate, some of his stories are accurate and trenchant than his novels. Joshi's distinction as a short story writer lies in his themes--both in their choice and in their treatment. Through his stories, Joshi depicts the contemporary situation as seen and felt by the individual who is a victim of the corrupt social order.

Finally, Kewal gets into the company of Penalty Rao—a thief, a smuggler, a pickpocket, a politician and a pimp. On a Divali night, urged by a desire to see his daughter, Kewal along with Penalty Rao and his friend, a taxi driver goes to his father-in-law's house. As Kewal goes up to see his daughter, his friends rob all the jewellery of the people present there. Later, they go to the Marine Beach where three of them have drinks and they yell out prayers for surviving them that night. Kewal's prayer shows Joshi's attempt at 16 social satires and the projection of the materialism prevailing in the modern Indian society:

I am a survivor, gentlemen, of card parties, of wedding receptions, five-year plans; of nosy neighbours, conjugal bliss, well-meaning friends and bloody-minded bosses. I am a survivor of life insurance schemes, stock exchanges and family planning techniques. In brief, gentlemen, I am a survivor of that fantastic racket that passes for the MODERN INDIAN SOCIETY. I am a survivor of mandacious mothers and relentless fathers, of two-penny politicians, of lawyers



and doctors. Above all, I am the survivor of that greatest disaster of them all: THE MODERN INDIAN WOMAN.¹¹

"The Only American from our Village" centers around Dr. Khanna, the most outstanding immigrant physicist at the University of Wisconsin, who has come to visit India—the country he had left fifteen years earlier. His lectures at various seminars and conferences are a great success. His wife, Joanne, and their two sons are worshipped by Dr. Khanna's relatives whom they have never seen before, and for whom they have brought Gillette razors, pop records and a mass of one-dollar neck-ties. The four-week trip goes about smoothly until Khanna meets Radhey Mohan who sells court paper in front of the District Courts. Khanna's father, Kundan Lal and Radhey Mohan were childhood friends who had gone to the same school and sat at the same desk. Kundan Lal was a brilliant student, who stood third in the state and won a scholarship for higher studies. He did well at college too, took up a job somewhere outside his hometown and returned to his village soon after his retirement. Radhey Mohan reminisces that Kundan Lal was very proud of his son, Khanna, who had settled in America, and told everyone about his achievements: He used to say you would be a big government man when you came back. He would say you were coming back in one year, in two years, any time.... He said you were the only American from our village. I asked him once what was so great about being the only American from our village. He said it was an honour.

Radhey Mohan tells Khanna about the expectations his father had of his son who had promised to send him a ticket to visit America. Frustrated at not receiving the long-awaited ticket, Kundan Lal alienated himself from his friends, and turned religious. The old man further narrates how when Kundan Lal was ill and dying, he revisited the school where they had studied together. It was the month of May and very hot. While returning, Khanna's father crossed the boiling sand of the dho with dhak leaves tied to his naked feet—a repetition of what he used to do as a school boy with no money for a pair of shoes. By the time he reached home, he had high fever and died the next day. Hearing this, Dr. Khanna winced, but his perfect training in the new civilization made him calmly remark that he was very sorry to hear of the death of his father. But the knowledge of the way his father died shattered his personality. To a psychiatrist Dr. Khanna confides that he has periods of great burning in his feet. His output of research since this incident has been zero, and he has "generally come to be known as the man who does nothing but stare at his feet.,²⁰ The themes of the rest of his short stories are also of an amazing and pleasant variety: the suppressed passion of teenage girls for the world of young men ("The Frontier Mail is Gone"), old men who long for youth, love and sex ("The Intruder in the Discotheque"), teen-agers who do nothing but eve-teasing ("The Eve-Teasers"), a young servant who tries to rape his mistress ("The Servant"), heartless modern manufacturers who are ready to choose any perfidious method for their sales promotion ("A Trip for Mr. Lele"), a picture of life in which men can prosper only through hypocrisy and corruption ("Harmik"), a contrast between war as it really is to a man who has been in it, and war as it is to those who read and talk about it from a comfortable distance ("The Homecoming"), and so on. Joshi is a typically Indian in the treatment and choice of his themes, and through them he presents a cross-section of the contemporary Indian society in as straightforward and interesting a way as possible.



Another short story entitled "The Boy with the Flute" is about a wealthy fifty year old businessman who belongs to a "social class whose influence was supreme and showed no sign of abating. In the world of commerce Sethi's name is legend and he considers his duty to preserve it at all costs. But we find him caught up in the labyrinth of his amassed wealth and an obsessive fear of death, which he calls primeval terror, overpowers him. In an effort at escaping it, he finds himself in the company of a mistress. Finding her sexually irresistible, Sethi smothers her with valuable presents only to find her scheming to extract as much money from him as possible. On a stormy night he breaks off his relationship with her, and feels "exorcised of the evil that had haunted his footsteps. On the way to his place of residence, he falls into the clutches of a young man who robs him of all that he has, and imprisons him in an unknown place. Finding himself helpless, and convinced that he was dying, Sethi remembers and feverishly chants the prayers which his mother had taught him and which he had forgotten to utter for more than thirty years then: Asato ma sadgamaya; Tamaso ma jyothirgamaya; Mrityormamritam gamaya. (from evil lead me to good; from darkness lead me to light; from death lead me to deathlessness). Mysteriously enough, a boy, a flute-player with his face dark with soot, frees him. The boy disappears soon after the event, and all attempts made by Mr.Sethi to trace him are unfruitful.

In a confused society, a society without norms and without purpose, one succumbs to temptations under the threats of insecurity, anxiety and fear. Through the appearance of the boy with the flute, Joshi seems to symbolize the fact that the insoluble problems of life can be expounded only through faith in God or religion, beyond the logic of science and reason. Joshi does not accord with the idea that the novel is more effective a literary form than the short story, and in his opinion, "Each has its own place. In my case it is the theme which determines whether it be a short story or a novel.

Although Joshi has not written much, he has done it effectively and powerfully, revealing himself as a good craftsman of fiction. According to Prof. Srinivasa Iyengar, the chief living authority on Indian English literature, Arun Joshi's is an unusual talent engaged in the art of fiction, and there is in his work the fusion of intellect, integrity and power of writing. In his short stories, as in his novels, Joshi projects the crisis of the modern urbanized world with its dehumanizing impact on the people at large. Apart from the contemporary relevance of his themes, subtle characterization, and the authenticity of his scenes, the significance of his works lies in the ease of his style, and his genteel taste. Joshi exhibits a rare depth of observation of the human nature, and the power and strength of his realistic portrayal makes his works all the more convincing.

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ASSESSMENT ON SOCIAL SUPPORT AMONG SCHOOL GOING ADOLESCENTS: A SCHOOL BASED SURVEY

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Abstract

Social support is one of the key features for development of every individual in the society. The aim of the study is to understand the social support among school going adolescents in Kollam district, Kerala. There were 600 school going adolescents from class VIII to class XII was selected through cluster sampling method. The tools for data collection were socio demographic details and multidimensional scale of perceived social support. The findings illustrate that 8.7 % of school going adolescents had low social support. The multiple regression analysis depict that a highly significant association in overall social support score with gender and age. There were 30.9% of school going adolescents need intervention packages on social support in the present study. However adolescents need a positive social support for their current and future life.

Keywords: Social Support, School Going Adolescents, Assessment, School Based Survey

Introduction

Social support is the attention to an individual that given from the community, social linkages and close connections(Lin, Dean, & Ensel, 1986). However social support plays a role of interpersonal relationships and a positive social support help to overcome the difficulties of school going adolescents. The school going adolescents social support basically focus on the support from family, peers and significant others. There will be positive social support for school going adolescents' benefits to overcome the issues such as worry, fear and stress (Camara, Bacigalupe, & Padilla, 2017).

The studies related to social support and adolescents depicts that emotional support from friends and family is higher than other supports (Griffiths, Crisp, Barney, & Reid, 2011); social support effects success through the adolescents' beliefs and affective experiences(Ahmed, Minnaert, van der Werf, & Kuyper, 2010); high perceived social support and significant difference between male and female (Prabhu & Shekhar, 2017); lack of social support leads to high level of stress, criminal behaviour and psychiatric disorders (Licitra-Kleckler & Waas, 1993); significant difference on gender with peer and teachers support (Ebru Ikiz, Savi Cakar, & Prof, 2010); low social support leads to depression (Ren, Qin, Zhang, & Zhang, 2018).

There is positive and significant relationship between social support and life satisfaction of adolescents (Khan, 2015).The positive social support from school shows the life



achievement of adolescents (Danielsen, Samdal, Hetland, & Wold, 2009). Quality of life (psychological) was significantly predicted by social support from family and friends. Quality of life (social relationships) was predicted by social support from significant others and friends (Alsubaie, Stain, Webster, & Wadman, 2019). The lack of social support may leads to suicide ideations, attempts, self-harming behaviours(Kumar & George, 2013). The positive family support and spirituality helps to overcome the suicidal ideations from adolescents (Ibrahim et al., 2019).

The attachment theory (Bowlby, 1978) is mostly allied to the concept of social support. The interpersonal relationships, social interactions, care and trust helps every individual development. However, school going adolescents also need social support from their peers, teachers and parents for daily life and future.

Aim

The aim of the study is to understand the social support among school going adolescents in Kollam district.

Materials and methods

This cross sectional study was conducted among school going adolescents on social support. The study area was in Kollam district, Kerala and the data collected from 19 schools. The data was collected during the period of July to October 2019. There were 600 school going adolescents was selected through cluster sampling method. The school going adolescents from class VIII to class XII and from 13 to 17 ages was selected for the study. The data collection procedure was (a) written permission from school authority, (b) written consent form from parents and school going adolescents.

Socio demographic performa was one of the tools administered among school going adolescents. The socio demographic performa includes age, sex, education, area, school type. The multidimensional scale for perceived social support was administered among school adolescents for understanding social support (G.D Zimet, Dahlem, Zimet, & Farley, 1988). The scale is a brief research tool to measure the three sources of social support like significant other, family and friends. The 12 items scale with 4 items for each subscale. The studies revealed that the scale had a good validity, reliability and stable factorial structure(Dambi et al., 2018; Gregory D. Zimet, Powell, Farley, Werkman, & Berkoff, 1990). The consent form and tools were in English and Malayalam.

The descriptive and inferential statistical analysis was completed through SPSS. The current study was approved by Academic committee of Mizoram University, Mizoram, India with vide resolution no. AC:35:3(14):III(3)].

Results

The table 1 indicates that the perceived social support among school going adolescents. A little more than one tenth on the school going adolescents had low support from significant other (13.2%). There were 9.2% from family and 7.7% from peer had low support. A little less than one tenth on the school going adolescents had low support on

overall support (8.7%). This result depicts that the school going adolescents are getting more support from peers than other support.

Table 1 Perceived Social support among school going adolescents

	<i>Low support (%)</i>	<i>Medium support (%)</i>	<i>High support (%)</i>
Significant other	79 (13.2)	214 (35.7)	307 (51.2)
Family support	55 (9.2)	124 (20.7)	421 (70.2)
Peer support	46 (7.7)	99 (16.5)	455 (75.8)
Over all	52 (8.7)	133 (22.2)	415 (69.2)

The comparison on social support of school going adolescents with gender depicts in Table 2. There were high significant comparison on each social support factors and overall with gender. The study found that the female school going adolescents had more social support than the opposite gender.

Table 2 Comparison on social support of school going adolescents with gender

SDQ Domain	Boys		Girls		df	t	P-value
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
Significant others	4.59	1.68	5.23	1.51	598	-4.83	.000**
Family support	5.16	1.72	5.91	1.39	598	-5.92	.000**
Peer support	5.37	1.67	6.05	1.30	598	-5.52	.000**
Over all	5.03	1.49	5.69	1.21	598	-5.98	.000**

SD=Standard Deviation; df=Degree of Freedom; ** $p < 0.01$

Table 3 Multiple regression analysis – predictor of self-reported social support total score

Values	β	P-value	95.0% CI	Model Summary
Gender	.24	.000**	(.45, .88)	$R = .29$ $R^2 = .08$ $F = 14.47$ $P = .000**$
Age	.16	.000**	(.08, .24)	
Types of School – Government or Private	.02	.46	(-.13, -.29)	
Areas – Rural or Urban	-.05	.14	(-.37, .05)	

CI: Confidential Interval; ** $p < 0.01$

The multiple regression analysis [Table 3] showed a highly significant association in self-reported social support total score among school-going adolescents with gender and age and no significant association with types of school and areas.

Discussion

Adolescents are a period of pressure & tension (Pahwa, Sidhu, & Balgir, 2019; Srinath, Kandasamy, & Golhar, 2010) and major difficulties of adolescents was academic pressure (Noronha & Govindaraju, 2017; Rentala, Nayak, Patil, Hegde, & Aladakatti, 2019), emotional and behavioural problems (Pahwa et al., 2019; U. Harikrishnan., Arif, & H. Sobhana., 2017; Wiles et al., 2008), lack of social support (Camara et al., 2017) and health-risk behaviors (Das, Chattopadhyay, Chakraborty, Dasgupta, & Akbar, 2015; Nagendra & Koppad, 2017; Peltzer & Pengpid, 2012; Qadeer, Wong, MacKillop, & Ferro, 2018).



The current study found that 8.7% of school going adolescents had lack of social support from significant other, friends and family. The study depicts that peer supports of school going adolescents (75%) was highest support among social support and other studies also revealed the same (Griffiths et al., 2011). A study by (Prabhu & Shekhar, 2017) illustrate that there was a high perceived social support and significant difference between both gender. The current study also depicts that female school going adolescents had more social support in all variables than male school going adolescents. Social support is one of major factor for the development of every individual. The positive perceived social support aid to reduce the worry, anxiety, stress, antisocial behaviours, psychopathological conditions (Griffiths et al., 2011; Licitra-Kleckler & Waas, 1993; Ren et al., 2018). The social support influence school going adolescents life achievements, quality of life, life satisfaction, build healthy interpersonal relationships, improve cognitive thinking, build social relationships and a positive environment from society (Alsubaie et al., 2019; Danielsen et al., 2009; Khan, 2015; Kumar & George, 2013).

The studies clearly revealed that psychological distress decreased with parental emotional support(Boudreault-Bouchard et al., 2013); significant correlations existed among cognitive variables, social support, Behavioral skills, and health lifestyle behaviors (Kelly, Melnyk, Jacobson, & O'Haver, 2011); improving social supports in families and neighbourhoods may alleviate distress and foster hope (Cheng et al., 2014). The positive support from significant other, peers and family guidance the adolescents' better future life. The limitations of current study were self-reported questionnaire and need to incorporate other determine factors related social support.

Conclusions

The current study concludes that 30.9% of school going adolescent's had moderate to low social support. Therefore there is a need to do periodical assessment and intervention packages to school going adolescents with the direction of multi-disciplinary team.

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EQUINE-ASSISTED THERAPY

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ABSTRACT

Equine-Assisted Therapy(EAT) is a form of experiential therapy which involves activities with horses to promote human physical and mental health at Licensed EAT centers. In this therapy patting the horse or stroking can decrease stress levels, create a calm environment and reduce anxiety as well as movement of horses with client improves functional ability in case of cerebral palsy. It can be applicable for the patients who are being treated for cerebral palsy, substance abuse, Addiction, Behavior disorders, mood disorders, eating disorders, ADHD, Autism, Asperger's ,sex Addiction, Bipolar, depression and related conditions.

Key Words: Equine, Therapy, horse, reduce anxiety, functional ability.

INTRODUCTION

Animals can provide an excellent emotional support for the human beings. Besides the pet-owner relationship, many of us have experienced extraordinary peaceful feeling with animals. Hence some animals are used in therapeutic setting to help people proceed through challenging emotional experiences. Animal-assisted therapists can use many of creatures in their work including dogs, cats and birds. But people who provide Equine assisted therapy claim that horses can provide benefits that no other animal can provide. "A horse is the projection of peoples' dreams about themselves – strong, powerful, beautiful – and it has the capability of giving us escape from our mundane existence." This quote is attributed to Pam Brown, and it likely has special resonance for people who love horses. It might also attract to people who provide equine-assisted therapy. These therapists believe that horses can provide people in recovery from addictions, mental illnesses or both with the help they will need to overcome the challenges they face.

Definition:

Equine assisted therapy is a kind of Equine Assisted Activity and Therapy (EAAT) in which horses are used as an integral part of therapeutic process to enhance physical and mental health. EAT provides support for improving the ability of young people to communicate, relate to others and increase the emotional and social impact of children and adolescents' functional ability. Findings from the research studies including people with anxiety and depression indicated increase in confidence, self esteem and assertiveness as well as a decrease in undesirable behavior.



History of equine therapy:

The concept of using horses having been practiced from ancient Greek time onwards, because Hippocrates described 'Hippotherapy' in his writings. In 1950, the EAT is so popular in Germany, Austria and Switzerland where this therapy was used by the physiotherapist for those with physical disabilities. In the last 20 years EAT has evolved to include psychological therapy.

In the 19th century, German physicians suggested horseback riding to decrease attacks of hypochondria and hysteria. Subsequently, Europeans continued to promote and standardize therapeutic riding methods to reduce physical ailments and promote psychological wellness. Since the 1990s, rehabilitation and mental health programs have implemented the use of horse for youth as a part of the therapeutic process.

Common goals of EAT include:

The goal of equine assisted therapy is to help the client to develop needed skill and attributes such as:

- Increasing assertiveness
- Honing problem-solving skills
- Improve the muscle tone
- Utilizing teamwork skills
- Building confidence
- Improving leadership skills

Unique Traits of Horses Suits with Mental Health:

Horses have the following unique characteristics which make this therapy more effective as follows:

1. **Size:** As the horses are large and very impressive animal, when an individual accomplishing the task with horses can gain more confidence, self esteem and continues to get reinforced with the feeling of empowerment.
2. **Herd Animal:** Horses are basically herd animal likes to have a companion which wants to create bond and it can be poignant when it comes to the human.
3. **Mirror Behaviour:** Horses are keen observer, more vigilant and sensitive to movement and emotion because they are prey animals. Therefore they have an inherent ability to mirror thoughts and behaviour of others. This kind of trait helps the client to learn to reflect on his own behavior and challenge the way the client can approach situations in his life.
4. **Non-Judgemental and Unbiased:** During the session with client and horse, the horse will offer only a sense of peace because they only will react to the client's behavior and emotions with no bias or any judgment of their emotional experience.

Indications of EAT:

Equine therapy can help the individual to build up self confidence, self-efficiency, communication, trust, perspective, social skills, impulse control and learn boundaries. EAT may be beneficial for patients dealing with psychosocial issues and various mental health needs, such as (but not limited to):

- Anxiety disorders
- Psychiatric disorders
- Cerebral Palsy



- Mood disorders
- Behavioral difficulties
- Other psychological illnesses – such as schizophrenia, ADHD, autism, personality disorders, depression, post-traumatic stress disorder (PTSD), receptive or expressive language disorders
- Major life changes such as trauma, grief, divorce and loss
- At-risk youth
- Victims of violence
- Addictions and substance abuse issues
- Learning difficulties.

Contraindications:

EAT should not be administered for the following clients:

- People who experience allergic reactions to horses or their environment.
- People who are actively dangerous to them self (Suicidal, Homicidal, aggressive)
- People who are delirious, demented, dissociative, psychotic, and severely confused.
- Medically unstable
- Actively substance using.

Horses chosen for EAT :

The horses chosen for the EAT must be calm, even-tempered, gentle, serviceably sound, and well-trained both under saddle and on the ground. Equine-assisted therapy programs try to identify horses that are calm but not lazy and physically fitted with proper balance, structure, muscling and gaits. Suitable horses move freely and have good quality gaits, especially the walk. Unsound horses that show any signs of lameness are generally avoided.

Training of Horses:

Before therapy sessions begin, horses are typically allowed to run freely and eat a good healthy meal. They shouldn't be full of nervous energy or hungry, as this might make them more reactive. When they've had a chance to exercise and eat, they might be more ready to work. Horse trainers typically handle these details.

Types of Equine Assisted Therapy:

Equine assisted therapy will be implemented in two forms: hippotherapy and equine assisted psychotherapy. The form of EAT will be chosen based on the needs of the client.

1. **Hippotherapy:** Hippotherapy is an intervention given by licensed physical therapist, occupational therapist, recreation therapist and speech-language therapist which uses equine movement as part of an integrated intervention programme to achieve functional outcome. Rhythmic, three-dimensional movement along with the rider's interactions with the horse and responses to the movement of the horse can improve the flexibility, posture, balance and overall function. Equine movement resembles human walking and has a transient effect on human muscle tone by

stimulating the vestibular system. The therapist guides both the rider and horse to encourage specific motor and sensory inputs.

2. **Equine-Assisted Psychotherapy (EAP):** Equine assisted psychotherapy is otherwise known as Equine-facilitated psychotherapy or Equine assisted mental health or Equine assisted counseling. This is an interactive process in which a licensed mental health professional (MHP) working with an appropriately credentialed equine professional partners with a suitable horse. EAP includes many different horsemanship activities such as grooming, handling, and longeing to facilitate emotional healing. In this interactive therapy, horse is a partner by reflecting the patient's true feelings. Because horses are excellent observer of nonverbal language, the interaction can reveal information of which people aren't aware. Clients can learn about themselves and others by involving in activities with horses and then processing feelings and behaviour patterns.

Precautions:

The role of therapist in EAT is more important. The therapist should take care of client physically, mentally and emotionally as well as the safety of horses. So the therapist must be more cautious in implementing the EAT therapy for the client with following background:

- History of animal abuse
- History of fire setting
- Suspected current or past history of physical, sexual or emotional abuse
- History of seizure disorder
- Gross obesity
- Medication side effects
- Stress-induced – reactive airway disease.
- Migraines

Role of Nurse in EAT Therapy:

- **Inform:** The nurse has to involve herself in information, education and communication (IEC) about EAT therapy and correct the misperceptions.
- **Refer:** Refer the patients to a well qualified, licensed and credentialed professional who can provide an EAT.
- **Support:** Support the clients who are receiving and received EAT.
- **Personal Development:** Through Equine assisted therapy, seek development of oneself as an evolving person who provides care to others.

Conclusion:

Overall, Equine assisted therapy is a powerful approach involves licensed EAT therapist, professional horse trainer, horses and the client collaboratively to achieve better physical and bio-psychosocial therapeutic outcomes. As a nurse, we have a critical role in health promotion of people in the society. Hence, we are in the position



to identify the people, inform about EAT, refer to the licensed EAT centers and support the people who involve in EAT.

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PARENTING STYLES AND PARENTING SENSE OF COMPETENCE AMONG MOTHERS OF CHILDREN WITH AND WITHOUT AUTISM SPECTRUM DISORDERS

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Abstract

Autism spectrum disorders is neither a maze nor a disease. Rather it is a challenge but not a catastrophic one. It can be defined as a worsening developmental functions and abilities. The study investigates parenting styles and parenting sense of competence among mothers of children with and without autism spectrum disorders. Two psychological tests were used to assess the variables taken for the study. Two scales were Parenting styles and dimensions questionnaire (PSDQ) and Parenting sense of competence scale on 60 mothers wherein thirty mothers belonged to category whose children have autism spectrum disorders and rest thirty belonged to category whose children are without autism spectrum disorders. Non probability purposive sampling technique was used to select sample for two criterion groups. Data was analyzed with the help of descriptive and inferential statistics. The results of the study portrayed that mothers of children with autism spectrum disorders adopted authoritarian parenting styles more and showed low levels of parenting sense of competence as compared to mothers of children without autism spectrum disorders who adopted authoritative parenting styles more and depicted high levels of parenting sense of competence. A significant relationship was also found out among the two variables. The current study can serve as a prominent aspect for future prospects in the field of distinct parenting styles and sense of competence and can help in creating awareness in society.

Keywords- Autism Spectrum Disorders, Parenting Styles, Parental Sense of Competence

Introduction-

Autism Spectrum Disorders has been a neuro as well as biological condition which has allured clinicians and has provoked them to work harder in this area. Many clinicians have a firm perception that it is a deep-rooted disorder (Maruvada,2020).It is truly said by an autistic person that “*Autism can’t define me, I define autism*”. There is not a one type of autism. All autistic children are somewhere different from each other. They are all congregated, making it a complex disorder. (Hendren,2014). It is a kind of inheritable and neurodevelopmental ailment which is marked by deficits in area such as inability to interact in community, substandard interaction ability and confined and monotonous conduct in different activities.

Autism is defined by its symptoms that are clustered together. Traces of this magnificent disorder can be found more than 60 years ago (Wolff,2003). Since its recognition, researchers are perplexed as well as amused by the manifestation, which has led to a



number of researches. These researches have not only helped clinicians getting aware of distinct features of this disorder but also how it leaves a lasting impression on mental as well as on physical wellbeing of care givers, family members as well as acquaintances.

Year 1971 marked a major milestone in this disorder with the release of the “*journal of Autism and childhood Schizophrenia*” whose pioneers were “Leo Kanner”. The first account of the disorder can be found out in between of second world war wherein contribution towards this disorder can be identified. First benefaction was *Leo kanner*. In his literature, he illustrated a sequence of 11 juveniles, whom he encountered during his clinical exercise. He described those children as “autistic disturbances of affective contact”. He elucidated these children as exceptionally genius, however they portrayed “a powerful desire of aloneness”. He retitled this as “early infantile autism”. Later, in 1944 *Hans Asperger* provided world with a *milder* version of autism which is known as “Asperger syndrome”. By the end of second world war, there was a zenith amount influence of “psychoanalytic ideas” which made clinicians conclude that the root cause of autism is *life experiences*. Moreover, they also omitted the part of genetics. The major change in present time can be noted in classification of autism. Earlier it was classified in category of schizophrenia but now we are very much aware that there is no relation between the two disorders. The ear 1977 certified that the disorder is caused due to “abnormalities in brain” and has “genetic” cause attach to it due to surging researches conducted on twins. (Lips,2014)

For the very first time, “infantile autism” was added in *diagnostic statistical manual* in 1980 giving it a different identity. However, in 1987 the name of disorder changed to “autism disorder”. In year 2000s, there was a rise and fall of vaccines available for autism. Prominent changes and development of the disorder can be noted in 2013 wherein distinct subdivisions were included in one category and was named as “autism spectrum disorder.”(Lips,2014).

Raising a juvenile with any kind of developmental disablement can be a provocation. Parent of children with “Autism spectrum disorder” generally come across many health issues which can be a root cause to not only physical ailment but also psychological issues. Parenting a child with this disorder can be weary as well as lethargic and understanding between parent and child can be stained due to stigma attached to the disorder and inability to understand drastic behavior changes of their child (Weinshenker,2014). Along with this, differences and inability of autistic individuals to connect with their family can be present with the growing age. Seeing and observing their child behaving in an inappropriate and inability to perform tasks which children of their age groups can do, can put parents in grief for their life.

Autism spectrum disorders is reckoned to affect roughly 1.7-2 million children in India. Early intervention as well as early diagnosis is proven to be fruitful for and is considered as a prominent aspect for treatment. In Indian subcontinent, the utmost symptom recognized by most of the parents was “social difficulty” with their children. Moreover, while interviewing them, it was also revealed that many guardians are not knowledgeable about this disorder. For the best treatment of their child, parents traveled to different places and seek advice of many clinicians (Mahapatra,2019).

Autism spectrum disorders is “actually a family epidemic”. The society and family where autistic child reside also plays a crucial role in development of the child. Autism



can not only lead to developmental delays in an individual but it also has a gigantic impact on mental health of parents. Developmental disabilities especially autism can ruin the relationship of patients with their family members and can also act as a contributing factor to other psychological disorders. Developmental delays in a child require love and care of both father as well as mother. Roles of both the parents plays a crucial role when it comes to raising an autistic child. Parents or caregivers of children with Autism spectrum disorder have divulge soaring levels of stress as well as mediocre health especially physical. Diverse attributes of parents can have an impact on the way they look upon stress provoking events in life as well as how tactfully they deal with unique situations related to their child who have any developmental issue. Dealing with children who have autism spectrum disorders is not an easy task and can be challenging for whole family. Parents and guardians try to apply distinct coping strategies with an aim to improve their child's situation. After getting aware that their child is suffering from autism spectrum disorder, the presumption of their parents is transformed. They feel that in future their child will perform tasks and activities just like a normal child such as going to college.

As the prevalence of *Autism spectrum disorders* is surging from time to time, it is pivotal to get aware how it exerts influence on environment as well as relationships in family. Mothers while raising their child with Autism spectrum disorder, don't get much "social support" from the environment, there is plausibility of mothers having depression as well as anxiety (Boyd,2002). In 1950, it was found out that strained parent-child relationship as a cause of dysfunctions in social and emotional working of a child. Moreover, it was supported by absence of parental comfort and deteriorated relation among parent and child. The same is well explained by *Bruno Bettelheim* in his theory (Crowell,2019).

Clinicians such as *Magaret Mahler* and *Micheal Rutter* focused greatly on idea of attachment among individuals who have autism. Mahler theorized when it comes to children, their growth had not facilitated to form attachment in their environment. On the other hand, Rutter explained "lack of attachment behavior and relative failure in bonding." The prominent symptom of autism according to *DSM-3* was "pervasive lack of responsiveness to other people". It was assumed that those children who have autism were not able "to demonstrate differential attachment to familiar people in contrast with unfamiliar adult". Nevertheless, there was evidence that this ideology is not valid with all the juveniles. Three groups were analyzed by Wing and Gould -1) those individuals who detach themselves and socially faraway, 2) those individuals who prefer staying away from "social overtures" and 3) those who occupy themselves in various interactions in atypical and peculiar way. (Crowell,2019).

Parenting Styles-

Parenting styles plays a vital part in delineating vigorous relationship between parent and child. In the 1960s renowned psychologists, "Diana Baumrind" provided with the concept of pillar theory, which explains association among primary parenting styles as well as behavior of a child. Control of parents can be classified into three categories which are: 1) affirmation vs denial, 2) a rigid control vs lax control and 3) psychological control vs liberty (Baumrind, 1967).

Baumrind (1971) gave concepts of distinct parenting styles. It includes-



Authoritative- Authoritative parents have high levels of assumptions and belief patterns towards attainment and pubescence. At the same time, they are kind hearted and approachable. They have certain kinds of rule sets for their children and impose certain boundaries. They encourage open dialogue with their children. They are tender, support ideologies of their kids and promotes sovereignty. This kind of parenting style is also known as “democratic parenting style”.

Authoritarian- These kinds of parents have high levels of demandingness and adopt insensitivity towards nurturing their children. In this kind of style, parents demand unseeing compliance applying rationale such as “because I said so”. These kind of parents demands discipline which sometimes can be problematic in certain situations for their child. They imbibe conformity and passivity and sometimes exert punishment with an aim to influence the behavior of their child. They are apathetic to the demands and not towards nurturing of their child.

Permissive- parents who follow this kind of approach implicate less guidelines and rules on their children. They try to avoid executing boundaries on children. They are soft-hearted and permissive; however, they loathe saying “no or disappoint their children”. Children who are nurtured and raised in this kind of parenting style are- 1) they cannot go along with regulations imposed on them, 2) they can sometimes lose “self- control”, 3) they have narcissistic kind of personality, 4) they can face more issues in different relationships and 5)can have difficulty in maintaining and enhancing social interconnections.

Studies conducted in this area have portrayed that children who are suffering from autism and are raised by parents who follow authoritarian parenting styles have found out that those children displayed critical behavioral issues, as compared to another group (Gau, Chou et.al, 2010). Not only it is negative for children who are born and brought up in this kind of environment, but it is also harmful for parents as they undergo many psychological issues while rearing their child with developmental delays. Results of a cross-sectional research depicted that mothers are highly prone to stress which had a link with depression and anxiety issues (Wang, Hu et.al, 2013).

Another analysis on parenting a child with autism, wherein researchers examined viewpoint of parents in taking care of their child during developmental years with autism to gaining an awareness about distinct ideologies of parents towards autism, family environment and social happening as well as their impression on health. The findings of the study revealed that while raising a child with autism spectrum disorder, parents come across multiple provocations in distinct areas of care, having influence on stress among parents and adjustment (ooi,lynn et.al,2016).

Parenting Competency-

Parental competency refers to nurturing child in a way that it enables the child to procure skills and capacities which are needed for dealing constructively with “ecological niches” which he/ she will inhabit during different stages of life (Belsky, 1984). It refers to accession of parenting abilities and expertise. Study conducted by Booth and Booth’s (1994) analyze parents who undergoes who have issues in learning divulged that their issues are often similar with parents who belongs to identical social as well as economic status and many of their issues should be perceived due to poverty. The outcome of the study, revealed that issues were intensified by the “services



ostensibly” as long as for guidance from family and there was negligence to include individuals’ resolutions affecting them (Booth and Booth, 1994).

Parents whose children have autism spectrum disorders requires to implement distinctive competencies for nurturing their child as compared to parents whose children are healthy. Educational initiatives for parents whose children have autism spectrum disorder can assist in lessening stress enhancing events and surge parental self-efficacy. Researchers have found stunted self-esteem and stress in mothers have been connected to ideal parenting, disadvantageous “early intervention programs”, Hinderance in development of child as well as zenith rates of “anti-social behavior” (Keen,2010).

It is very important for parents whose children have Autism Spectrum Disorders to reestablish stability in family and should believe that their child have this disorder. Hence, with sufficient knowledge they will be able to assemble their interests and routine and of with their child. Along with this, they will also be able to maintain a healthy communication of their child in society hence improve satisfaction. Researches also portrayed that supremacy in rearing a child is a prominent aspect in attaining parental competence (Mohomamadi,2018).

Objectives of the study

In order to attain the prominent goal of the study, following objectives were prepared-

- 1.To study parenting styles among mothers of children with and without autism spectrum disorders
- 2.To study parenting sense of competence among mothers of children with and without autism spectrum disorders
- 3.To study the relationship between parenting styles and parenting sense of competence among mothers of children with and without autism spectrum disorders.

Hypotheses of the study

- 1.There will be significant difference between parenting styles among mothers of children with autism spectrum disorders.
- 2.There will be significant difference between parenting sense of competence among mothers of children without autism spectrum disorders.
3. There will be significant relationship between parenting styles and parenting sense of competence among mothers of children with and without autism spectrum disorders.

Method

Participants

For the successful completion of this study, in total sixty mothers were chosen wherein, thirty mothers belonged to category whose children have autism spectrum disorder and rest thirty belonged to category whose children are without autism spectrum disorder. It was made sure that children included for the study were from age group of 4-12 years of age. Children included for the study should meet the inclusion criteria who had autistic features according to DSM-5. Mothers age for the study was chosen to be in range of 30-45 years of age. Techniques of sampling used in this study was purposive sampling. Sample was collected with the help of quantitative technique. Data was analyzed with the help of descriptive and inferential statistics. Control was exerted over variables such as age of child (4-12 years) and geographical location- (Delhi/ NCR).

Tools used-



For the study, two scales which assessed parenting styles and parenting sense of competence were used.

Parenting style scale used of the completion of this research is *Parenting styles and dimensions questionnaire (PSDQ)* which was given by Robinson, Olsen and Hart. This tool is based on eminent theory on parenting styles given by Baumrind. Age criteria for this scale is 4-12 years old children's parents. The first version of scale included "sixty-two items" in 1995. However, the final version of scale has "thirty-two items" in 2001.

Parenting sense of competence scale developed by Gilbaud-Wallston & Wandersman, 1978) assesses parental sense of competence on two distinct areas- satisfaction and efficacy. It is a 16 item Likert-scale questionnaire (on a 6-point scale ranging from strongly agree [1] to strongly disagree [6]). Satisfaction section of the tool tries to assess the mother and father anxiety, motivation and frustration, while the Efficacy section looks at the mother and father competence, capability levels, and problem-solving abilities in their parental role.

Procedure

After discussing the aim and requirements for the study with head of the institution where this study was carried out, they screened out children who were diagnosed with ASD in their institute. Children with "autism spectrum disorder" were not made part of the study if they had any other diagnosis that included any other comorbid disorder. Comparison children group mothers were chosen through "informal contacts" who portrayed interest in participating in this study. It was made sure that mothers chose for both the groups were literate. Before conduction of the study, mothers were briefly informed personally about aim and necessary details were shared with them. Written informed consent were therefore signed by mothers after explaining them the purpose as well as procedure of the study, they were reassured of confidentiality. The participants were not disclosed about the nature of the study in order to avoid the socially desired responses. Age of mother as well as child were kept in mind before conduction of session. After this, instructions from questionnaires which were parenting styles scale and parenting sense of competence scale were read out by researcher to mothers and questions were told to them. If they had any doubt while this process, researcher explained them briefly about the questions for their better understanding. At the end of the session mothers were thanked for their time and cooperation.

Results

The table given below portrays that there is a significant difference between parenting styles and parenting sense of competence among mothers of children with and without autism spectrum disorders. Authoritative parenting styles if the first dimension of parenting styles scale. The mean value and standard deviation for children without ASD was found out to be 54.93 and 8.867 respectively. Whereas the mean value and standard deviation for children with ASD was found out to be 48.10 and 7.420 respectively. The t is 3.237, significant at .002 level. On the dimension of authoritarian parenting styles. The mean value and standard deviation for children without ASD was found out to be 34.20 and 9.901 respectively. On the other hand, mean and standard deviation of children with ASD was found out to be 46.50 and 7.445 respectively. The t is -5.438, significant at .000. Third dimension in this scale is permissive parenting styles. The mean value and standard deviation for children with ASD was found out to be 7.93 and



2.43 respectively. On contrary, mean value and standard deviation of children without ASD was found out to be 10.83 and 2.306 respectively. The t is -4.948 significant at .000 level.

Table 1.2 illustrated another scale chosen for the study was parenting sense of competence wherein the mean value and standard deviation for children without ASD was found out to be 70.23 and 10.156 respectively. Whereas, mean value and standard deviation for children with ASD was found out to be 60.57 and 8.850 respectively. The t is 3.930, significant at .000 level.

Table 1.3 depicts the relationship among both the variables. There is negative correlation between authoritative and authoritarian parenting styles which is $-.458^{**}$ at 0.01 significant level. Along with this, a negative correlation is also found out between “authoritarian rearing ways and parenting sense of competence” which is at $-.528^{**}$ at 0.01 significant level. When it comes to mothers whose children are without autism spectrum disorder, it has found to have a positive correlation between “authoritative parenting styles and parenting sense of competence” which is at $.423^{**}$ at 0.01 significant level. On the other hand, when it comes to permissive parenting styles, which was found to be “low” in both the groups, it has negative correlation among parenting sense of competence at $-.268^{*}$ at 0.05 significant level.

Table 1.1 *Mean, standard deviation and t of parenting styles among mothers of children with and without autism spectrum disorder*

Dimensions	Mothers groups	N	M	Std. Deviation	P	t
Authoritative Parenting style	Without autism spectrum disorder	58	54.93	8.867	.002	3.237
	With autism spectrum disorder	58	48.10	7.420	.002	3.237
Authoritarian Parenting style	Without autism spectrum disorder	58	34.20	9.901	.000	-5.438
	With autism spectrum disorder	58	46.50	7.445	.000	-5.438
Permissive Parenting Style	Without autism spectrum disorder	58	7.93	2.243	.000	-4.948
	With autism spectrum disorder	58	10.83	2.306	.000	-4.938

Table 1.2 *Mean, standard deviation and t of parenting sense of competence among mothers of children with and without autism spectrum disorder*

Dimensions	Mothers groups	N	M	Std. Deviation	p	t
Parenting sense of competence	Without autism spectrum disorder	58	70.23	10.156	.000	3.930
	With autism spectrum disorder	58	60.57	8.850	.000	3.930

Table 1.3 represents the relationship among parenting styles and parenting sense of competence among mothers of children with and without autism spectrum disorder.

	Authoritative parenting styles	Authoritarian parenting styles	Permissive parenting styles	Parenting sense of competence
Variables	r p	r p	r p	r p
Authoritative parenting styles		-.458** .000	-.248 .056	.423** .001
Authoritarian parenting styles	-.458** .000		.451** .000	-.528** .000
Permissive parenting styles	-.248 .056	.451** .000		-.268* .039
Parenting sense of competence	.423** .001	-.528** .000	-.268* .039	

“**. Correlation is significant at the 0.01 level (2-tailed).”

“*. Correlation is significant at the 0.05 level (2-tailed).”

Discussion

The current study investigates and attempts to analyze the relationship between co-parenting styles and parenting sense of competence among mothers of juveniles with and without *autism spectrum disorders*. As expected, mothers of kids with the disorder reported high levels of authoritarian parenting styles and low levels of “*parental sense of competence*” as compared to another group that is mothers of children without the disorder. Parents of children with autism spectrum disorders reported more authoritarian and less authoritative parenting as compared to another group. Findings of the present study are very much similar to that of other researches done in some nations which includes Israel (Hirschler-Guttenberg et al. 2015b), and Taiwan (Gau et al. 2010) in which authoritarian (or highly directive) parenting style was more utilized by parents whose child have ASD than among comparison parents.

First dependent variable taken for this study was parenting styles and Dimensions Questionnaire by ,Robinson, Mandleco, Olsen, & Hart 2001. It was based on research conducted by “Diana Baumrind” who gave crucial types of parenting styles which are-authoritative parenting styles, authoritarian parenting styles and permissive parenting styles. An *authoritarian parenting style* with a zenith amount of structure might also develop in reaction to elevated levels of tension faced by mothers and fathers of kids who have ASD (Hayes and Watson 2013). The scale has *fourteen items* in this dimension. Mothers and fathers with elevated tension have been shown to be more likely to portray to be negative in their parenting (Weitlauf et al. 2014). “Authoritarian parenting” indicates “high demands” as well as “low responsiveness”. Mistakes, in this kind of parenting style tend to be punished harshly. Along with this, they are not



inclined or try to elaborate reasons for this kind of behavior imposed on their child. On the other hand, “authoritative parenting styles” which is commonly used among mothers of children without autism spectrum disorder are reactive to the child’s “emotional needs” along having high standards. They have defined limits and are very harmonious in executing barriers. Third dimension of this scale is permissive parenting style on which none of the groups chosen for the study scored as high as the other two dimensions. The scale has *four items* related to this dimension. “*Permissive parenting*” is a type which is marked by nadir commands and zenith tolerance. They practice loving behavior, yet give nadir regulations and rules. Another dependent variable which was taken in this study to better understand mothers of both the groups was “parenting sense of competence scale” which assessed satisfaction as well as self -esteem among parents. Here higher scores reveal significant levels of competence.

The most prominent espousing reason for conduction of this study is due to the less availability of verification analyzing the *parenting ways and sense of competence among matriarchy of children with and without autism spectrum disorders*. Due to this, in the current research, our espousing aim was to assess a relationship between the above-mentioned variables and whether to analyze any difference if present.

The results of the study draw attention to the fact that the experience of raising any child can be demanding and tough and analysts have urged that households usually acknowledge well as well as calibrate to perpetuate firmness as well as direct life’s provocations (Minnes, 1988). Accordingly, analysts have posited that households wherein a child have any dysfunctions are cynical influence and therefore experience more uncertainty and maladjusted than “typical” families.

The study conducted retains all the hypothesis mentioned. First hypothesis formulized for this study was there will be significant difference between rearing ways amid mothers of kids with “*the autism spectrum disorders*”. The study retains this hypothesis. After the completion of analysis of results, it was found out that mother whose children have autism spectrum disorder tends to adopt “authoritarian parenting styles” while dealing with their child. They scored high on authoritarian dimension. In accordance to hypothesis given, authoritarian parenting style had $t=5.438$ and was found to be significant at 0.02 level (table1.1). On contrary, mother whose children does not have autism spectrum disorder tends to adopt “authoritative parenting styles” while raising their child. They scored high in this dimension. According to hypothesis stated, authoritative parenting style had $t=3.23$ and was found to be significant at 0.01 level (table1.1). Study managed by Hutchison (2016) on parenting styles as a variable concluded that soaring levels of stress linked with extensive utilization of authoritarian and permissive rearing ways, and additional issues with conduct management for kids. Authoritarian and permissive raising ways were associated with “*poorer child executive functioning*”. In other studies, mothers and fathers of offspring with ASD have showed further practice of “*authoritarian parenting styles*” in comparison to other group (Gau et al. 2010), as well as parents of normal kids have delineated zenith application of “*authoritative parenting*” compared to those who have a child with ASD (Rutgers et al. 2007). It is extensively well- known that involving in “*permissive and/or authoritarian*



rearing behaviors is associated with unfavorable outcomes for children, while *authoritative parenting* is related with more desirable child outcomes (Baumrind et al. 2010).” In point of fact, it is frequently tough for guardians whose kids suffer from conduct issues and/or developmental dysfunction to involve in “*optimal authoritative rearing*”. For instance, if an individual child whose children suffer from developmental disabilities is engaging in a temper tantrum, the parent may find it simple and effortless to slap or harm the child, or to brutally penalize the offspring, and terminate the chaos quickly, in contrast to other more authoritative options available. This at the end will guide to likeliness of this way of dealing in the future, with less development in kid’s conduct. “(Sameroff and MacKenzie 2003)”. This statement is braced by the view that for guardians of children with any dysfunction “*especially autism spectrum disorder*,” the use of “*authoritative style of raising* ” became less commonly used for older children compared to younger children, a pattern not found for typically developing controls (Woolfson and Grant 2006).

It is important to note that, it is not that the child’s conduct is the mothers and fathers liability, but that it is prominent to also draw awareness to as well as assist the guardians of offspring with alignment, especially since often the focus is only on the offspring and his or her issues. Guardians with a kid with “*special needs*” need aid and may well being from academic about the possible long-term consequences of non-authoritative parenting styles and interposition on extra commutable rearing ways for challenging offspring. Indeed, numerous “*behavioral parent training interventions*” that address parenting skills and dysfunctional parenting styles, such as “*Triple P*” (Tellegen and Sanders 2014), and “*Parent–Child Interaction Therapy*” (Lesack et al. 2014) have shown astonishing effects on parent and child behavior for children with ASD.

Another hypothesis drafted for the study was that “*there will be significant difference between parenting sense of competence among mothers of children without autism spectrum disorders*.” The study retains this hypothesis. Parenting sense of competence measures self -esteem as well as satisfaction among parents. After analysis of the results, it was established that parenting sense of competence (table-1.2) was reported “low” among matriarchy of kids with autism spectrum disorder. According to hypothesis stated, “*parenting sense of competence*” among matriarchy of children with autism spectrum disorders had t- 3.930 and was found to be significant at 0.01 level. However, another group was reported “elevated” parenting sense of competence among matriarchy of offspring without autism spectrum disorders. Mums who delineated that their kid had an ASD detection had nether amounts of parenting sense of competence – potentially because this may represent a additional critical way of the kid’s state. This recommend that offspring’s amount of performance may impact “*parenting sense of competence*” (Hill & Rose, 2009). Study conducted by katkic et al (2017) depicted their results that there was a “significant difference amid matriarchy of children with and without disabilities in tension, and self-perceived sense of maternal efficacy, which was part of sense of competence variable.” Prior studies have portrayed that that mothers who had nadir assistance needs had more “parenting satisfaction” (Arellano, Denne et.al ,2017). Previous studies suggest that parents who have “high self-perceived parenting



efficacy” feel that they fulfill their parenting roles and are successful in nurturing positive kid growth (Kersh et al., 2006).

Consequently, another hypothesis focused for the study that “*there will be significant relationship between “parenting styles and sense of competence” amid mothers of offspring with and without autism spectrum disorders.*” After analysis of results, it was illustrated that there is negative correlation between authoritative and authoritarian parenting styles which is $-.458^{**}$ at 0.01 significant level. Along with this, a negative correlation is also found out between “*authoritarian rearing ways and parenting sense of competence*” which is at $-.528^{**}$ at 0.01 significant level. This accepts out hypothesis that if mothers of children with autism spectrum disorder have soaring levels of authoritarian parenting styles, there will be decrease in their parenting sense of competence. When it comes to mothers whose children are without autism spectrum disorder, it has found to have a positive correlation between “*authoritative parenting styles and parenting sense of competence*” which is at $.423^{**}$ at 0.01 significant level. On the other hand, when it comes to permissive parenting styles, which was found to be “low” in both the groups, it has negative correlation among parenting sense of competence at $-.268^{*}$ at 0.05 significant level. (table 1.3)

The present study came with some of the limitations such as- 1) the sample size of the study was small due to time constraint and it could have been of sizeable amount, 2) sample taken for the study was from one institute due to the issue of privacy many institutes declined conduction of research and 3) more childhood dysfunctions could also be correlated and be part of the present study.

Summary

Mothers and fathers of offspring with ASD or any other maturing delays can require distinct nurturing challenges while raising their child. Raising any kid can be chaotic in itself. One can only imagine the chaos of rearing and raising a kid with dysfunction. Moreover, co-parents with an offspring having a dysfunction have been found to have significantly more tension than those having a child without any condition (Rao&Biedel 2010). This study provides us with initial knowledge about parenting styles and parenting sense of competence among two groups of mothers. First, whose children have autism spectrum disorder and second whose children are without autism spectrum disorder.

Research conducted in Western societies has accepted the fact that rearing has a “*analytical impact on development of a juvenile*”. This includes influence on children’s self-esteem (Zakeri and Karimpour 2011), and social development (Carlo et al. 2011). First scale used for the study was “parenting styles and Dimensions Questionnaire.” One of the most widely used approaches to gestate parenting is that of parenting style (Baumrind 1978; 2013). The scale attempts to analyze these three dimensions. The study found out that mothers whose children suffer from autism spectrum disorder, espouse authoritarian parenting style. They widely use punishment rather discipline whereas on the other hand, mothers of children without autism spectrum disorder, embraces authoritative parenting style which is democratic way for raising their child.



Another scale used for the study was parenting sense of competence which measures self-esteem as well as satisfaction among parents. The results of the study indicated that birth mothers of kids who are suffering from autism spectrum disorders reported “low” levels in this scale whereas matriarch of kids who are not suffering from autism spectrum disorder delineated zenith amounts of parenting sense of competence. Authoritarian parenting styles as well as low levels of parenting sense of competence can be ascribed to 1) difficulty in day to day chaos and difficulty in scholastic as well as job related activities 2) monetary difficulty in aid seeking and health maintenance and 3) communal withdrawal of the families due to behavioral problems which can lead to communal difficulty. (woodgate,2010). This is also been proven by this study wherein authoritarian parenting styles and parenting sense of competence was correlated. And it was found out that authoritarian rearing ways and sense of competence which is at $-.528^{**}$ at 0.01 significant level.

The study conducted denotes that Interventions should be undertaken to manage and encouraging parents to use appropriate rearing ways. Future longitudinal investigations and researches would be beneficial in addressing these relations. Moreover, it could help clarifying the developmental framework related to desirable parenting styles as well as competence levels of parents.

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A STUDY ON VIOLENCE AND NEGLECT EXPERIENCED BY WOMEN SURVIVORS – EXTENT, IMPACT ON THEIR QOL

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Abstract:

The authors try to examine the quality of life among the economically poor women victims of violence. They present findings within a conceptual framework comprised of role functioning, life satisfaction, well-being, and social-material conditions, including Physical, Psychological, Social Relationship and Environment related violence and its impact on quality of life of women victims. The study indicates that **Gender inequality and discrimination , poverty, injustice , insecurity(social and economical) , lack of education , lack of awareness, lack of self confidence , and lack of support from the family as well as civil society** are root causes of violence against women. The impact of violence leads Poor Quality of life among the women victims

The study also focus on to examine the Quality of life among economically poor women Victims of violence and need for Social Work Intervention. The universe of the study is Mandya and Mysore, Karnataka, the samples drawn registered cases from selected NGOS with the help of WHOQOL BRIEF scale, Likert scale and case study. The exploratory and diagnostic research design was adopted to explore the study results. Suggesting the need for further investigation. The authors conclude with a brief discussion of directions for future research.

Key Words: Quality life, Women victim, Violence and Social Work

Introduction:

Violence against women can have a myriad of devastating consequences on women's short and long term wellbeing. Along with the immediate Physical and Emotional impact of Violence, women's overall quality of life can be adversely affected over an entire lifetime, which can , in turn , impact their participation and engagement in various aspects of life and society(Johnson et al. 2008).These consequences to the individual women , along with the violent act itself, can have ripple effects on as a whole (WHO 2011). *Women are victims* of violence; every *woman* should get the best in *life* and is able to grow to her full potential.

Violence & Socioeconomic Status

Socioeconomic status (SES) encompasses not just income but also educational attainment, financial security and subjective perceptions of social status and social class. Socioeconomic status can encompass quality of life attributes as well as the opportunities and privileges afforded to people within society. Poverty, specifically, is not a single factor but rather is characterized by multiple physical and psychosocial



stressors. Further, SES is a consistent and reliable predictor of a vast array of outcomes across the life span, including physical and psychological health. Thus, SES is relevant to all realms of behavioral and social science, including research, practice, education and advocacy.

SES Affects our Society

SES affects overall human functioning, including our physical and mental health. Low SES and its correlates, such as lower educational achievement, poverty and poor health, ultimately affect our society as a whole. Inequities in health distribution, resource distribution, and quality of life are increasing in the United States and globally. Society benefits from an increased focus on the foundations of socioeconomic inequities and efforts to reduce the deep gaps in socioeconomic status in the United States and abroad. Behavioral and other social science professionals possess the tools necessary to study and identify strategies that could alleviate these disparities at both individual and societal levels.

Interpersonal Violence

Exposure to violence transcends age and SES, affecting all levels of income, education and occupation. Although exposure to violence affects all SES groups, youth from lower SES backgrounds tend to have increased exposure and likelihood of suffering from detrimental future outcomes.

Community Violence

Assessing and targeting violence at the community level is especially useful because adjustments at this level often affect a large number of individuals. Factors of SES play an important role in this area because communities are often segregated by SES, race and ethnicity. Targeting the risk and protective factors of violence at the community level will likely engender the greatest change. Community level risk factors for violence include increased levels of unemployment, poverty and transiency; decreased levels of economic opportunity and community participation; poor housing conditions; gang activity, emotional distress and a lack of access to services (Chen, Voisin, & Jacobson, 2016; McMahon et al., 2013; Voisin & Neilands, 2010). In contrast, protective factors buffer individuals and communities from these risks. In communities, these buffers include a stable economy, positive social norms, abundant resources, high levels of social cohesion, family support and rewards for prosocial community involvement (Jain, Buka, Subramanian, & Molnar, 2012; Jain & Cohen, 2013; Hardaway et al., 2012).

Reviews of literature

- Exposure to violence during youth has long-term life consequences. For example, adolescents who were physically abused have decreased odds of getting married, reduced educational attainment, and reduced income and net worth in adulthood (Covey, Menard, & Franzese, 2013).
- Observing violence and family conflict is correlated with increased depressive symptoms during high school (Eisman, Stoddard, Heinze, Caldwell, & Zimmerman, 2015).



- Adolescents' exposure to community violence is correlated with lower high school grade point averages and decreased enjoyment and interest in school (Borofsky, Kellerman, Baucom, Oliver, & Margolin, 2013).
- Research on post violence consequences finds that exposure to violence can negatively affect the ability to sustain employment. Women who are physically assaulted are significantly more likely to have unstable employment than women who do not experience intimate partner violence (IPV; Crowne et al., 2011).
- Women in abusive relationships frequently lose their jobs, experience high job turnover, are forced to quit or are fired (Crowne et al., 2011).
- IPV has long-term negative effects on women's job stability. For example, IPV has immediate consequences on women's ability to remain employed but also inhibits their ability to maintain a job for some time after the abuse ends (Adams, Tolman, Bybee, Sullivan, & Kennedy, 2013).
- Seventeen percent of cities cited domestic violence as the primary cause of family homelessness (The United States Conference of Mayors, 2015).
- Nearly 40 percent of veterans with post-traumatic stress disorder (PTSD) are living in poverty (Davis et al., 2012).
- Individuals with untreated PTSD had significantly lower long-term income and employment rates than those receiving treatment (Leonard et al., 2011; Murdoch, 2006; Savoca & Rosenheck, 2000).

Older Adults

- Every year, an estimated four million older Americans are victims of physical, psychological, or other forms of abuse and neglect (American Psychological Association, 2012).
- One in 20 older adults indicates that they have experienced some form of perceived financial mistreatment. The financial exploitation by family members and by strangers increased among more physically disabled adults (Acierno, Hernandez-Tejada, Muzzy, & Steve, 2009).
- At times, the financial burdens of multigenerational households or living in overcrowded quarters can lead to stress that can trigger elder abuse (American Psychological Association, 2012). Low income, poor health and low social support all independently predict neglect (Acierno et al., 2009).

Methodology

Aim of study:

This study investigates the Quality of life among economically poor women survivors of violence and need for Social Work Intervention. The research question is: What are the causes of violence and its impact on quality of life among the economically poor women Survivors? And need for Social Work Intervention

Objectives of the study

To study Socio – Economic Status of women victims of violence

To explore the Quality of life of Women victims of Violence

To understand the need for social work intervention

Research Design

The exploratory and diagnostic research design was adopted to explore the study results. The universe of the study is Mysore, Karnataka. The samples have drawn 100 registered



cases from selected NGOs – VIKASANA Mandya and Shakthidhama, Mysore. Only registered Women survivors were considered as respondents of the study. The tool used for collection of data was Interview, observation and case study method with the help of WHOQOL BRIEF scale, Likert scale. The data collected from both primary and secondary sources. The results obtained in quantitative and qualitatively. The duration of the study is 3 months.

Results and Discussions

This study is a register-based investigation of the long-term economic consequences for women of being exposed to severe violence that only includes cases who come for counseling and rehabilitation. The use of such other sources as police reports would have involved a higher risk of selection bias because women in the higher social strata are presumably more able to dodge being recorded by the police. The women exposed to severe violence are compared to age matched women from the population.

The results show that women who were assaulted have a much worse development of their financial situation than other women. Women who are victims of severe violence less often have paid work, more often low income, lower income growth, and much more often receive social assistance after the assault. In sum, all indicators of their financial situation show a very negative development.

The magnitude of violence against women in India is uncertain. The number of persons claimed to have been victims of violence varies considerably between studies and is much dependent on how *victim of violence* is defined, If the definition also includes symbolic violence such as insults, threats, harassment in physical ,emotional ,and sexual violence so forth, the numbers affected increasing day by day.

The prevalence of exposure to violence is increasingly being discussed as a public health issue. This is also recognized by the World Health Organization [WHO], 2007, 2012). Women and men are exposed to violence, but there are important differences in where the violence takes place. To men, home is a place of safety. To women, home may be the most dangerous place of all. The general difficulties of defining and studying violence against women as a public health problem are scrutinized by Ruiz-Perez et al. (2007). In their focus on intimate partner violence these authors encounter problems in defining this type of violence, in finding data about the magnitude of the problem, related to lack of consensus with regard to measuring events, and more.

Certain factors increase the risk of being exposed to violence. Research has shown a strong association between a reduced financial situation and several other negative circumstances, such as poor health, halting social networks, weak political resources and exposure to violence (Statens offentliga utredningar [SOU], 2000). Being young, unemployed, and divorced/single, especially those with children, increases the risk of becoming a victim of domestic violence (Nerøien & Schei, 2008).

Physical violence against women affects their entire lives. Their autonomy and integrity is damaged, their relationships with family, friends, and working life become more difficult and their health is adversely affected. Women subjected to violence more frequently report poor health and physical complaints

Results:

Demographic data of the respondents.

- Religion: Hindu (40) Muslim, 55, Christian 5

- Age of the respondents: majority of them were between 18 to 35
- Education: Illiterates, 30, primary 58 high school, 12
- Marital status: Single 45, married 30 divorced/separated 15, widowed 10
- Current Health Status (5-point Likert scale): very bad (65), Bad (30), Not bad /not good, Good (5) , Very Good

WHOQOL-BREF: 4-domain confirmatory factor model

Factors	Very bad (%)	Bad (%)	Good (%)
Physical: Pain,Energy ,Sleep , Mobility, Activities,Medication , Work	58	40	12
Factors Psychological: Positive feelings, cognitions, self esteem, Body Image, Negative Feelings, Spirituality	Very bad (%) 78	Bad (%) 18	Good (%) 4
Factors Social Relationship: Personal Relations, Social Support, Sex	Very bad (67%)	Bad (20%)	Good (13%)
Factors Environment: Safty and Security, Home environment, Finance, Health and Social Care, Information, Leisure, Physical Environment, Transport	Very bad (90%)	Bad (6 %)	Good (4%)

Major findings and Recommendations

- Majority (55%) of the respondents are Muslim.
- Majority of the respondents Age between 18 to 35.
- The Educational status of the respondents' primary level only.
- Marital status: Single 45, married 30 divorced/separated 15, widowed 10
- Majority (65%) of the respondents Current Health Status is bad.
- Majority (58%) of the respondents said that the quality of life of women victims (physical) very bad condition.
- 78 % of the Respondent's psychological status is also very bad .Very few of them said that they have good quality of life.
- 67 % of the Respondent's Social relationship is very bad.
- Majority 90% of the respondents said that they have very bad **Environment in** Safety and Security, Home environment, Finance, Health and Social Care, Information, Leisure, Physical Environment and Transport.

Suggestions and recommendations:

- Organizations working to mitigate effects of domestic violence provide services for victims in coordinated partnerships. These services include: Community Awareness



and Advocacy to inform women about available resources and facilitate and encourage a community-level response.

- Crisis and Pre-Crisis Services to remove women from abusive environments as quickly as possible.
- Medium and Long-Term Services to help victims cope with emotional, psychological, and physical trauma, restore self-esteem, and build independence.
- Children's Services to enable mothers to seek help for themselves and their children and address trauma experienced by children exposed to domestic violence.
- Effective social work intervention model in curative, preventive, rehabilitative and development.

Conclusion

Violence against women can have a myriad of devastating consequences on women's short and long term wellbeing. Along with the immediate Physical and Emotional impact of Violence, women's overall quality of life can be adversely affected over an entire. To improve the the quality of life of women victim need to expand existing and emerging innovations and research to foster systemic change, such as better understanding the connections between homelessness and domestic violence. Another example is community mobilization, which works toward lessening the stigma surrounding domestic violence and making it a concern for entire communities, not just individual families.

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‘VISTI’(FORCED LABOUR)- NATURE OF EXPLOITATION AND PROTESTS,ANCIENT INDIAN PERSPECTIVES

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SYNOPSIS

Visti or forced labour in ancient India has been envisaged as an extra-legal, coercive physical labour exploitation taxed forcefully by the local foci of power that developed from fourth century AD in northern and southern India. It flourished to a great extent during the early medieval period due to the practice of religious grants of land to Brahmanas and religious institutions transferring economic right of revenue collection from the land to the donee. This gradually empowered the donee, unquestionably, to extract visti or forced labour from the peasants and artisans living in the donated areas or villages. This extra-legal practice became more vigorous and extensive when, due to shrinkage of trade and currency, the king granted lands and transfer economic as well as administrative and judicial rights to his high officials instead of salary in cash. This process of de-centralization and the rise of local ruling class or feudatories reinforced the extraction of visti as a institution. Various terminologies and the nature of visti have been illustrated in contemporary and later texts and inscriptions, particularly copper plate charters of land grants. Varieties of forced labour can be visualized from the sources discussed. But the real nature of its exploitation can be gleaned and visualized from the outbursts of protests by the exploited. This would be the only way to justify the nature of visti in historical perspective.

KEY WORDS:Agrahara (land grants to brahmanas, temples and monasteries),Monetary anemia (scarcity of currency or cash in the market),Dasas (subordinated or enslaved people),Karmanta visti (forced labour exacted in state controlled workshops),Visti-bandhaka (supplier of unpaid labour force),Samanta (feudatory),Ayuktaka (royal officials),Sarvapida (exploitation of forced labour from every sphere)

A perusal of the Ancient Indian economic life, I reckon, would certainly take into account the gravity of ‘visti’ (forced-labour) as a crucial factor in shaping the then socio-economic fabric. Fairly common, as gleaned from different historical and Puranic sources, was its exploitation in early historic and early medieval India. The state apparatus of ancient India did utilize free services in the form of ‘visti’ as an extra legal tax at specific intervals or as situations demanded.⁽¹⁾ It should be kept in mind that the pattern of the extraction of ‘visti’ was not always symmetrical and manifested undulations in respect to space and time. In the initial stage, it was exacted as an alternative to revenue payment in cash. Hence, this primary process was devoid of all the features, simple or complex, of the full-fledged coercive form of ‘visti’. Occasionally, extra-legal labour was exacted, manifesting typical attributes of forced-labour. Yet, at the same time, mention may be made of the Arthashastra, denouncing tyrannical exploitation of *visti*.⁽²⁾ Later, during early medieval times or precisely, from



4th/5th centuries onwards, with the changing political fabric, the state of the exploitation of 'visti' witnessed a pattern of de-centralization and the system of *Agrahara*⁽³⁾ opened the flood-gates of such exploitation at local levels by religious donees, followed by royal officials who were granted landed properties in lieu of payments or salaries. This was due to "monetary anemia" in northern India as an effect of the gradual decline in trade and commerce in the 5th century AD. The system of forced labour in the succeeding centuries tended to become more rigorous and coercive. Eventually, the common victims were the primary producers, both agricultural and non-agricultural, like the *sudras*, *dasas*, *bhridakas*, the craftsmen and the artisans.⁽⁴⁾ Further, the system became much more intensified from the middle of the 1st millennium AD and ascended the extreme pinnacle of exploitation in the Gupta and post-Gupta period. The term 'sarva-visti',⁽⁵⁾ during the early medieval times, had incorporated all spheres of economic activities subjected to forced labour as regular tax.

The term 'visti' has been translated by Monier Williams as 'forced labour'/'compulsory work' or 'drudgery'.⁽⁶⁾ Another translation would be 'impressed labour'. This is synonymous to additional labour required to carry out public or royal work,⁽⁷⁾ exploiting suppressed population. The *Arthashastra* refers to *visti* along with 'kara' and 'pratikara'.⁽⁸⁾ This indicates that the exaction of *visti* was not irregular. *Visti*, being paid in musles by the villagers, was probably registered in black and white by the gope as known from *Arthashastra*. *Kautilya* has recommended that the city accountants would perform the same function.⁽⁹⁾ In the *Maurya* period (3rd century BC), the appropriation of *visti* was apparently a legal monopoly of the state, since, it was likely that private exploitation of *visti* was restricted.⁽¹⁰⁾ But, there might be in existence, in a limited sense, some kind of local exploitation. We have historical evidences regarding the exploitation of local people by regional *Maurya* officials and this was retaliated by the out-break of local revolts as happened in *Taksasila* during the reign of *Chandragupta Maurya*. Prof. D.D. Kosambi, on the authority of *Kautilya*, has shown that the *Maurya* state apparatus was highly aware and at the same time instrumental regarding the non-availability of arms in the hands of peasant class, to keep, any kind of upsurge/ revolts at bay. The *Mauryan* state had had absolute control over the economic resources except some areas (where state benefit in was nil) and was in practice of exploiting the labour of artisans at state-controlled farms. The term 'karmanto-visti' or forced labour in state-controlled workshops,⁽¹¹⁾ ratifies the claim as historical.⁽¹²⁾ It is not un-likely that craftsmen had to serve the state controlled factories/ workshops free of wages at intervals, and/ or during the time of financial stringency for the recovery of state finance. Slaves and hired labourers were employed to render forced labour. In special occasions un-paid labour was exacted, as known from the drama, *Mudrarakshasa* by *Visakh Datta*. Here, it was stated that a carpenter, who furnished the main entrance of the royal palace (probably at Magadha) on the eve of *Chandragupta's* coronation was praised by *Chanakya*, who told the carpenter that he would have his reward for his before long.⁽¹³⁾ On the authority of *Arthashastra*, it might be gleaned that forced labour was employed in warfare along with public works. In times of warfare forced labour was utilized to clean the camps, roads, bridges, carry machines, weapons, armors, body



of mounded soldiers etc.⁽¹⁴⁾ Public works comprised constructions of huge buildings, reservoirs art forms.⁽¹⁵⁾ Such constructions were impossible with mere regular labour.

Slaves and hired labourers were compelled to provide forced labour, chiefly to generate production in state farms, to carry out agriculture works in 'sita' or royal cultivable lands and other type of works. The karmadhyaksas and the sitadhyaksas employed slaves, labourers (primarily *Sudras*), prisoners and captive soldiers for these pursuits. The *Arthashastra* refers the term '*karsakaprayah*' for *Sudra* labour force as tillers, also refers to an office called '*visti-bandhaka*',⁽¹⁶⁾ related to harnessing and supply of *visti* / forced labour. For creation of new settlements or colonies the *Maurya* authority preferred people belonging to the lower castes or the *Sudras*.⁽¹⁷⁾ '*Sudra-karsakas*' were preferred in royal lands, since, they were more vulnerable to suppression,⁽¹⁸⁾ even war captives were not spared for creating new settlements (cf. Asoka enforced the captives of the *Kalinga* war-261 BC for this purpose). Large irrigation projects were also executed through the imposition of forced labour along with other taxes. This is a replica of an authoritarian state- craft exploiting and humiliating hapless peasantry, labourers, artisans and other professionals.

Various terms were used to denote the variations of forced labour. Mention may be made of '*visti-pradana*' (giving forced labour), '*kosa-visti*' (forced labour for augmentation of treasury), '*karmanta-visti*' (forced labour employed in state controlled farms), '*visti-karapratikarma*' (forced labour in lieu of tax in cash or kind), '*hiranya-visti*' (forced labour used in gold mining).⁽¹⁹⁾ The term '*hiranya-visti*' gives us glimpses regarding the *Mauryan* keen interest in gold mining using forced labour for maximum resource gain for royal treasury.⁽²⁰⁾ The *Arthashastra* also gives us a long list of forced labour related works like, sweeping, weighing things, measuring grains, supervising works, carrying commodities to store house and other service related works, involving prisoners, slaves, *sudras* and others of despised class.⁽²¹⁾ This indicates the heterogeneity of people discharging *visti*.

So far as the contents and recommendations in the *Arthashastra* is concerned, the very lifeblood of *Kautilyan* principle is 'canon-economy and reflected concern towards waste of labour and resources. Whoever capable of doing work, is to be taxed, either in kind or *visti*. This economic principle of *Kautilya* is illustrated in the recommendation of utilization of labour criminals and civil debtors of public undertakings without giving them wages. The providential aspects of this principle for the state, was the reduction of the number of vagrants, who, otherwise might become bottlenecks to social progress, ultimately leading to political menace.⁽²²⁾ That the affluent class would respond to the call of the state for *visti*, sending their slaves,⁽²³⁾ servants, bullock-carts etc, was a common expectation from the part of the authority. These were required to carry out cooperative construction.

Priority to and protection of state interest are illustrated in the *Arthashastra*, when it recommended that a person should have to share the expenditure of the state, but shall have no claim to it's dividends. This is enough to prove the shameless coercion and exploitation of human- labour. For Megasthenes, it was the artisans who worked for the state for a certain number of days in lieu of payment of taxes.⁽²⁴⁾ *Visti* was legalized by the royal maxims and administrative control and state extortion of forced labour was not



regarded as a violation of justice, though *Kautilya* was against the tyrannical exploitation of forced labour, so far as his recommendation goes. After all, *visti* remained a potential source of oppression in ancient India.⁽²⁵⁾ The Mauryan centralized economic strategy was to generate resources for the stability of the state. The private exploitation was recommended not to be practiced as in *Arthashastra* it has been advised that the king would protect those peasants or cultivators who might have been exposed to oppression by *danda-vistikara* or perhaps forced labour by his subordinate officers. This might indicate that private exploitation by subordinate officers means the loss in state interest so far as human resource was concerned. That, the financial crisis was amplified during the closing years of the Maurya realm was corroborated by *Patanjali* in his book, *Mahabhasya*.⁽²⁶⁾

Under the Sakas of Western India exploitation of *visti* was not unknown. It was imposed on the subjects belonging to the lower ranks in general, not confined among the slaves and wage earners.⁽²⁷⁾ In the Junagarh rock inscription of *Rudradaman*- I (dated -150 AD), it was claimed that the expenses for the repair of *Sudarsana* lake were met from the royal treasury. The claim for his benevolent act of not burdening the people with extra taxes or *visti*,⁽²⁸⁾ indicates that during the mid 2nd century AD. the practice of exploitation of labour by the state was highly entertained. A form of subjection was also implied in *visti*.⁽²⁹⁾ In the early centuries of the Christian era, the subjection of general people and peasants in western India became regular in practice.⁽³⁰⁾

It has been alleged historically that since *Rudradaman's* family might have served under the Kushanas, and much of his territory might have been a part of the Kushana realm, exaction of *visti* could have been familiar to the Kushanas so far as their Indian territory is concerned. It is not unlikely, that *visti* was utilized for the maintenance of the privileged community and the Kushana hierarchy.⁽³¹⁾ Though, we are not in a comfortable position to draw any final proposition regarding the exaction of *visti* by the Kushana rulers or by the dominant class under them, the Kushana imperial and fiscal structure did prove, that economic pressure must have been mounted up upon the rank and file under that realm. *Visti* must have been utilized in royal services, agriculture and workshops.⁽³²⁾

In a royal proclamation, contemporary to the Kushanas, the adjective word, 'oppressive'⁽³³⁾ has been used to illustrate the quantum and gravity of *visti*. Most likely, the Kushana emperors maintained their socio-political and economic infrastructure by 'in-human plunders of human muscle power.' Hence, it would be injustice to history if we award the Kushanas, the credit that they were benevolent and took economic welfare as one of their objectives.⁽³⁴⁾ The Kushanas might have tried to enforce and legalize *visti* by establishing 'divine hegemony' on the subjects by deification of deceased kings or by erecting '*devakulas*'. Lawgiver, Manu, regarded forced labour as a regular levy and recommended that a day's free labour to be given by the mechanics, artisans and *Sudras*. Whether, they were to be given food that day, was not mentioned specifically by Manu, though, *Visnu* (another law giver) preferred for that. We know from the writings of Gautama that providing food to them was essential. *Sukra* laid down laws that artisans and craftsmen should work



without wage a single day in a fortnight for the benefit of the king.⁽³⁵⁾ The 'smriti' of Narada has categorized various types of slaves and the nature of exploiting their labour. Mention may be made that these were primarily recommendations in theory, and how far reflected in practical life is highly conjectural.

The practice of land-grant in the form of 'agrahara' with religious objectives, changed the economic fabric in the post Maurya period, specifically in the Gupta and post-Gupta period (300AD – 900AD). Initially, lands or villages were granted to the *Brahmanas* and religious establishments / institutions like temples or Buddhist monasteries. Ownership of land and not the villages was granted to the donees. For villages, the donee could only enjoy the revenue. These religious grants to individuals were generally hereditary. For institutions, these grants were also made forever, so long as they exist. The revenue management in those cases was entrusted on respective institutional trustees. Later, high officials (civil / military) were granted lands or villages in lieu of payment in cash, probably due to the fall in currency in the market. These grants were secular in nature, transferring initially, economic and administrative rights to the donees, and gradually, political and judicial rights were abandoned in the hands of the 'secular donees', hither to exclusively, in control of the central authority or the state. Such transfer of rights / power turned the benefices into, substantially independent pockets, preparing favourable atmosphere for the rise of local foci of powers.⁽³⁶⁾

According to R.S.Sharma, the donees gradually became landlords or intermediaries. As the king, practically lost control over the appropriation of revenue as a result of transfer of land, right to collect revenue and other prerogatives, the intermediaries became lords or rulers in respective regions with economic, extra-economic, administrative and military powers. On and from 650 AD, this tendency of secular donations, along with *Agrahara* increased rapidly. The *Dharmasastras* refer to three-tier hierarchy in land system, the 'mahipala' or the king, the 'svami' or the landlord, and the 'karsaka' or the tillers. There might be the existence of several other intermediaries. This very system gradually led to the rise of landless agricultural labourers. Such stratification has been mentioned in the Asrafpur copper plate charter (675 AD) of the *sāmanta* (feudatory) of South Bengal king *Debakharga*. This evidence clearly proves the existence of several avenues for the intensive exploitation of visti. In the midst of rising tendency of decentralization of administration, the king might have retained his sovereign power over the land, and could refuse the land grant and could return back the same if the donee was unable to satisfy the requirements. The chammak copper plate inscription of *Prabarasena* of the *Bakataka* lineage, reflects a warning for the donee to follow certain rules, otherwise the king had the power to turn down the grant, indicating king's political and economic sovereignty.

It is to be noted that grants made in favour of royal officials (secular grants), were not hereditary. The term, 'vikrayadha- navajarni', actually carries the meaning, 'not to sale' or 'mortgage', denoting that the donee was devoid of ownership rights. Also, mention may be made of the term, 'aikapuruskani' or grants for one generation. But, it is to be



noted that the transfer of economic and administrative rights had something to do with the growing intensity of 'visti'. The *Vakataka* grants frequently refer to the term 'sarva-visti', or forced labour exacted from every economic sphere possible.

R.S.Sharma, on the basis of the Puranas (probably, compiled between 4th- 5th centuries AD), sketched the total socio-political and economic crisis in the imagery of the 'Kali' Age, giving greater emphasis on the Puranic evidences. It has been stated in the Puranas that the royal authority or the kings were in practice of exploiting the peasants ('*bhupalah pidayisyanti karsakan*'). This description at-least proves that the puranic compilers were well versed with this extra legal practice. The quantum of exploitation increased leaps and bounds, since, privatization of visti made its headway as an allied process of de-centralization of power.

Under the Guptas, and later, under the Maitrakas of Balabhi and the Vakatakas, the term 'visti' included all sorts of free services and obligations. The so-called 'in-feudation of landed property, might have magnified the power and prestige of the donees to some extent. The Kamasutra of Vatsayana, though dealing with other aspects of life including erotic, represents some glimpses of the attitude of the property owned elite peasants, landlords or their sons ('*halottavrttiputrosya*') towards peasant women. Also, the book on erotics, throws some light on how the women-folk were engaged and bound in forced labour ('*vistikarma*'), field work ('*ksetrakarma*') and other types of work.⁽³⁷⁾ Milindh Pancho, an earlier text, refers to rich/ elite cultivators ('*kussako*'), manifesting overlordship on the rural poor.⁽³⁸⁾ Padmapurana, a later text, depicts the condition of peasants, living in extreme poverty ('*ksivalajanah*'). The term, '*dhanojjitah*' also denotes poor peasants. The term, '*aksinadhana sampannah*' means rich peasants, exploiting the unfortunate lot of the peasantry. This was an example of sub-exploitation of peasant by another peasant belonging to the upper strata.⁽³⁹⁾

In the fourth- fifth centuries AD, the political and administrative de-centralization became partially vibrant. Economic and administrative rights of the king were parceled out in favour of local beneficiaries, followed by judicial and military rights of the king ('*cata-bhata- apravesya*'). Since then, the donees or the beneficiaries got free hands to impose visti at will. Village headmen, existing in the power hierarchy, also gained much authority in this process. They sometimes, performed the role of that of royal officials ('*gramadhipati ayuktaka*'). It is note worthy to mention that some Vakataka and Rastrakuta grants excluded the right of the donees to extract free labour or visti. But, this does not prove that the extortion of visti was not a regular phenomenon. Though, it is true that visti never turned to be an all-Indian event. In the early medieval India, visti remained popular in central and western India.

The land grant charters under the Maitrakas granted the right to the donees to impose visti as occasion might arise, but in practice, the donees could determine the occasion for at their discretion. The artisans, as well, were not spared from the grinding jaws of visti.⁽⁴⁰⁾ In western India, in AD 592, a charter, granted in favour of a group of merchants, living in a specific region/ village ('*vanig-grama*'), recognized the right to extract visti. Lesser artisans and craftsmen were subjected to provide free labour to the



merchants, acting as elders ('*varika*'). Merchant/ craft guilds were also given the right to enjoy *visti*. Though, tax paying sectors, like sugar pressing or indigo processing were exempted from the exaction from *visti*.

The Vakataka, Calukya and Rastrakuta records reflect the extension of *visti* to the western part of central India, Maharashtra and parts of Karnatak. *Visti* assumed a wide magnitude in central India. The term '*sarva-visti*' in this respect is noteworthy. Some grants from western India of the 4th- 5th centuries, dated in Kalacuri-Cedi era⁽⁴¹⁾ refer to the term '*sarvaditya-visti* (all varieties of dues and forced labour). Due to the absence of proper demarcation of boundaries of land granted, the donees took the full opportunity to bring barren lands under cultivation using forced labour. However, the number of free peasants in India seems to have been far greater, but the rise of land-lordism, equipped with other crucial powers, might have further impoverished the condition of the peasantry. B.N.S. Yadav, a pioneer in early medieval history, has shown that the term '*asrita-halika*' signifies the infeudation of the peasantry. In the *Vrhanaradiya Purana*, the term '*vadda-hala*' means bonded agricultural labourer. But, the condition of the Indian peasantry never fell to that of the European serfs. On the authority of the *Subhasita Ratnakosa*, D.D.Kosambi has shown that the peasants could fly away to other region when the lord was oppressive.

In 806-7 AD., Rastrakuta king, Govinda-III, made a grant of a village to a Brahman in the Nasik area, acknowledging the right of the donee to extract *visti*, along with others.⁽⁴²⁾ In 863 AD. Dhruva-III made a grant of a village, recognizing the donee's right to punish the offenders and extract *visti* from the villagers.⁽⁴³⁾ Though no mention has been made of the term '*visti*', the term '*sarvapida*' been used in lieu, meaning 'extortion from every sphere. The feudatories under the Pratiharas of eastern Kathiawar, had unquestionable right to exact *visti*. The term '*s-otapadyamanavisti*',⁽⁴⁴⁾ meaning exaction of forced labour as occasion might arise, was for the first time, coined in the Maitraka grants and was directly borrowed by the Rastrakutas. The Maiteaka grants also refer to the term '*vittolakara*',⁽⁴⁵⁾ characteristically akin to *visti*. Kalhana, in his *Rajtarangini*, referred to 'forced labour' in existence in Kashmir in 12th century AD. In early medieval Kashmir, *visti* was utilized for carrying loads ('*rudha bharodhi*') and construction of roads through mountain tracks for transportation.⁽⁴⁶⁾ The royal authorities in Kashmir allowed the peasants only to keep a meager amount of foodstuff for themselves and 'robbed away' almost every bit of agricultural surplus.

The *Rajtarangini* confirms the popular notion that the growing surplus in the hands of peasants would make them enough powerful to rise against the royal domain. This indicates, the existence of 'consciousness' among the peasantry, leading them to unite and rebel (with arms) against socio-economic oppressions. Regarding peasant resistance, *Yasastilaka campu* illustrates the peasant protest against the repression and exploitation by the landlords, though in the long run the rebels were suppressed and killed. R.S.Sharma⁽⁴⁷⁾ and B.N.S. Yadav consider the Kaivarta rebellion under the leadership of Divya, as a conscious revolt by the peasants against exploitation. The Kaivartas fought against the palas of Bengal, riding buffalos and using simple weapons.



But in the writings of Sandhakara Nandi, this revolt was not represented as a peasant upsurge. On the authority of *Abhyatilakagani*'s commentary on Dvyasrayakavya of Hemchandra, it may be presumed that 'karsaka sreni' (peasant class) used weapons made of wood ('*kasthamyayam sastram*') in their course of resistance against feudal oppression.⁽⁴⁸⁾

During the 12th and the following centuries, with the gradual development of trade and commerce and the expansion of money economy, forced labour became less popular. Besides this, the development of towns and city life in western India, the well-known practice of exaction of visti lost significance. Avenues were opened up before the repressed peasants and could fly to urban settlements and find work as unskilled artisans and craftsmen.⁽⁴⁹⁾ Visti or forced labour proved detrimental to the ultimate development and modernization of economy, but, the system did not altogether weather away; it existed in different forms and character.⁽⁵⁰⁾

Conclusion

The above perusal gives us somehow a sketchy idea about the existence of visti or forced labour in ancient India. The authoritative exploitation of manpower was sometime retaliated by the oppressed. The resistance, though, was not frequent or achieved success. Stray references to peasants taking up arms against their immediate oppressors do not prove with certainty that there existed organized subaltern-ideology, unity or class-consciousness. Indian peasantry, from time immemorial, remained subjected to the higher authority on the basis of social hierarchy. This hierarchy determined the scope, extent and utilization of visti / 'forced labour'. The evils of visti, substantially, jeopardized the condition of the population belonging to the lower strata of the social hierarchy or subjects, socially dumped as despised castes. Visti, as an extra-economic mechanism, implied intra as well as inter-communal strife with one primary objective, i.e. exploitation. The oppressors, might be the state, regional ruler or individual land holders, tried to legalize this mechanism, and with various powers in their hand, materialize the exploitation of human labour, off-setting their communal or caste distinction. Visti can be considered as one of the manifested traits of the process for establishing hegemony over the ruled.

The above perusal helps us to draw some basic inferences or parameters to scale the gravity and quantum of visti. First, central and regional political authorities in ancient India legalized the extra-legal visti to exploit manpower; second, to legalize this exploitation / coercion, political ideology and military power were used. We are not certain, but there may exist a communal consciousness (51) among the exploited lower order; third, this consciousness in an un-uniformed pattern, to some extent, acted as a force to social mobility, manifested by folklore, cultural tradition, local beliefs, customs, practices and kinship ties and relations.

The historical evidences so far gleaned, largely come from royal inscriptions, land grant charters and royal-proclamations. Besides this, the literary and legal works are also written / composed by socially or economically elites / royal patrons. Hence, these



evidences should be carefully taken with grains of salt, while, constant search for authentic data regarding the real mindset and aspirations of the people of the lower order, must be carried on.

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PSYCHOLOGICAL IMPACT OF SOCIAL MEDIA DURING COVID - 19 PANDEMIC LOCKDOWN

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Abstract

Social media has played a crucial role in spreading awareness and knowledge about the novel Corona virus disease. However, it has also been misused for spreading fake news, fabricated videos, hatred and creating racism during the pandemic. The posts, messages and videos on social media have had different impacts on different people during the lockdown. This research paper attempts to study the psychological impact of social media on its users. The primary data for the study is collected through questionnaire which was administered amongst 300 people all over India. The secondary data is collected from various books, journals and media reports. It is observed that social media is having a positive impact on its users during COVID-19 pandemic. It is playing a major role in keeping people connected and happy.

Keywords: Social Media, Psychological impact, Lockdown, COVID 19

Introduction

In today's world, it is undisputable that social media plays an important role in impacting our thoughts, lifestyle, economy and our overall view about the world. It is an electronic forum that brings people to share information, exchange ideas, seek advice, and offer guidance. It has been adopted by one and all as an essential part of their daily lives. During the ongoing 2019-20 COVID – 19 pandemic the usage of social media has increased by leaps and bounds. As per market research firm Nielsen, the social media volume saw a whooping surge in the wake of global Corona Virus pandemic. The reason could be that people were looking for more information, awareness and guidance regarding the novel Corona virus disease. Consequently, a lot of awareness campaigns were triggered on social media which helped people across the country to know about the essentials as well as the precautionary measures to be taken during this time.

As and when the lockdowns are declared, the intensity of the social media activity witnesses a huge jump. As everybody is under lockdown and has more free time than ever, it is observed that the number of hours spent on social media platforms has increased tremendously. Social media has played a vital role during the lockdown in controlling the stress and fear of people and has helped in updating them about the current scenario. People are trying out different hobbies and passions for which they never had time before and posting their pics and videos on social media, bragging about the same. They are learning and developing new skills through social media. It has become a platform for sharing various talents, creativity, cooking videos, workout videos, etc. There are frequent video calls to friends and families. Virtual celebrations and parties have become a new trend. To put it in a nutshell, people are now literally



glued to social media. In addition to this, rate of internet browsing and online video streaming, has also amplified.

As every coin has two sides, social media is also no less. Though it has been very useful in many ways during the lockdown, it has an adverse side as well. The social exposure to various controversial news and posts has led to the increase of many opinionated posts which have further led to unhealthy debates and discussions. It has at times created chaos by circulating misinformation, fake news and fabricated videos. Most of the times, if a person gets a message, he passes it to his friends and relatives without checking the authenticity or genuineness of the same. People putting up posts showing their skills are trolled by certain users saying this is not the time to eat so much or showcase their privileges. Intolerance and moral policing can be observed behind the comments and posts of some people. Social media can spread any message in a jiffy or real time. While some posts disseminate the feeling of happiness, hope, love and satisfaction, there are others that spread confusion, sadness, negativity and hatred leading to not only stress, depression and anxiety but also to intolerance and communalism.

Overview of Literature

Since humanity is currently living in the technological era, there has been a major shift towards creating an online presence. This has resulted in the rise of a new generation, which has become reliant on their virtual connections and the content they produce online to define their identities. (Hardey, 2011). The usage of social media such as Twitter, Facebook, YouTube and others, has been growing at a tremendous rate and its adoption rate by people has been skyrocketing ever since it was introduced. This massive social media upsurge brings with it challenges and opportunities that need to be analyzed thoroughly. (Al-Deen & Hendricks, 2012). Li & O'Connor (2015) feel that people are influenced by these social media developments, in many ways. Social media can have an impact on an individual's level of depression. (Krylova, 2017)

Kadam & Atre (2020) in their study have observed that social media has played a crucial role in spreading awareness and knowledge about public health; however, it has also been misused for spreading fake news, hatred and creating racism during epidemics and civil unrest. They have discussed how social media and societal response to COVID-19 negatively affected its control measures in India and what should be possible corrective measures. Duraisamy, Rathinaswamy & Sengottaiyan (2020) in their study have said that with the internet, social media have become the most acclaimed tool for freedom of speech, democracy, truth and source of infotainment. Hussain, W. (2020) in his study has expressed that within the context of social and physical distancing, the role of the different mass media channels and social media in lives of individuals and society cannot be underestimated.

The above-mentioned studies were used as reference for this paper.

Rationale of the study

The increase in the rate of contagion due to Corona virus and the ways of transmission has threatened the human beings to a great extent. Also, the decision of lockdown has been tough on everybody, as it is difficult for people to be confined within



the walls of their homes. The conditions of the ones staying alone or away from their families have become miserable. People are scared to the core for their lives and at the same time insecure about their jobs and businesses because of uncertainty about things and conditions during and post pandemic. Even though they are engaging themselves in different activities, at the back of their mind they are always worried about their financial conditions, arrangement of essentials, their health, their people, their country, in a way their overall survival. During this time when people seem to have become emotionally weak, different opinions on social media are making them behave in ways which are reflected in their posts and comments. When the country and common people are fighting against the deadly Corona virus, there are certain anti-social elements and mischievous people who are spreading sensationalism, rumours and misinformation; making it crucial for Government and experts to battle not only the pandemic but the infodemic as well. There is awareness among people, and they try to ignore such messages but still, different posts have different psychological impacts on different people. If there are numerous positive impacts associated with the social media posts, there are several negative impacts as well. These points very well justify the conduct of this study. The results of this study will help us know the overall psychological impact of social media on Indian society at large irrespective of the demographics of people.

Objectives

During this COVID-19 outbreak, social media has become the most significant venue for gathering information, irrespective of the fact that this information must be taken with a pinch of salt. Such information certainly affects the psychology of people. Thus, the primary objective of this study is to analyze how the social media information, posts, messages and forwards are affecting or influencing the general public in the country during the period of lockdown 2020. Also, the study will try to find out whether people check the authenticity of a message or not, before forwarding.

Research Methodology

This research paper is an exploratory study that has used quantitative investigation. There is no hypothesis for this research. The primary data is collected through administering a questionnaire (survey tool) amongst 300 respondents from across India irrespective of the demographics of the people. Random sampling method was used. The questionnaire consisted of close ended questions which were designed keeping in mind the objectives of the study. The data collected is analyzed using histograms and pie-charts. The secondary data is collected from different media reports and journals.

Analysis and Findings

In the past 2-3 months, social media has shown both sides of the coin. According to media reports, it has spread positivity, awareness, hope and happiness on one side and negativity, stress and hatred on the other. People have been reacting both positively and negatively. There were instances where posts citing the infamous *Nizamuddin incident* and *Palghar lynching incident*, led to provocations and communal

disharmony in many parts of the country. There were posts bashing the government which led to arguments between different political party workers supporters. On the positive side, social media has boosted the morale of people. It has kept the world together. The videos of people clapping, whistling or ringing the bell to thank the frontline workers and lighting the candles or diyas, posted on different social media platforms, have developed a sense of unity and solidarity in everyone.

The data collected through 300 questionnaires has been analysed, and the inferences are presented below.

Figure 1.
Time Spent on Social Media

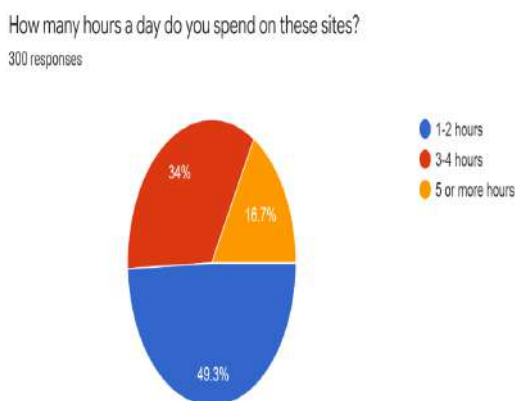
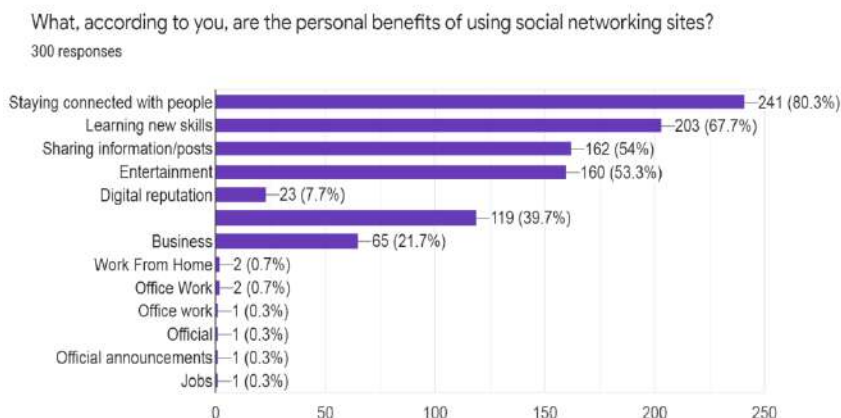


Fig. 1 shows that 100% people are using social media during the lockdown period, though their time spent on it differs. This question also had an option – *Do not use Social Media*, as answer. Not even a single person selected this option. This response shows that social media has become an integral part of everyone's life these days, whatever be the reason.

Fig. 2 exhibits the reasons for which people are using social media during the pandemic. Different people have different reasons, the most prominent reason being staying connected with people as 80% people say that. It's a known fact that human beings are social creatures by nature. Whether one is an introvert or an extrovert, after a couple of days of self-isolation, he's likely to miss his friends, relatives or colleagues. The void that is left from the lack of social interaction is significant, and social media offers a way to fill this void. Due to the ongoing uncertainty people need to feel connected more than ever before. Other reasons that have been specified for using social media are learning new skills (67%), sharing information (54%), for entertainment (53%), keeping up with news, trends, gossips (39%) etc.

Figure 2.
Reasons for Using Social Media



During these trying times, it is also important that people should not forward messages or posts thoughtlessly. They should check the authenticity of the messages that they receive, before forwarding. If any post or video is found inappropriate or suspicious, it should be ignored and deleted

Figure 3.
Checking Authenticity of Messages



Fig. 3 proves that only 37% people forward the messages without checking. Remaining 63% check the authenticity of messages through different means. This analysis shows that people are quite aware of not forward anything and everything. They know the importance of behaving in a responsible manner.

Figure 4.
Disadvantages of Social Media

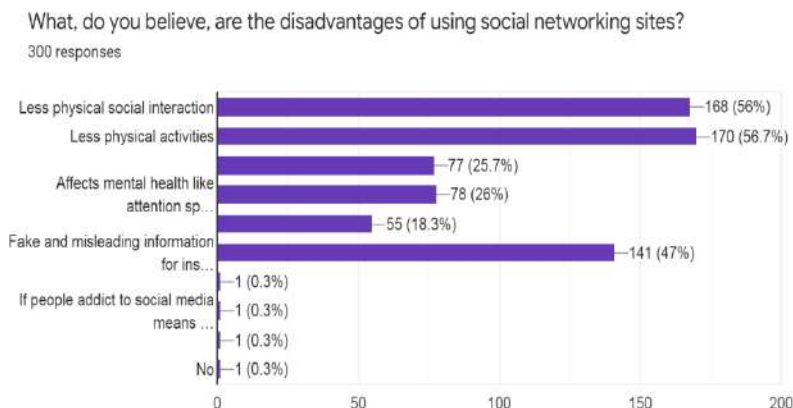


Fig. 4 displays the various disadvantages of social media during the lock down. Amongst all the disadvantages the most crucial disadvantage is that it spreads fake and misleading information for instigating people. 47% people agree to it. This data shows that many people are aware of the existence of fake, fabricated and misleading messages. Those who are not aware, they need to know this fact. Apart from this, 25% people believe that spreading negative feelings and emotions like stress, depression and anxiety is also a disadvantage of social media.

People were also asked about the impact of social media on their overall wellbeing.

Figure 5.
Impact of Social Media

How are social networking sites impacting your overall well being during this lock down?
 300 responses

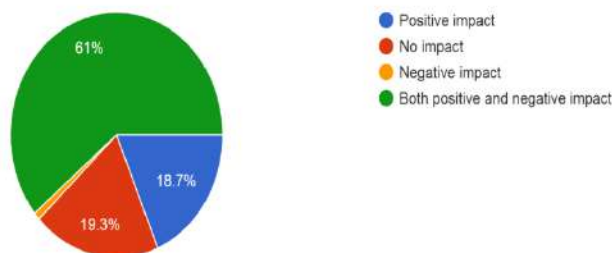


Fig. 5 shows this impact. 18% people say that social media is having only a positive impact on them during the lock down. Negative impact is almost nil. 61% people say that it is having both positive and negative impact on them. Impact might depend on the type of messages they receive. We have 19% people who are strong enough and are not affected by social media messages.

Figure 6.
Emotions Experienced

What emotions do you experience when using social networking sites during lock down?
300 responses

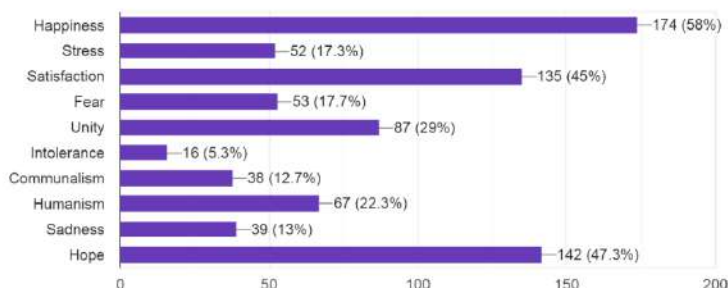


Fig. 6 reveals the most important analysis of this study i.e. emotions that people experience while using social media during the lock down. Though the response has been a mix of different emotions, still maximum people (58%) said that they experience happiness. 47% people said that it gives them hope, 45% said that it gives them satisfaction and 29% said that it gives them a sense of unity. All these emotions confirm positive psychological impact of social media on people. There are negative emotions also like stress (17%), fear (17%) and communalism (13%). If compared with positive impact, this is just negligible.

Discussions and Suggestions

From this study, it can be inferred that social media is having a positive impact on the majority of its users in India during the time of Covid-19 lockdown. This pandemic has left most people feeling anxious and looking for support amid the ongoing uncertainty and at this time social media has come for their rescue. The study validates that it has played a major role during the lockdown by keeping people connected. It has provided useful information and awareness from time to time. It has been a great medium for spreading happiness and hope, brightening people's days and lifting their moods. The study has also proved that people are mature and sensible enough to check the authenticity of messages before forwarding. The current situation has taught them to behave responsibly. Since this research did not take into consideration the age, gender, educational levels and professions of the people, that adds to the scope of further researches. Also, there are evils associated with social media, but looking at its brighter side, they can be ignored the way population for this research seems to have done. There should be proper vigilance by the cyber cell and the cyber security squads on the posts



and comments so that the otherwise useful platform does not cause psychological discomfort to its users. Also, during this time of isolation people themselves need to see how to engage with social media in a healthy and positive manner and get the maximum benefits out of it. Social media, if used wisely, is a powerful tool and truly a blessing.

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DUAL PERCEPTION OF SARASVATĪ: A RĠVEDIC EYE VIEW

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ABSTRACT:

Hindu Religion mentions various Gods and Goddesses. *Rgveda* mentions a very few name of goddess in the crowd of powerful gods. One of the important goddess in *Rgvedic* age, is *Sarasvatī*. Various oblations are attributed to the *Sarasvatī*. From pre-historic time to present day, *Sarasvatī* is a very much discussed matter for Researchers and Ideologists. They have been attracted for its mystic characteristics. We often see various articles on newspaper, scholarly article on various academic journals and much news regarding *Sarasvatī*. At present, we worship *Devī Sarasvatī* as a goddess of knowledge. But ancient Indian history especially *Rgveda*, revealed various forms of *Sarasvatī*. *Rgveda* mentions dual perception of *Sarasvatī*. In the later Vedic age, forms of *Sarasvatī* have become changed. The present study will estimate the actual conception of *Sarasvatī* by consulting the selected original texts of *Rgveda* and its interpretations.

KEYWORDS: *Sarasvatī*, *Rgveda*, River, Goddess.

INTRODUCTION:

Rgveda is the biggest oral literature of India. To know ancient Indian history, religion, people, culture and nature – it is one of the main source. The Vedic age was ritualistic. There were various religious functions to participate. Actually ritual or religious ceremony was a habit or routine to the Vedic people. The word ‘Ritual’ comes from the Latin word ‘*ritus*’ which means a ‘*custom*’. As we all know, religion played a large part in life in ancient India. V.M. Apte has said—“Ritual systematized religious worship that religion becomes an abiding feature of the social life of people – almost a social institution. Ritual and prayer have two expressions one is dependence on divine or supernatural power and the second is the practical aspect of religion.”

There were a great number of hymns in the *Rgveda*. The verses of the *Rgveda* were primarily divided into two groups –

1. Religious hymns.
2. Secular hymns.

The object of the first type of hymn is offering prayer or the oblation to the Gods and Goddesses. There were many deities who were offered oblation by the sages in various sacrifices. There are many hymns that were but sacrificial chants and a certain number of them are connected with magic, while a large number came out independent of the sacrificial rituals, though they too, were taken up later to be used in sacrificial contexts.



According to Yāska, there are three principal deities or *devatās* in the Vedic age. They are –Agni, Vāyu or Indra and Sūrya.¹ But apart from these three deities, various oblations were offered to other Gods and Goddesses as well. According to Yāska all other gods reside in these three primary gods.

Sarasvatī is an important Goddess of the Vedic age. Actually luster of these three deities belonged to Sarasvatī. *Vāg-devī*, which is mentioned by the *Veda*, had three forms which were as follows–

- Ilā in the earth.
- Sarasvatī in the *antarikṣa*.
- Bhāratī in the heaven.

Sarasvatī has priority over Ilā and Bhāratī ---- other two deities of the Vedic age. Sarasvatī along with Ilā and Bhāratī were offered oblations by seers in RV.3.4.8, RV.5.5.8, & RV.7.2.8. In the Purāṇic Age, Ilā and Bhāratī were replaced by Mahādevī and Mahālakṣmī. Both Ilā and Bhāratī merged into the all-pervading personality of during the later Vedic period.²

One of the twelve components of Viśvadevas are Sarasvatī along with Ilā and Bhāratī. There are very few hymns attributed to only Sarasvatī. But we got many hymns in which Sarasvatī was offered oblations with other deities. These hymns reveal her to the status of a *sūkta-bhāj* deity – a deity of higher order with a distinct and independent identity.

Actually Sarasvatī is a mysterious character to the scholars as well as to the researchers. *Rgveda* mentions dual perception of Sarasvatī. One is a sacred river and the other, a deity pervading all three worlds. According to scholars, it is only as a river that the *Rgveda* has alluded to Sarasvatī and what of it seem to pervade all three worlds are its celestial characters.

SURVEY OF PREVIOUS WORKS:

There were very few attempts on the dual perception of Sarasvatī in Rgvedic age. Individual works on various forms of Sarasvatī have been done by various oriental scholars as well as western scholars. I get an article of Prof. P.C. Jain and Dr. Daljeet on “**SARASWATI FROM VEDAS TO OUR ALTAR**”. In which, various forms of this goddess have been discussed from Vedic age to present time. There was also a paper entitled “**RIGVEDIC SARASWATI: MYTH AND REALITY**” by Ashoke Mukherjee. River Sarasvatī has been mentioned and discussed in this paper. There was also a work on Sarasvatī by Rajesh Kochhar entitled “**RIGVEDIC SARASWATI: LOST OR MISPLACED.**” The present study wants to discuss about the Vedic Sarasvatī and its actual conception.

OBJECTIVES OF THE STUDY: The present research paper will try to find out the references of duality in Sarasvatī in Vedic age. The actual position of Sarasvatī in the Rgvedic age will be understood on the basis of *Samhitā* literature. The present study will try to find out:

- The Oblations of Goddess Sarasvatī.

¹Thakur:2003.Part iii.846

²Swami Nirmalananda:1418(Bengali Year).42



- The Prayers for river Sarasvatī.
- Dual perception of Sarasvatī in *Ṛgveda*.
- Acceptance of duality in Sarasvatī among peoples.

METHODOLOGY:The present study will attempt to collect data concerning the following issues from the *Ṛgveda*: duality, god of food, river, acceptance among people and other subjects relevant to this study. It will further try to understand the meaning of the selected original text with reference to their contextual background. In doing so, the available exegeses of ancient and modern Vedic interpreters will be consulted. The collected materials regarding the study will be further analyzed in the following directions:

- i. Etymological meaning of the word Sarasvatī.
- ii. Enumeration of Sarasvatī as a river in *Ṛgveda*.
- iii. Sarasvatī as a deity in *Ṛgveda*.
- iv. Duality in Sarasvatī in *Ṛgveda*.
- v. Sarasvatī in later Vedic periods.

i. ETYMOLOGICAL MEANING OF SARASVATĪ:

The morphology of the word with the stem and suffixes is somewhat like this: *saras+matup+ñip* = Sarasvatī, thus meaning ‘one with plenty of water’. Actually the word “sara” denotes various kinds of meaning i.e. water, letters (*svara*) & sound, light etc. in the Sanskrit *śabdaśāstra*. The aforementioned first two meanings of the word ‘sara’ has been accepted by the scholars in the Vedic age. But, in the later Vedic period, the meaning of this word Sarasvatī, has become changed which is “one who leads to the essence of knowledge.”

ii. ENUMERATION OF SARASVATĪ AS A RIVER IN ṚGVEDA:

The image of Sarasvatī has evolved across the time. The connotation of this word differs from what it was in the Vedic time to the present day. India is a river-centric country. Ancient Indian history mentions various rivers like Gangā, Sindhu etc. The earliest record of ancient Indian culture, *Ṛgveda* mentions Sarasvatī as a river along with Ganga. *Ṛgveda* refers Sarasvatī as a river in its various verses mentioned below:

- *ambitamenadītamedevītameSarasvatī.
apraśastāivamasipraśastimambanaskṛdhi. RV.2.41.16.*

Griffith has translated it: “Best mother, best of rivers, best of Goddesses, Sarasvatī, we are, as ’twere, of repute: dear Mother, give thou as renown.” In this verse, the seer Ṛṣi has praised Sarasvatī as the best river. The western and oriental scholars have opined in same tune about this verse.

- *tveiśvāSarasvatīśritāyūṁśidevyām.
śunahotreṣumatsvaprajāmdevididḍhinaḥ. RV.2.41.17.*

“In thee, Sarasvatī, divine, all generations have their stay. Be glad with Sunahotra’s Sons : O Goddess grant us progeny.” — Griffith.

- *āyatsakāmyaśasovavaśānāḥSarasvatīsaptathīsindhumatā.
yāhsuṣvayantaḥsudughāḥsudhārābhisvenapayasāpīpyānāḥ.*

Wilson has translated this verse in this way – “May the seventh (stream),Sarasvatī, the mother of the Sindhu and those rivers that flow copious and fertilizing, bestowing abundance of food, and nourishing (the people) by their waters come at once together.” RV.7.36.6

In the following verse, Sarasvatī has been described as glorious, loudly roaring, strongly flowing:-

- *ekācetatSarasvatīnadīnāmśuciryatīgiribhya ā samudrāt.
rāyaścetantībhuvanasyabhūrergṛtampayoduduhēnāhuṣāya.*

Griffith has said in the translation of this verse – “Pure in her course from mountains to the ocean, alone of streams Sarasvatī hath listened.

Thinking of wealth and great world of creatures, she poured for Nahuṣ her milk and fatness.” RV.7.95.2.

- *brhadu gāyīṣevacoasuryānadīnām.
Sarasvatīm it mahayāsuvṛktibhiḥstomairvasiṣṭharodasī.*

Griffith has rendered the verse thus – “I sing a lofty song, for she is mightiest, most divine of streams. Sarasvatī will I exalt with hymns and lands, and O Vasiṣṭha, Heaven and earth.” RV. 7.96.1.

- *mahoarṇaḥSarasvatīpracetayatiketunā.
dhiyoviśvāvīrajati.*

In Wilson’s translation the verse means: “Sarasvatī, makes manifest by her acts a mighty river, and (in her own form) enlightens all understandings.”RV.1.3.12.

In this verse, Sarasvatī has been, for the first time, mentioned as an important river of Vedic age. The oriental commentator Sāyaṇa has said – “*dvividhā hi Sarasvatī vigrahavad devatā nadīrupā ca.*” Yāska in his ‘Nirukta’ says in this context — “*tatraSarasvatītyetasyānadīvatdevatāvatcanigamābhavanti.*”³

R̥gveda 6.61 also mentioned Sarasvatīas a river. On the second verse of this hymn, Griffith has said – “She with her might like one who digs for Lotus-stems, hath burst with her strong waves the ridges of the hills.

Let us invite with songs and holy hymns for help Sarasvatī who slayeth the Pārāvatas.”RV.6.61.2

Not only this verse, but also the fourteenth verse of this hymn mentionsSarasvatī as a river as well as a wealthy goddess—

- *sarasvatyaabhi no neṣivasyomāpaspharīṭpayasāmānaḥ ā dhak.
juṣasvanahsakhyaṣyācamātvatkṣetrāṇyaaraṇāniganma.*

Griffith has said in his translation of this verse:—“Guide us, Sarasvatī, to glorious treasure: refuse us not thy milk, nor spurn us from thee.

Gladly accept our friendship and obedience: let us not go from thee to distant countries.” 6/61/14

This is an exclusive hymn (RV. 6.61) in which the river is praised as “fierce, swifter than the other rapid streams” coming onward from the hills with its strong waves, it springs from threefold source and so on.

³Thakur:2003.Part-iii.304



All these forceful utterances in the *Rgveda* and many other references in other post-Vedic literature to the Sarasvatī River have created a lot of interest among the Ideologists and the scholars of ancient Indian history.

iii. SARASVATĪ AS A DEITY IN *RGVEDA*:

There are various oblations were offered to divine goddess Sarasvatī. Seers worshiped Sarasvatī as a goddess of wealth and goddess of sacred speech. She was depicted as a goddess in a very few verses. They are being mentioned below:

- *pāvakānaḥSarasvatīvājebhirvājīnīvatī.
yajñamvastudhiyāvasuḥ. RV. 1.3.10*

This verse refers to Sarasvatī as the deity of the sacred speech or *Vāg-devatā*. Wilson has translated it thus:– “May Sarsvatī, the purifier, the bestower of food, the recompenser of worship with wealth be attracted by our offered viands to our rite.”

The next verse of the same hymn also attributes to the praise of Sarasvatī as a divine Goddess:–

- *codayitrīsunṛtānāṃcetantīsumatīnām.
yajñamdadheSarasvatī. RV. 1.3.11*

Wilson has rendered it into English in the following manner:– “Sarasvatī, the inspirer of those who delight in truth, the instructress of the right minded, has accepted our sacrifice.”

- *Sarasvatīmyāmpitarohavantedakṣiṇāyajñamabhinakṣamāṇāḥ.
Sahasrārghamiloatrabhāgaṃrāyaspoṣamyajamāneṣudhehi.*

RV. 10.17.9

This verse refers to Sarasvatī as the possessor of food or “*annavatī*”. In this hymn, Sarasvatī is worshiped with many other Goddesses. Griffith has transformed the verse thus into English:–

“Thou, called on as a Sarasvatī by Fathers who come right forward to our solemn service,

Give food and wealth to present sacrificers, a portion, worth athousand, of refreshment.”
Sarasvatī has been mentioned as a Goddess in RV 6.61.13 also. This verse indicates the dual forms of Sarasvatī. Griffith puts it thus:

“Marked out by majesty among to the Mighty ones, in glory swifter than the others other rapid streams.Created vast for victory like chariot, Sarasvatī must be extolled by every sage.”

iv. DUALITY IN SARASVATĪ:

The abovementioned verses has referred that *Rgvedic* people had gladly accepted the river Sarasvatī as well as the goddess Sarasvatī.*Rgveda* is full of prayer and various oblations were offered for food, safety and money and knowledge to the goddess Sarasvatī. On the other hand, river Sarasvatī is called Best River in the *Rgvedic* age. So, it could be said that, the river form of Sarasvatī was most accepted to people. Goddess of knowledge, Sarasvatī was less accepted due to Vedic education was limited to the three higher classes of the society. However, there are various prayers are mentioned for food to the Sarasvatī.



v. SARASVATĪ IN LATER VEDIC PERIODS:

According to *Vāmanapurāṇa*, Sarasvatī is referred to as a river in *Rgveda* as well as in the *Purāṇas*. Sarasvatī was born from Plakṣa tree and then the river entered into the Dvaitavana. On the other hand, Sarasvatī originated from the Himālayas. As India is river-centric, there came up various sacred places centering the river Sarasvatī.⁴ But in the era of *Mahābhārata*, Sarasvatī lost her flow. Actually in the age of *Brāhmaṇa*, Sarasvatī became obsolescent.⁵

FINDINGS:

The findings of the study related to the objectives are as follows:

- i. *Rgveda* refers dual conception of Sarasvatī.
- ii. Sarasvatī was one of the best rivers of the Vedic age.
- iii. The Sarasvatī had two forms: Goddess of knowledge and donor of food.
- iv. Prayers offered to *annadātrī* more than *vāg-devī*.

SUGGESTION:

- The researcher can study on Sarasvatī in Purāṇic Age.

CONCLUSION:

The role of Sarasvatī in the Vedic age was very contradictory. In some places, we get the reference of Sarasvatī as a deity of divine speech. On the other hand, Sarasvatī has been worshiped as a river in most of the *Rgvedic* verses addressed to Sarasvatī. We get some instances like RV 2.41.16; in which Sarasvatī has been praised both as river and goddess. But in the later Vedic period, she lost her flow and became a deity of Knowledge or divine speech. Actually post-*Rgvedic* Sarasvatī begins gaining prominence over the *Rgvedic* Sarasvatī, a river.

ABBREVIATION

RV=*Rgveda*

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A RE-APPRAISAL OF TEBHAGA MOVEMENT WITH SPECIAL REFERENCES OF THE SANTHAL COMMUNITY

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Abstract

The Tebhaga Movement was one of the most important peasant movements in Bengal history. The movement had been started from the colonial era and continued even after independence. In November 1946 the movement had started and almost lasted until 1948. This movement had more impact all over the undivided Bengal as Dinajpur, Jalpaiguri, Bankura, Howrah, Maldah, Darjeeling, Hooghly, Midnapore, 24 Parganas, Rangpur, Pabna, Khulna, Bogra, Mymensingh, Jessore etc. The word 'TEBHAGA' means two-third. The Protesters were demanding two-third of the crops and as well as started protesting against the unethical demand of Zamindars and Jotedars. The main demand of the Protesters had two-third of the product. Although this movement mainly had been done by the Bargadars, the small farmers and also the field labours were actively participated.

Both the Hindus and the Muslims of Bengal were also participated in the Tebhaga movement to maintained communal harmony. Some of the leaders of this movement were Ila Mitra, Nurjalal, Comrade Muzaffer Ahmed, Comrade Amal Sen, Botudatta, Comrade Abdul Haq, Josik Hemant Sarkar, Munshi Modaskar, Shamsheer Ali, Kasralal Biswas, Radha Rani Ghosh, Comrade Josik, Lal Ghosh, Santal Sivaram Majhi etc. In 1855 for the first time Santhals had protested against Zamindars and moneylenders during the British period. Many researchers have said that Tebhaga was one of the noted movements after the Hool or Santhal rebellion. Like Santhals rebellion in the Tebhaga movement Zamindars and Jotedars were strongly protested by Protesters. In this research paper I will try to show the role of Santhals in the Tebhaga movement. There it was not only the Santals, but also the Rajbangshis, Muslims, Hindus and many others castes and religions were actively participated. The research paper tried to highlight- 'In this collective resistance of Tebhaga movement how the Santhals had worked.

Keywords: Tebhaga, Bargadar, Zamindar, Jotedar, Santhals, Rajbangshis, Muslims.

In the year 1939 - 40, the then Prime Minister of Bengal Fazlul Huq formed a Land Revenue Commission. A memorandum was given to the commission from the Pradeshik Krishok Sabha (provincial peasantry). This is one of the main reasons for the plight of the Bengal peasants that the zamindari tradition is to be demanded to distribute all the lands of zamindar-Jotedars without any losses, and to distribute free agro workers, shareholders and poor peasants. The demand for Bargadar's Tebhaga was



probably not in that memorandum. But the commission recommended for Bargadars to produce two-thirds of their produce¹.

During the decade of the Second World War, due to the horrific famine of Bengal, the struggle of the people gets more new dimensions. In that time the extent of the struggle, the workers of all classes, including the peasant, are involved in this struggle. At the end of the Second World War, at the same time, the historical response of farmers in undivided Bengal began in the Tebhaga movement. Under the zamindari tradition, the farming system was introduced to cover all the costs of production of plow, seeds and bullocks for the production of crops. They were work hard to harvest but to give half of the crop to the zamindars, Jotedar. They got half of the rest. But often they would not get half for unethical of Zamindars and Jotedars. In the meeting of the Bengal Provincial Council meeting of the Peasants Conference in September 1946 - it was decided to start a movement demanding Tebhaga against this unfair practice of Jotedars and Zamindars².

In 1946, the famous Tebhaga movement of the Bargadars started in Bengal. The Bargadars claimed that two-third of the crop yields. The participant in this movement was originally from the lower caste people. Dr. Radha Kamal Mukherjee said that the caste Hindus (Bengali gentleman) would not have to touch the plow. Bargadars they were only the labor of the Jotedar. The Bargadars came from lower classes and among indigenous people and Muslims³. Movement began preparing for the beginning of the 1940s, but it was closed during the Second World War had left behind. The Bargadars had been demanding for a long time, which would give 2/3 percent of the produce. Earlier, in the draft report of the various government departments, the opinion was given in favor of this claim. For example, in June 1940 the Floud Commission agreed on behalf of the Tebhaga⁴. Note that the tradition of giving half of the crops produced by Bargadars was common practice. Generally crop sharing system was known as barga, adhi, bhagi, etc., all meaning half shares. But they were deprived of their share, for the Jotrdar unethical demand. Farmers have had a long day of anger '*Baje Tola*'⁵. In such a volatile situation, in September 1946, the Bengal Provincial *Krishoksava* called the People's Movement. They were started the movement for the implementation of the proposed Floud Commission, which had long demand for the Bargadars⁶.

The Bargadars started the movement against Jotedar or Zamindars. The Small farmers and landless laborers were joining the movement. The movement started in September 1946. Noted that the Protesters had called in North Bengal 'Adhiyar', others places sharecroppers and official documents Bargadars⁷. They also had to pay extra 'Abwab', such as 'Mahallawari, chicken eating (paddy for Jotedar's home chicken), theater cost etc. All these accumulations are going on regularly. There are also various types of torture on Bargadars or farmers. Farmers' marriage, mourning, milad, festivals, all were depending on Zamindar's willing⁸. The Bargadars always used to depend on their farming Zamindars interests. There was no right on land of the Bargadars'.

In November 1946, during the harvesting of monastery, Bargadar started the movement in front of various demands. For example,



- 1- Two-third parts of the crop yields.
- 2- Ownership will be given to the cultivator's land.
- 3- The produce crop did not store in the Jotedar or landlords premises.
- 4- Bargadars will store produce crop in their own premises.
- 5- The crop will be distributed by the receipt.
- 6- No 'Abwab' can be obtained from the Bargadars.
- 7- Any cultivable land that is cultivated should be given to cultivate Bargadars.
- 8 – The Bargadars land could not occupied forcibly⁹.

They started the movement to fulfill the above demands. Bargadars of some north and northeastern districts of Bengal and their supporters had gone to fields and cut down crops. Bargadars started store the crops in their own premises (Khalan). At that time the movement became bloody when obstructed by the zamindar's own lathial forces to the Bargadars. The peasants jointly chanted slogans. For example, '*Tebhaga Chai*', '*Nijo kholanae dhan tolo* ', '*jan debo tobu dhan debo na, langol jar jomi tar*', etc¹⁰. The Bargadars their mental and emotional determination had manifested by these slogan.

The first movement in Dinajpur district was started in 1353(Bengali Calendar) 14th paus¹¹. Thakurgao sub division was the centre of Dinajpur district. The movement spread almost 22 police stations out 30 police stations of Dinajpur. When the movement started in Dinajpur their landlords to force them kept crops in Jotedars area. Jotedar's tenants force was retreating for villagers Volunteer Force¹². The level of exploitation of Jotedars in Dinajpur was intense and the number of Bargadars in this region was much higher than other region¹³. Jotedars did not understand this unified picture of the Bargadars. The Jotedars took help of the police to suppress the movement of Bargadars. Unity among all classical Bargadars increased even when the police campaign started. The first martyr was Bargadars Sivaram Majhi and poor Muslims daily labor Samiruddin of Chirir Bondar police station at Bajitpur on 4th January in 1947.¹⁴

In this research paper, the role of tribal Santhals was highlighted in Tebhaga movement. Now let us see how the Santhals settlement and spread in north Bengal happened. It is known from various sources that in the post-Santhal rebellion, the first of the Santhals started settling in Malda, Dinajpur. Later, they were scattered in different areas of the country due to torture of food, shelter and Dikus as Maladaha, Dinajpur, Rangpur, Rajshahi and Bogra districts. Their livelihood continues from the forest, cutting the soil and working in the fields. Zamindar and Jotedar were installations the Santals in Dinajpur¹⁵. They were involved in various activities like indigo cultivation, gardening industry. Besides they made many fallen and uncultivated lands in the fields. They were farming as shareholder¹⁶.

In 1936, was held all India Santhals conference then increased political consciousness among the Santhal community. Santhal shareholders protested against Jotedar's oppression. Santhals peasant was influenced by Santosh Chatterjee. Bhuju Tudu was one of the leaders of the Santhals in Dinajpur. At first, he was associated with the movement of the Congress, which he later became involved with the Communist



party. Apart from Santhals leaders Bhaju Tudu, was Duma Tudu, Durga Tudu, Majhi Murmu, Gure Hansda, Harma Murmu notable¹⁷.

Jalpaiguri district was a pioneer lady leader of the movement. Her a nickname as *Buri Ma*. Santhals and Rajbanshi were the leader in Malda district. Habibpur, Gajole and old Malda were major centre of the movement. Tribals peasant were involved in Nakshalbari of Jalpaiguri district. Sutahata, Mohishadal, Nandigram, and Paskura of Medinipur district the movement became very intense. There was protester came from schedule caste and lower caste.

Tebhaga movement became a bloody movement. There all caste people were participated in the movement. Many protesters had died but among them here noted down only tribals Santhal people. First martyr was Sivram Majhi and Samiruddin on 4th January in 1946, at Chirir Bandar in Dinajpur district. Apart from Majhi Soren and Narayan Murmu had been martyr of Khapur on 20th February in 1947. Four tribals people had been died on 29th march in 1947 of Malda district¹⁸.

In spite of many credits, the movement was also limitation. According to D. N. Dhanagare, "without C.P.I. and Kisan Sabha activity the Tebhaga struggle would not have developed. But the movement also demonstrates how sometimes, politicalization can weaken the rebellious impulse of the peasantry"¹⁹. The movement was not called revolutionary movement in any way. Their primary demand was two thirds crops, demanding the land ownership for Bargadars was optional.

After all achievements of the movement were that Tebhaga struggle was successful in so far as it has been estimated that about 40% of the sharecropping peasants got Tebhaga right granted willingly by the landholders. The struggle also led to the abolition or reduction of unjust and illegal exaction in the name of 'abwabs'²⁰. According to D. N. Dhanagare, Being the outgrowth of leftwing mobilization of the rural masses, it was the first consciously attempted revolt by a politicalized peasantry in Indian history. Therefore the movement assumes a special significance in the study of Indian peasant struggles²¹. The Tebhaga activities had very much united despite of their religion discrimination. "There was a widespread participation of Santhal peasants in the struggle. In West Dinajpur, clashes took place near the town of Balurghat, 9 of the 22 farmers killed in the police firing were Santhal, and the remaining farmers were Rajbangshi and Muslims. On that day the Santhal farmer joined the peasants of other communities. Their struggles over the borders of communal interests were merged between the peasantry of all castes and communities. The problem of indigenous peasant is not a communal problem; this problem is the problem of agriculture - problems of Bengal. In the transformation of the agricultural system, the indigenous farmers have to find ways to solve the problem"²².



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PUBLIC PERCEPTION ON INDIA BECOMING A CASHLESS ECONOMY

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ABSTRACT

A cashless economy is a system where most of the financial transactions, no matter how small or big, happen digitally. Today the Government of India and the Reserve Bank of India are promoting and appealing the citizens of India to get familiarized with various online means like Credit Cards, Debit Cards, Mobile Wallets, Internet Banking, etc. Since the midnight of November 8, 2016, when the Indian Government demonetized the currencies of denomination 500 and 1000, people have been using these digital means to a much greater extent as compared to before. Cash is a basic necessity for humans and availability of cash has definitely resulted into consumption expansions. But with cash comes black money, accountability issues, tax avoidance, corruption, higher costs for printing, etc. Thus, today there exists a dire need for an economy like India to go cashless and formalize its transactions. The government is taking various measures in order to motivate people to use cashless modes. Slowly and steadily they are getting acquainted with it too. This research paper aims to study the perception of the public on India transitioning into a cashless economy and the various benefits and challenges perceived by them. It also identifies the challenges and benefits of the same to the economy as a whole. Growth in e-commerce has also impacted this movement greatly and so the most preferred online payment app has also been identified. The data is collected via Primary Survey and the Samples are chosen based on Convenience Sampling Method.

Keywords: cashless economy, demonetization, digital payment modes, e-commerce, internet banking, mobile wallets

3. INTRODUCTION

India, a republic comprising of 29 states, 6 union territories, representing great culture, heritage and flora fauna is the world's 5th largest economy as per the Gross Domestic Product (GDP). It is home to the world's 15% population and is one of the fastest growing economies of the world. In order to keep growing at this pace it is very essential to be adaptive in order to move forward harmoniously. To sustain and to fulfil the basic necessities humans came up with barter system years ago. Gradually, this system began getting replaced by using gold, silver coins and gradually got replaced by monetary bills and so on. We are now progressing towards Digital Money and Cashless Transactions. With the bloom in trade and industrialization, it has become necessary to have credit payment systems for large voluminous transactions. The Indian Economy has diversified substantially and stood apart over the past several decades with various policy initiatives and measures taken by the Government. Ever since Shri Narendra Modi took charge of



the country as the Prime Minister, many radical changes have been seen. Initiatives like Make in India, to encourage foreign investment and Digital India to digitize transactions, data and improve digital literacy have been seen. The two critical fragments of trade and investment have enabled India to transform into a vast growth potential market, and to be able to leverage its market size to its advantage. Thus, arises the need of Electronic Commerce (e-commerce) and up-to-date technology for ease and convenience. The use of plastic money and internet grew significantly and the main message behind this by the then Finance Minister Mr. Arun Jaitley was to Go Digital. All of this e-commerce growth has been supported by the prompt and potent implementation of initiatives like Digital India, Skill India and Innovation Fund, Start-up India, Make in India. Since, it is for the people of our country it is very essential to know and hear about it from them.

In this paper, the researcher aims to understand how the Indian Public (urban common man) has benefitted, or faced challenges and their comprehensions and acknowledgments about India becoming a Cashless Economy, as desired by the Government. This will also tell us about the extent of its potential in the coming future. The government investments in this stratum have been huge and these are only with the view of the changing needs of citizens and to provide them with a convenient platform that helps them get resources easily. Thus, it is necessary to know the position of citizens in responding to the solutions put up by the government to build a New India which will be stronger than ever.

LITERATURE REVIEW

a. Economic Growth

(Goel, Sahai, Vинаик, & Garg, 2019) in their paper Moving From Cash to Cashless Economy - A Study of Consumer Perception Towards Digital Transactions explain how with the level of change in the process of making payments, supported by improved technological infrastructure and changes in policies, there has been a significant increase in the online transactions in this virtual world. The paper also establishes a comparison as to what percentage of people are using cashless payment methods all around the world have explained the various preferred modes too. It was seen that many people are reluctant while sharing their personal details over the internet and face issues while doing so.

(Banerjee, 2018) in the following paper Impact Importance and Requirement of Cashless Transactions in India focuses on importance of the cashless policy in India. Cashless transactions are required in the country in order to ensure better accountability of funds, transparency in the system, reduced bureaucracy, less risk of carrying physical money, tracking expenses and mainly having easier and convenient transactions. One important role it holds is in the economic growth of the country. Corruption and black money markets are the issues which get resolved with less use of cash. It also promotes high standard of living and good growth for the economy. But when the public is reluctant to adopt such systems, the whole economy suffers.



b. Benefits

(Banerjee S. , 2018) in his paper Inclination towards Cashless Transactions states that the unhindered growth of India as an economy it is very important for it to adapt to keep moving forward and for this very reason the government is trying to emphasize continuously on the need for digital transactions and how it will benefit individuals and the society as whole. Benefits to consumers include time and cost saving, cash backs and rebates, convenience and accessibility. But they hesitate on the aspects of technology know how, illiteracy, less network. The methodology used is based on descriptive research design using primary data and secondary data for the study.

c. Challenges

(Podile & P, 2017) in their paper Public Perception on Cashless Transactions in India analyze how post demonetization, India witnessed a boom in transactions happening via online payment methods. India is slowly transitioning into a cashless economy with even Rickshaw walas and vegetable vendors embracing digital payment solutions. The paper has used primary data collection method via questionnaires. They look into various aspects like impact of transaction related factors including convenience, privacy, costs, etc. They have further analyzed the technical factors namely internet connectivity and point of sale (POS) machines while transacting. The gap identified here is to enlist the benefits and challenges faced by them. The paper concluded stating that only when the government successfully addresses the public, they will gain confidence regarding the same.

(Meher, 2017) in the paper Hurdles in Metamorphosing India's Economy to a Cashless Economy identifies how India needsto transform into a cashless economy in order to curb corruption and black money, stop counterfeiting of the Indian currency, eliminate terror funding and curb unethical business activities. The paper further also analyses the various electronic payment methods that exist like e-wallets, cheques, net banking shows how the frequency of usage witnessed a sudden rise during the period of demonetisation. Further, the paper also identifies the possibility of transforming into a cashless society in the future as 17.6% only. The reasons for the same have not been identified. The researcher here has analysed data via primary source which has been collected with the help of a questionnaire and secondary data has also been collected for supporting the responses collected by a questionnaire. Further several analysis tools have been used for better analysis.

d. Preferred Mode

(Roy, 2018) in his paper a Study on Consumer Preference Towards Selected Digital Payment Mode analyses the different modes of payments available for transacting goods and services. The paper identifies the modes have been emerged as the top most ones for making payments by consumers. The study is a descriptive one and is based on both primary and secondary data. It further identifies that mobile wallets are the first choice of consumers followed by debit and credit cards. The problems include non-technological backgrounds, network connectivity and the risk of



cybercrimes. India is currently going through the process of accepting modernization in terms of its payment mechanisms and is gaining an unprecedented momentum. The study has found that e-wallet payment method is more preferred than any other payment methods but fails to identify the most preferred one.

e. E-commerce

(Khan, 2017) in his paper Contribution of Ecommerce towards Cashless Economy talks in terms of how e-commerce is playing a very important role in the Cashless Movement that has been going on for a while now. The paper identifies the changing consumer behaviour and the various ecommerce developments that are taking place. E-commerce is one of the fastest growing market today, especially in India. The paper identifies the most preferred mode of payment in e-commerce to be via Cash on delivery, followed by Debit and Credit Cards. The major pre-requisites for going cashless include adequate access to financial services, good technology and infrastructure, merchant willingness and adaptability. It has been concluded that it has a great hand in promoting cashless transactions and thus fulfilling the vision of cashless economy.

(Kaur & Pathak, 2015) in the paper E-Payment System on E-Commerce in India discuss how e-commerce has improved the potential of buying and selling products, information and services. The various types of e-payments system are identified as credit cards, debit cards, smart cards, digital cards, etc. The limitations include lack of usability, security, eligibility and consistency. The researcher has used primary data for the analysis via personal interviews and secondary data too. It was found that credit cards were most dominantly used as people believed that it incurred less transactional costs as compared to all the other E-payment transaction methods. The research gap identified was finding out the most prominent mobile wallet among users. The survey instrument used is an unstructured questionnaire.

f. Demonetization

(Venkata & Boda, 2017) in the paper Demonetization of Currency Notes - A Step towards a Cashless Economy talk about the effects of demonetization as a step towards becoming a cashless economy. Demonetization has proved to play a major role is spreading awareness regarding the pros of becoming a cashless economy. India being a cash-dependent economy is taking its own time to adapt to such changes. The paper attempts to study whether the level of awareness regarding the alternatives available to cash among the citizens of the country. It is identified as need of the hour. The major effects include encouragement, lesser visits to bank, limited withdrawals from ATMs, more usage of online banking and digital wallets, improvement in technical infrastructure and more safety. The analysis is done through the primary data collected via a structured questionnaire, six months post demonetization and is supported by secondary data collected from various journals, articles.



(Kumar & Chaubey, 2017)in the paper Demonetization and its impact on adoption of digital payment: opportunities, issues and challenges talk in terms of the how demonetization impacted and changed the buying behaviour of the Indian society. Paying by digital modes became a habit and a more common thing, hesitation was lessened and confidence in using the same went up. The paper analyses the aspects of usability and affordability when it comes to preference by the citizens. The research methodology used by the researcher is primary (descriptive and exploratory) and secondary data as well. For collecting primary data, a structured questionnaire approach was used. Most of the people transitioned to digital payment methods only post demonetization. The adoption process was slow and people faced issues as they were not used to it and it was forced on them, but gradually to be progressive as a country, they did adapt to this new world of digital transaction system.

4. RESEARCH METHODOLOGY

A research problem is a combination of a study population and a subject area. This ensures utmost clarity while conducting research.

The research problem of this paper is to study the public perception on India transitioning into a cashless economy prevailing among the residents of Mumbai.

RESEARCH OBJECTIVES

Research objectives are the statements that explain what kind of problems are going to be studied in the report, after evaluation of the literature review, which are as follows -

1. To understand the level of awareness about the importance of becoming a cashless economy for the economic growth of the country
2. To analyze the benefits of cashless economy to the public and the cash habits of the consumers
3. To determine the challenges that are attached with going cashless
4. To identify the most preferred mode of cashless payments used by the public
5. To understand the impact of e-commerce on a cashless economy
6. To examine the role of demonetization towards transition of India into a cashless economy

RESEARCH METHODOLOGY

a. Research Design

The research design comprises of the basic blueprint of the research. This paper uses descriptive research, with the help of which the technical report has been prepared. It is a quantitative type of research. A quantitative research extensively uses numerical systems. Descriptive research describes the characteristics of a situation or problem or a phenomenon. Further, the method of cross-sectional studies is used where a sample is selected, which represent the population and data is collected from them only once during a particular period.

b. Sampling Plan

Responses were collected from 178 citizens of India, particularly the ones currently residing in Mumbai. For the same, non-probability method and convenience



sampling was used. Convenience sampling is where the chance of being selected is not known by the respondents or by the researcher.

c. Data Collection Method

The method used for collection of data is both via primary and secondary sources. The data collection instruments for secondary data included various online published sources like articles, journals, periodicals, conference papers, internet, etc. To collect primary data, a Survey Questionnaire (Structured) was prepared and responses were collected using Google Forms online.

d. Data Analysis

A structured approach was adopted in order to analyze the data using descriptive statistics tools. This helps in presenting better analysis and interpretation of the data. In Descriptive Statistics, the most used were mean (average), mode (frequency), median (middle most value) and standard deviation (to understand how dispersed the data is). The questions were bifurcated on the basis on nominal, ordinal, interval and ratio scales to identify the descriptive research tool.

5. RESEARCH RESULTS AND DISCUSSION

Background Study: The sample size of the survey conducted was 178 out of which the number of male respondents was 86 (48.31%) and females were 92 (51.69%). Efforts were taken to maintain equal ratio in order to ensure all kinds of perspectives regarding the topic are obtained. Further the age group ranged from 16-year-olds to 60-year-olds. The major respondents belong to the group of 18 to 55 as they were the ones who have been impacted, benefited to a great extent. Also, responses collected from them would be more relatable, reliable and authentic. Other aspects like qualification and occupation were also asked to have a clear understanding of the respondents from whom the data was being collected. It plays a crucial role in grasping the respondents' background to prove the authenticity of the research. The monthly incomes were also asked about to understand how much is the monthly income and how much are their expenses collectively.

a. To understand the level of awareness about the importance of becoming a cashless economy for the economic growth of the country

To ensure high economic growth and development, it is very important that the consumers first understand the need for a cashless economy. We will first cover the benefits to the economy as a whole.

The most prominent benefits to a cashless economy were identified to be authentication and more formalized transactions, more options of payment modes to the consumers, reduction in cost of printing money to the RBI reserve bank of India, reduction in corruption and money laundering, ensuring proper and fair tax collection and using the same in various welfare benefit schemes and lastly as this would increase the amount of money with the banks it would also result into more liquidity which is very beneficial for a country like India at this given point in time.

Respondents were asked to rate the factors on a scale of 1 to 5 and the mean and median of all the above six factors found out to be 4 for a sample size was 178. The challenges identified are as follows as per Table 6.1.1. These are basically coming out to be challenges for the economy, due to unwillingness of individuals. The following are the ones perceived by the public and the standard deviation for the same is greater than 1.5 which signifies that there is a variance existing, which implies a difference in people's opinions.

Table 6.1.1 Challenges For The Economy In Becoming Cashless

Challenges	Mean	Standard Deviation
Inclusion of entire population	3.66853933	1.196614386
Infrastructural facilities	3.71348315	1.105680353
Multilingual population	3.49438202	1.085326846
Cashless payments not accepted everywhere	3.65730337	1.188683708

Source: Primary data

Sample size: 178

- b. To analyse the benefits of cashless economy to the public the cash habits of the consumers

Table 6.2.1. shows that all of the listed options are important when considering the benefits of cashless transactions to individuals. As per 92 respondents, government is taking enough and adequate measures in supporting the consumers in adopting to cashless transactions. We have the mentality that we do certain things only when they prove to be beneficial.

Table 6.2.1- Benefits To Consumers On Going Cashless

Factors	Mean	Standard Deviation
Wider acceptability	3.35393258	1.180592227
Convenience (time and cost effective)	3.81460674	1.176228826
Safe and quick transfer of funds	3.69101124	1.144886983
Attractive and frequent reward points on digital payments	3.56179775	1.279610253
Risk of carrying physical money reduces	3.58988764	1.205125114
Written record	3.50561798	1.25885425

Source: Primary data

Sample size: 178

The benefits can also be identified in terms of the frequency of use of plastic money -As per Table 6.2.2 below was found out that 116 respondents prefer cash to pay for their regular household and personal expenses. Followed by debit card and mobile wallets which were also amongst the preferred modes. Credit cards were only preferred by 29.78% of the respondents and online banking by only 17.98%. Even though cash is preferred credit, debit cards and mobile wallets are also preferred by

many, this signifies growth as this was definitely not the case 10 years back. Also, only cash was preferred more by the people of the age 50+ comes to be 29% as they are not very comfortable with using technology and so they stick with the traditional means.

Table 6.2.2- Frequency of Use of Various Payment Modes and Analysis of the Most Preferred

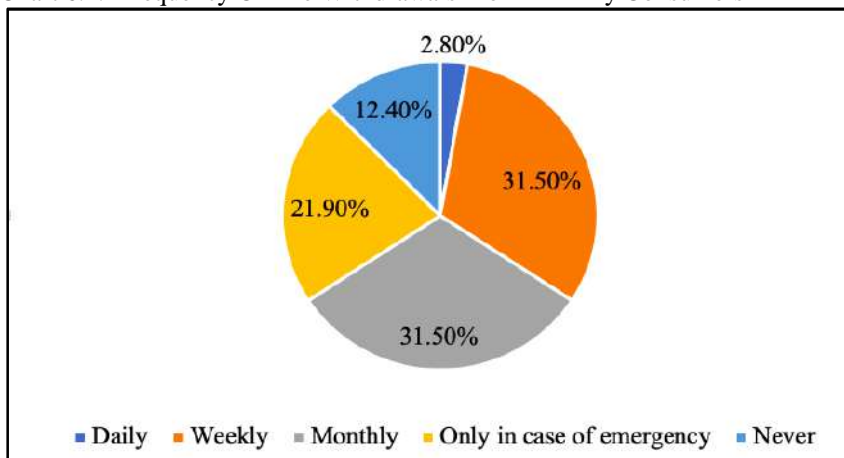
Payment mode	Frequency	Preferred (%)
Cash	116	65.17
Credit Card	53	29.78
Debit Card	69	38.76
Mobile wallets	70	39.33
Online banking	32	17.98
Others	3	1.69

Cash used by (Age)	Frequency	Total users	Percentage (%)
Less than 18	8	10	30.00
18 to 25	46	63	17.46
26 to 50	27	57	12.28
50 and above	35	48	29.17
Total	116	178	

Source: Primary Data

Sample size: 178

Chart 6.2.1 Frequency Of The Withdrawals From ATM By Consumers



Source: Primary data

Sample size: 178

The above figure shows maximum withdrawals of cash from ATMs happened weekly or monthly, only 12% of the respondents do not use the ATM services and 2.8% withdraw cash from ATMs daily. The mode of the data here is weekly and monthly i.e. repeating mode which represents Weekly and Monthly withdrawals.

c. To determine the challenges that are attached with going cashless
When enquired about feeling secure, 151 respondents answered with a Yes and only 27 said No. Still we see that is not the case as people still rely on cash transactions and do not prefer cashless transactions. The following reasons were identified for the same and as we can see the average for all is almost similar and the standard deviation being slightly greater than 1 implies the indecisiveness of people, and shows the confusion pertaining to the same. This is an important reason for lack of usage by the consumers.

Table 6.3.1. Challenges Faced By Consumers

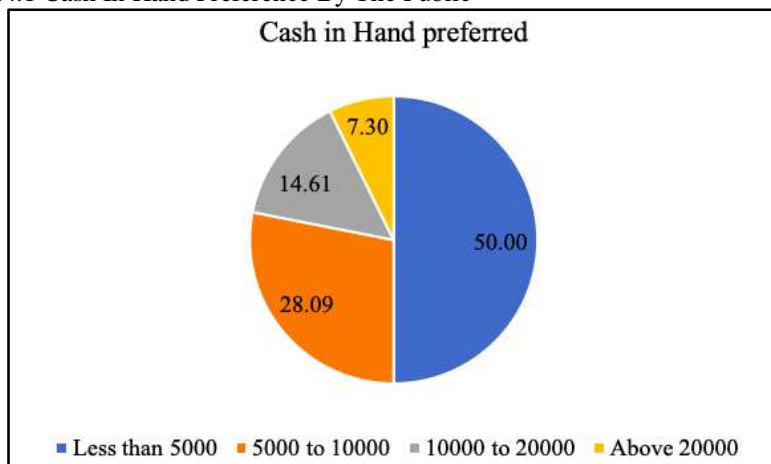
Challenges to the consumers	Mean	Standard Deviation
Possibility of personal data getting stolen by hackers	3.6011236	1.180538456
Network connectivity	3.51123596	1.165602892
Overspending	3.60674157	1.213092211
Chances of making errors	3.37078652	1.138757599
Need digital literacy	3.75842697	1.218066356

Source: Primary data

Sample size: 178

d. To identify the most preferred mode of cashless payments used by the public
As a result of demonetization there still prevails fright among the citizens and so 50% of the respondents preferred to keep less than Rs.5,000 cash with them. To dig deeper it was found that people having monthly income up to Rs.25,000 were the ones who most preferred to keep less than Rs.5,000 cash with them. This was found out by calculating the number of users spending less than Rs.5,000 and distributing it among the income levels.

Chart 6.4.1 Cash In Hand Preference By The Public

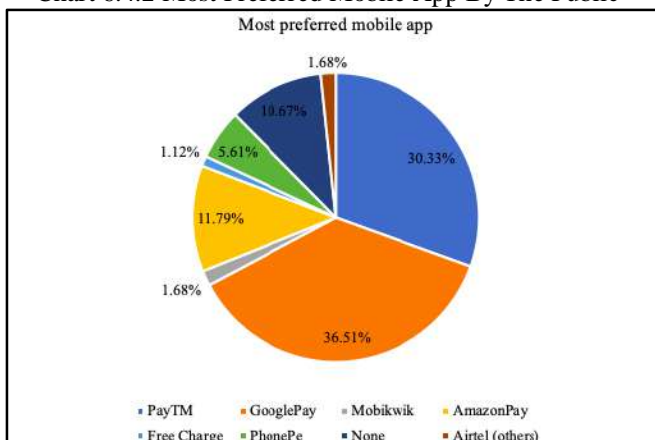


Source: Primary data

Sample size: 178

Further, 67.9% preferred cashless transactions, out of which 43.8% were employees and 28.9% of students out of the sample of 178 respondents. This shows that majority of the working-age-population comprehends the need for cashless transactions better. Rs.0 to Rs.5000 was found to be the amount that was spent using e-payments by most of the respondents (66%). This was calculated using mode, by finding out the highest frequency.

Chart 6.4.2 Most Preferred Mobile App By The Public



Source: Primary data

Sample size: 178

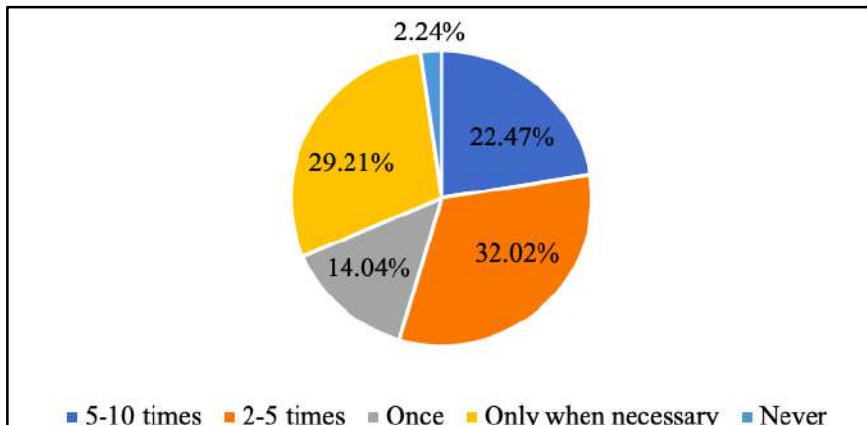
Google pay and Paytm followed by Amazon pay were the most preferred applications. The factors considered here were user friendliness, easy to use, security, innovative solution to issues and no additional charges. Google pay is a unique integration and is linked up with other Google products like Gmail it only requires you to have a linked Google Account.

(Roy & Sinha, 2017)state that perceived usefulness, perceived ease of use, perceived risk, perceived security are the aspects that intend the use of such electronic payment systems.

84.83% of the respondents which is 151 out of 178 believe that online payments are secure. When enquired about the place where cash would be used, 52.24% of the respondents would use cash only where cash was the only option followed by the next reason being where the goods were of low cost (39.88%). Also, where online payments would add more charges cash payments would be preferred (26.4%) and 34% of the respondents would prefer it everywhere.

e. To understand the impact of ecommerce on a cashless economy

Chart 6.5.1 Analysis Of The Most Preferred Segment To Shop Online By Consumers

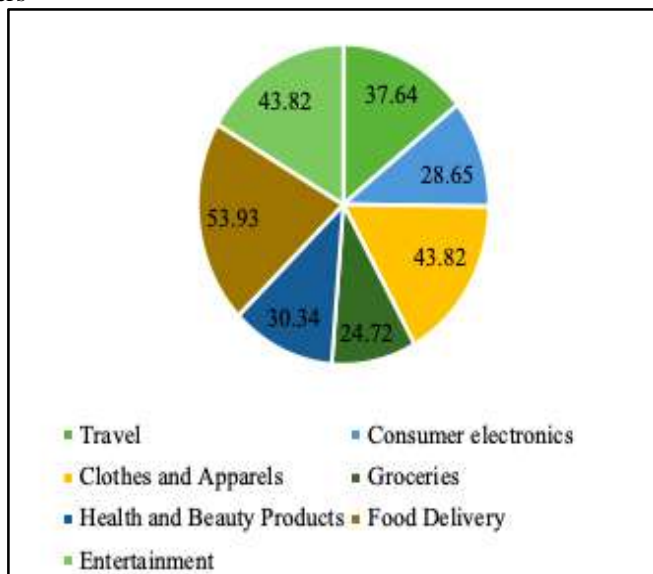


Source: Primary data

Sample size: 178

The above figure shows the frequency of consumer shopping from the e-commerce websites, the data found shows that 32% of the people shop 2 to 5 times in a month followed by 29.21% who shop only when necessary the reason for the same is that, we as Indians are still accustomed to the physical method of shopping where we can touch and feel the product, and also use our bargaining skills to ensure that we are getting the best deal. Consumers still need to be motivated in terms of making purchases online. This is a great way of promoting.

Chart 6.5.2 Analysis Of Most Preferred Segment To Shop Online By Consumers





Source: Primary data

Sample size: 178

Clothes and apparels and entertainment being the most sought segment, unlike the previous times, this has greatly boosted the ecommerce segments and thus cashless segments.

Table 6.5.1. Frequency Of Modes Of Payments When Making Purchases Online

Modes of payment	Frequency
Cash on Delivery	87
Credit/Debit Card	32
Mobile wallets	96
Net banking	49

Source: Primary Data

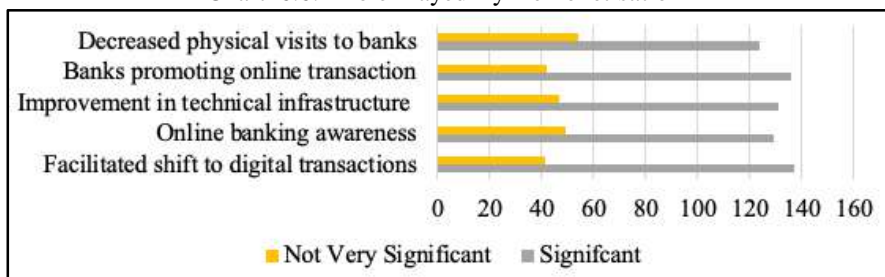
Sample size: 178

Here we can clearly see how, Mobile Wallets are more preferred than any other payment mode, followed by Cash on Delivery. This shows the significant contribution of E-commerce and also the benefit of going cashless on e-commerce industry.

f. To examine the role of demonetization towards transition of India into a cashless economy

The figure below shows that demonetization also played a significant role in the aspects of facilitating shift to digital transactions, as when the notes were banned suddenly, the citizens were left with no option but to adopt to cashless means in order to survive. This proved to be comparatively convenient for them and they got hooked to it. It also made people aware about the banking transactions to a very large extent, right from rural public to the urban public. Banks also started promoting digital transactions and e-payment apps/sites started providing with more incentives and cashbacks to encourage people. All of this significantly also reduced the number of visits a person would make to the bank in order to get his work done, as most of the services were now available online.

Chart 6.6.1 Role Played By Demonetisation



Source: Primary data

Sample size: 178



Further, on a scale of 1 to 5, 26.4% Strongly Agreed to fact that Demonetization has changed their perception about cashless transactions, followed by 36.5% who rated a 4 (Agree), 24.2% were Neutral, 6.2% Disagree and only 6.7% Strongly Disagreed.

6. DISCUSSION

1. Making sure that all segments of the society are exposed to these policies and it can be implemented from the top level to the bottom level in order to ensure ease and convenience for all.
2. Transactions amounting to more than Rs.50,000 need to be made online. This will ensure having a written record and the black money prevailing in the economy will reduce.
3. The various e-commerce websites and platforms should provide incentives and rewards not just to its frequent customers but to all the members registered, depending on the usage of debit cards, credit cards and mobile wallets while making purchases. It needs to be given to all so that it does not serve as a demotivator and frequent reminders are given.
4. Individuals must not be permitted to keep a large amount of money with them. The government would need to come up with stringent policies for the same. It should not be taxed and higher interest rates should be provided to motivate the consumers to keep their idle money with the bank.
5. It must be ensured that all citizens of the country have at least one bank account which is linked with most of the government documents and the individuals attaining majority age must be supplied with a bank Account so that they can manage their transactions.
6. Apps such as Paytm and Google Pay that are used to a great extent should be linked with ATM accounts. This might reduce the withdrawals taking place and the frequency of the same.
7. All the retailers and the merchants should be motivated to use online payment methods to collect payments and they should also motivate the consumers to pay via these. All the costs associated with operating these mechanisms must be removed.
8. Most of the consumers are just lethargic in adopting to the new techniques and they need to be tackled urgently by the government to ensure more population turning towards adopting cashless systems as soon as possible.

7. CONCLUSION

After a very detailed analysis, it can now be concluded that India is taking all steps possible to become a cashless economy and emerge as a world power. Knowing what the citizens of the country think about various policies is very important in order to analyze the current situation and also to predict the possible future trends. As the researcher with the help of various charts and diagrams shows, the descriptive tools used on the answers obtained by the respondents, it is safe to say that Indians are slowly getting accustomed to the cashless modes. They are beginning to understand the various benefits to the economy and benefits for them. We are now also ready to tackle the



challenges that come along, and make sure to minimize those. The people who are using the cashless system directly or indirectly do get benefited and might not be consciously aware of the same. We strongly witness a combination of cash and cashless transactions taking place and it will take its own time before we can proudly call India – A cashless economy!

8. LIMITATIONS OF THE STUDY

- 8.1 Objective: There is a possibility that the objectives selected maybe too broad and all the aspects that are covered under the objectives may not have been covered due to lack of experience in conducting research and the availability of adequate resources. It has been tried to ensure that the focus of the research has been constrained to the objective selected and has produced significant analysis.
- 8.2 Sampling: In the research the samples were selected from different parts of Mumbai including South Mumbai and Western Mumbai. This is a sample survey and there is a possibility of sampling error as there might be an unintentional bias. Thus, the sample is not a true representative of the population. There there is a possibility of a sampling error on the part of the researcher.
- As convenience sampling was used in the research, there could exist a bias on the side of the respondent and this might result in in minor accuracy in the data collected. The samples were selected based on ease of access to the researcher.
- 8.3 Cross Sectional Study: As it was a cross-sectional study, here data is collected only once by the researcher from a specific sample population. There might be a possibility that the findings of this study won't be applicable post a certain period of time.
- 8.4 Also, since the data was collected only from the respondents of Mumbai there is a possibility that the same findings and recommendations would not be applicable to other parts of the country/world/other segments of the population.
- 8.5 Although, utmost care has been taken to ensure that the analysis is accurate there is a chance of coming across many other factors which could not be accounted for.

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A STUDY ON MULKRAJ ANAND'S SELECTED NOVELS

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ABSTRACT

Homo Sapiens Scuffles, the superiority of one race over another, is the belief in this novel, which often results in discrimination and prejudice towards people based on their ethnicity. This chapter deals with the analysis of Mulk Raj Anand's Untouchable and Coolie selected for analysis. It also includes the information's of novels and a discussion of the plot in common.

The first accords with the introductory part "Introduction" which deals with the Biography and the works of Mulkraj Anand. To profit an international readership one of the pioneers of Indo-Anglian novel, he, together with one of the first India-based writers in English such as R. K. Narayan, Ahmad Ali and Raja Rao.

Homo Sapiens Scuffles in The Road. The main character Bhikhu bears adequate similarities to the character Bakha in Anand's earlier novel Untouchable. Homo Sapiens Scuffles in Coolie. It will be a good to start the analysis of novel with a comment by Saros Cowasjee. She says, Homo Sapiens Scuffles in Untouchable. The life of Bakha, a sweeper-boy, and brings out the impact of the various events on him, is depicted in this novel for a day, by giving us his 'Stream of Consciousness', in the manner of James Joyce and Virginia Woolf. Bakha is eighteen year old son of Jamadar, Lakha.

Keywords: Realism, Bandage, Filial Love, Devotion, Threatens, Flail Love, Suffer, Crisis, Kidnap, Bond, Marriage, Self-Identity, Distressed, Alienation, And Frustration.

Mulk Raj Anand is pre-famous for the seriousness and funnies of his commitment, in the Indian novelists, to bring about another Indian society. He is a novelist with a thought of himself and a conception of life which have been evolved from numerous influences, predominantly western European, yet with Indian sanctions and traditions.

His humanism, new named Karuna Rasa or compassion, is the regular outcome of his searching and suffering, emerging from the emergencies throughout his life. According to Anand, he composes in light of the fact that there is this compulsion to express his feelings, his inward convictions that have influenced him to acknowledge life.

Not very many of the scholar, even these from India, have approached to Anand's numerous works and the documents at his Bombay residence. All these profitable sources have been made accessible to the competitor of this theory, and have been incorporated into the annotated bibliography of essential and secondary sources, forming the third section.



It fills in as a comprehensive documentation of the biography which thus depicts the adventure of Anand's life on a huge canvas uncovering the close relationship between his encounters and his innovative compositions. The endeavor has been to depict the points of interest of some viewpoints of his life, which are "intriguing in themselves, and which are important in so far as they enable us to comprehend Anand.

I have examined Anand's numerous works, articles, letters and notes to abstract figures, faultfinders and scholars, and I have also made utilize of interviews and reports that have been followed and collated in the reference index.

One of the principal Indian journalists in the English dialect to make a blemish on the worldwide situation, Mulk Raj Anand was a writer with many books, short stories and expositions to his name. Considered a pioneer of the somewhat English Indian fiction, he is best associated with his delineation of the poorer classes of individuals in India and their situation. His compositions are rich with the practical and touching depiction of the issues of the basic man, regularly composed with tragic clearness.

Mulk Raj Anand was much excessively acquainted with the issues of the poorer segments himself. The child of a coppersmith, he had seen brutalities of incredible detestations unfurl before his own particular eyes—all that originated from the position framework that lingered over India like a threatening condemnation.

He was an energetic student and went to Cambridge for advanced education where he turned out to be effectively engaged with legislative issues. He later came back to India to crusade for the reason for India's freedom.

A strong and straightforward author, he uncovered a few of India's insidious practices through his compositions. He was a productive essayist and wrote an awesome number of works, a large portion of them were an editorial on the social structure of his opportunity.

Discussion:

Mulk Raj Anand's novel *The Road*, he manages a similar issue however with a distinction, as it is a novel of today where untouchability lawfully illegal. The novel nonetheless, demonstrates that the untouchables or 'Dalits' are still subordinated and live as subalterns.

On a symbolical perusing, the novel is a campaign against the disparity and barbarism honed against a subaltern untouchable—the triumph of good finished abhorrence. In this novel, as in *Untouchable*, casteism is rehearsed and censured on the grounds that it disfavors human poise. The story rotates round the subaltern Bhikhu, the pioneer of the untouchables of a town, sentenced to fabricate a connection Road.

The Road, rather than turning into an approach to illumination is changed over into a position of human debasement. *The Road* is an emblematic challenge against the idea of Karma and Capitulation to the inevitable. *The Road* speaks to a time of progress where the old request of the Hindu convictions in untouchability will change yielding spot to another vision of human solidarity and participation.

The Road looks to the time hole required for the adjustment in human personality for the vision of the meeting up of the Dalits and the standing Hindus. Another social dynamism through work in light of human collaboration is the thing that



Anand has in his vision. The discouraged classes are gotten in the interlacing neediness and social debasement.

They can secure societal position and increase monetary flexibility just through the 4 good news of work. Anand is keen on an aggregate social activity and he feels that the salvation of people lies through work. It is in this regard the author brings up the issue without bounds of the discouraged classes.

He feels that their social life must be effectively engaged with a progressing system of work. The effect of industrialization is felt in the development of work. He feels that fertilizer and restroom cleaning convey insult to men like Bakha.

The best way to evacuate this disrespect is to present a logical gadget whereby the life of the untouchable will experience an ocean change. The insult originates from the work they do. Anand's answer is that the presentation of flush framework changes the character of work. Anand includes another point and he says that picking up of monetary opportunity will modernize their life and make them respectable people. The degeneration in social life is thought to be the aftereffect of a moderate religion.

Anand needs to call attention to that accomplishment of autonomy has not rolled out any huge improvement in the hardship of the untouchables. The low rank individuals turn somewhat defiant however the high station likewise turn more unbending in their disposition towards them. The novel opens with the contention between the high position Hindu young men and Bhikhu the low standing untouchable on the issue of the untouchables heading off to the sanctuary. The embarrassment of his mom rankles Bhikhu. At the point when a kind hearted man mediates, the young men flee murmuring messy misuse.

Thus, Laxmi, mother of Bhikhu in *The Road* shares Lakha's obscurantist belief in holiness of rank request. Like Lakha, who discourages the retaliatory soul of his child, Laxmi additionally wishes her child Bhikhu could disguise the station administrators in his individual.

The religious legitimacy, gathering from dutifulness to laws of rank, Laxmi solidly accepts, would free the outcasts from such sins.

She, as Lakha, convinces her child to surrender the state of mind of defiance towards the rank Hindus and win religious legitimacy by maintaining their will. In *The Road*, Suraj Mani, the minister at the sanctuary in Govardhan town, misuses the myth of law of Karma to fulfill his religious voracity. He joins with Thakur Singh, the proprietor, in inducing the Kshatriya standing against the Dalits over the issue of building the town Road.

He proliferates the standard Hindu view-point among the villagers that the Untouchables by taking care of the stone for developing have contaminated the intensive toll. Since it is a corrupt demonstration, it would bring about underhandedness spreading on the planet.

Through Intellectual Suraj Mani, as through Savant Kalinath in *Untouchable*, Anand uncovered the avarice of the consecrated class. With a specific end goal to fulfill his avarice of getting offerings he tries to persuade Thakur Singh that purificatory service will fix the debasement caused by the touch of the Untouchables while dealing with the stone.



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He additionally conciliates the landowner by disclosing to him that the Untouchables are poor in light of their transgressions as opposed to due to their abuse by him. His own particular words uncover how behind the exterior of purificatory service his insatiability works: Those individuals are sentenced by their Karma to work out their fate among the flies and the tidy of their cabins.

The stink of their covered rooftops and the smothering warmth is discipline enough for them... Also, our kin weren't right in straightforwardly refusing to break the stones touched by the Harijans.

In uncovering Suraj Mani's covetousness for offerings, false religiosity and sexual desire, Anand assaults the holy class as he does on account of Kalinath, the cleric in *Untouchable*. In the case of Suraj Mani, he demonstrates that the ministers were translators of social codes, as well as they used impressive impact in town issues.

Notwithstanding, neither Bakha nor Bhikhu views the standing codes as supernaturally appointed. In making Bhikhu, Anand did not add any new quality to the legend; thus he stays another variant of Bakha. Be that as it may, both show, solid repugnance for take after the innate occupations; Bakha of searching and Bhikhu of shoe making. Since *Untouchable* was composed in the 1930s, Bakha feels more compelled to take after the dismal routine work of cleaning soil than Bhikhu feels.

Through Bakha's dissent against his brutal treatment by a station Hindu, as opposed to the degraded renunciation of his dad to their will, Anand underlines the reality how the youthful ages of the 1930s yearned for an adjustment in water-tight compartment arrangement of standing.

Bakha, who is illustrative of the outcasts, registers solid dissent with his dad, against his own particular abuse and attack of Sohini, his sister. Not at all like his dad,



who has undeterred confidence in decency of standing framework, Bakha voices disdain for, and outrage against, the treacherous which has bound him to an existence skirting on subjugation.

Consequently such unreasonable thoughts that execution of rank obligations will qualify him to be conceived in a family a standing Hindu never inconvenience him. Despite what might be expected, he indicates enough assurance to strike back against the rank Hindu who slaps him when he incidentally happens to touch him.

Bakha's disdain against the offending conduct of the position Hindus isn't a blast of outrage however he supposes to strike back against the standing Hindus coolly. He, be that as it may, neglects to exceed the hindrances developed by station traditions to secure the high standings, especially consecrated class, against the outcastes.

Conclusion:

The previous investigation of Mulk Raj Anand's works with exceptional regard for the different subjects on which his books and short stories are based has conveyed us to certain conclusion. This section contains a brief rundown of the real discoveries and finish of the investigation. Besides, some unexplored angles, which have been investigated in the past parts, have additionally been said here in this section. Of all Indian inventive journalists writing in English, Anand is maybe the most worried about the moment perception of society and writing. His perspectives regarding the matter are spread over many papers and articles.

Indians were dealt with as subhuman creatures fit to be subjugated, abused, and burglarized. To exacerbate things, a few Indians themselves helped these white-cleaned Britishers to build up a prevalence complex and keep the locals at a protected separation. They took a gander at their English bosses with stunningness, ponder, and profound respect and acted like degraded, cowering slaves prepared to do all requests of the English, regardless of whether reasonable or unjustifiable.

To include the hopelessness of the neediness stricken Indian workers, the rich Indians who delighted in great status held hands with their remote rulers to stifle their own kinsmen whom destiny and chance had denied their favors. The consequence of the childishness of these very much encouraged English and Indian experts was the pervasiveness of numerous social and monetary shades of malice which added to the social disasters like position framework, endowment framework, and visually impaired confidence in superstitions which Indians had acquired from their predecessors. It was likewise a period when reformists like Mahatma Gandhi had begun a battle against both the English control and local social shades of malice.

There was an enlivening among some informed Indians against the shades of malice pervasive in the public arena. They had begun perceiving the need of the inspire of down-trodden comrades. Mulk Raj Anand, whose long remain in Britain had not made him careless of his Indian brethren, felt the need of attesting the nobility of the



powerless, vulnerable, abused and enduring humankind whose discourse had been stifled in their throats by the severe power of the outside run the show.

He was highly motivated by Mahatma Gandhi's battle against untouchability. Aside from Gandhi, Anand likewise went under the impact of a few different masterminds and journalists - generally humanists, sentimental people, naturalists and Marxians. Like Rousseau - the source of Sentimental idea in Western Europe - Anand created common love for man.

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ISOLATION, OPTIMIZATION AND CHARACTERIZATION OF PROTEASE PRODUCING BACTERIA FROM SOIL COLLECTED FROM EAST KOLKATA WETLAND

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ABSTRACT:-

Introduction:-Proteases serves as key enzymes in modern application. Microbial protease assumes a significant character in biotechnological processes. **Materials and Method:-** In this work the purpose of our examination is the isolation of proteolytic bacteria from East Kolkata Wetland soil on skimmed milk agar and the portrayal of their proteolytic activity at different pH, temperature and incubation period. **Results:-** From the isolated seven positive strains, BRS5 and MA1 were chosen as the best cultures for protease production. Both these cultures were characterized based on the microscopic and biochemical characterization. BRS5 and MA1 were found gram-positive rod and gram-positive cocci respectively. Both BRS5 and MA1 created proteases in alkaline pH, however, the ideal pH was determined as 8 for BRS5 and 7.5 for MA1. The ideal incubation period for protease production was determined as 48 hours for both BRS5 and MA1 at alkaline conditions. The most elevated enzymatic action for BRS5 was found as 0.14 U/ml at 48 hours of incubation, and that of MA1 was 0.15 U/ml. Further enzymatic action was determined at various temperature and it was noted that the maximum enzyme activity of BRS5 was 0.14 U/ml at 55°C and that of MA1 was 0.095 U/ml at 50°C. The unknown concentration of crude protease was resolved utilizing the tyrosine standard curve and was found to be 0.9899 μ mole. BRS5 and MA1 gave a better outcome when washed with detergent. **Conclusion:-** The above outcomes demonstrate that these bacterial isolates can be utilized as biotechnological devices on industrial occasions.

Keywords:-East Kolkata Wetland, pH, Protease, Skimmed milk agar, Temperature, Tyrosine

Introduction:

Proteases symbolize one of the three biggest gatherings of modern chemicals and record for about 60% of complete worldwide protein deals. This strength of proteases in the mechanical market is foreseen to extend further continuously since 2005 (Rao et al., 1998). Since the appearance of enzymology, microbial proteolytic proteases have been the most generally contemplated chemical (Razzaq et al., 2019). These proteins have picked up intrigue not just because of their imperative job in metabolic exercises yet in addition because of their colossal usage in businesses (Rao et al., 1998; Sandhya et al., 2005; Cui et al., 2015). Microbial proteases are fundamental segments of a wide range of life on earth, comprising of prokaryotes, growths, plants and animals. They can be



derived in huge bits in generally short period by means of set up maturation systems and produce a bounteous, ordinary inventory of the favored item. Lately there has been a remarkable increment in the utilization of antacid protease as modern impetuses. Basic proteases are portrayed as those proteases which are dynamic in an impartial to soluble pH extend. They either have a serine community (serine protease) or are of metallo-type (metalloprotease); and the soluble serine proteases are the most vital group of compounds so far abused (Gupta et al., 2002). These compounds provide benefits over the utilization of ordinary concoction impetuses for various reasons; for example, they display unnecessary synergist action, a high level of substrate particularity can be delivered in huge amounts and are financially feasible. Microbial soluble proteases rule the worldwide compound market, representing two-third of the portion of the cleanser business. The inability of the plant and animal proteases to satisfy current world needs has prompted an expanded enthusiasm for microbial proteases. Microorganisms speak to a magnificent wellspring of catalysts attributable to their expansive biochemical decent variety and their vulnerability to hereditary control (Hamza, 2017). Because of these proteases from microbial sources are favored more over the chemicals obtained from plant and animals. The more important thing is they have practically all attributes desired for their biotechnological applications. Be that as it may, contrasted with the bacterial protease, parasitic proteases are dynamic over a wide pH go (pH 4 to 11) and display expansive substrate particularity, for example *Aspergillus oryzae* produces the three proteases; acid, neutral and base (Hamza, 2017). In any case, they have a lower response rate and not on a par with heat resilience than do the bacterial chemicals. The benefits of parasitic proteases are helpfully created in a strong state fermentation process (Hamza, 2017). Among microorganisms, *Bacillus* sp. is appealing mechanical apparatuses for a wellspring of proteases. Alkaline proteases of *Bacillus* sp. origin have noteworthy modern potential because of their biochemical assorted variety and wide applications in tannery and nourishment businesses, therapeutic definitions, cleansers and strategies like waste treatment, silver rebuilding and goals of amino acid blends (Agrawal et al., 2004). Albeit a wide scope of small scale life forms, for example, bacteria, parasites, actinomycetes and yeasts are known to date to deliver proteases, a huge capability of industrially accessible basic protease are obtained from gram positive bacillus strains due to their capacity to mystery a lot of alkaline protease having huge proteolytic action and steadiness at significant high pH and temperature (Ferrero et al., 1996; Kumar, 2002; Yang et al., 2000; Tennalli et al., 2012). *Bacillus* sp. is profoundly great bacterium for protease creation since it is non-pathogenic and very much investigated for delivering different sorts of proteases. Among *Bacillus* strains, *B. licheniformis*, *B. subtilis*, *B. acidophilus* and *B. lentus* were significant strains abused mechanically so far for protease creation (Tennalli et al., 2012; Bhunia et al., 2010). A system was accounted by Iwase et al. 2010; they portrayed the creation of an extracellular serine protease (Esp.) by *S. epidermidis* which hinders *S. aureus* biofilm development. The present work wants to seclude and discover protease delivering microorganism and to measure the enzymatic movement of the bacterial isolate and also characterization of the proteolytic activity of secluded bacterial strains by submerged fermentation and assessing the parameters, for example, incubation period, optimum pH for better protease production and ideal temperature for most extreme enzymatic activity



collected from East Kolkata Wetland area. The east Calcutta wetland is the biggest city wetland ecosystem in India overlaying 12,500 ha, which consists of 286 wastewater-fed fishponds unfold over 3,832.27ha (over 30% of the complete wetland area), producing 10,915 metric tons of fish yearly (Chatterjee et al., 2007). Between 2,000 and 3,000 metric tons of strong wastes, in exceptional forms, are being deposited each day in the wetland areas (Chatterjee et al., 2007). Besides giant extent of municipal wastewater, these canals additionally elevate effluents from at least 538 tanneries in three distinguished agglomerates and about 5,500 different small-scale industrial organizations such as rubber industries, electroplating industries, pigment manufacturing units, potteries, and battery manufacturing plants (Chatterjee et al., 2007). Therefore, biota in the east Calcutta wetland ecosystem is considered to be below plausible danger of hazardous metallic contamination.

Research Methods or Methodology:

Soil Sample collection

Soil samples were collected from different regions of East Kolkata Wetland area from roots of various plants.

Soil sample preparation

The soil samples were air dried first and then it was followed by grinding. A mortar and pestle used for grinding. After grinding soil samples were sieved the usage of mesh sieve and saved in dry and easy screw cap jars with suited labelling and was stored for further analysis (Firdous & Chakraborty, 2018).

Isolation of bacteria:

The collected soil samples were diluted in saline water and inoculated (0.1 ml) on Luria-Bertani (LB) agar plate with the aid of unfold plate method. Then the plates were incubated at 37°C for 4 days. After 4 days single colonies were chosen and preserved in nutrient broth for additional studies. After that gram staining was carried out to test the morphological traits of the bacterial isolates. Thirty bacterial cultures were screened for their capacity of protease creation on skimmed milk agar plate containing casein 0.5%, yeast extract 0.25%, dextrose 0.1%, skim milk powder 2.8% and agar 1.5% (Tennalli et al., 2012). In this test all the bacterial cultures were independently plated on skimmed milk agar plate and incubated at room temperature and after 24 hrs the zone of inhibition was recorded. On the basis of zone of clearance two best producers BRS 5 and MA 1 were selected for checking protease activity.

Biochemical characterization of remoted bacteria:

Purification of the bacterial isolate used to be validated by means of Gram staining. The pure colonies have been once more cultured on Nutrient agar. After acquiring pure culture, following biochemical checks have been carried out for the preliminary characterization purposes: catalase test, mannitol salt agar (MSA) test, nitrate broth test, motility agar test, Starch hydrolysis test, DNase test, sugar broth test, Methyl red test, MacConkey agar test, and Simmon's citrate agar test. These exams had been used to become aware of the isolate in accordance to the Bergey's manual of systematic bacteriology.



Qualitative test for protein:

To recognize unrefined sample as protein some test were done as biuret test, Ninhydrin test, Millon s test, Xanthoproteic test and Sulphur test. This test gives shading responses on the premise amino acid present (Rupali, 2015).

Quantitative measure of protein:

The total protein concentration of the sample was estimated by Lowry s method. The protein standard utilized was Bovine Serum Albumin(BSA) (1mg/ml) (Rupali, 2015).

Preparation of casein solution:

Casein was used as substrate. It was organized from alkali soluble casein which was dissolved in 10 ml distilled water. The insoluble component was dissolved through addition of the alkali. The pH was adjusted to 8 with 0.1 M sodium hydroxide (Rupali, 2015).

Crude enzyme preparation:

The protease fabricating bacterial state was added in casein stock medium followed by incubation at 37°C for 48 hrs. The refined medium was sifted utilizing Whatmann No.1 channel paper aseptically in laminar air flow. The filtrate was exposed to centrifugation at 10,000rpm for 10 minutes to dispense with unwanted particles. The supernatant was utilized as crude enzyme production for further examinations (Rupali, 2015).

Protease enzyme assay:

To find out about proteolytic movement, supernatant was utilized as enzyme source. The substrate utilized was 1% casein in 0.1 M phosphate support and adjusted to pH 7.0. after that 1ml of enzyme and substrate was incubated at 50°C for 60 min. To stop the reaction 3ml Trichloroacetic acid was utilized. One unit of protease activity was portrayed as the augmentation of 0.1-unit optical density at 1hr incubation period (Rupali, 2015). It was followed by centrifugation at 5000 rpm for 15 mins. After that from this, 0.5ml of supernatant was taken, to this 2.5ml of 0.5 M sodium carbonate was included, combined appropriately and incubated for 20 min after incubation it was added with 0.5ml of folin phenol reagent and the absorbance was inspected at 660 nm by the usage of Spectrophotometer (Rupali, 2015). then the measure of protease produced was estimated and expressed in microgram of tyrosine produced underneath standard assay conditions. In view of the tyrosine produced, we determined the protease activity (Rupali, 2015).

Effect of pH on enzyme activity:

To learn about the impact of pH culture media, the pH was adjusted by the usage of unique pH buffer ranging from 5.0- 9.0. It was incubated at 37°C for 48 hrs. After incubation, enzymatic activity was determined through standard enzyme assay (Rupali, 2015).

Effect of temperature on enzyme activity:

To learn about the standard temperature in which an enzyme shows its maximum activity, the substrate with crude enzyme was uncovered to exceptional temperatures between 25°C to 70°C. Enzyme activity was determined with the aid of standard enzyme assay (Rupali, 2015; George-Oka &Odibo, 2011).

Impact of fermentation period on enzyme activity: The organism to be tested was grown in supplement stock containing 1% casein and 3% NaCl. It was incubated at 37°C for 24,48,72,96 and 120 hr in an orbital shaker at 150rpm. Then it was followed by



centrifugation at 10,000rpm at 4°C for 10 min and protease activity was examined in the cell free extract (Rupali, 2015).

Washing test:

Application of protease protein by disengaged organism as a cleanser additive substance was concentrated according to (Chakraborty&Karmakar 2020). For this we stained three white cotton garments (5*5cm) with blood and grass independently and then we arranged and examined following sets:

- Blood and grass stained material plunged in flagon with refined water (100ml).
- Blood and grass stained material plunged in flagon with refined water(100ml) +1ml detergent(7mg/ml)
- Blood and grass stained fabric dunked in carafe with refined water (100ml) +2ml enzyme arrangement.
- Blood and grass stained material plunged in flagon with refined water (100ml) +1ml cleanser (7mg/ml) +2ml protein arrangement.

Then we incubated all the flasks at 60°C for 15 min. Following incubation, we took out the cloth pieces and rinsed with water and dried. Visual assessment of cloth pieces showed the impact of enzymes in expulsion of stains. Untreated cloth pieces recoloured with blood and grass were taken as control (Rupali, 2015; Nadeem et al., 2013).

Statistical Analysis:

Triplicate measurements of all the data were done by Microsoft Excel Software Version 2010 by calculating standard deviation and standard error. Pearson correlation was also performed for the enzymatic activity at different pH and temperature using IBMSPSS statistics 22 software (Firdous & Chakraborty, 2018).

Results:

Isolation of Bacteria:

The normally happening environment delivers great protein source to microorganisms. Seclusions and screening of microorganisms from these indigenous habitats is ideal for providing bacterial species which possess the capability of producing protease protein. In this study, our aim was to isolate protease producing bacteria from soil collected from East Kolkata Wetland area. The soil microorganisms were isolated by culturing on Nutrient agar medium. Thirty bacterial settlements showed up on the plate which was followed by streaking on supplement agar plate to get pure culture. All the bacterial confines were additionally prepared for proteolytic action (Fig. 1).



Figure1: Isolation of potent bacterial strain using different agar plates

Screening of Bacterial strain for Proteolytic activity

All the segregated bacterial settlements were screened on skim milk agar plate for their proteolytic activity. For this a loopful of each bacterial detaches were independently inoculated on skim milk agar plate followed by incubation at room temperature ($27^{\circ}\text{C} \pm 2^{\circ}\text{C}$) for around 24 hrs. After incubation, we observed that seven isolates out of thirty isolates indicated impressive proteolytic action by particularly framing clear zone around the provinces in skim milk agar plate shown in fig.2.



Figure2: Proteolytic activity of positive bacterial strains BRS 5 & MA 1

Among all the considerable number of cultures MA1 demonstrated most elevated zone of clearance of 25mm distance, followed by BRS5 which appeared 15mm width (Fig. 3). These two cultures (MA1 and BRS5) were chosen for protease production.

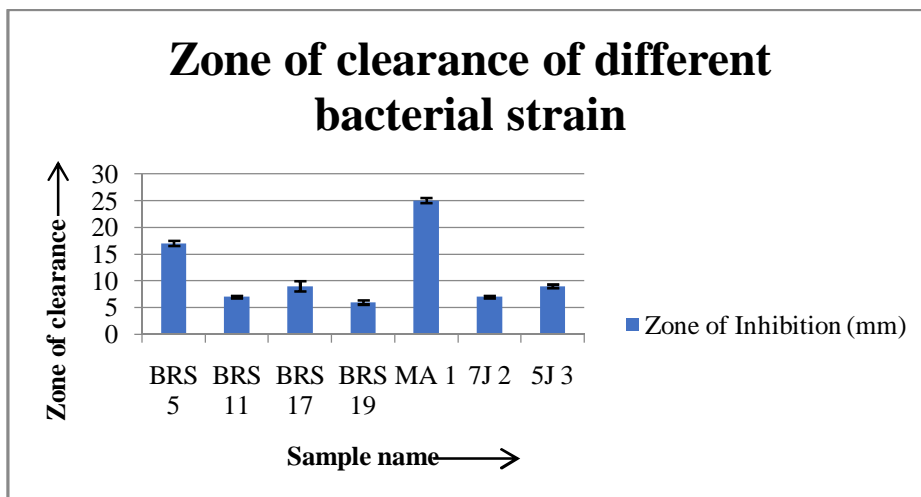


Figure3: Zone of clearance of different bacterial strain

Morphological and Biochemical characteristics of Bacterial Isolates:

The identification of bacteria was carried out by morphological studies i.e. staining which includes Gram staining. The two strains which showed the best result of the all samples showed irregular cocci and rod shaped, purple coloured colonies which indicates it as gram positive bacteria (Fig. 4).

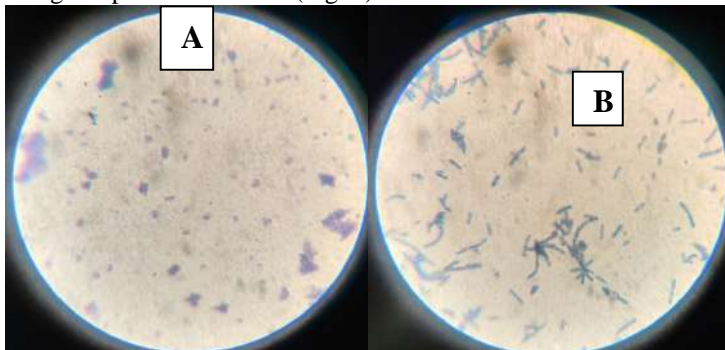


Figure4: Gram characterization by gram staining of potent bacterial isolates (A = Gram -ve bacterial strain & B = Gram +ve bacterial strain)

Biochemical Characterization of Bacterial strain:

Cultural characterization was done on agar plates like colony morphology that is shape and size. For biochemical characterisation we performed some biochemical test which includes catalase test, mannitol salt agar test, nitrate broth test, motility test, Starch hydrolysis test, DNase test, glucose sugar broth test, lactose sugar broth test, methyl red test, MacConkey agar test, and simmon's citrate agar test. Based on the result of biochemical characteristics we assumed that the two strains may be of *Bacillus* sp. and *Staphylococcus* sp. (table 2).

Table 2 Biochemical characterization of different bacterial isolates

Basic Characteristics	Properties of Sample MA1	Properties of Sample BRS11
Gram Staining	Positive (+ve)	Positive (+ve)
Shape	Irregular	Irregular
Size	Medium	Big
Catalase Test	Positive (+ve)	Positive (+ve)
Mannitol Salt Agar Test	Positive (+ve)	Negative (-ve)
Nitrate Broth Test	Positive (+ve)	Positive (+ve)
Motility Test	Positive (+ve)	Positive (+ve)
Starch Hydrolysis Test	Positive (+ve)	Positive (+ve)
DNase Test	Positive (+ve)	Negative (-ve)
Glucose Sugar Broth	Negative (-ve)	Negative (-ve)
Lactose Sugar Broth	Negative (-ve)	Negative (-ve)
Methyl Red Test	Negative (-ve)	Negative (-ve)
MacConky Agar Test	Negative (-ve)	Negative (-ve)
Simmon's Citrate Agar Test	Negative (-ve)	Negative (-ve)

Qualitative and Quantitative test for Protein:

To recognize crude sample as protein some test were performed by biuret test, Ninhydrin test, Millon s test, Xanthoproteic test and Sulfur test. This test gives shading responses on the premise amino acid present (Fig. 5).



Fig 5: Qualitative test for standard protein of potent bacterial isolates

The total protein content of the sample was determined by Lowry s method. The protein standard utilized was Bovine Serum Albumin(BSA) (1mg/ml) (Fig.6). The concentration of the two bacterial isolates MA 1 and BRS 5 are showed that BRS 5 contains greater concentration of proteins (table 3).

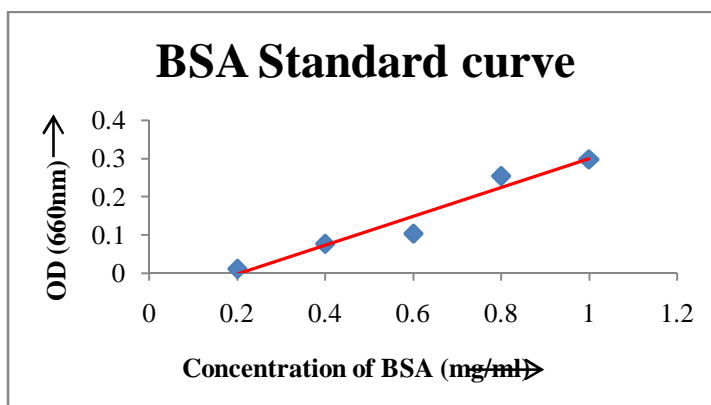


Fig 6: BSA standard curve for protein estimation

Table 3: Protein content of different bacterial isolates

Bacterial Isolates	Protein conc. of isolates (mg/l)
MA 1	0.74
BRS 5	0.83

Protease Assay

Protease activity by Tyrosine standard curve

Tyrosine standard curve was plotted to quantify the chemical Activities of protease. A standard arrangement was set up by utilizing 0.5 M of Na_2CO_3 , 50mM of glycine buffer, pH 10, Folic reagent diluted in a ratio 1:1 and different concentration of Tyrosine stock solution were taken as 20 $\mu\text{g/ml}$, 40 $\mu\text{g/ml}$, 60 $\mu\text{g/ml}$, 80 $\mu\text{g/ml}$, 100 $\mu\text{g/ml}$. A required sum test tube buffer and tyrosine were added to each test tube. 2.5 ml 0.5 M Na_2CO_3 was included in each test tube consequently, the blends were kept at room temperature for 10 min. After incubation 500 μl of Folin reagent was included and was followed by further incubation for 30min at room temperature. A Solution of glycine buffer of pH-10, 2.5ml of Na_2CO_3 and 0.5ml of Folin reagent were included in a test tube which is considered as a blank. The unknown concentration of crude protease was resolved utilizing the tyrosine standard curve and was found to be 0.9899 μmoleat 660nm utilizing spectrophotometer and the standard curve was plotted (Pokhrel et al., 2014) (Fig. 7).

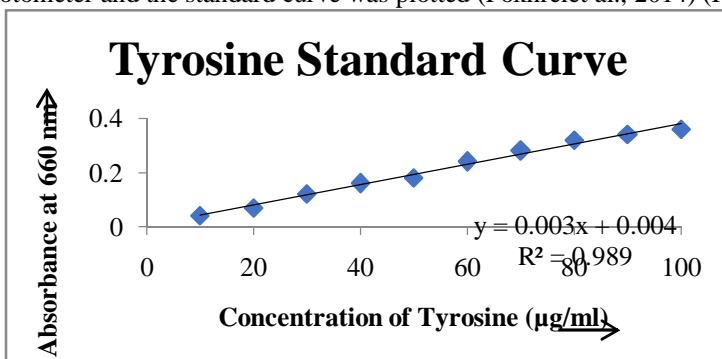


Figure7: Tyrosine standard curve for protease estimation

Evaluation of proteolytic action of different bacterial isolates:

The proteolytic activity of MA1 and BRS11 bacterial strains was additionally measured by caseinolytic test as depicted by Tennalli et al., 2012 with little alterations. For the production of enzyme, submerged fermentation was set up utilizing supplement stock enhanced with skim milk powder as media. The crude enzyme extricated from the media is then tested for proteolytic assay.

Impact of pH and incubation period on enzymatic activity of MA1 and BRS5 bacterial strain:

Effect of pH is one of the central point for the development of microorganisms in the medium that influences the productivity of microorganisms. In this investigation a great emphasis was put to determine the protease activity at acidic, alkaline and neutral pH. This aids in the assessment of protease produced and to improve the pH condition for higher productivity. It was found that the BRS5 and MA1 showed maximum enzyme activity in alkaline condition at pH 8 and pH 7.5 respectively that is the maximum protease activity of BRS5 culture was found to be 0.12 U/ml greater than that of MA1 culture which was found to be 0.1 U/ml (Fig. 8).

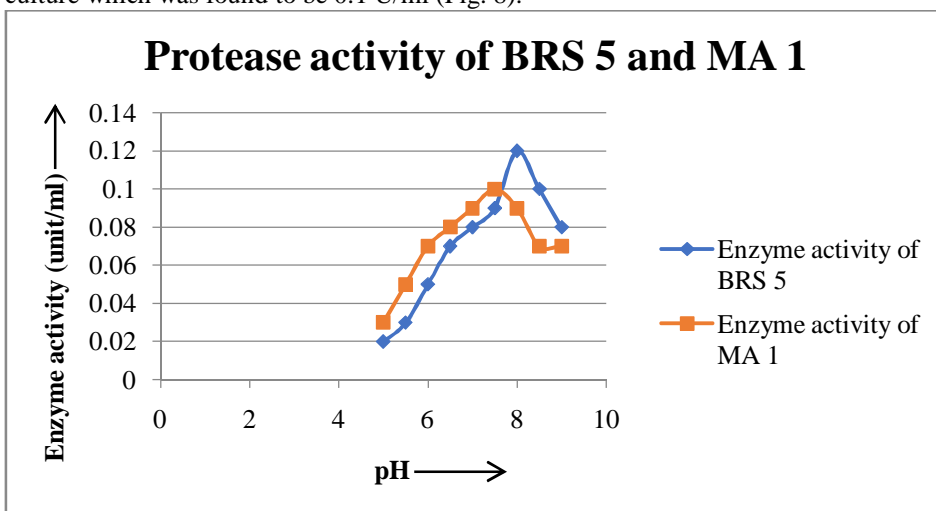


Figure 8: Effect of different pH on protease activity (BRS 5 bacterial strain protease activity respected to different pH and MA 1 bacterial strain protease activity respected to different pH).

Impact of temperature on protease activity of MA1 and BRS5 bacterial strains:

Temperature is one of the noticeable variables influencing development of microorganisms; it additionally influences the productivity of enzymes as greater percentage of enzymes are heat labile (Tennalli et al., 2012). In this study the enzyme activity of the selected cultures was checked at 25°C, 30°C, 35°C, 40°C, 45°C, 50°C, 55°C, 60°C, 65°C, 70°C. It was found that the BRS5 and MA1 showed maximum enzymatic activity at an optimum temperature of 55°C and 50°C respectively that is the maximum protease activity of BRS5 culture was found to be 0.14 U/ml greater than that of MA1 culture which was found to be 0.095 U/ml (Fig. 9).

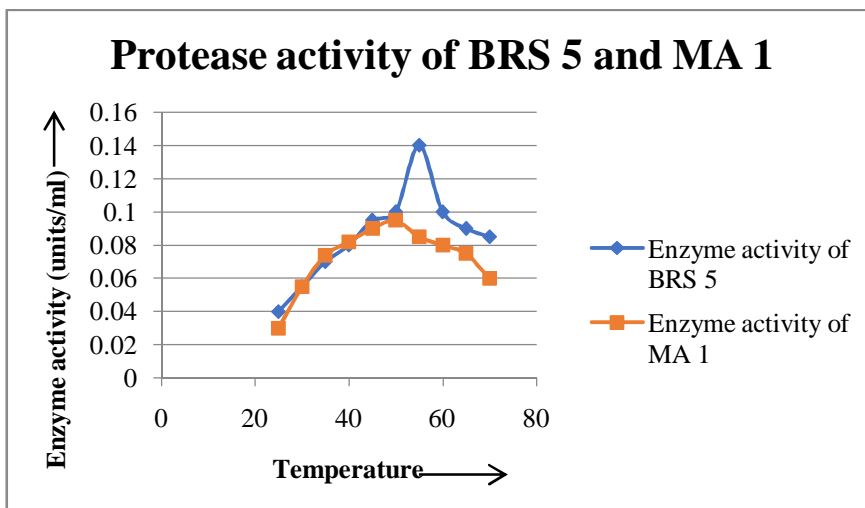


Figure 9: Effect of different temperature on protease activity of MA 1 bacterial strain (BRS 5 bacterial strain protease activity with respect to different temperature and MA 1 bacterial strain protease activity with respect to different temperature).

Effect of fermentation period on proteolytic activity

The maximum protease production by bacteria was found at 48 to 72 hrs of incubation period. The present study determined maximum activity of Protease production which is 48 hrs of fermentation period shown by both BRS5 and MA1. However, MA1 expressed better protease production at both 48 hrs and 72 hrs of incubation period than BRS5. The maximum protease production for BRS5 at 48 hrs is 0.14 U/ml and for MA1 is 0.15 U/ml (Fig. 10).

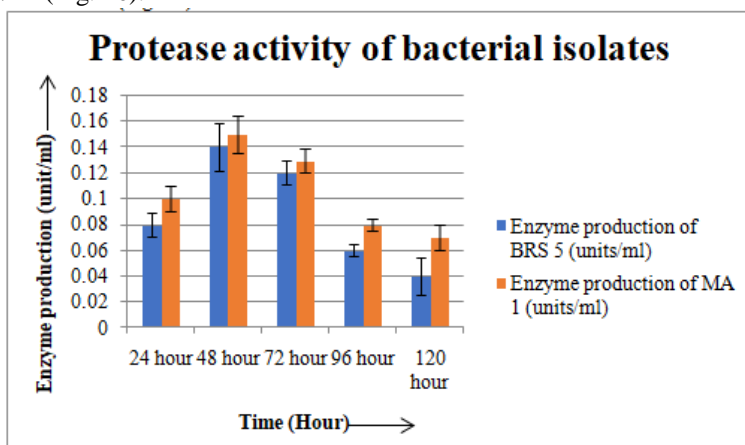


Figure 10: Proteolytic activity on different fermentation period (BRS 5 bacterial strain protease activity with respect to different fermentation period and MA 1 bacterial strain protease activity with respect to different fermentation period).

**Washing test**

On performing the washing test, we observed that we got the best removal of stain after combining the water, detergent and the bacterial protease enzyme for both BRS5 and MA1.

For BRS5, water and BRS5 protease removed the stain of grass very efficiently whereas it was not that much effective in removal of blood stain from the cloth. For MA1, water, detergent and the MA1 protease enzyme removed both the grass and blood stain from the cloth most efficiently (table 4).

Table 4:Washing test of different stain on BRS 5 and BRS 11 protease

Stain	Only Water	Water and detergent	Water and BRS5 protease	Water, detergent and BRS5 protease
Grass	+	++	+++	+++
Blood	+	++	++	+++

+ = Poor removal of stain, ++ = Good removal of stain, +++ = Very good removal of stain

Statistical Analysis:

The IBM SPSS statistics 22 software was used to understand the following correlation matrix between different electron donors used to relate the different temperature and enzyme activity of different bacterial strain. According to correlation matrix the P value should be ≤ 0.05 for the result to become significant and the test is not significant if the P value is ≥ 0.05 . As per table shown below there is a positive significance at the level of ≥ 0.05 between different temperature and enzymatic activity of BRS 5 bacterial strain and at the level of ≥ 0.01 between different pH and enzymatic activity of BRS 5 strain. Both the cases BRS 5 shown the positive significance value.

Table 6:Pearson's correlation matrix of temperature and different bacterial culture by IBM SPSS 22

Correlations				
		Temperature	Enzyme activity BRS 5	Enzyme activity MA1
Temperature	Pearson Correlation	1	.659*	.437
	Sig. (2-tailed)		.038	.207
	N	10	10	10
Enzyme activity BRS 5	Pearson Correlation	.659*	1	.776**
	Sig. (2-tailed)	.038		.008
	N	10	10	10
Enzyme activity MA1	Pearson Correlation	.437	.776**	1
	Sig. (2-tailed)	.207	.008	
	N	10	10	10
*. Correlation is significant at the 0.05 level (2-tailed).				
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 7: Pearson's correlation matrix of pH and different bacterial culture by IBM SPSS 22

Correlations				
		pH	Enzyme activity BRS 5	Enzyme activity MA 1
pH	Pearson Correlation	1	.855**	.574
	Sig. (2-tailed)		.003	.106
	N	9	9	9
Enzyme activity BRS 5	Pearson Correlation	.855**	1	.780*
	Sig. (2-tailed)	.003		.013
	N	9	9	9
Enzyme activity MA 1	Pearson Correlation	.574	.780*	1
	Sig. (2-tailed)	.106	.013	
	N	9	9	9
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Discussion:

It has been accounted that the culture conditions can firmly impact the creation of extracellular protease by various microorganisms. *Bacillus* sp. was seen as prevalent in soil. Consequently 2% was determined as *B. coagulans*, *B. stearothermophilus* and *B. licheniformis*, 4% were *B. cereus* and *B. circulans*, 6% were ,8% were *B. laterosporus*,10% were *B. pumilis*, 20% were *B. brevis* and 21% were *B. sphaericus* and *B. macerans* (Rupali, 2015). In the current investigation seven bacterial segregates demonstrated proteolytic action. Out of this, bacterial settlement indicating the greatest proteolytic movement was concentrated further. The protease producer was recognized as genus *Bacillus* sp. and *Staphylococcus* sp. Various physiological components were contemplated like the impact of pH, temperature, fermentation media, washing test.

The most extreme activity of enzyme appears as thermostable and this property can be employed in detergent application. It shows better consequences of washing with detergent (Chakraborty et al., 2020). It was determined that enzymatic action increments with ascend in temperature compasses to greatest at 55°C. Enzyme activity was steady with the temperature inside the scale of 35°C to 65°C. Enzymes were additionally still dynamic at 70°C. In literature, optimum temperature has been accounted for between 30-70°C for *Bacillus* sp. (Sevinc&Demirkan, 2011). Optimum temperature for protease of *B. licheniformis* UV-9 was seen as 60°C (Nadeem et al., 2013). Bizuye et al., 2014 announced ideal temperature for proteolytic movement of protease delivering bacteria was 37°C - 50°C and revealed ideal temperature for proteolytic action of protease producing microbes was 37°C - 50°C. The pH of the culture unequivocally influences numerous enzymatic procedures and transmission of compounds across the cell membrane. Increment in pH shows increment in enzymatic activity. Most extreme activity at alkaline pH 9 was accounted for by Odu&Akujobi, 2012. In literature it was indicated that the enzyme also gave high action in the alkaline pH run 6.0-9.0 (Rupali, 2015). Bizuye et al., 2014 reported ideal pH for protease production was pH 8-10.



Conclusion:

In this present study soil of East Kolkata Wetland area shows presence of protease producing bacteria. The bacteria were screened and identified as *Bacillus sp.*(BRS5) and *Staphylococcus sp.*(MA1). Analysing the utilization of Protease enzyme, it may be bridled into biotechnological forms. The proteases are the most significant industrial compounds, bookkeeping a significant volume of absolute overall enzyme deals. In the study of Tennali et al., 2012 two best strains from the twelve proteolytic microorganisms were considered for their proteolytic effectiveness. Both P5 and P12 strains indicated high protease production in basic pH at 27°C for 48hrs under submerged fermentation. Further these two strains can be employed for enormous scope protease production (Tennali et al., 2016). In this present study, it was found that both BRS 5 and MA 1 showed maximum enzyme activity in alkaline pH and higher temperature due to which this can be employed in industrial applications. According to Rupali, 2015 the protease producing bacteria was screened and identified as *Bacillus Sp.* so, this organism could be very useful in textile industries since Burhanpur is known for textile industry from where the soil is collected for isolation of protease producing bacteria. In this present study, the isolation of bacteria was done from the soil sample collected from East Kolkata Wetland Area where huge amounts of wastes are deposited on a daily basis which includes salt marshes and sea meadows as well as wastes from sewage farms and settling ponds. Thus, these protease producing organisms can be utilized in Waste Management and in the process of bioremediation. The protease producing bacteria was screened and identified as *Staphylococcus sp.* and *Bacillus sp.* which can be very useful in industries likerubber industries, leather industries, electroplating industries, pigment manufacturing units since East Kolkata Wetland Area is a place where apart from the large volume of municipal wastewater, the canals also carry effluents from tanneries and other small-scale industrial establishments. The shortage of natural assets and the gathering of contamination brought about by human activities have required the advancement of production innovation that is less unsafe to nature.

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RAPE: CONSENT AND PRESUMPTIONS

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Abstract:

Forcible rape is a violent crime, as are all cases of sexual assault. In more than one-third of the cases, the victims are children, and a significant number of victims are elderly women. Although few of these victims have serious physical injuries, they all suffer psychological trauma that will affect their lives and the lives of those around them. All of these victims need medical care and psychologic counseling if they are to adjust and reenter society without difficulty.

Keywords : Rape, Consent, Criminal Law, sexual intercourse.

Introduction

It is a general principle of the criminal law that the onus of proof is always upon the prosecution to prove affirmatively each ingredient of the offence it needs to establish and such onus never shifts¹, same principle applies to prove the offence of rape mentioned under section 375 of Indian Penal Code 1860.

When an accused is tried for committing rape upon a grown up women, burden lies on the prosecution to prove that the sexual intercourse was done against the will and without the consent of the women.²

Section 114-A of Indian Evidence Act, 1872 creates presumption as to absence of consent in certain prosecution for rape. Consequently the law of burden of proof in the case of rape have undergone a radical change and the principle of law that the burden of proof, always lies on the prosecution shall not apply in the cases covered by section 114-A, Indian Evidence Act and the case law laying down principle of burden of proof contrary to the rules laid down in Section 114-a are no longer good law.

Section 114-A says: in the prosecution of rape under clause(a) or clause(b) or clause(c) or clause(d) or clause(e) or clause(g) of sub section 376 of the Indian Penal Code (45 of 1860), where sexual intercourse by the accused is proved and the question is whether it was without the consent of the women alleged to have been raped and she states in her

¹ Section 101 indian Evidence Act, 1886

² Nilamber Goudo v. State, 1982



evidence before the court that she did not consented, the court shall presume that she did not consented.³

So we can say , as the affirmation for the sex shall be consensual so the instigator of a sexual interaction wishes to do anything , he must enquire whether his partner wishes that to be done, so the technical burden of such enquiry lies upon the accused.⁴

Legal Provisions: India is a country where women hold high status in the society but still we do not have strict measures to protect them. We have various laws strictly framed to protect their life but seemed to have many loophole. Rape is considered as a most heinous crime done on women and statistic states that it is quite prone in India. We have various laws to regulate such heinous crime but when it comes on the implementation part, we lack somewhere or we need to make an attempt to have a hold upon it. Thus, abruptly leads in interpreting the crime in diversified way which sometimes even leads to miscarriage of justice. The change in definition of rape is due to the liberal interpretation of the term. It is the need of the hour and we have to move according to the present scenario. Legislature and Judiciary are trying to curb this issue defining these term in a more concrete manner.

The IPC does not defines consent in positive terms, but what cannot be regarded as consent is explained by Section 90. Consent given first under fear of injury and secondly under a misconception of fact is not consent at all. That is what is enjoining by the first part of Section 90.

These two grounds explained under Section 90 are the analogous to coercion or mistake of fact. Which are the familiar grounds which can vitiate a transaction? The factors set out in the first part of Section 90 are from point of view of the victim.

The second part of Section 90 enacts the corresponding provision from the point of view of the accused. It lays emphasis on the knowledge or reasonable belief of the person who obtains the tainted consent. The requirement of both the parts should be cumulatively satisfied. The Court has to see whether the person giving the consent has given it under fear of injury or misconception of fact and the Court should also be satisfied that the person doing the act is conscious of the fact or should have reason to think that the consent has been given.

Section 375⁵ implicitly reveals that the consent of the women should have been obtained prior to the act; otherwise it will be no defence if the women's consent has been obtained after the commission of the act.⁶

Such consent shall be obtained by her free will and not by force or through any means of deception. There are certain instances mentioned under the statute which will amount to no consent on the part of the woman. Under these circumstances the offender will not get the defence of consent in any case.

³ Text of Indian Evidence Act ,1872 by Universal.

⁴ From No Means No to Only Yes Means Yes: The Rational Results Of an Affirmative Consent Standard in Rape Law, Article by prof. Mrinal Satish.

⁵ Indian Penal Code, 1860

⁶ 1 Hawak PC c 16, section 7, p 22



If the consent of the women for sexual intercourse is obtained by putting her under the fear of death or hurt, then in such a circumstance it will not amount to the consent obtained by free will and it will not be any defence to the accused person.⁷

The consent or its absence is a pure question of fact which varies from case to case, for instance, the fact that the girl was taken into the deep forest and where she was kept throughout the night, strongly suggests that the prosecutrix was not a consenting party. Otherwise, there was no need to take her to a lonely and isolated place.⁸

In another instance where the girl was overpowered by holding her hands by another person during sexual intercourse, it suggests that there was a repel from the side of the lady and the act was obviously without her consent.⁹

Similarly, where the prosecutrix and her cousin sister, who was also with her at the time of the incident, were found crying together immediately after the incident, in such a case it can be easily enumerated that the act was done against the will of the prosecutrix it would rule out the possibility of her consent.¹⁰

On the other hand, facts which suggests that the act was done in the circumstances when the victim was not in condition to give her consent, in such a case the offender will not get the desired defence of consent. For instance, A sleeping person can never consent . where the offender had intercourse with a women while she was asleep, he was held to have committed rape and no defence of consent was given to him.¹¹

Where the consent is obtained by compelling the victim and putting her into such a condition that she could not refuse or resist the act, such a consent would not be a valid one. For instance, if a person having close touch with the family and acting almost like a father induces the girl to accompany him on the pretext that her father was ill and she was required to visit him and on the way during the night time she was made a victim of sexual assault, it may be that she might have not resisted or might have even passively suffered the assault, it will not amount to a valid consent as the prosecutrix was not in a condition to refuse.¹²

So in the present study will be based upon the nature of consent given in rape offences and presumptions assumed by the courts in different types of rape offences, on the basis of which the whole burden of proof tends to shift from prosecution to defence.

The consent: Defined:

The word consent is defined under section 90 of IPC . the first part of section 90 defines that the consent given first under fear of injury and secondly under a misconception of fact is not a consent at all. And the second part emphasises upon the consent given by an unsound person and the minor who is under 12 years of age is not a consent, while for the purpose of section 375 IPC the age limit is extended to 18 years and if she is the wife of the accused then her consenting age shall be above 16 years of age.

Such a consent shall be obtained by her free will and not by force or through any means of deception. There are certain instances mentioned under the statute which will amount

⁷ State v. Mange Ram AIR 2000

⁸ Babu 1984 cri Lj (NOC) 74

⁹ Vinod Kumar 1987 cri Lj 1541(MP)

¹⁰ Ibid

¹¹ Mayers (1872)

¹² Gajanand Maganlal Mehta 1987 Cri Lj 374 (GUJ)



to no consent on the part of the woman. Under these circumstances the offender will not get the defence of consent in any case.

Similar to the consent obtained by force, the consent obtained by fraud is also not acceptable. But it is a mixed question of law and fact whether the act of the accused to defraud the woman for the intercourse was grievous enough to constitute a fraud.

Stephen, J, said , that it seems that “the proposition that fraud vitiates consent in criminal matters is not true if taken to apply in the fullest sense of the word, and without qualification. It is too short to be true as a mathematical formula is true. If we apply it in the sense to the present case it is difficult to say that the prisoner was not guilty of rape, for the definition of rape is having connection with a women without her consent: and if fraud vitiates consent, many seductions would be rapes and so might acts of prosecution procured by fraud., as for instance by promises not intended to be fulfilled ... the only sort of fraud which so far destroy the effect of a woman’s consent as to convert a connection consented to in fact into rape are frauds as to the nature of the fact itself, or as to the identity of the person who does the act.”¹³

In the same case it was further held by Stephen, J, “ That consent obtained by fraud is no consent at all is not true as a general proposition either in fact or in law. If a man meets a woman in the street and knowingly gives her bad money in order to procure her consent to intercourse with him, he obtains her consent by fraud, but it would be childish to say that she did not consent.”

It will be a mixed question of law and fact whether the act of the accused amounted to the obtaining of the consent through fraud. The primary burden of proof is always upon the prosecution but once the prosecutrix refuses the question of consent, then by the virtue of section 114-A of Indian Evidence Act , the whole burden of proof will be upon the accused and he has to prove that he has obtained the consent through the legitimate means and not by fraud.

On the other hand the consent obtained by Misconception of fact is also not a valid consent. In *Mange Ram* case¹⁴, the court observed that consent for the purpose of section 375 requires voluntary participation not only after the exercise of intelligence based on the knowledge of the significance and moral quality of the act but after having fully exercised the choice between resistance and assent.

If the prosecutrix is not in her full senses or she is in such a condition that she cannot understand the nature of the consent which she is giving and the accused, taking advantage of such situation, commits the act, the burden of proof(under section 114-A) will fall strict upon him to prove that his consent was genuine.

In such a situation the accused has to prove that, either, the prosecutrix was in her full senses and capable to understand the nature of the consent which she gave to the accused, or , the accused was an unknown to the fact that the consent has been given in such circumstances.

¹³ Queen v. Clarence 1888

¹⁴ AIR 2000 SC 2798



Clear cases of 'no consent':

In certain cases where the facts and circumstances clearly states that there was no implicit or explicit consent from the part of the victim, there the court shall make a presumption in favour of the victim that she did not consented and the burden of proof for rebutting such presumption totally falls upon the accused.¹⁵ The court shall prima facie consider the case as if there was no consent on the part of the victim, after analysing the facts and circumstances of the case.

And if the accused pleads for such a defence of 'consent' in the the court , the burden of proof would be strict upon him.¹⁶

For instance, where the accused made false promise of marriage to a girl thus obtained her consent to sexual intercourse, and it was found she was a minor and her consent was no consent in law, the conviction under section 376 was upheld.¹⁷

In another instance, where a man had raped a married women and injuries were caused on her body, the plea of consent was found not to be approvable.¹⁸ As it was clearly visible that the woman has repel back during the act.

In another circumstance where the victim is not in the position to give her consent.(she is insane, congenitally dumb etc), in such cases even the presumption made u/s 114-A has no role, because it will be de facto presumed by the court that there was no consent on the part of the victim, as she is unable to communicate her consent.

So we can say when the victim is unable to communicate the consent due to any circumstantial drawback (eg; mouth blind folded due to some operation) or due to any congenital or accidental disability(like dumbness) , taking advantage of such disability accused makes a sexual intercourse with her, the accused will not get the defence of a consensual intercourse.¹⁹

For instance where a blind helpless young girl was raped by the accused, it was held that expression 'consent' can not be equated to inability to resist out of helplessness and absence of injuries on the victim also does not by itself amount to consent by her.²⁰

On the other hand there could be case under which the consent could be attained by forcefully compelling the victim to give her consent. Like in the cases where the accused puts the victim into the fear of death or hurt in order to get her consent. But in such cases the prosecution shall prove the factual as well as legal validity of the compelling factors like fear of death or fear of hurt.

It shall be proved that the fear was of death.. If the fear was such that it created the apprehension of death or hurt in the mind of the victim than it will surely qualify of the court to hold a presumption under section 114-A in favour of the victim.

Judicial Approach: In *Tukaram*,²¹ Mathura and her husband Ashok were called at police station at night hours. Police constable Ganpat took Mathura behind the police station and committed sexual intercourse with her. Tukaram was drunk and hence could

¹⁵ Sec. 114-A Indian Evidence act 1872

¹⁶ Ibid

¹⁷ Addepalli Settibabu 1994 Cri Lj 1420(AP)

¹⁸ Pala Ram 1994 Cri Lj 1677(Raj)

¹⁹ Sec. 375 , added through THE CRIMINAL LAW (AMENDMENT) ORDINANCE, 2013

²⁰ Rabinarayan Das 1992 SC 1275

²¹ AIR 1979 SC 185



not commit sexual intercourse but he fondled the private parts of Mathura. Pursuant to the FIR by the prosecutrix, the case was registered against the police personnel. The trial court acquitted the accused but the High Court convicted him. The accused appealed to the Supreme Court.

In Supreme Court, Koshal, J. stated, “ In holding the circumstances available in the present case make out a case of fear on the part of the girl, it did not give a finding that such fear was shown to be that of death or hurt, and in the absence of such a finding the alleged fear would not vitiate the consent. Further the circumstantial evidence to be used in order to prove the an ingredient of an offence, it has to be such that it leads to no reasonable inference other than that of guilt... the circumstantial evidence available is not only capable of being construed in a way different from that adopted by High Court but actually derogates in no uncertain measure from the inference drawn by it.”²²

In State v. Prakash , the prosecutrix Nirmala was raped by a police constable and his companion. The trial court convicted the accused but the High Court acquitted them . the high court agreed with the trial court that the accused had the sexual intercourse with the victim but in view of absence of marks of violence on her person, she was a willing partner to the act of the sexual intercourse.

The prosecution approached the Supreme Court, SC observed “it is worthy of note that police constable was in uniform on bandobast duty. By the show of her duty he coerced the prosecutrix in to total abject surrender. It is, therefore, not a case of prosecutrix being a willing party to sexual intercourse. It is a case where she has surrendered herself involuntarily, under duress and threat held out by the first accused.”²³

So, in this case the Supreme Court totally denied the opinion of the High Court regarding the prosecutrix being the ‘consenting party’ on the factual grounds that the prosecutrix and her husband were poor rustic villagers and the ‘show of authority’ by the constable was sufficient enough to subject the prosecutrix according to his will under the fear of hurt or may be death.

In both the above cases, once the facts of the cases were proved i.e. there was a genuine apprehension of death or hurt to the prosecutrix under which she surrendered herself and gave her consent, the burden of proof(by the virtue of section 114-A) fell strictly upon the accused when they pleaded for the defence of consent and the court made presumption in favour of the victim regarding her “no consent”.

The fourth clause under section 375 of IPC , it includes the cases where the consent is given by the women under the belief that the person having sexual intercourse with her is a man to whom she has been married, whereas in fact it is not so, in such a case the accused is held guilty under the offence of rape.

But it is very important to prove by the prosecution, in order to prove the guilt of the accused, that he knows the fact that he is not the husband of the women with whom he is having sexual intercourse as she believes him to be her husband. The consent, in such cases, is really no consent at all.²⁴ Again the burden of proof will fall strict upon the

²² Ibid

²³ State v. Prakash AIR 1992SC 1275

²⁴ Dr. A.N. Mukherji v. State, 1969 Cri. L.J. 1203



accused seeking the defence of consent under this clause. The excuse of the accused that even he believed the lady to be his wife is not a valid ground for defence.

Once the victim refuses the question of consent in her evidence, and says that she was made to believe that the accused is her husband, the primary burden of proof (by the virtue of section 114-A) will fall strict upon the accused and now he has to prove the legitimacy of his act.

While the fifth clause of the section covers those cases where the lady gave the consent to the accused but due to the unsoundness of mind or due to the intake of some stupefying substance she was unable to understand the nature of her consent.

The sexual offence committed with a woman with her consent will amount to an offence of rape, when at the time of giving such consent, the woman is unable to understand the nature and consequence of her consent because she is of unsound mind or she is under intoxication or she has been administered any stupefying or unwholesome substance by the man committing sexual intercourse himself or through another.²⁵

Once the prosecution has established that the woman was not in her senses when she gave her consent and the woman rejected the question of the consent in the court. Section 114-A will come into play and the burden of proof will be upon the accused to prove that it was a consensual act.

If the age of the prosecutrix is below 18 years and below 16 years (being the wife of the accused) the element of consent becomes immaterial. It is not an issue whether the prosecutrix consented for the intercourse or not, so the accused cannot raise a plea of defence regarding the consent of the victim, and the court need not to hold and presumption in such cases.

Presumption to be held by the court

In order to preserve the modesty of the women the court shall hold its primary presumptions in favour of the women regarding the issue of the 'consent'.

When a woman says that she has not consented to the unholy act, the court shall hold its prima facie presumptions in favour of her. Here the court shall presume that the woman did not actually consent,²⁶ and the burden of proof to rebut such presumption of the court shall fall upon the accused strictly who is seeking the defence of a 'consensual intercourse'.

The above rule was not a part of original text of the Indian Evidence Act of 1972, but is inserted by the amendment act 43 of 1983. Which says: "*In the prosecution of rape under clause(a) or clause(b) or clause(c) or clause(d) or clause(e) or clause(g) of sub section 376 of the Indian Penal Code (45 of 1860), where sexual intercourse by the accused is proved and the question is whether it was without the consent of the women alleged to have been raped and she states in her evidence before the court that she did not consented, the court shall presume that she did not consented.*"²⁷

According to this section, Indian Evidence Act in a prosecution for rape under clause (a) or (b) or (c) or (d) or (e) or (g) of sub-section 2 of section 376 where the sexual

²⁵ By Criminal Law Amendment Act, 1983

²⁶ Section 114-A Indian Evidence Act, 1872, inserted by Act 43 of 1983

²⁷ Ibid



intercourse by the accused is proved initially by the prosecution then the question arises whether the act was without the consent of the woman and if she states in her evidence that she did not consented, the court shall presume that she did not consented.

There is a very strong reason behind such presumption i.e, once the sexual intercourse is proved by the prosecution the another thing to be proved in order to establish the offence under this section is that such an intercourse was committed without the consent of the prosecutrix . but it is very difficult for the court to judge whether the victim is a consenting part or a non consenting one , as it is a pure question of fact so it is necessary for the court to establish a stable platform to place the burden of proof in either court in order to initiate the proceedings initiate the proceedings.

So in order to maintain the modesty of the victim , who is already suffered a lot physically and mentally , the initial burden of proof is placed upon the accused. The consent or the want of the consent has almost always to be decided on surrounding circumstances of each case and so the problem is not very easy to solve.

So the presumption under section 114-A can be drawn when the accused says that he committed rape with the consent of the prosecutrix.²⁸ The consent or the want of the consent has almost always to be decided on surrounding circumstances of each case and so the problem is not very easy to solve.

In the cases of rape the court shall keep in mind that the evidence of the rape victim should be taken very sensitive approach and with a serious attitude unless there are strong circumstances militating against the testimony of the victim.²⁹

So, the refusal to act on the testimony of a victim of sexual assault in the absence of the corroboration will result as an insult to the physical and mental injury the victim has suffered so far.

The evidence of the victim of the sexual assault is given much more importance than the evidence of the victims of other offences and the court is also bound to presume in favour of the victim in accordance to such evidence.

But I would like to suggest that such a presumption held by the court is too inclined in the favour of the victim that makes the accused too prone to fall within the ambit of this section. And the prosecutrix can also easily take advantage of such privilege.

CONSENT, RAPE AND ACQUITTAL :

There are many instances where the court is bound to presume in favour of the victim, and the accused is crushed by the burden of proof mentioned under section 114-A, even if he is not guilty.

But the question of the consent is a question of fact and it may vary from case to case, in one case it might be there but in other case it might not. Section 114-A bounds the court to hold the presumption in favour of the evidence given by the victim, even if there is no corroborative evidence in support of the testimony of victim's oral evidences.

In the case, where the victim is taken to the house inmates of which were known to her, there the victim and the accused were allowed to stay in the night, accused sharing the

²⁸ Ravindranath v, state of U.P , 1991

²⁹ Rafiq v. state of U.P, AIR 1981



bed of victim, even then it was held accused must be deemed to have had sexual intercourse against her volition.³⁰

Where the victim was in friendly relations with the accused and they shared the same room in the hotel, even then it was presumed by the court that the act was done without the consent of the prosecutrix.

The court shall be liberal enough to balance the burden of proof in favour of that party which seems to be more disadvantageous after analysing the fact. Like a case³¹ where the accused seems to be physically weak than the prosecutrix and the prosecutrix, who has already denied the question of consent, is a strong built lady of higher age, technically the chances for commission of the sexual intercourse, without her consent, seems to be very low.

Similar circumstances were present in a case, where the accused was just a 17 yrs old boy studying in class viii and he was charged under this section for committing rape to his sister in law, who was a very strong built lady. In this case the accused was acquitted by the high court. And it was established that the charges brought against him were false and fabricated.

There could be a circumstance where the accused is a family member or a family friend of the victim and he enters into the sexual relation with the victim with her consent, but latter on due to the fear of social embracement the lady charges him with the offence of rape.

There is a case³² where the accused being the cousin of the husband of the victim, visited her and they had a consensual sexual intercourse behind the closed doors and latter on when the husband finds it, the lady charges for rape.

So we can also say that fear of social embracement can also turn a consensual sexual act into a rape. In such cases the burden of proof shall be liberalised upon the accused otherwise it would lead to an unnecessary harassment to the accused.

There are many cases³³ when the age of the victim is wrongly mentioned in the court and due to which the accused gets the conviction, but latter in appeal it is discovered by the medical evidences(which were ignored in the trial) that the victim was an adult and the act was consented by her.

So before holding a presumption in favour of the victim, on the basis of her mere evidences, it shall be made compulsory that the other corroborative evidences shall also be given an equal weight.

There are circumstances³⁴ where the corroborative medical evidence does not show any semen inside the lady's womb and still the burden of proof is made in favour of the lady. No matter latter on the accused is acquitted by the court, but it leads to a high degree of mental, physical and social embracement to him.

In another instance³⁵ where there were no marks of resistance on the body of victim were there and any marks or scars on the private parts and the evidences of bleeding

³⁰ Taiyab Seikh v. state of W.B (1998)

³¹ State of H.P v. Mango Ram 2000

³² Ramji Dass v. State of H.P 2009

³³ State of U.P v. Manoj Kumar Pandey

³⁴ State of U.P v. Amar Singh 2001

³⁵ State of Gujarat v. Farukhbhai Ahmedbhai Shaikh.



were conspicuously absent in the medical evidence, still by the virtue of 114-A the oral evidence of the victim is given more preference.

The question of consent has always been a question of fact and it's answer varies from fact to fact and case to case, then it is suggested that court shall not hold a strict attitude towards the accused in the matter of burden of proof, it shall be flexible and the court shall be given authority to shift it according to the fact of the case.

There are instances³⁶ where the accused has promised to marry the victim and later on when he is unable to fulfil the promise the victim charges him with the act of rape. It is clearly visible to the court where such a promise is prevalent, it is obvious that the victim and accused were living under a harmonious relationship which technically reduces the chances of an unconsensual sexual act, but section 114-A bounds the wisdom of the court to a certain limit and compels it to make presumptions against the order of visible facts.

There are circumstances³⁷ where there has been a sexual intercourse with the victim but with the tacit consent of her and connivance of her husband and the medical reports also does not supports the charges, the section 114-A bounds the court to make a presumption in favour of the victim, no matter the accused is acquitted after a long and harassing trial.³⁸

Conclusion:

So, we can say that presumption is made in favour of the women in all above cases because versions of the ladies who are victims of rape are normally excepted since she would not tell a lie on her own cost and she would give out the fact for punishment of the real culprit.

But the question of the consent is a question of fact and it may vary from case to case , in one case it might be there but in other case it might not. Section 114-A bounds the court to hold the presumption in favour of the evidence given by the victim, even if there is no corroborative evidence in support of the testimony of victim's oral evidences. Which is a block to the principle of natural justice.

This section not only bounds the wisdom of the court in favour of the women but also leads to unnecessary sufferings on the part of the accused.

Cases and instances discussed above suggests that section 114-A can also be misused by the victim as it provides protection to her testimony in all circumstances by default, whether she has any corroborative evidence to her statement or not, it does not matter. And it can lead to unnecessary sufferings on the part of accused. **Hence, my hypothesis is proved.**

As I believe that one hand the section is a privilege to a really victimised lady while on other hand it can be used as the weapon of taking revenge or causing sufferings to an innocent accused.

So , I will suggest after analysing the above mentioned instances and cases that, as the section 114-A bounds the wisdom of the court to a certain limit and compel it to make

³⁶ M.c Prasannan v. state 1998

³⁷ Pratap Misra & Ors. V. State of Orissa AIR 1977

³⁸ Ibid



presumptions against the order of the visible facts, the court shall not hold a strict attitude towards the accused in the matter of burden of proof, it shall be flexible and the court shall be given authority to shift it according to the fact of the case.

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- Criminal law commentary by Dr Hari Singh Gour
- Text of Indian Penal Code by Universal
- Text of Indian Evidence Act by Universal



BLUE ECONOMY: WHERE WE ARE? AND WHAT WE WANT?

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Abstract

Blue economy or Blue growth which has emerged during the last decade as an important direction in the era of sustainable development for the global economy. It is an economic model for sustainable development through its focus on ocean based development which will focus on a vast arena of fisheries, ports, aquaculture, electricity generation, waste disposal and above all a promotion of livelihood for all those who are directly or indirectly depend on oceans. Blue economy is an ocean based sustainable development model with immense opportunities and prospects because about 72% of the surface of our blue planet is covered by oceans and constitute more than 95% of the biosphere and humanity's relationship with oceans is vital for maintaining life on earth. This paper basically intends to throw light on the significance of Blue Economy in today's World, its development over years, its components, opportunities and challenges faced including funding support, and what will be its relevance for our nation and state and so on.

Key Words: Blue Economy, Blue Growth, Oceans, Fisheries, Aqua Culture, World Ocean Assessment, Sustainable Development Goals

Introduction

Food and livelihood support provided by Oceans, its role in promoting global trade and nature based tourism industry, developing hydro carbon exploration from sea bed, maintaining vast potential for renewable blue energy from waves, tidal, wind, biomass etc will throw light on the need and necessity for the concept of blue economy for a sustainable well being. Oceans produce more than one half of oxygen necessary for earth and absorb fifty times more carbon dioxide than our atmosphere. Costanza, R., et al. (1997) in the article "*The value of the world's ecosystem services and natural capital*" explains the role of ecological system and natural capital stocks are so critical to the earth's support system. We do not find any tree in oceans, but oceans produce more oxygen than rainforests for example, Phytoplankton which is microscopic plant, carried by oceanic currents absorbs carbon dioxide and releases oxygen. We do not see them and are one of the tiniest beings on the planet, and one of the most important to have around, keeping us alive. So much is the importance of oceans to promote sustainability on earth. It regulates the climate, regulate rain and drought, and thus act as a global climate control system. There comes the significance of blue economy.

United Nations Sustainable Goals are a blue print for a sustainable future which consists of 17 goals for a targeted year of 2030. Realising the significance of oceanic development and life below water to make earth habitable for humankind Goal 14 is



adopted as an important goal among the 17 goals. Goal 14 which focuses on life below water and says like this: “conserve and sustainable use of oceans, seas and marine resources for sustainable development”. Oceans cover close to three quarters of the Earth’s surface, contain 97% of the Earth’s water, and represent 99% of the living space on the planet by volume. Over three billion people depend on marine and coastal biodiversity for their livelihoods. Globally, the market value of marine and coastal resources and industries is estimated at USD 3 trillion per year or close to 5% of global GDP (Sustainable Development Goals, UN, 2015) Blue economy is focused on capturing potential synergies and managing the trade-offs across industries to better address the growing threats now confronting oceans.

United Nations (2016). *The First Global Integrated Marine Assessment. World Ocean Assessment I*. rightly pointed out the need for a blue economy that without an integrated, coordinated, proactive, cross-sectoral and science-based approach to coastal and marine management, the resilience of coastal and marine ecosystems and their ability to provide vital services will continue to be reduced. The first report itself provided many baselines in the marine socio-economic and bio-geo-physical systems and the Second World Ocean Assessment (WOA) which is currently being prepared for delivery in late 2020 tries to build on these baselines and evaluate the changes that occurred since the first assessment. Emerging topics like anthropogenic noise, marine spatial planning, management approaches etc which are not a part of the first assessment is planning to incorporate in the second one. Marine ecosystem provides so many ecosystem services like goods, fish harvests recreation, tourism, erosion control, pollution control, habitat provision and other cultural benefits etc which in turn leads to human wellbeing (Barbier, 2017). The second assessment is also planning to focus the two main types of ecosystem services provided by the ocean such as regulating and supporting ecosystem services (which deals with carbon dioxide absorption, coastal protection officered by coral reefs, maintaining hydrological cycle etc) and the other named as provisioning ecosystem services developed as a result of human activity to secure benefits out of oceans (FAO, 2018).

Blue economy: Meaning and Background

A blue economy is low-carbon, efficient, and clean (UNDESA 2014a). Oceans have a significant role in reducing carbon emissions by absorbing nearly thirty per cent of CO₂ emissions, generates oxygen, absorbs green house gases thus maintain environmental sustainability of the oceans and coastal areas. Oceans are really “development spaces” where nature based tourism, energy production, mineral wealth extraction, social inclusion, sustainable livelihood generation, climatic balance etc integrates. Healthy oceans are a prerequisite for sustainable development as it encourages better use of blue resources and thus leads to poverty eradication. By promoting economic growth and creating more job opportunities blue economy improves human wellbeing. Better wellbeing creates social inclusion and social equity, such a responsible society always cares for biodiversity and tries to reduce environmental risks. Blue economy is an emerging concept which employs sustainable technologies and infrastructure including a social dimension or social wellbeing for a sustainable future. It is also an economy that is based on sharing, circularity, collaboration, solidarity, resilience, opportunity,



and interdependence (UNEP 2015). Its growth is driven by investments that reduce carbon emissions and pollution, enhance energy efficiency, harness the power of natural capital such as the oceans and halt the loss of biodiversity the benefits that ecosystems provide (UNEP 2013).

When we turn back to examine the various developments and literature associated with the blue growth and realization about the importance of oceans, the 1982 UNCLOS (United Nations Convention on the Law of the Sea, Agenda 21, *The Blue Economy: 10 years, 100 innovations, 100 million jobs*” (Gunter Pauli, 2010), Rio +20 outcome document, “The Future we want”, the 2030 agenda for sustainable development and so on. The Rio +20 outcome document, reaffirmed poverty eradication as its key challenge: “Eradicating poverty is the greatest global challenge facing the world today and an indispensable requirement for sustainable development. In this regard we are committed to freeing humanity from poverty and hunger as a matter of urgency.” (Para 2, The future we want, UNCTAD 2012) All these concrete documents clearly depict that blue resources occupies a predominant place in the overall development of all the countries across the globe and how blue economy and blue growth will result in social and economic inclusion and promote better livelihood enhancement of the global population. Throughout the Rio +20 process there has been a growing appreciation that the Oceans and Seas across the World require more in depth attention. Governments at the World Summit on Sustainable Development decided that a regular assessment of the oceans should be carried out (UNEP and IOC-UNESCO, 2009). The first Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects (also known as the first World Ocean Assessment), approved by the United Nations General Assembly, reported that growing populations, economies and the agricultural and industrial requirements for feeding, clothing and housing the world’s population are seriously degrading parts of the marine environment, especially near the coast (United Nations, 2016)

Blue economy and Blue growth: How to finance the Blue economy for sustainable development

The blue economy concept paper rightly pointed out how much degradation has been taken place in association with oceans. Approximately 20% of the world’s coral reefs have been lost and another 20% degraded, Mangroves have been reduced to 30-50% of their historical cover and about that 29% of sea grass habitats have disappeared (Blue economy concept paper, UNEP, 2016). Therefore a restoration of the natural habitat will surely boost up ocean based development including the fish production as well as global trade. When we examine the World fisheries and aquaculture production, both current and projected including projected fish trade (Detailed picture is given in tables 1, 2, and 3 respectively) will clearly show how much is the relevance of blue economy and blue growth. To develop all such sectors a funded support is essential, and PROBLUE helps in solving this problem to a great extent. PROBLUE is a part of World Bank’s overall Blue economy program. It is a New Umbrella Multi Donor Trust Fund (MDTF) housed at the World Bank which supports healthy and productive oceans. MDTF in fact creates awareness and promotes investments and it is more aligned to World Bank’s twin goals: Ending extreme poverty and increasing income and welfare of the poor in a sustainable way. PROBLUE focuses on 4 main themes:



- The management of fisheries and aquaculture
- The threats posed to ocean health by marine pollution, including litter and plastics
- The sustainable development of key oceanic sectors such as tourism, maritime transport and off-shore renewable energy
- Building the capacity of governments to manage their marine and coastal resources in an integrated fashion to deliver more and long-lasting benefits to countries and communities, including the role of nature-based solutions to climate change.

Table 1

World Fisheries and Aquaculture Production 2011-2016 (1000 tonnes)

Production (Capture)	2011	2014	2016
Inland	10.7	11.3	11.6
Marine	81.5	79.9	79.3
Total Capture	92.2	91.2	90.9
Aquaculture (Inland)	38.6	46.9	51.4
Marine	23.2	26.8	28.7
Total aquaculture	61.8	73.7	80.0
Total World Fisheries & Aquaculture	154.0	164.9	170.9

Source: Food and Agriculture Organization of the United Nations (FAO), 2018, The state of World Fisheries and Aquaculture, ISBN 978-25-5-130 562 P-3

Table 2

Projected Fish production 2030 in Asia 2011-2016 (1000 tonnes)
Fisheries and Aquaculture

Production (Capture)	2016	2030	Growth rate (%)
Asia (Total)	121776	144666	18.8
China	66808	79134	18.4
India	10762	13407	24.6
Indonesia	11492	15158	31.9
Japan	3872	3427	-11.5
Philippines	2821	3229	14.4

Source: Food and Agriculture Organization of the United Nations (FAO), 2018, The state of World Fisheries and Aquaculture, ISBN 978-25-5-130 562 P-90

Table 3

Projected Fish Trade 2030 in Asia 2011-2016 (1000 tonnes)

	Exports			Imports		
	2016	2030	Growth rate (%)	2016	2030	Growth rate (%)
Asia (Total)	19349	24062	24.4	15974	17606	10.2
China	7652	9407	22.9	3869	3804	-1.7
India	1072	1727	61.2	44	35	-20.1



Indonesia	1280	2017	57.6	151	468	209.7
Japan	681	953	40.0	3729	3645	-2.2
Philippines	322	241	-25.3	461	597	29.3

Source: Food and Agriculture Organization of the United Nations (FAO), 2018,
The state of World Fisheries and Aquaculture, ISBN 978-25-5-130 562 P-190

Creating a new trust fund like PROBLUE is as relevant as it was established because of client demand. A better understanding of the current trends and emerging threats to oceans will be focused and identify appropriate solutions for action. It will thus creates more job opportunities and promote blue growth and results in overall economic growth. There are so many donors for PROBLUE; Norway was an early partner, announcing their contribution at the 2018 World Bank Group and IMF Spring Meetings, followed by Sweden, Iceland, France and Germany. Canada pledged about \$50 million at the G7 meeting in Halifax in September 2018. European Commission and the United States become the additional associated partners along with other countries like Denmark who are considering for joining MDTF such as Denmark. PROBLUE is also considering inviting private donors to join the effort and to apply for PROBLUE support for a specific country, the relevant federal ministry of that country works with the World Bank. Together they identify and outline the work that will best help benefit sustainable and integrated development in healthy oceans. PROBLUE is fully aligned with the Blue Economy work program at the Bank. What, When and How the components of the marine ecosystem are monitored is essential in blue economy. Initiatives like Framework of Ocean Observing (FOO) are assisting in this process (UNESCO, 2012) and FOO mainly aims for the international integration and coordination of interdisciplinary ocean observations. International observation networks, such as the International Quiet Ocean Experiment and Global Ocean Acidification Observing Network are also developing frameworks for identifying variables for monitoring. FAO 2018 revealed that regular reporting of some aspects of the socio-economics in fisheries and aquaculture, activities occurs at regional and global scales.

Components and opportunities of the Blue economy

The sectors of blue economy can be broadly divided under two groups, one which are directly related with living or renewable resources of the oceans like fisheries and so on and the other which is related with the non-living or non renewable resources of the oceans like sea bed mining, dredging, off shore oil and gas etc. A detailed view of the same is presented below. For example under fisheries sector we can include sea food harvesting, boat manufacture and maintenance, developing fish processing equipments, packing, marketing and distribution related activities along with trade of edible and non edible sea food products. Aqua culture as well as the use of marine living resources for pharmaceuticals and chemicals as part of marine bio technology, extraction of minerals, other energy sources, desalination etc, promotion of trade and commerce including marine tourism, indirect contribution to the environment and promotion of livelihood as well as generation of economic activities too fall under the purview of blue economy. Another key component of international cooperation for the Blue Economy approach is

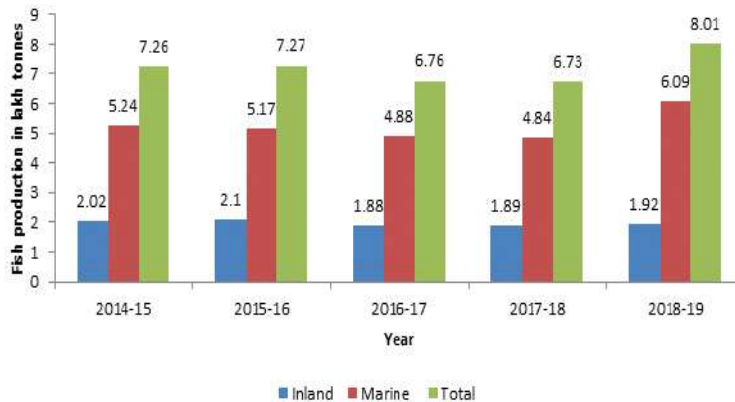


Research. Ocean research is also an important part of blue economy program as it will increase more and better understanding about the oceans and its unlimited prospects for a sustainable living. What a sustainable blue economy and what are the conditions under which it should be develop is a matter of concern, and every country has to develop a different formula based on the following factors (Economist Intelligence Unit 2015) like unique national circumstances, maritime zones, economic activities carried out there and how much expansion that they have to carry without adversely affecting the environment, potential for innovative activities and issues related to their particular social, cultural and environmental communications.

Blue Economy: A focus on India and Kerala

The blue economy is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem." (World Bank, 2017). It's quite true that a more productive use of fisheries sector along with minerals and energy from oceans will helps to boost up the GDP of every nation. This situation is apt for nations like India who possess a large coastal line of 7,516.6 Km. We have also immense potential for developing coastal tourism which will consistently improve the livelihoods of people in and around. The aim of Blue Economy models is to shift resources from scarcity to abundance, and to start tackling issues that cause environmental problems including marine debris which threatens the integrity of food chains in the oceans (Kathijotes, 2013). Plastic materials and other litter are widespread and adversely affect the oceanic sustainability by damaging the sea and bird life. The First Global integrated Marine Assessment (World Ocean Assessment, 2016) pointed out that such polluting activities in fact adversely affect the carrying capacity of oceans, create more economic, social and environmental costs.

Blue economy has a high prospect for a country like India, being the second largest producer of fish and second largest aquaculture nation in the World after China (Annual Report 2018-19, Department of Animal Husbandry, Dairying and Fisheries, GoI). Turning to Kerala, the fisher folk population of the state is estimated at 10.39 lakh for the year 2018-19, of which 8 lakh belong to marine sector and 2.39 lakh belong to inland sector. Turning to the fish production in 2017-18, Kerala was ranked fifth among Indian states in the case of marine fish production (Economic review 2019, Kerala State Planning Board). It thus shows blue growth will directly benefit such a huge community in Kerala and its indirect effect will be countless. The below figure clearly point out the fish production in Kerala from 2014-15 to 2018-19.



Source: Economic Review 2019, Kerala State Planning Board

Turning to the growth side, Kerala's Gross State Domestic Product (GSDP) at constant prices (2011-12) is found at 7.5 per cent in 2018-19 and the per capita Income of Kerala for the same period is 1, 48,078 where the national average is 93,655. Kerala has a high potential of growth under blue economy and the Blue economy will really give an impetus to the development scenario of Kerala; other geographical features of Kerala in fact create an added effect to the situation.

Challenges of the Blue economy

It is quite true that the health of the oceans is drastically declined due to human activities like unsustainable fishing, spread of invasive species, plastic and chemical pollution, habitat degradation etc. (The First Global Integrated Marine assessment, World Ocean Assessment, 2016). Even though treated as unlimited resources, if unsustainably utilized will reduce the blue growth potential. Marine pollution caused by untreated sewages, plastic debris will be another prominent challenge of blue economy. For example as pointed out by FAO, 2016 about 57 percent of fish stocks are fully exploited and another 30 percent are over-exploited. Coastal development is good, but on the other hand it may lead to marine habitat depletion which leads to marginalization of poor communities if it is not handled with proper care and attention.

Conclusions

Development of ocean economies plays a significant role in the overall development of all countries, just like green economy, blue economy too aims at improvement of human wellbeing, social inclusion and reduces environmental risks and ecological scarcities. As already explained that worldwide ocean economy is valued about US \$ 1.5 trillion per year and nearly eighty per cent of global trade is carried by sea and above all more than 350 million jobs are linked to fisheries. Along with this aquaculture too become the fastest growing food sector and proved about fifty per cent of fish for human



consumption. From the above explanation it is quite clear that where we are in the initial stage of the development scenario of blue economy and what we want is complete social inclusion as well as more livelihood generation. Therefore proper care and attention should be given to blue growth and blue economy because oceans are the real veins of every economy which pumps proper growth to all sectors directly and indirectly associated with it.

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PASSIONATE CARE USING NEURAL NETWORKS

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ABSTRACT

Simulated Neural Networks are computational techniques that fit in to the meadow of contraption Learning. The ambition of studying insincere Neural Networks is to make real a especially simplified example of the individual brain. In this way, imitation Neural Networks seek to gather everyday jobs (to unravel problems) mimicking the behaviour of the brain. An non-natural Neural exchange ideas as it should be to its supremacy to the abundant interconnections between neurons. both neuron container barely do exact uncomplicated tasks, and insincere Neural Networks bottle complete multiuse building calculations as they are typically tranquil of a lot of insincere neurons, spicily interrelated between every other and communicating with all other. Before studying neurosis hollow Neural Networks, that canister elucidate big ascend real-life problems, we necessity recognize how the particular neurons and unfussy networks work. For this reason, this follow a line of investigation rag shows the research of put-on Neural Networks, their working, primitive expansion models and how neural networks know how to lend a hand in house systems like feeling concentration for civilizing health think about techniques in the world.

1. INTRODUCTION

As health carefulness systems in industrial countries transform towards a value-based, patient-centred example of forethought delivery, we be opposite new complexities concerning to civilizing the assembly and management of health precision delivery; for example, civilizing the integration of processes in attention mode for patient-centred persistent disease management. non-natural brainpower falsehood at the nexus of new technologies with the likely to convey health be concerned that is cost-effective and right attention in real-time, handle actual and resourceful letter between multidisciplinary stakeholders, and tackle non-traditional treatment settings, the evolving healthcare headquarters and workforce, and the beginning of new and incongruent health in order systems. With the quick uptake of put-on astuteness to brew increasingly dense decisions across out of the ordinary industries, near is a massive amount of solutions proficient of addressing these health bother management challenges; however, here is a rareness of guidance on selecting apt methods tailored to the health trouble industry. The journal aims to afford a vehicle for bringing mutually multidisciplinary perspectives, explore and initiatives with reference to the idea of passionate care, which has a short time ago customary greatly interest and interest. At this time we defend the motivation behind the new open-access journal, and we invitation health tension practitioners and researchers to connect with us. passionate in health burden Concerns that a individuality be able to discover his/her health evils that he is facing without consulting a doctor. several era while we immovable a little form of disease which prepare we, but the number not grasp is not hence considerable to stay the



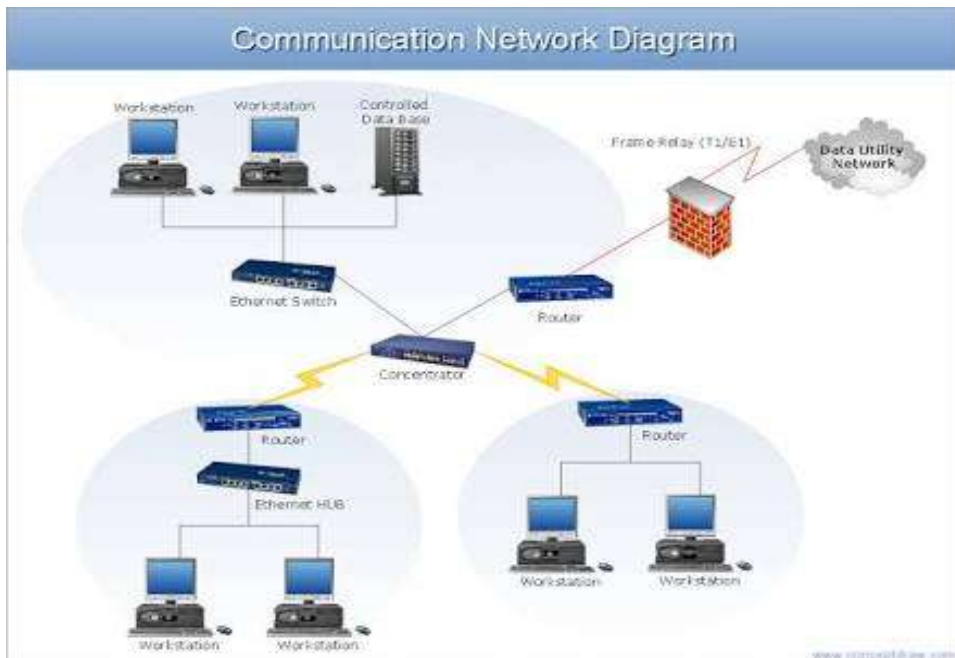
doctors. no more than the anyone has to make happen the symptoms as enter to our request and it will breed the superlative harmonize disease that a persona be able to obtain corresponded to the symptoms. Generally, in day to day energy every ego side a hindrance correlated to health, it may be main or minor. Every time we basic to deduce appointment from doctors which get ordinarily alongside stand in line at their clinic or hospitals along with their charges are set and from time to time violent to pay for fora ordinary man, similar for the negligible challenge the stay is alike for everyone. For instance, contemplate that you don't require to perform to the medical doctor and similarly, the general practitioner also doesn't disturb to a great extent about the less important disease or problem. perfectly by your symptoms and your suffering, the concentration will cause the nearly all probable disease you have. That's just our treatment will do!

As a result, the development may consist of milestones, tasks, or other sub-projects. though sub-projects are fashioned as branch of a father project, they are careful outside projects that rope in an objective side and signify a unconnected deliverable of the project. The Projects module canister demonstrate projects in a grid, as a chart or as a thumbnail.

2. WORKING

CLECC is a 4 month unit/ward-based implementation programme all ears on emergent panel practices that enhance players function to grant considerate care. The implementation programme takes four months but is considered to head to a longer-term time of benefit improvement. Compassion is "a hidden awareness of the anguish of an extra coupled with the desire to relieve it"(Chochinov, 2007) and consciousness kindly requires "relational capacity" in practitioners, that is the office to feel compassion and to engage in a caring bond (Hartrick, 1997). CLECC is based on administrative center culture scheme with the agency itself (i.e. the area in sanatorium settings) conceptualised as culture environment and party as a neighborhood of custom (Fuller, 2007, Fuller and Unwin, 2004, Wenger, 1998). The focus of the interference is on creating I beg your pardon? Fuller and Unwin (2004) request an 'expansive' environment that chains work-based opportunities for the occurrence of collective goals, dialogue, insightful learning, mutual backing and part modelling for every one members of the set at an characteristic and cluster level. Such an environment be supposed to facilitate stick to engage with and gather from mass addict experiences and their possess emotional responses, communicate unquestionable strategies and support, and optimise and sustain not public and players relational position to embed empathetic approaches in staff/service-user interaction and practice. 'Expansive outcomes' are theorised to incorporate high-level property interactions between ceremony users and staff, and between be bothered players members, clear-cut burden experiences reported by ceremony users and personnel information of summit sympathy with patients and carers. as a rule knowledge actions are built into the effective day to make possible experiential techniques to set off "real-time" deep erudition and to make possible party members to magnet on both

other's expertise, experiences and aid as resources. Wider opportunities are like so presented for promoting erudition and civilizing habit at an distinct and squad level. scholarship in the office is supplemented by classroom-based experiential learning. This mutual set about is theorised to have an advantage to deeper erudition and extra big perform amend than one that relies on classroom education alone. study support.



3. PROPOSED MODELS FOR NEURAL NETWORKS

Early Approaches

The first neural network models go back to the 1940s. Around this time, two mathematicians, McCulloch and Pitts (1943) suggested the description of a neuron as a logical threshold element with two possible states. Such a threshold element has L input channels (afferent axons) and one output channel (efferent axon). An input channel is either active (input 1) or silent (input 0). The activity states of all input channels thus encode the input information as a binary sequence of L bits. The state of the threshold element is then given by the linear summation of all afferent input signals x_i and comparison of the sum with a threshold value s . If the sum exceeds the threshold value, then the neuron is excited; otherwise, it is in the quiescent state. The excited and quiet state should correspond to the firing or not firing of an action potential of biological neurons and are represented in the model by the binary values 1 and 0 for the activity of

the output channel. Excitatory and inhibitory inputs signals are modulated by "synaptic strengths" $w_i = \pm 1$. The output signal of a neuron is thus given by:

$$y = \theta \left(\sum_i w_i x_i - s \right).$$

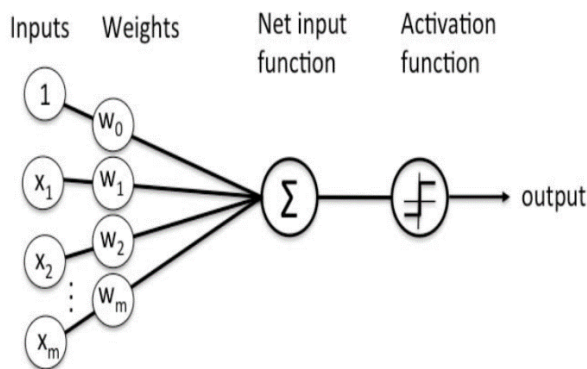
where $\theta(x) = 1$ for $x \geq 0$ and $\theta(x) = 0$ for $x < 0$.

With the advent of the computer, it became possible to simulate detail the learning capacity of networks made of neurons subject to the above kind and to demonstrate practical applications of such systems.

Perception

A perceptron is a neural network unit (an artificial neuron) that does certain computations to detect features or business intelligence in the input data.

A Perceptron is an algorithm for supervised learning of binary classifiers. This algorithm enables neurons to learn and processes elements in the training set one at a time.



There are two types of Perceptrons: Single layer and Multilayer.

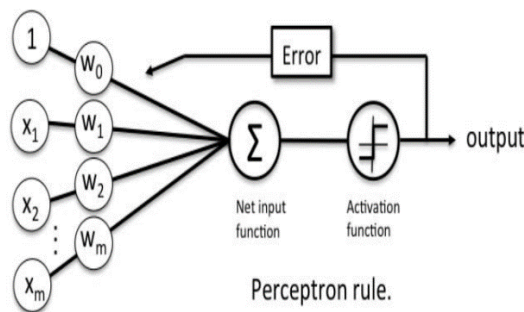
- 1) Single layer Perceptrons can learn only linearly separable patterns.
- 2) Multilayer Perceptrons or feedforward neural networks with two or more layers have the greater processing power.

The Perceptron algorithm learns the weights for the input signals in order to draw a linear decision boundary.

This enables you to distinguish between the two linearly separable classes $+1$ and -1

Perception Learning Rule

Perceptron Learning Rule states that the algorithm would automatically learn the optimal weight coefficients. The input features are then multiplied with these weights to determine if a neuron fires or not.



The Perceptron receives multiple input signals, and if the sum of the input signals exceeds a certain threshold, it either outputs a signal or does not return an output. In the context of supervised learning and classification, this can then be used to predict the class of a sample.

Perceptron Function

Perceptron is a function that maps its input “x,” which is multiplied with the learned weight coefficient; an output value “f(x)” is generated.

$$f(x) = \begin{cases} 1 & \text{if } w \cdot x + b > 0 \\ 0 & \text{otherwise} \end{cases}$$

In the equation given above:

“w” = vector of real-valued weights

“b” = bias (an element that adjusts the boundary away from the origin without any dependence on the input value)

“x” = vector of input x values

“m” = number of inputs to the Perceptron

The output can be represented as “1” or “0.” It can also be represented as “1” or “-1” depending on which activation function is used.

Associative Memory

Hebb's learning rule in the form of Eq. 3.2) led to another class of models, those of associative memory. One of the remarkable properties of the human brain is its ability to draw inferences or associations between all types of mental images. For a long time, the location of this mental capacity and the respective mode of information storage posed a great puzzle. Although Hebb proposed the synapse as a relevant storage element, it was not compatible with neurophysiological experiments to ascribe to individual synapses a role requiring a degree of reliability similar to that of storage locations in a conventional computer. On the contrary, information storage in neural networks turned out to be remarkably robust concerning loss or malfunction of some limited portion of the neurons. One possible explanation was provided by storage concepts in which each newly arriving piece of information is stored in a way that is "distributed" over many storage elements. Thus, loss or malfunction of a portion of the memory causes merely a general degrading of the quality of the stored information but not the total loss of individual entries.

A proposal for a network model with such properties was made by Willshaw, Bunemann, and Longuet-Higgins (1969), whose network uses threshold value elements of the type (3.1). The information to be stored is presented in the form of training pairs (x,y). x plays the role of the input pattern, y that of the output pattern and both are represented as binary vectors for which the components take values 0 or 1. x plays the role of the "key" for the associated pattern y. Proper operation of the network model of Willshaw et al. requires that x be a vector with a large number of components, whereas y may be of low dimension. The dimension N of y determines the number of threshold value elements required. Each threshold value element computes, as in the perceptron, a single component y_r of the output pattern. It is given by

$$y_r = \theta \left(\sum_{i=1}^N L w_{rxi} - s_r \right)$$

We consider a pattern v and a component r of the output, to which the value y_r is provided. $y_r = 0$ is assigned the wrong for output pattern value v . What is the probability for equation (3.15) $y_r = 1$ if altogether p patterns are stored?

Abb. 3.3: Pattern storage in an associative memory matrix. The input information is provided by the horizontal lines as a 0-1-pattern x of "activities." The output information y is the 0-1-pattern on the vertical lines. Each intersection of an output line r and an input line i is assigned a "weight" w_{ri} (marked by a symbol), which is set to the value one if both lines are active simultaneously. The associations between the input and output patterns are stored in the matrix determined in this manner. Fig. 3.3a-c show the implications of this rule for three consecutive training pairs. The output y corresponding to the input pattern x can be approximately reconstructed for each output line by summation and thresholding, $y_r = \theta \left(\sum_i w_{ri} x_i - s_r \right)$ (Fig. 3.3d). In Fig. 3.3d, the

output pattern reconstructed in this way deviates from the correct pattern in the component designated by an (*).

The nonlinear threshold operation using the function $\theta(\cdot)$ defined in (3.5) does not allow a mathematical analysis. However, a matrix memory

Neural Network Models 33 can also be realized using a linear ansatz. In this case, the threshold operation does not occur, and the binary values may be replaced by continuous variables. The resulting linear associative memory has been investigated by Kohonen (1972, 1984a) and forms the subject of the following section.

Linear Associative Memory

An important difference between nonlinear and linear systems is the validity of the superposition principle in the latter. The linear superposition of the corresponding output pattern. Whether or not this is a desired property depends on the intended application. However, in general, this circumstance does imply a limitation of linear models compared to nonlinear models: only in the latter case can a linear combination of input patterns be associated with an independent output pattern.

In the following, we consider the linear ansatz

$$y_r = \sum_{i=1}^N L w_{rxi} \quad (3.24)$$

Like Eq.(3.5), Eq. (3.24) can be interpreted as the transformation of an input signal x by a number of “neurons,” now assumed linear, into an output signal y . We are again interested in the use of a system described by Eq.(3.24) as a memory for a number of given “training pairs” $(x^{(v)}, y^{(v)})$, $v = 1, 2, \dots, p$. In contrast to the previous section, the components $x^{(v)}$ and $y^{(v)}$

I can now take arbitrary continuous values. For example, $x^{(v)}$ might be an array of pixel intensities of a grey-level image, and $y^{(v)}$ might contain some information which is to be “associated” with this image. In particular, $y^{(v)}$ may even coincide with $x^{(v)}$. In this case, one has a so-called auto-associative memory. At first glance, the association of a pattern with itself seems to promise little new information. However, a useful effect results if the association succeeds even in the case of an erroneous or incomplete input pattern. The auto association leads in this case to the elimination of errors and/or to completion of incomplete input data.

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The requirement that the p training pairs $(x^{(v)}, y^{(v)})$ be stored constitutes a condition on the $N \times L$ -matrix W of weights w_{ri} . The simplest approach consists in minimizing the squared error $E[W]$, averaged over all input patterns of the matrix, which is dependent on the matrix W : $E[W] = \sum_{v=1}^p \sum_{r=1}^L (y_r^{(v)} - \sum_{i=1}^N L w_{rxi} x_i^{(v)})^2$

Several solution strategies are possible for minimizing $E[W]$. The three most important are: (i) exact algebraic minimization by means of the so-called pseudoinverse, (ii) application of an iterative gradient-descent procedure for stepwise minimization of $E[W]$, and (iii) use of the correlation matrix of training pairs as an approximate solution for the weight array W .

The approaches (i) and (ii) lead essentially to the same solution and maximize the achievable “storage capacity.” However, as a solution technique, (i) has the disadvantage of requiring a completely new computation of all w_{ri} for each newly



arriving pattern. Hence, this approach is unrealistic, at least as far as applications to neural models are concerned. On the other hand, method (ii) can be formulated as an iterative “learning rule” which, for sufficiently frequent sequential “presentation” of the training pairs to be stored, gradually produces the optimal weights w_{ri} . However, the change of a weight w_{ri} in a learning step also depends on all the other weights w_{rj} , $j = i$. In this sense, alternative (iii) is still simpler. Moreover, the required correlation matrix is easy to compute, and its formulation as an iterative “learning rule” takes the form of Hebb’s rule. However, in general (iii) does not yield the minimum of $E[W]$ and hence its utilization of storage capacity is worse than that of the optimal techniques (i) and (ii). This disadvantage is only avoided in the case of pairwise orthogonal pattern vectors, i.e., $x^{(v)} \cdot x^{(u)} = 0$ for $\mu = v$. In this case, all three techniques are equally good, and (i) and (ii) reduce to (iii).

4. CONCLUSION AND FUTURE SCOPE

In future doctor and patient would only be meeting up for the major issues like operation or some sort of surgery. No overhead to doctor and patient anymore. It may prove to be a boon to the world where despite being so advanced technologies people die because they did not get the facility of doctors.

The software will also have the facility of email id login so that the patient or doctor who has forgotten their credentials will be able to know their respective id password. The user will be able to receive his login id and password on their email addresses. Also one of the facilities that could surely be added in future is the online medical store which will help patients in getting their prescribed medicine online. The doctor will prescribe medicine which the patient can get directly to their places hence saving time of purchasing the prescribed medicine.

At last, we can conclude that this software will bring an efficient and effective change in the Doctor-patient relationship. The software will also prove to be time-saving for both doctors as well as the patient. The software can also be considered as a part of Digital India as it encourages the users to indulge themselves online.

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CHALLENGES OF ONLINE CLASSES AT SCHOOL LEVEL

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Introduction

Education is an important tool that is very useful in everyone's life. Education is what sets us apart from other living beings on earth. It makes man the smartest creature on earth. It empowers man and prepares him to face life's challenges efficiently. Education is an important means of propagating and disseminating new ideas and perceptions. It mentally prepare people to accept change. It creates an environment through which people can easily adapt to desired changes. It is only through education that people in society accept new ideas, perceptions and new methods. Education also contributes to the development of an individual and the prosperity of the community. There has also been a change in the form of education according to the changing environment. The objective, curriculum and teaching methods have changed over time. Today's education is equipped with new age tool and tricks. The simple black board has been replaced by the smartboard and a variety of marker pens have replaced the chalk. The prevalence of audio-visual system in education is increasing steadily. Boards with touch screen are now being used in school for easier and better presentation. The modalities of education system are changing very fast. Digital learning such as PPT, Video presentations, e-learning methods, practice demos, online training and other digital methods are currently being used to make education effective, along with classroom teaching. Along with this ICT, Distance education and online classes are also being used in education. All these mediums are being widely used at high levels but their use at school level is very less. Currently, they are also being used at the school level due to the Corona virus. The thing that has most affected the corona virus is the education system. From school to higher level education has almost come to a standstill. Online classes is the only option due to the closure of all types of school, colleges and universities. The online classes system allows both teachers and students to exchange ideas and information. It is a form of distance learning where the teacher has less role of a tutor and the student's contribution to his/her education is more than the status of normal studies. Online classes includes web based learning, mobile based learning, computer based learning and virtual classroom etc. Apart from this, school are adopting the option of online learning through Zoom App, Google classroom, Microsoft Team, Skype, You-tube, WhatsApp etc. to keep the education of the students smooth.

Importance of online classes

The main objective of online classes is to keep the education of students smooth. Through this students can get education according to their convenience. Online classes promotes alternative education and ideas. The quality of education can be improved through online classes. Through this, the wastage of money in education can be reduced. It can prove to be extremely effective in spreading education in rural India and remote



areas. Shortage of teachers and lack of basic institutions in rural India can be met through it. It encourage students to “Learn themselves” and “community education”. Through online classes, teachers will have more participation from more students. Teachers can make education effective by experimenting with new teaching techniques. Effective online learning environment leads students to higher levels of thinking, promotes active students participation and motivates students by adjusting for individual differences. Online learning is flexible and convenient due to which student’s interest in education can be awakened. The online classes system can be made anywhere at any time. Any kind of social and cultural reasons cannot stop it, due to this also in the development of girl child education. Through online classes, students can get solutions to their problems and students who did not ask questions due to shame in class can openly ask their problems through online.

Efforts made by the Government for Online classes

Due to Corona epidemic, all educational activities are currently being carried out online through the country. In most colleges, universities and schools are teaching students only through online education. To improve and promote online education, the Union Ministry of Human Resource Development has launched the “**INDIA READ ONLINE**” campaign. The purpose of this campaign is to improve online learning. In the sequence, the government has provided many facilities for students to study online. Education is being imparted for school students by the education department through **Shala Darpan, Diksha Platform, e-pathshala, Swayam Portal, Swaym Prabha, Gyan Darshan, Gyan Dhara** etc. CBSE is introducing live classes for students to exercise, nutrition, yoga, meditation and immunity power. These classes are available at You-tube, Facebook and Instagram. NCERT has launched an alternative academic calendar for primary level students, in which teachers are discussing the educational activities to students & parents by calling or messaging on mobile.

Challenges of online classes

There are many challenges facing online classes in India. The syllabus of all the academic boards of the country is different. Due to which it is impossible to teach students from same platform. The challenges are greater in rural areas than in urban areas. Because rural India still lacks electricity, network, broadband, connectivity and banking facilities. Internet speed is also big problem in India. India ranks 128th in the world in terms of internet speed. There is lack of digital culture for online classes in rural India, even today, the formal language of education are local languages. Whereas most of the English language is used in online classes. Apart from this, the management, teachers and students also face some challenges in online classes which is as follows-

Challenges for Management

The biggest challenge for management in online classes is the lack of qualified and trained teachers. A large section of teachers are not proficient in the use of digital medium. Online classes comes across as somewhat complicated and impersonal experience. Management lacks resources for online classes and they also do not have e-content and study material. Management says that the platform through which students



are taught is not suitable for education. These platforms charge on the use of more time, many platform do not have good video quality, many platform do not have the facility to upload PPT, PDF files. Management has more work pressure. It has become impossible for them to connect all the students with the online class. Because of the number of students given in the school records, many of the students do not have their own phones or those who have them do not use smart phones. That is why it is impossible to convey information of online classes to all students.

Challenges for teachers

Currently all teachers are teaching students through online classes but they are also facing many challenges. They says that it is becoming difficult for him to operate the online platform properly without training. There are many teachers who are away from their homes are also having trouble recording their educational video. Teachers says that online classes lacks direct communication with students. Students are not regularly present in online classes. Students start talking among themselves. Teachers are able to solve only 2 or 3 students problems in online classes. Sometimes, there are advertisements in the middle of class which are not suitable for children. Sometimes outsiders are also added which have spoiled the classroom environment. Teachers also say that not all types of children can be taught in online classes. Students of secondary level can be taught but it is impossible to teach primary level students in online class. According to the teachers, there are some subjects which cannot be extended through online classes such as mathematics and science. In online classes, students are not disciplined and teachers do not have control over them. Students write anything on the screen when teacher use to share screen or white board. Teachers can't identify the disturbance behind the class when she/he muted all students. Students stop to show their videos and teacher can't identify them. Sometimes audio-video quality is not good for solve the problem of students.

Challenges for students

When a number of students are benefiting from online classes and the education facility provided by the government, then there are also a large number of students who do not have such medium. The resources used for online classes are very expensive which students are unable to buy. Students of rural areas do not have the facility of mobile, internet and laptop etc. and students who have these facilities they do not have electricity facility. Many students do not know how to use online platforms. There are many students who have only one smartphone in their family, so they are having difficulty in getting online classes. They are unable to concentrate in studies because the home environment is not suitable for studies. Students are having trouble completing homework and assignment given by teachers.

Conclusion

Presently there are some challenges along with increasing attraction of online classes across the world. The challenges related to online classes in urban areas in India are less, while much effort is still needed to connect rural areas with online classes. First of all, the digital infrastructure will have to be strengthened in rural areas and the study



material will have to be passed on the students. Government higher educational institutions have to be made smart. Training of online classes should be imparted to the teachers as well as students so that the goal of education can be achieved. Education is a movement from darkness to light, and now the need for digital strengthening for this movement has increased in the present perspective.

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A DESCRIPTIVE STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING RESPECTFUL MATERNITY CARE AMONG THE MOTHERS OF THE RURAL AREA OF GREATER NOIDA (DHADHA)

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ABSTRACT :-

Dignified respectful healthcare for women during pregnancy and childbirth is a human right, and attention to this issue has increased over the past decade, more broadly from a human rights perspective, and more specifically from a public health lens, as mistreatment by a provider during childbirth can be associated with numerous health complications for both the mother and the child. Nowadays more women comes under this type of treatment by the health care provider in the hospital ,that's why researcher choose this topic for study . The main Objectives of study are :To assess the pretest knowledge level regarding respectful maternity care. To assess the post-test knowledge level regarding respectful maternity care. To evaluate the effectiveness of teaching programme regarding respectful maternity care. 24 To determine the association between post-test knowledge score relation to respectful maternity care among the mothers and selected demographic variables.

Methods- A Non experimental Quantitative research approach and descriptive research design was adopted to conduct the research study .Convenience sampling technique was used to collect the data Tool used for the present study were socio –demographic data sheet A structured knowlegge,Questionnaire for modules for mothers , questionnaire for post-test knowledge for mothers.

Results: of present study showed that Forty percent of the total study subjects were mothers. Out of 40,50%, mothers were in the age group of 18-25 years , 25% mothers in the age group of 25-35 years , and 25% belonged to the age group of 40 years above. Majority 62.5% were Hindus. Out of 40, 37.5% had education up to primary, 25% of mothers were mothers were higher secondary, 25% had education up to the level of senior secondary and 12.5% were graduate. Fifty percent get the information from the family members,12.5% get the information from the health center,12.5% get from the internet and 25% get information from the health care provider . 37.5% mother were stay in the hospital for 24-48 hours. 51 Fifty percent mother pay extra charge for family planning service. The mean post-test knowledge score was significantly higher than the mean pre-test knowledge scores. There was the positive significant relationship between mean post-test knowledge scores.

INTRODUCTION :-

Dignified respectful healthcare for women during pregnancy and childbirth is a human right, and attention to this issue has increased over the past decade, more broadly from a



human rights perspective, and more specifically from a public health lens, as mistreatment by a provider during childbirth can be associated with numerous health complications for both the mother and the child. While there are concerted global efforts to reduce complications and mortality of women during childbirth, particularly in low resource countries, maternal mortality continues to be a significant cause of death among women worldwide . An important component of many efforts to decrease maternal mortality include programs designed to increase access to quality antenatal and facility delivery services. This programmatic priority raises the issue of how quality is defined, how it can be measured, as well as the degree to which lack of quality serves as an impediment to women's decision to utilize available care. A component of quality care that is receiving attention amongst researchers and clinicians is the issue of mistreatment of women by health care providers during childbirth. A growing body of literature suggests that fear of such mistreatment is a key impediment to timely acquisition of care and use of institutional facilities for childbirth, particularly among less educated and poor women, and is associated with poor birth outcomes for both mother and child . Such mistreatment can include a broad array of provider behaviors, from neglectful or non-consensual care to verbal or physical abuse against a woman during childbirth . . Despite a growing body of evidence on the adverse effects of mistreatment during birth, quality of care in terms of respectful and compassionate treatment of women continues to receive little attention in programming efforts, likely in part because its definition and measurement remain s in dispute . A recent comprehensive systematic review of 65 qualitative and quantitative studies on the topic documents the following major types of mistreatment by providers: direct abuse (physical, sexual or verbal), discrimination, failure to meet professional standards of care (non-consensual or non-confidential care, neglect or abandonment, and inadequate or poor quality medical resources), and non-supportive care . However, authors of this review highlighted that in practice quantitative studies on the topic held "inconsistent identification criteria and operational definitions" This lack of a standard measure may partially account for the highly -varied prevalence of mistreatment reported (12–98%) across different populations and national contexts . While research in this area is growing, and efforts are being made to assess the prevalence of the problem, the best ways to measure mistreatment are still uncertain. One debate has been on whether self-report or direct observation would be better and more valid. Lack of clarity on measurement makes it difficult to both evaluate the full extent of the occurrence of mistreatment, as well to evaluate the factors, both determining and consequential of, its occurrence. More insight into the limitations and strengths of different ways to measure mistreatment is important, both from the perspective of collecting evidence that adds to our understanding of the scale of the problem, and from the perspective of defining mistreatment during childbirth and refining measurement tools that reflect a more precise definition.

NEED OF THE STUDY:- Evidence has shown that D&A can occur during any interaction between health care providers and childbearing women and is influenced by a variety of factors. These drivers include provider training and attitudes, service delivery standards, facility organization, health system leadership and governance, lack



of accountability, and structural factors within societies, communities, and health systems. Research suggests that fear of mistreatment is a significant deterrent to use of health facilities for childbirth. A recent framework developed by the World Health Organization (WHO) to represent the essential components of quality of care for maternal and newborn health suggests that provision of care and experiences of care are equally important aspects of care quality. Disrespect and abuse of women seeking maternity care is also recognized as a violation of human rights. Human rights declarations and conventions enshrine the right to freedom from harm and ill treatment and treaty-monitoring bodies recognize maternal healthcare as a core component of states' obligations to fulfill the right to health. Several recent frameworks specifically highlight healthcare for women during childbirth as a human rights issue.

REVIEW OF LITERATURE:- John Anthony, Mrunal shetye, Suneeta Krishnan, Anita raj (2017)- to assess the discordance between self-reported and observed measures of mistreatment of women during childbirth in public health facilities in Uttar Pradesh, India, as well as correlates of these measures and their discordance. A Cross sectional data were collected through direct observation of deliveries and follow-up interviews with women (n = 875) delivering in 81 public health facilities in Uttar Pradesh. Participants were surveyed on demographics, mistreatment during childbirth, and maternal and newborn complications. Provider characteristics (training, age) were obtained through interviews with providers, and observation data were obtained from checklists completed by trained nurse investigators to document quality of care at delivery. Mistreatment was assessed via self-report and observed measures which included 17 and 6 items respectively. Cohen's kappas assessed concordance between the 6 items common in the self-report and observed measures. Regression models 29 assessed associations between characteristics of women and providers for each outcome. Most participants (77.3%) self-reported mistreatment in at least 1 of the 17-item measure. For the 6 items included in both self-report and observations, 9.1% of women self-reported mistreatment, whereas observers reported 22.4% of women being mistreated. Cohen's kappas indicated mostly fair to moderate concordance. Regression analyses found that multiparous birth (AOR = 1.50, 95% CI = 1.06–2.13), post-partum maternal complications (AOR = 2.0, 95% CI = 1.34–3.06); new-born complications (AOR = 2.6, 95% CI = 1.96–4.03) and not having an Skilled Birth Attendant (SBA) trained provider (AOR = 1.47, 95% CI = 1.05–2.04) were associated with increased risk for mistreatment as measured by self-report. In contrast, only provider characteristics like older provider (AOR = 1.03, 95% CI = 1.02–1.05) and provider not trained in SBA (AOR = 1.44, 95% CI = 1.02–2.02) were associated with mistreatment as measured through observations. Younger age at marriage (AOR = 0.86, 95% CI = 0.78–0.95) and provider characteristics (older provider AOR = 1.05, 95% CI = 1.01–1.09; provider not trained in SBA AOR = 0.96, 95% CI = 0.92–0.99) were associated with discordance (based on mistreatment reported by observer but not by women). Provider mistreatment during childbirth is prevalent in Uttar Pradesh and may be under-reported by women, particularly when they are younger or when providers are older or less trained. The findings warrant programmatic action as well as more research to better understand the context and drivers of both behavior and reporting.



MATERIALS AND METHODS:- A non-experimental quantitative research approach and descriptive research design was adopted in the present study to assess the effectiveness of planned teaching programme on knowledge regarding respectful maternity care among the mother of the rural area of greater noida. Convenient sampling technique was used to collect the data. The population for this study were between 18-40 yrs of age. The sample size for the present study was 40.

The tool used in this study comprised of two parts :- A structured knowledge questionnaire was prepared to assess knowledge of mothers regarding respectful maternity care. The tool was prepared by an extensive review of research and non research literature.. A knowledge questionnaire consisted of two parts:-

Tool I Part-(A) : Part one had 8 items. This comprised of items seeking information on background data such as – age of mothers, education, marital status, religion,health care facility, collect information regarding maternity care, how many days stay in the hospital, pay extra charged for any service.

Tool II Part-(B) : This contained 20 knowledge items covering the following areas:- 1. Concept of respectful maternity care. 2. Definition respectful maternity care 3. Condition during labour room 4. How to treat in the labour room. 5. Prevention from the harmful effects. All questions are write or wrong. There were total 20 items. Each question beared a score of one mark. Total score was 20.

ETHICAL CONSIDERATION:

1. Written permission was taken from the Principal of Kailash Institute, greater noida, utter Pradesh.
2. Ethical permission for conducting the study was taken from the sarpanch of village.
3. Written permission was taken from ethical clearance committee of kailash institute, greater noida , utter Pradesh.
4. Informed Consent was taken from each study subjected.
5. Confidentiality and anonymity of subjects was maintain through out the study.

RESULTS AND INTERPRETATION :The results are organized accordance to the objectives of the study below :

Table I:- Frequency and percentage distribution of subjects as per socio demographic variable

(N

=40)

S.NO	DEMOGRAPHIC VARIABLES		N	%
1.	AGE(IN YEARS)	18-25 YEARS	20	50
		25-35 YEARS	10	25
		35 YEAR OR ABOVE	10	25
2.	MARITAL STATUS	SINGLE	15	37.5
		MARRIED	15	37.5
		WIDOWED	5	12.5
		DIVORCED	5	12.5
3.	RELIGION	HINDU	25	62.5
		MUSLIM	10	25



		CHRISTIAN	3	7.5
		OTHERS	2	5
4.	EDUCATION	PRIMARY	15	37.5
		HIGHER SEC.	10	25
		SENIOR SEC.	10	25
		GRADUATE	5	12.5
5.	HEALTH CARE FACILITY NEAR HOME	HOSPITAL	10	25
		HEALTH CENTER	15	37.5
		CLINICS	5	12.5
		OTHERS	10	25
6.	MATERNITY SERVICE INFORMATION GET	FRIENDS/FAMILY	20	50
		BOOKS	5	12.5
		INTERNET	5	12.5
		HEALTH CARE PROVIDER	10	25
7	NO. OD DAYS STAY IN HOSPITAL	6-12 HOURS	5	12.5
		12-24 HOURS	10	25
		24-48 HOURS	15	37.5
		MORE THEN 48 HOURS	10	25
8.	PAY EXTRA CHARGE FOR SERVICE	FAMILY PLANNING SERVICE	20	50
		ULTRASOUND SCAN	10	25
		MIDWIFE SERVICE	10	25
		NONE	0	0

Table 1. data presented in the table showed that there were 50% mothers were in the age group of 18-25 years, 25% in the age group of 25-35 years whereas 25% belonged to the age group of 35 years of above. data also showed that 62.5% were hindus, 25% were muslim and 7.5% were Christians and only 5% others. Regarding education , 25% had education up to the higher secondary, 37% were middle pass, 25% were graduate. Regarding health care facility 25% use hospital, 15% use health center , and 12.5% use clinics. 50% people get knowledge regarding maternity care from friends and family and 12.5% get information from books, 12.5% get information from internet and 25% get information from health care providers . 12.5% mother stay in hospital for 6-12 hours and 25% mother stay in hospital 12-24 hours , 37.5% stay for 24-48 hours and 25% stay for more then 48 hours. 50% of mothers pay extra charged for family planning service , 25% pay for ultrasound service and 25% pay for midwife service.

Table 2:- Distribution of mothers based on overall knowledge regarding respectful maternity care.

(N = 40)

LEVEL OF KNOWLEDGE	SCORE	NO OF RESPONDENTS	
		NO.	%
INADEQUATE	<20%	28	28%
MODERATE	20-35%	12	12%
ADEQUATE	>35%	0	0%



Table 2 showed that the present study the knowledge of mothers towards respectful maternity care was associated about 28% mothers had inadequate knowledge regarding respectful maternity care, about 12 % mother had moderate knowledge and 0% had inadequate knowledge regarding respectful maternity care.

Table 3:- Mean , standard deviation of Pre- test and Post- test knowledge scores of mothers.

(N = 40)

KNOWLEDGE TEST	MEAN	STANDARD DEVIATION	"t value
PRE-TEST	12.45	78.74	20.87
POST-TEST	13.36	84.59	H.S

The data presented in the revealed that the mean post- test knowledge score (13.36) was higher than the mean pre-test knowledge score (12.45) . the standard deviation of the post- test knowledge scores (84.59) was higher than the standard deviation of the pre-test knowledge score (78.74) indicating that the group became more homogenous in post-test in knowledge regarding respectful maternity care.

In order to determine the difference between means of pre-test and post- test knowledge score "t" value was computed for correlated means.

Table 4 :- Find association between knowledge regarding respectful maternity care with their selected demographic variables:-

N= 40

S.NO	DEMOGRAPHIC VARIABLES	NO	%	LEVEL OF KNOWLEDGE				CHI SQUAR E
				<MEDIAN(13) >MEDIAN(27)				
				NO	%	NO	%	
1.	AGE (YEAR)							
	-(18-25) YRS	20	50	4	30.77	16	59.29	3.85
	-25-35 YRS	10	25	5	38.46	5	18.51	DF 2
	-ABOVE 35 YRS	10	25	4	30.77	6	22.24	N.S
2.	MARITAL STATUS							
	-SINGLE							
	-MARRIED	15	37.5	3	23.07	12	44.44	14.04
	-WIDOWED	15	37.5	2	15.38	13	48.14	DF 3
	-DIVORCED	5	12.5	4	30.76	1	3.70	S.
		5	12.5	4	30.76	1	3.70	
3.	RELIGION							
	-HINDU	25	62.5	10	76.92	15	55.55	5.31
	-MUSLIM	10	25	1	7.6	9	33.33	DF 3
	-CHRISTIAN	3	7.5	1	7.6	2	7.40	
	-OTHERS	2	5	1	7.6	1	3.7	N.S



4.	EDUCATION -PRIMARY SCH. -HIGH SCH. -INTERMEDIATE -GRADUATION	15 10 10 5	37.5 25 25 12.5	5 5 2 1	38.46 38.46 15.38 7.69	10 5 8 4	37.37 18.51 29.62 14.81	8.54 DF 3 S.
5.	NEAR HEALTH INSTITUTION -HOSPITAL -HEALTH CENTER -CLINICS -OTHERS	10 15 5 10	25 37.5 12.5 25	5 5 2 1	38.46 38.46 15.38 7.69	5 10 3 9	18.51 37.03 11.11 33.33	4.71 DF 3 N.S
6.	MATERNITY INFORMATION -FAMILY/ FRIENDS -BOOKS -INTERNET -HEALTH CARE PROVIDER	20 5 5 10	50 12.5 12.5 25	10 2 1 0	76.92 15.38 7.6 0	10 3 4 10	37.03 11.11 14.81 37.03	9.58 DF 3 S
7.	NO. OF DAYS STAY IN HOSPITAL -6-12 HOURS -12-24 HOURS -24-48 HOURS -MORE THAN 48 HOURS	5 10 15 10	12.5 25 37.5 25	2 5 3 3	15.38 38.46 23.07 23.07	3 5 12 7	11.11 18.51 44.44 25.92	5.18 DF 3 N.S
8.	EXTRA CHARGED GIVEN -ULTRA SOUND SCAN -FAMILY PLANNING CLINICS -MIDWIFERY	20 10 10	50 25 25	7 3 3	53.84 23.07 23.07	13 7 7	48.14 25.92 25.92	5.82 DF 2 N.S

N. S – NOT SIGNIFICANT

S- SIGNIFICANT AT $P < 0.05$ LEVEL

The above table represents that statistical outcomes of association between knowledge and socio- demographic variables of the subjects. In order to examine the association between these variables, the chi-square test was worked out. Among these variables accounted for associations, the variables age ($\chi^2 = 3.85$, $df = 2$), near health institution ($\chi^2 = 4.71$, $df = 3$), religion ($\chi^2 = 5.31$, $df = 3$), were found to be statistically not significant with knowledge of women regarding respectful maternity care at 5% level i.e., $P < 0.05$. The marital status ($\chi^2 = 14.04$, $df = 3$), further education ($\chi^2 = 8.54$, $df = 3$), maternity information ($\chi^2 = 9.58$, $df = 3$), variables were found to be statistically significant at 5% level i.e., $P > 0.05$. It evidenced that the knowledge of women regarding respectful maternity care influenced by the age, marital status, religion, education, maternity information, near health institution, no. of days stay, pay extra charges for facility.



DISCUSSION:- A similar cross-sectional study by **Anteneh asefa and Delayehu Bekele(2011)** was undertaken in four health facilities (one specialized teaching hospital and its three catchment health centers) in Addis Ababa, Ethiopia, to quantitatively determine the level and types of disrespect and abuse faced by women during facility-based childbirth, along with their subjective experiences of disrespect and abuse. A questionnaire was administered to 173 mothers immediately prior to discharge from their respective health facility. Reported disrespect and abuse during childbirth was measured under seven categories using 23 performance indicators. Among multigravida mothers (n = 103), 71.8% had a history of a previous institutional birth and 78% (75.3% in health centers and 81.8% in hospital; $p=0.295$) of respondents experienced one or more categories of disrespect and abuse. The violation of the right to information, informed consent, and choice/preference of position during childbirth was reported by all women who gave birth in the hospital and 89.4% of respondents in health centers. Mothers were left without attention during labor in 39.3% of cases (14.1% in health centers and 63.6% in hospital; $p < 0.001$. although 78.6% (n= 136) of respondents objectively faced disrespect and abuse. This quantitative study reveals a high level of disrespect and abuse during childbirth that was not perceived such by majority of respondents. It is every women right's to give birth in women- centered environment free from disrespect and abuse.

CONCLUSION :- The present study the knowledge of mothers towards respectful maternity care was associated about 28% mothers had inadequate knowledge regarding respectful maternity care, about 12 % mother had moderate knowledge and 0% had inadequate knowledge regarding respectful maternity care. The data presented in the revealed that the mean post- test knowledge score (13.36) was higher than the mean pre- test knowledge score (12.45) . the standard deviation of the post- test knowledge scores (84.59) was higher than the standard deviation of the pre- test knowledge score (78.74) indicating that the group became more homogenous in post-test in knowledge regarding respectful maternity care. In order to determine the difference between means of pre-test and post- test knowledge score "t" value was computed for correlated means. Forty percent of the total study subjects were mothers. Out of 40,50%, mothers were in the age group of 18-25 years , 25% mothers in the age group of 25-35 years , and 25% belonged to the age group of 40 years above. Majority 62.5% were Hindus. Out of 40, 37.5% had education up to primary, 25% of mothers were mothers were higher secondary, 25% had education up to the level of senior secondary and 12.5% were graduate. Fifty percent get the information from the family members,12.5% get the information from the health center,12.5% get from the internet and 25% get information from the health care provider . 37.5% mother were stay in the hospital for 24-48 hours. 51 Fifty percent mother pay extra charge for family planning service. The mean post-test knowledge score was significantly higher than the mean pre-test knowledge scores. There was the positive significant relationship between mean post-test knowledge scores. This represents that statistical outcomes of association between knowledge and socio- demographic variables of the subjects. In order to examine the association between these variables, the chi -square test was worked out . among these variables accounted for associations , the variables age ($\chi^2= 3.85$, $df =$



2) , near health institution ($\chi^2 = 4.71$, $df = 3$) , religion ($\chi^2 = 5.31$, $df = 3$) , were found to be statistically not significant with knowledge of women regarding respectful maternity care at 5% level i.e., $P < 0.05$. the marital status $\chi^2 = 14.04$, $df = 3$, further education $\chi^2 = 8.54$, $df = 3$) , maternity information ($\chi^2 = 9.58$, $df = 3$) , variables were found to be statistically significant at 5% level i.e. , $P > 0.05$. it evidenced that the knowledge of women regarding respectful maternity care influenced by the age, marital status , religion , education , maternity information , near health institution , no. of days stay , pay extra charges for facility.

IMPLICATIONS:- The findings of the present study have several implications for Nursing education, Nursing practice, Nursing Administration, Nursing research and Public education.

NURSING EDUCATION

In the present trend of health care delivery system, the emphasis is shifted from cure to care oriented services. Only through standard education can there be standard practice. Hence there is a need for integrating and updating new trends in nursing education.

1. The gap between the existing and the expected levels of knowledge of the mothers regarding respectful maternity care developing through the planned teaching programme.
2. The students need to be given more opportunities in assessing the learning needs to plan and conduct teaching plan of the mothers regarding respectful maternity care in hospital and community setting.

NURSING PRACTICE

1. Nurses during their practice come in contact with mother during ante-natal and post-natal care. They can play an important role in dissemination of information regarding respectful maternity care . This will create awareness among the mothers of rural and urban areas.
2. Health teaching is an integral component of nursing practice. Hence, apart from the incidental teaching, nursing personnel should plan a teaching program for mothers in order to enhance their ability as dependent care agent in the care of mother and newborn baby.
3. Nursing personnel should adopt various methods of providing information regarding respectful maternity care for the mother at home, through video films and leaflets prepared in local languages or any other methods such as verbal instructions, demonstrations, rehearsals, feedback, discussions, etc.
4. A planned teaching programme regarding respectful maternity care developed for the present study has been found to be effective. Hence, the same may be translated into local language and modified, if required It should be made available to nurses to serve as a guide and to provide teaching to the family and mothers in ante-natal, post-natal ward, pediatric OPD and ward, etc.



NURSING RESEARCH

1. There is a need to extend intensive nursing research in the area of caregiver's education especially in the area of feasibility of mothers involvement in the care of ante-natal and post-natal mothers using better methods of teaching and effective teaching materials.
2. A survey can be conducted to study the attitude of nurses regarding respectful maternity care.
3. There is also a need to have more of the nursing studies to evaluate the effectiveness of planned teaching programme in terms of knowledge, attitude and practice of mother regarding respectful maternity care.

RECOMMENDATIONS:-

1. A similar study can be conducted for the healthworkers of the hospitals.
2. A similar study can be carried out to evaluate the effectiveness of planned teaching programme on knowledge regarding respectful maternity care, among the mothers of rural and urban area.
3. A comparative study can be carried out to ascertain the knowledge level of literate and illiterate mother.
4. Similar study can be replicated using different teaching strategies such as video films, computer simulation, etc.

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NARRATIVIZING TRAUMA: TRACING DANI'S POST-TRAUMATIC STRESS DISORDER IN *MIDSOMMAR*

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Abstract

When a person is trapped in a world of imprisoned solitariness, without any blood ties or friends, he/she definitely loses their sanity to certain extent. Witnessing a painful and tragic event in life, gradually leads them to classic trauma and also, subsequently, disorders creep up the person's psyche. When trauma engulfs the mind, it strangles the person emotionally, mentally and physically. Strokes of depression capture the person leaving the pent-up emotions suppressed in him/her. The present study features traumatic incidents accumulated in the main character of Ari Aster's film *Midsommar*, Dani Ardor, who is literally a schizophrenic. Dani suffers from a serious mental disorder in which people interpret reality abnormally. She witnesses a combination of hallucinations, delusions, and possesses an extremely disordered thinking and behavior that impairs daily functioning, and as a result she is induced into paranoid schizophrenia. A potentially traumatic event death of Dani's parents and sister drastically transforms Dani, leaving her psychologically traumatized. Later on, Dani develops posttraumatic stress disorder (PTSD), an anxiety disorder caused by this distressing event. The present study is avant-garde and original as it narrates the trauma faced by Dani and particularly examines how Dani experiences the conditions of the mental disorder. Moreover, here, focusing on the psychological disturbances of Dani clearly articulates how Dani's mind is convulsed throughout the film.

Keywords: - Classic Trauma, Posttraumatic stress disorder (PTSD), Hallucinations, Schizophrenic, Paranoid Schizophrenia.

At the verge of breakup with a perfidious boyfriend, to stand as a mute witness to a harrowing incident of parricide of Dani's parents by her sister Terri and sister's self-murder, Dani Ardor (Florence Pugh), a girl in her late twenties is abandoned mercilessly at an early stage of life. She is left to endure all the profuse strains of emotional convergence all alone. After hearing the news of her family's death, deep inside, Dani has been shattered into a hundred broken pieces which cannot be easily mended together as there is no one who really stands or identifies with her vicissitude. Director, Ari Aster made a deteriorating relationship the central conflict of the film after he himself experienced a difficult breakup. The film begins by showing the peaceful photographs of Ardor family and soothing Sweden music plays on. Tension starts brewing from the start itself as Dani is shown sniffing from a panic attack disposed by her own sister Terri who left an alarming email which contained "I can't anymore-everything's black- mom and dad are coming too. Goodbye." All the anxiety and depression of the mental cognition, which is inflicted on Dani is evident in the early scenes of the film, after the traumatic occurrence.



An overwhelming amount of stress and tension leads to trauma in Dani when it exceeded her ability to cope, or integrate the emotions involved with this particular experience. Psychological trauma is defined as a bad damage caused to the psyche of a normal person that occurs as a result of a particular depressing event/s. It can be precipitated in weeks, years, or even decades as the person struggles to cope with the immediate circumstances, eventually leading to serious, long-term negative illness and resultive consequences. John P Wilson and Thomas A. Moran in their book *Psychological Trauma: Posttraumatic Stress Disorder and Spirituality* clearly elucidate how trauma affects mental processes:

Lindemann's definition of psychological trauma as "the sudden, uncontrollable disruption of affiliative bonds" is interpreted broadly and the effects of trauma on emotional and cognitive processes, underlying biological changes, resulting psychopathology are reviewed...Post-traumatic stress disorder, perhaps more than any other mental disorder, demonstrates the close interdependence of psychological and physiological reactions. (Xii)

Trauma may be a result of a single distressing experience or recurring events of being overwhelmed. Here, the sudden and tragic bereavement of the whole Ardor family casts Dani in an emotionally unstable condition and her mind is losing control to maintain everyday day activities. When people experience different personal accidents or incidents, the impact they have also differs according to the event intensity. So, people will be reacting to similar traumatic events, differently. Certain people who experience a potentially traumatic event will have the chance to become psychologically traumatized, while certain others may not feel any severe or noticeable trauma. However, being exposed to a major traumatic event leads some people to develop post-traumatic stress disorder (PTSD) or related mental illness such as paranoia or schizophrenia. According to major sources, about 3.5% of adults have Posttraumatic stress disorder (PTSD) in a given year, in the United States, and 9% of people develop it at some point in their life. Comparing with much of the rest of the world, rates are between 0.5% and 1% during a specific year. It is to be noted that the disorder is more prevalent in women than men. However, it is to be noted that sudden, unexpected death of a loved one is the most common traumatic event type reported in cross-national studies. A survey from the WHO World Mental Health Surveys showed the statistics that there is a risk of 5.2% for developing PTSD after revealing the news of the unexpected death of a loved one. This type of traumatic event is widespread and it accounts for approximately 20% of PTSD cases worldwide. Hence, it is no revelation that Dani can be considered as a victim of PTSD because majority of women suffer from stages of depression at one point of their life. Posttraumatic stress disorder (PTSD) can be defined as:

Posttraumatic stress disorder (PTSD) is a mental disorder that can develop after a person is exposed to a traumatic event, such as sexual assault, warfare, traffic collisions, child abuse, or other threats on a person's life. Symptoms may



include disturbing thoughts, feelings, or dreams related to the events, mental or physical distress to trauma-related cues, attempts to avoid trauma-related cues, alterations in how a person thinks and feels, and an increase in the fight-or-flight response.

The study analyses the symptoms Dani exhibits as a PTSD sufferer. Ari Aster specifically draws close angles on Dani's face so as to exhibit her fears and emotional anguish. Dani's face is most of the time anxious and tense due to intense inner turmoil. Unable to contain as forlorn in the tragedy, she seeks the aid of her boyfriend Christian. Christian in turn can't relinquish her due to her current appalling position of being without any family or friends. Dani's boyfriend Christian Hughes (Jack Reynor) even inculcates her for her frequent fits of terror by saying "You go straight into crisis mode" and at another instance, he tells his friend Mark that Dani already have a therapist. At one point, Dani frantically tries to make Christian stay with her and accepts Christian's fault (of not telling Dani about the "The Sweden trip") as her own which is even made worse with her apology. This clearly states how desperate Dani feels and she doesn't want to be solitary in her room and requests Christian to just "understand" her. Dani herself thinks that she is insane and admits to Pelle that he should think she's "nuts" as it is clear from her field of study, psychology.

Dani suffers from the illusionary symptoms of paranoia which normal people usually don't undergo. She clearly believes that others have hidden motives and others set out to harm her. She doubts the loyalty of others. Being hypersensitive to criticism, having trouble working with others, Dani is quick to become angry and hostile, becoming detached or socially isolated, being argumentative and defensive, having trouble seeing their own problems, having trouble relaxing etc... Most people who have schizophrenia will hear voices that no one else hears. Dani hears some voices which are trying to dominate on her.

Several nightmares and flashbacks along with panic attacks cloud up Dani's psyche and she wails most of the time after the death of her family members. Throughout, panic attacks grip her and in one such episode, Dani dreams Christian and his friends abandoning her alone in village. Life has dropped Dani in an abandoned state where she can trust none. Her traumas are carefully manifested by Ari Aster when she screams out but no sound comes out but only an array of engulfing darkness covers the screen during her nightmare. The darkness symbolizes Dani's fear, emotional imbalance and psychological disorder. Later, she sees her mother in a night gown walking in her house and then the scene of attestupa when the elder man is being stricken with mallet. The elder man's face is collocated with her mother's lifeless face with a gaping mouth. Later on, she visions her father, mother and sister lying under the same cliff.

During Pelle's sympathetic treatment to Dani since both are orphaned due to fate, result is an outbreak of emotions inside Dani. She excuses herself to the bathroom of Christian's friends' flat and Ari Aster craftily and ingeniously slides the scene to the toilet of aero plane, Dani still mewling and whimpering. There is no particular sequence of scenes in which one can observe Dani apparently happy. Immediately after Dani and friends arrive in Sweden, Dani intakes psilocybin mushrooms and behaves exasperated. After she hears Mark's words : "You guys are like my real family" and all of a sudden, she gasps out of the trance state .With great effort so as to hide her sensitivities, she



goes for a walk. On the way, she whimpers and reassures herself that she is alright. Either in her imagination or in real, she faces humiliation from Pelle's friends who laugh at her. As a schizophrenic, she thinks that she is being harmed or harassed; those certain gestures or comments are directed at her. Her ongoing phantasmagoria persists when she next washes her face and in the bathroom mirror she daymares a vision of her sister with the black adhesive cello tape attached to mouth just like she was at her death time. This is another symptom of Dani in which she detects, visual hallucinations, in which she sees things either during day or in dream that occurs in within her. Later, Dani hallucinates a picture of her parents sitting and sleeping on sofa along with sister Terri and slowly, Terri looks and leers unpleasantly at Dani. Even after Dani is in dream, she is unable to restrain from her outburst of emotions. She is encapsulated by shrubs and grass growing out of her right hand. She grunts, exhales and screams, "Stop it" and runs away from the crowd into the forest exasperated. This condition of heightened reactivity to stimuli is the result of PTSD. The saddening medical condition weakens her as one can observe her crying soon after she reaches a solitary confinement.

Whenever Dani witnesses any incident, her parents especially her mother and sister crawls up the space. Particular occurrence when the elders sacrifice themselves, Dani juxtaposes her mother's face to the dead elder man's mutilated face. Another episode occurs when Dani sees vision of the three of them lying dead on the same setting of the sacrifice that is, under the cliff. Dani grows tensed at Attestupa and she breathes heavily when blood from hands of the elder's wound (cut by other communards) is sacrificed. Camera focuses on her from the height of the cliff and Dani is frantic. When the elder woman, Yvla, looks at her she stops behaving disturbed all of a sudden. After the first jump, Dani screams along with Josh. She no more hear any sound. Aster draws her surrounding as blank, empty and engulfing for a minute. Further, when the elder male sacrifices, others strike him dead with a mallet. Each thud of mallet makes Dani feverish, motionless and frenzied.

Dani's sister Terri, a bipolar disorder sufferer who has killed herself by attaching a tube to her mouth with black adhesive cello tape, when she filled their house with carbon monoxide. The next day, Dani, after she dresses in Harga white dress, a Harga girl coerces her to take more psychedelic drugs and makes her participate in the prestigious maypole dancing competition. After she wins the coveted May Queen title, while everyone congratulates her, suddenly Dani sees an illusion of her mother coming to her in white Harga attire and caresses her which is essentially a chimera and a thing which Dani hoped for because of her mental conflict but it is illusory and impossible to achieve.

Victims of PTSD are faced with insomnia and Dani borrows sleeping pills from Josh all the time when they are in Sweden. One can observe that while back at home also, Dani takes Ativan, which is FDA-approved for short-term treatment of insomnia or trouble sleeping that's caused by anxiety or stress. The very common disorder lasts for months and triggers back heart-wrenching pictures of Dani's family of the traumatic accident. For Dani who have suffered enough, towards the end witnesses another tragic sight of sex ritual of Christian with the Harga girl, Maja. Greatly devastated, Dani gasps, wails and sobs. She vomits and her terrible emotions find their



way when she cries aloud and other Harga maidens cry rhythmically with their May Queen.

Intermittent gasps are shown in the film. Dani still hasn't recovered from the shock and is not willing to accept the fact that she is abandoned by her family and Christian. When the final custom of sacrifice takes place, all the while Dani is glum, pale and doesn't look around the procedures of ritual. This scene clearly shows how pathetic Dani is, her wan face give clear intentions how depressed she is. Dani is instructed not to talk or move by one of the maidens as she opens her eyes. Emotionless and tired of whole situation, she lifelessly watches on the sacrifice rituals.

Life of Dani before and after her visit to Sweden, her dreams, thoughts and fears are manifested and analyzed in the study. When Dani first have a glimpse of "the tranquil and majestic" Harga community, she smiles wholeheartedly not knowing how emotionally drained out she is going to be. Dani dances for May Queen, she smiles and enjoys herself forgetting all her traumas. Under the influence of drugs, she picturizes her feet to be covered with straws and couldn't even understand what is going on. Dani is happy after winning the title, particularly when a Harga girl says that she is their family now and "like sisters". The sense of belonging comes at this moment and Dani is no longer alone but like Pelle, has the companionship of a whole community who "doesn't bicker over what's theirs and what's not theirs". She soon imitates Swedish ways and songs and the totality of familiarity springs up. She is held together by a group of 7 girls when she is distressed after witnessing Christian's sex ritual. The girls stand with their May Queen just like family. She is a center of worship where there seems to be a flower-festooned cross with rings hanging from the crossbars. Dani feels held by a family, a real family at the end. The long standing abandonment has been transformed into tranquil acceptance that Dani out rightly welcomes through an ironic smile.

A sort of despair and vengeance is inflicted on Dani's mind, when Christian is made to sacrifice in the community as one of the nine. It's Dani who chooses for this act. She helplessly stares and low-spirited, she quivers her lip. Mainly when someone tries not to cry but they are crying, their lip shivers because they are holding back, hence, Dani acts emotionally stable. At the end of the film, when Christian is burnt along with others in the yellow "temple", Dani wails, coughs and gasps loudly just like the other times when she feels weak. She wears the heavy flowery outfit of May Queen, which is advanced at a hefty pace symbolizes all her past experiences being dragged along by her. Later, Dani watches all the communards of Harga smiling, wailing and enjoying the sacrifice, she accepts the fact that just like the pyramid falls apart, she need to give up her past. The last scene is very scenic and charming as Dani peacefully smiles and returns back to sanity, as she realizes that now whole Harga community is currently accepting her as their family. Calmness, peace and tranquility sediments in her mind as she has become a member of the community.



Conclusion

Any person in this world would feel extreme levels of mental disturbances when he/she is alone. One who witnesses a tragic incident need to be guarded and cared so that the person doesn't experience any acute traumatic disorders. Ari Aster's Dani is bitterly eradicated from her family and unfortunately no one else belongs to her as her own. Dani has been exposed to an extreme traumatic stress of involving direct personal experience of actual death. Learning about unexpected and violent death of her entire family pushed her into fringes of psychotic depression. An introvert, withdrawn from the world, she falls into severe psychological trauma and develops a medical condition Posttraumatic Stress Disorder. This study has carefully attempted to point out the main character's psychological disturbances, delusions, hallucinations, nightmares, emotional instabilities and traumas. Dani already have a therapist at the very beginning of the film and she develops major troubles throughout the film. She even cannot accept people as her 'own'. Sweden empathetically changes Dani. Her excessive distress and neurosis are wiped away by the Harga community who at the end of the film gives what she had been in heed all her life; acceptance. Taking a wide angle, it is found that an abandoned Dani undergoes a clear metamorphosis in the end both mentally and physically through lucid catharsis.

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SEISMIC VULNERABILITY ASSESSMENT OF EXISTING BUILDINGS USING RAPID VISUAL SCREENING: A REVIEW

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Abstract:

Earthquake being the major disaster that has originated much damage to society, and it has been a threat to people for years. There is no way to put a stop to the occurrences of seismic activity. Though some advancement has been developed in the field of seismic prediction still strong ground shakings cannot be correctly predicted. Most of the residents of the country live in the buildings built with insufficient seismic resistivity. The destructive picture after so many earthquakes all over the globe has underlined the necessity for seismic vulnerability evaluation. Hence it is essential to estimate the vulnerability of the existing structures to prevent any serious risks. This paper attempts a review of rapid visual screening methodology considering the various aspects of this procedure. It is the easiest way to examine the huge building stocks in a short period and is cost-effective.

Keywords: Rapid Visual Screening, Seismic Vulnerability, Existing Building, FEMA.

1. Introduction:

Earthquake is one of the most disastrous threats to humans and properties by nature (Wahyuni et al. 2018). Past earthquakes demonstrate that the older buildings which were not designed for resisting earthquakes have been severely damaged (Ningthoujam and Nanda 2018). Most of the existing buildings all across the globe have been designed to withstand the gravity loads only without any proper seismic provision (Nanda et al. 2014). The speedy development of urban areas, unplanned residency, error in structural design, poor quality material and faulty construction practices have also contributed to seismic threat (Nanda et al. 2014). Therefore it becomes a subject of serious concern due to the poor response of the RC frame and masonry buildings especially in developing countries during past earthquakes. Hence, it is now necessary to recognize the buildings utilizing seismic vulnerability opinion and to make stronger the poor buildings (Jain et al. 2010).

The earthquake vulnerability of any structure can be referred to as its proneness to the damage during any strong ground shaking (Ningthoujam and Nanda 2018). It is essential for the city having huge quantity of infrastructure/residents (Rautel et al. 2015). There are various methodologies to assess the vulnerability of buildings before the earthquake and post-earthquake (Shah et al. 2016). When it comes to dealing with a huge building stock, an engineer requires quick assessment procedures so as to apply possible retrofitting measures on the poor buildings (Jain et al. 2010). Usually, three-level assessment procedures are adopted for accuracy in the evaluation that is widely used, are as follows;

- a) Rapid visual screening

b) Preliminary assessment

c) Detailed evaluation

2. Rapid Visual Screening (RVS):

There are numerous of seismic assessment procedures that have been invented all over the globe (Jain et al. 2010). One precise method is detailed seismic vulnerability estimation but it is tricky and costly practice and cannot be applied on a huge quantity of buildings (Nanda et al. 2014; Nanda et al. 2019). Hence it is required to incorporate simpler procedures that permit a quick examination of the vulnerability outline of various types of buildings (Rautel et al. 2015). RVS is such an inexpensive procedure for recognizing the structures that are highly vulnerable and need to be examined in-depth for suitable structure mitigation action (Lizundia et al. 2015; Rautel et al. 2015). The RVS methodology has been invented to recognize and categorize buildings that are seismically unsafe (Lizundia et al. 2015). The RVS methodology is a simpler way for a rapid assessment of a huge building stock that requires a walk down survey for each building (Ningthoujam and Nanda 2018; Patil and Swami 2017; Shah et al. 2016). The RVS methodology is intended to be employed with no performance of any structural calculations (Arya and Agarwal 2019).

RVS method for earthquake vulnerability assessment of existing structures was formerly invented in 1988 as FEMA-154 by Federal Emergency Management Agency. The guidelines of this report are widely used all across the globe as a reference (Agrawal and Chourasia 2007; Lizundia et al. 2015; Patil and Swami 2017; Ramly et al. 2014; Wahyuni et al. 2018). FEMA-154 report was made modifications in the report in the year 2002 to include modern advancements in technology and lessons from past earthquakes in the 1990s and this modified report is referred to as FEMA-P154 (Lizundia et al. 2015; Sinha and Goyal 2004). The technical source of the method, comprising of the scoring structure and its advancement, is enclosed in the companion FEMA-155 Report, including the Supporting Documentation (Lizundia et al. 2015). Various seismic evaluation methods have been suggested across the globe but RVS methodology has been found a fine alternative due to its simplicity (Lizundia et al. 2015; Nanda et al. 2014). It generally comprises of a street walk down survey taking 15 to 30 minutes for every building of a particular region of study (Agrawal and Chourasia 2007; Arya and Agarwal 2019; Jain et al. 2010; Lizundia et al. 2015; Nanda et al. 2014; Nanda et al. 2019; Ningthoujam and Nanda 2018).

2.1 Advantages of RVS:

1. It permits the examination of building with the least access due to screening by revolving the building from the exterior and evaluating whether the buildings involve more thoroughly being assessed [8].
2. This screening method is designed in such a way that no structural calculations are required [9].
3. This screening procedure and structure are well-matched with GIS techniques and also allows the data usage for development and improvement purposes [11].
4. RVS procedure allows the identification of the building based on the score calculated [10].
5. RVS techniques can be successfully applied to the buildings of various types of occupancies [8].

6. RVS is also extensively useful for research [5].

2.2 Hazardous Building Parameters:

Various researches have proven that different building parameters affect the different damages of the building at the time of a strong ground shaking (Lizundia et al. 2015; Ningthoujam and Nanda 2018). Major parameters affecting the response of the building during the seismic event are as follows:

Soft storey:

In today's era, buildings are built with a ground storey as open for parking, shops, etc. due to congested space in urban areas. This practice leads to lesser stiffness of the ground storey as compared to the storey above. Such RC buildings are extra weak to earthquake damage (Albayrak et al. 2015; Jain et al. 2010; Joshi et al. 2019; Nanda et al. 2014; Ningthoujam and Nanda 2018).

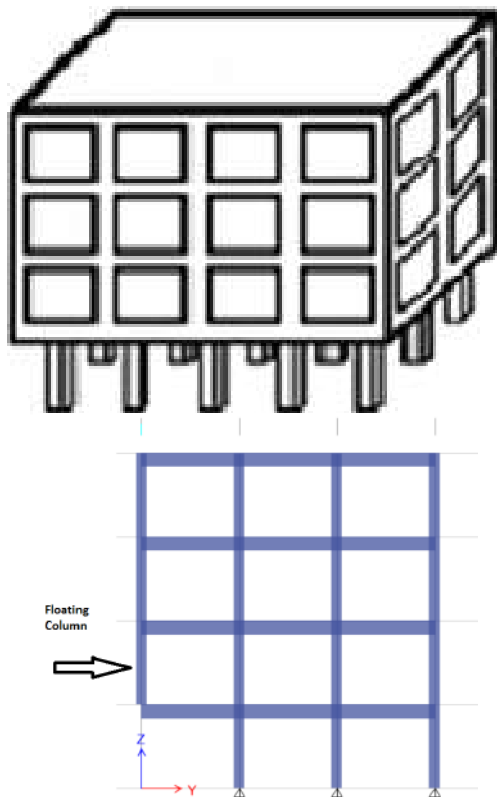


Figure 1. Building with soft storey Figure 2. Building with floating column

Substantial overhang:

The projection beyond 1.2m of upper storey from the ground storey has been found to be affected in past earthquakes. These practices are conducted to get greater space in rooms, balconies, etc. (Albayrak et al. 2015; Arya and Agarwal 2019; Nanda et al. 2014; Ningthoujam and Nanda 2018).

Floating columns:

Floating column breaks the continuity of load transformation resulting less capacity of building and get damaged during seismic action (Arya and Agarwal 2019; Jain et al. 2010; Joshi et al. 2019; Ningthoujam and Nanda 2018).

Re-entrant corners:

Regular structure always performs better than irregular structures during an earthquake. The existence of re-entrant corner is one of the severe plan irregularities resulting in susceptibility to more damage (Albayrak et al. 2015; Arya and Agarwal 2019; Joshi et al. 2019; Nanda et al. 2014; Ningthoujam and Nanda 2018).

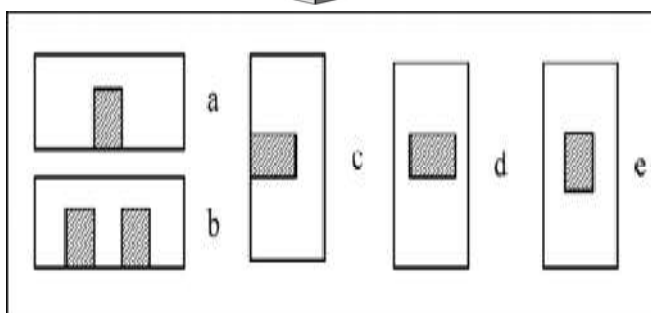
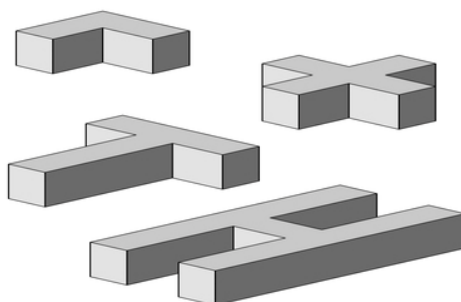


Figure 3. Re-entrant corner buildings

Figure 4. Symmetrical plan with staircase position

Maintenance condition:

The appropriate maintenance of the building also increases the life of the building and adds some prevention to the damage of building in the event of the earthquake (Arya and Agarwal 2019; Jain et al. 2010; Nanda et al. 2014; Ningthoujam and Nanda 2018).

Eccentric staircase location to plan:

The asymmetric position of the staircase should be considered as a potential parameter in RVS due to its connectivity with the torsional performance of the structure (Ningthoujam and Nanda 2018).

Type of soil:

The type of soil present at the site is one of the main parameters as the intensity of ground shaking and unavoidable damage of building depends on it during seismic events (Albayrak et al. 2015; Arya and Agarwal 2019; Jain et al. 2010; Joshi et al. 2019; Nanda et al. 2014; Ningthoujam and Nanda 2018).

Age of the Building:

The time span in years since the building is constructed is taken as the age of the building and this is also a parameter for RVS procedure (Albayrak et al. 2015; Jain et al. 2010; Joshi et al. 2019; Nanda et al. 2014; Ningthoujam and Nanda 2018).

Number of Storeys:

The number of floors present in a building is taken as number of storeys considering basement and mezzanine to be a normal storey (Albayrak et al. 2015; Arya and Agarwal 2019; Joshi et al. 2019; Nanda et al. 2014; Ningthoujam and Nanda 2018).

Short Column:

RC buildings with semi-height masonry infill, construction of mid-storey beams for staircase landing, etc. origin short column in the buildings. The short column is found to have more stiffness as compared to usual columns and fails due to higher shear forces during strong ground shakings (Albayrak et al. 2015).

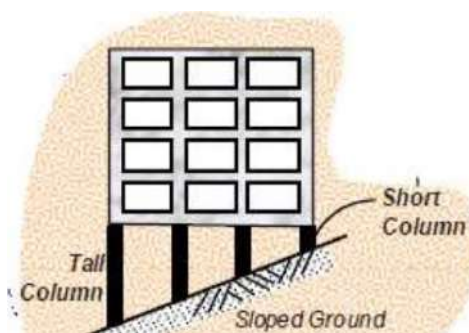


Figure 5. Short column

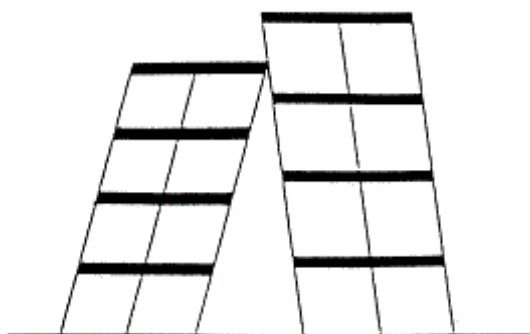


Figure 3. Pounding of buildings

Pounding Effect:

The difference in storeys between adjacent buildings generates contacts of the two building due to the difference in the periods during an earthquake and known as pounding effect (Albayrak et al. 2015; Jain et al. 2010).

Topographic Effect:

If the building is located on a hilly area with a slope greater than 30 degrees needs proper evaluation and remedial measures because of the high possibility of a landslide in the event of an earthquake (Albayrak et al. 2015; Joshi et al. 2019; Nanda et al. 2014).

Visual Construction Quality:

The materials used for construction, workmanship and maintenance condition of a building specify the quality of building and categorized into three classes as good, moderate or poor (Albayrak et al. 2015; Jain et al. 2010; Joshi et al. 2019; Nanda et al. 2014).

Seismic Zone:

There are generally three seismicity regions that are low, moderate and high for which separate data collection sheets are available (Lizundia et al. 2015; Nanda et al. 2014).

2.3 Building Types Considered in RVS:

An ample of varieties of buildings are considered in RVS procedure from non engineered structures to semi engineered structures, load bearing to reinforced structures. Usual types of buildings can be classified as per FEMA-154 provisions mentioned in Table 1 (FEMA P-154 2015).

Table 1. Building types consideration in RVS.

Abbreviation	Description
Wood	Include light wood frames for one/multiple family houses that may be more than one storey in height
S1	Include structures of steel moment resisting frame
S2	Include structures of steel frame with bracings
C1	Include structures of concrete moment resisting frame
C2	Include structures of concrete having shear wall
C3	Include structures of concrete frame with masonry infill walls (unreinforced)
RM1	Include reinforced masonry with flexible floor and roof diaphragms
RM2	Include reinforced masonry with rigid floor and roof diaphragms
URM	Include buildings with unreinforced masonry bearing wall
MH	Manufactured housing



2.4 RVS Score Calculation:

The examination, data assortment, and judgment-making practice usually occur at the site with admission to its exterior, requiring the total time of 15 to 30 min per building (Nanda et al. 2014). This method includes a basic value based on the type of building and basic value modifiers based on the hazardous building parameters. Final Score is calculated as follows:

$$\text{Final Score} = \text{Basic Value} + \Sigma \text{Basic value modifiers}$$

2.5 Rapid Visual Screening data collection sheets:

There are three types of RVS data collection sheets on the basis of the seismicity of the region selected for rapid visual screening as low, moderate and high seismicity as represented in Table 4, Table 5 and Table 6 respectively (Nanda et al. 2014). All the three sheets includes general building information, type of occupancy, occupancy number, type of soil, type of falling hazard (if any), and types of buildings.

3. Seismic Vulnerability Assessment:

The vulnerability of existing buildings is measured by calculating RVS scores employing numerical seismic hazard (Nanda et al. 2014). Once the building is recognized as seismically unsafe, such buildings shall be further evaluated by an experienced professional in seismic evaluation and design (Lizundia et al. 2015). The five damage grades of EMS-98 are used to classify the level of vulnerability of the buildings surveyed. The final score of 2 is taken as cut off for the assessment below which further evaluation is recommended (Albayrak et al. 2015; Jain et al. 2010; Lizundia et al. 2015; Ramly et al. 2014; Rautel et al. 2015; Nanda et al. 2014; Wahyuni et al. 2018). A score of 0.7 or less of a building is considered as heavily vulnerable (Ningthoujam and Nanda 2018; Ramly et al. 2014; Sarmah et al. 2018; Sinha and Goyal 2004). Classification of grades and further evaluation requirements on the basis of scores are listed in Table 3.

3.1 Damage Grading System:

The procedure makes use of a damageability grading system as per European macroseismic scale 1998 (EMS-98) that necessitates the assessor to recognize primarily the lateral load-resisting mechanism of the building as well as to recognize the building's characteristics that can be helpful in the modifications to the seismic response prediction for the lateral load-resisting mechanism alongside with non-structural components.

Table 2. Damage grading system (EMS 1998).

Grade	Damage Effects
Grade 1	No damage to minor damage (Minor Non structural damage) Fine cracks can be seen in plaster on structural members as well as in partition walls.
Grade 2	Moderate damage (Minor structural damage, Reasonable Non structural damage) Cracking occurs over structural frame members and structural walls and fall of plaster/mortar can be seen.



Grade 3	Significant to high damage (Reasonable structural damage, Major Non structural damage) Large cracking over partition walls and cracking of beam column joint as well as spalling of concrete cover can be seen.
Grade 4	Extremely high damage (Large structural damage, extremely large Non structural damage) Large cracking over frame elements, concrete failure in compression, rebar fracture, failure of bond, some column failure etc.
Grade 5	Devastation (extremely heavy structural damage) Failure Ground storey parts resulting collapse of the structure.

Table 3. Relationship between Score and damage grade (Albayrak et al. 2015; Nanda et al. 2014; Nanda et al. 2019; Ramly et al. 2014; Wahyuni et al. 2018).

Rapid Screening (S)	Visual Score	Description of Damage
$S > 3.0$		Possibility of Grade 1
$2.0 < S < 3.0$		Higher possibility of Grade 2, Extreme high possibility of Grade 1
$0.7 < S < 2.0$		Higher possibility of Grade 3, Extreme high possibility of Grade 2
$0.3 < S < 0.7$		Higher possibility of Grade 4, Extreme high possibility of Grade 3
$S < 0.3$		Higher possibility of Grade 5, Extreme high possibility of Grade 4

Table 4. RVS data collection sheet for low seismic hazard

FEMA-154/ATC-21 Based Data Collection Form

	Address: _____							
	Pin _____							
	Other Identifiers _____							
	GPS Co-ordinates (If available) _____							
	No. Stories _____				Year Built _____			
	Surveyor _____				Date _____			
Total Floor Area(sq. Ft./sq. m) _____								
Building Name _____								
Use _____								
PHOTOGRAPH (OR SPECIFY PHOTOGRAPH NUMBERS)								
Plan and Elevation Scale:								

OCCUPANCY					SOIL TYPE			FALLING HAZARDS		
Assembly	Govt.	Office	Max. No. Of persons		Type I Hard	Type II Medium	Type III Soft	Chimneys Cladding	Parapets Others.	
Commercial	Historic	Residential	0-10	11-100						
Emer. Service	Industrial	School	101-1000	1000+						

BASIC SCORE, MODIFIERS, AND FINAL SCORE, S										
BUILDING TYPE	Wood	S1 (FRAME)	S2 (LM)	C1 (MRF)	C2 (SW)	C3 (INF)	RM1 (BAND+RD)	RM2 (BAND+FD)	URM3	URM4
Basic Score	6.0	4.6	4.6	4.4	4.8	4.4	4.6	4.8	4.6	3.6
Mid Rise (4 to 7 stories)	N/A	+0.2	N/A	+0.4	-0.2	-0.4	-0.2	-0.4	-0.6	-0.6
High Rise (>7 stories)	N/A	+1.0	N/A	+1.0	0.0	-0.4	N/A	N/A	N/A	N/A
Vertical Irregularity	-3.0	-2.0	N/A	-1.5	-2.0	-2.0	-1.5	-2.0	-1.5	-1.5
Plan Irregularity	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Poor Condition	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Code Detailing	N/A	+0.4	N/A	+0.6	+0.4	N/A	N/A	N/A	N/A	N/A
<hr/>										
Soil Type II	-0.4	-0.8	-0.4	-0.6	-0.4	-0.4	-0.2	-0.4	-0.4	-0.4
Soil Type III	-0.8	-1.4	-1.0	-1.4	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Liquefiable Soil	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-1.6	-1.4	-1.4	-1.4

FINAL SCORE, S	
Comments	Further Evaluation Recommended
	YES NO

Table 5. RVS data collection sheet for moderate seismic hazard

FEMA-154/ATC-21 Based Data Collection Form

<div></div>	Address: _____									
	_____ Pin _____									
	Other Identifiers _____									
	GPS Co-ordinates (If available) _____									
	No. Stories _____					Year Built _____				
	Surveyor _____					Date _____				
	Total Floor Area(sq. Ft./sq. m) _____									
	Building Name _____									
	Use _____									
<div>PHOTOGRAPH</div> <div>(OR SPECIFY PHOTOGRAPH NUMBERS)</div>										
Plan and Elevation Scale:										
OCCUPANCY					SOIL TYPE			FALLING HAZARDS		
Assembly	Govt.	Office	Max. No. Of persons		Type I Type II Type III Hard Medium Soft			Chimneys Parapets Cladding Others.		
Commercial	Historic	Residential	0-10	11-100						
Emer. Service	Industrial	School	101-1000	1000+						
BASIC SCORE, MODIFIERS, AND FINAL SCORE, S										
BUILDING TYPE	Wood	S1 (FRAME)	S2 (LM)	C1 (MRF)	C2 (SW)	C3 (INF)	RM1 (BAND+RD)	RM2 (BAND+FD)	URM3	URM4
Basic Score	4.4	3.6	3.8	3.0	3.6	3.2	3.4	3.6	3.0	2.4
Mid Rise (4 to 7 stories)	N/A	+0.4	N/A	+0.2	+0.4	+0.2	+0.4	+0.4	-0.4	-0.4
High Rise (>7 stories)	N/A	+0.8	N/A	+0.5	+0.8	+0.4	N/A	N/A	N/A	N/A
Vertical Irregularity	-3.0	-2.0	N/A	-2.0	-2.0	-2.0	-2.0	-2.0	-1.5	-1.5
Plan Irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Poor Condition	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Code Detailing	N/A	+1.4	N/A	+1.2	+1.6	+1.2	+2.0	+2.0	N/A	N/A

Soil Type II	-0.2	-0.6	-0.6	-0.6	-0.8	-0.6	-0.8	-0.8	-0.4	-0.4
Soil Type III	-0.6	-1.2	-1.0	-1.0	-1.2	-1.0	-1.2	-1.2	-0.8	-0.8
Liquefiable Soil	-1.2	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.8	-1.6
FINAL SCORE, S										
Comments								Further Evaluation Recommended		
								YES NO		

Table 6. RVS data collection sheet for high seismic hazard



<div style="display: flex; flex-direction: column; align-items: center;"> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 100px; height: 100px; border: 1px solid black;"></div> </div>	Address: _____ _____ Pin _____ Other Identifiers _____ GPS Co-ordinates (If available) _____ No. Stories _____ Year Built _____ Surveyor _____ Date _____ Total Floor Area(sq. Ft./sq. m) _____ Building Name _____ Use _____																																						
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Plan and Elevation Scale:																																							
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1"> <tr> <th colspan="5">OCCUPANCY</th> </tr> <tr> <td>Assembly</td> <td>Govt.</td> <td>Office</td> <td colspan="2">Max. No. Of persons</td> </tr> <tr> <td>Commercial</td> <td>Historic</td> <td>Residential</td> <td>0-10</td> <td>11-100</td> </tr> <tr> <td>Emer. Service</td> <td>Industrial</td> <td>School</td> <td>101-1000</td> <td>1000+</td> </tr> </table> </div> <div style="width: 45%;"> <table border="1"> <tr> <th colspan="3">SOIL TYPE</th> <th colspan="2">FALLING HAZARDS</th> </tr> <tr> <td>Type I</td> <td>Type II</td> <td>Type III</td> <td>Chimneys</td> <td>Parapets</td> </tr> <tr> <td>Hard</td> <td>Medium</td> <td>Soft</td> <td>Cladding</td> <td>Others.</td> </tr> </table> </div> </div>					OCCUPANCY					Assembly	Govt.	Office	Max. No. Of persons		Commercial	Historic	Residential	0-10	11-100	Emer. Service	Industrial	School	101-1000	1000+	SOIL TYPE			FALLING HAZARDS		Type I	Type II	Type III	Chimneys	Parapets	Hard	Medium	Soft	Cladding	Others.
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BUILDING TYPE	Wood	S1 (FRAME)	S2 (LM)	C1 (MRF)	C2 (SW)	C3 (INF)	RM1 (BAND+RD)	RM2 (BAND+FD)	URM3	URM4																													
Basic Score	3.8	2.8	3.2	2.5	2.8	2.6	2.8	2.8	1.8	1.4																													
Mid Rise (4 to 7 stories)	N/A	+0.2	N/A	+0.4	+0.4	+0.2	+0.4	+0.4	-0.2	-0.4																													
High Rise (>7 stories)	N/A	+0.6	N/A	+0.6	+0.8	+0.3	N/A	N/A	N/A	N/A																													
Vertical Irregularity	-2.0	-1.0	N/A	-1.5	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0																													
Plan Irregularity	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5																													
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Code Detailing	N/A	+0.4	N/A	+0.2	+1.4	+0.2	N/A	N/A	N/A	N/A																													

Soil Type II	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4																													
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FINAL SCORE, S																																							
Comments									Further Evaluation Recommended <div style="display: flex; justify-content: space-around;"> YES NO </div>																														



4. Literature available:

Agrawal and Chourasia 2007 proposed a simplified approach to estimate the vulnerability of existing buildings of a city in India and made modifications in basic as well as performance modifiers of ATC-21 relating to Indian context based upon 1997 Jabalpur earthquake survey data. Albayrak et al. 2015 conducted an in-situ survey of 1643 buildings inside the northern part of Eskisehir city Turkey and seismically assessed by RVS procedure, calculated Earthquake Risk Score and found 218 out of the total building were fallen under high-risk category and recommended for further detailed evaluation. Arya and Agarwal 2019 proposed a RVS form for estimation of seismic vulnerability of reinforced concrete buildings as per the Indian context for all seismic zones using the guidelines of the latest Indian seismic code. Jain et al. 2010 conducted RVS by shortlisting 101 RC-frame buildings as Phase I, took another 169 buildings for survey as Phase II after damage in Ahmadabad, India. Similarly 270 buildings was considered as third sample, comprising of buildings of Phase I and Phase II and performed statistical regression analysis, noticed that 46% of the buildings were correctly predicted by the method. Joshi et al. 2019 assessed a total of 18,835 of lifeline buildings in the Himalaya province of Uttarakhand using RVS employing the modification in the basic values of RVS suggested by Agarwal and Chaurasiya 2007. Mukhopadhyay et al. 2016 discussed the strategies for evolving a RVS procedure for non-engineered and semi-engineered buildings of the Indian seismic zone III and IV, conducted a shake table experiment to check the response of both reinforced and unreinforced masonry junctions and concluded that the reinforced junction withstand 2.4 higher ground acceleration. Nanda et al. 2014 conducted survey of RVS for seismic assessment of NIT Durgapur campus, India using FEMA 154/ATC-21 based data collection forms, suggested the cut-off score of 2 below which further evaluation is to be required. Nanda et al. 2019 conducted a sidewalk survey to prioritize various hospital buildings in Kolkata, India based on scoring using RVS. Ningthoujam and Nanda 2018 performed statistical regression analysis to find a correlation between outcome variables by using a record of 396 damaged buildings surveyed after Manipur seismic event of 2016, proposed new RVS sheet and noted that the damage grade estimated by proposed sheet matches 64.65% with the actual damage of buildings. Patil and Swami 2017 performed RVS on Total 40 buildings of Chiplun city to assess the seismic vulnerability using FEMA 154 sheet with some modification as per Indian condition including RC as well as load-bearing structures. Ramly et al. 2014 applied RVS methodology on 1166 existing buildings in Bukit Tinggi, Malaysia by using FEMA 154 (2000) employing various inventories of the buildings and concluded the 26% of the total buildings needed the detailed evaluation by the experts. Rautela et al. 2015 performed rapid visual screening on 6206 buildings of two core tourist goals of Himalaya Nainital and Mussoorie, India using modified scoring forms of FEMA and found that 14% buildings of Nainital and 18% buildings of Mussoorie being highly vulnerable to damage to the next seismic activity. Sarmah et al. 2018 performed RVS for 100 existing buildings randomly in the city of Guwahati Assam and gave a quick and complete report on existing building stocks to the public authorities to prioritize the buildings for appropriate remedial measures. Shah et al. 2016 performed RVS on more than 1000 residential buildings with an agenda to estimate the variation of older and modern

buildings in a fast-growing city Jeddah Saudi Arabia using FEMA guidelines. Sinha and Goyal 2004 discussed various severe past earthquakes in India and suggested RVS assessment, Simplified vulnerability assessment, and Detailed vulnerability assessment. Wahyuni et al. 2018 developed RVS smartphone application named RViSITS with an Android platform and based on the FEMA 154 code and also conducted the numerical analysis using SAP 2000 on four buildings and verified both the results.

5. Concluding Remarks:

Based on the above literatures, we have concluded as follows:

1. Rapid Visual Screening is one of the extremely suggested methodologies for seismic assessment and can be conducted with no such structural computation, but by doing a walk down survey of a particular building and filling up the RVS sheet by the assessor.
2. FEMA-P-154 guidelines are upgrades version that allots a basic structural score on the basis of seismic exposure intensity of the province, structure category and lateral load-carrying capacity of the building.
3. RVS is such a method that allows the modifications relevant to modern technologies like usage of GIS techniques, android platforms, etc.
4. The data collected by the surveyor shall be submitted to the municipal authorities so as to apply the necessary measures if required for the region.
5. Past earthquake damage data and numerical analysis shall also be incorporated for randomly selected buildings to verify the RVS results for a particular region of seismicity.
6. Statistical regression analysis helps in the formation of a new RVS sheet using past damage data employing various hazardous building parameters for the particular seismicity.

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