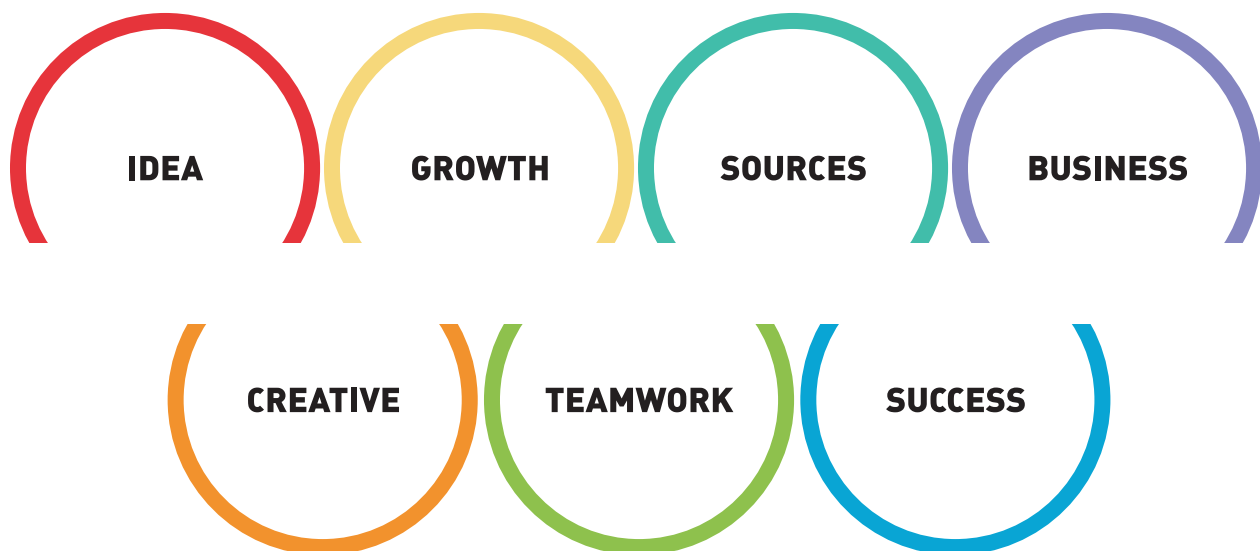


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- Examining the Effect of Psychological Wellbeing, Perceived Stress Level, Organizational Commitment on Job Satisfaction of Indian Corporate Employees during Covid-19 Pandemic.
- Branding Strategies and Indian Retail Marketing.
- To assess the availability of Resource and Structure for Management of Bio Medical Waste in Small, Medium and Large Hospitals of Rohilkhand Region.
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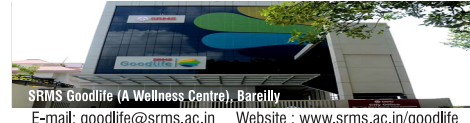
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Shri Ram Murti Smarak College of Engineering & Technology has an independent residential campus spread over 35 acres of land with all weather roads, lush green lawns, playgrounds, Multi-Purpose Hall, Gymnasium, Squash Court and 53020 sq.m. of built up area on the campus. The campus is aesthetically planned and designed with exquisite facilities.

The college offers courses of undergraduate and postgraduate levels, with a professional or vocational orientation to internationally recognized standards of excellence. All courses lay emphasis on practicals and are multi-disciplinary in approach. The college inculcates Values, Ethics in its students, so that the PRIDE of SRMSCET will become the ASSET of our Nation.

The college has demonstrated the perennial evidence for merit and quality. It is developing by leaps and bounds in terms of infrastructural facilities and human capital not only to fulfill the requirements of the current technological status but also to set itself as teaching and research centre of eminence in future.

27 YEARS OF QUALITY EDUCATION :

- SRMS College of Engineering and Technology (CET), Bareilly has signed a Memorandum of Understanding (MOU) with the prestigious National Taipei University of Business (NTUB), Taiwan on 24th July 2023.
- SRMS Trust Chairman Shri Dev Murti Ji conferred with Achiever Award for remarkable contribution in Medical Service by Central UP Chamber of Commerce and Industry on 22nd June 2023.
- SRMS Institutions signed MoU with UN Global Compact Network India to drive sustainable development practices on 28th April 2023.
- Chairman, SRMS Trust, Shri Dev Murti Ji honoured with 'Uday Utkrashtra Samman 2023' award by Deputy CM, UP on 19th February 2023, for his commitment to quality education and healthcare services in the region.
- Faculty of Management Science, SRMSCET, Bareilly ranked 38th in North Zone among India's Best B-Schools, 116th ranked in Private Institute, 142nd ranked in private schools by Fortune India in Nov. 2022, Vol.13. N-1.
- Shri Aditya Murti Ji, Director, SRMS IMS received the Prestigious Rohilkhand Management Association (RMA) Achievers Award 2021.
- Achieved TOP 55th Rank B-Schools Region-Wise Private-North by Business World in 19th November 2022.
- Achieved TOP 56th Rank B-Schools Region-Wise Private-North by Business World in 2021.
- Rohilkhand Management Association Excellence Award 2020.
- Winner of Rohilkhand Management Association Excellence Award-2020 for its remarkable achievements in health care services.
- Management Excellence Award 2019.
- Brand Icons Rohilkhand Award 2018.

Editor

Dr. Pankaj Agarwal
Associate Professor
Faculty of Management Science
Shri Ram Murti Smarak
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- Excellence Award for Higher Education in India 2017.
- Brand Icons of Rohilkhand Award 2016.
- Education Excellence Award given by Times of India in the year of 2015.
- Edupreneurs Award -2013 Vice Chancellors choice to the Chairman of the institution.
- Education Excellence Award given by CMAI Association of India in association with Times of India in the year 2013.
- Skill Tree knowledge Evangelist of India - 2013 for the outstanding contributions to the advancement of higher education system.
- Winner of National Employability Award -2012 by AMCAT.
- Awarded by Dr. Ram Manohar Lohiya Laghu Udhmi Protsahan Pradeshik Puruskar given by MSME &EPD, Govt. of U.P. in Education in the year 2011.
- Winner of National Awards for excellence in education -2011 in Indian Education awards -2011.
- The College is a STAR Performer College of UPTU now AKTU and winner of Excellence Award in B.Tech., B.Pharm, MBA & MCA in year 2009 and 2010 continuously.
- Winner of Academic Excellence Award of UPTU for MBA, B.Tech and B.Pharm in year 2008 and 2009 continuously.
- College has been selected for the Technical Education Quality Improvement Programme of National Project Implementation Unit of the Government of India financed by the World Bank.
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About FMS

(Faculty of Management Science)

Shri Ram Murti Smarak College of Engineering and Technology, Bareilly, UP has been offering its prestigious management programme since 1996. MBA from this college is known for its quality & perfection and recognized by industries for its practical orientations. The alumni of MBA course from this college are working at leading positions in the companies of repute. The Faculty of Management Science conducts various value addition activities also such as Campus Outreach Programmes, Management Development Programmes, Faculty Development Programmes & Interdisciplinary International Conferences, Certified Courses.

MBA from this college is among top ranked in the affiliating university since the beginning and awarded with Academic Excellence Awards of the university. A high degree of interaction is maintained with industries for imparting practical training. The department offers comprehensive management education blended with Entrepreneurship development, Case study, Economic policy analysis etc. Certification courses in Finance, Insurance, International Business, Project management & HR Management provides extra edge to the students of SRMS Bareilly & they are ready by to move from campus to corporate.

The department is having well equipped Class Rooms, Computer Lab, Seminar Halls, Team Rooms etc. to provide best required infrastructure for effective teaching and learning process. In order to promote research, the department publishes management journal Bizcraft (ISSN: 2231-0231, RNI No: UPEGN/2007/19207).

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Bizcraft, the Journal of Management Sciences (FMS SRMS) is a bi-annual, peer reviewed journal with national circulation.

It publishes original communications of research that advances, illuminates Management science and that educates the journal readers.

Manuscripts dealing management aspects will be considered for publication, provided. They contain results of original investigations. Articles need to be of general interest - e.g., they cross the boundaries of specialties or are of sufficient novelty and importance that the journal's readers, whatever their specialty, should be made aware of the findings.

Research papers reporting original research, review articles, correspondence on published articles will also be considered. Papers of routine nature which are merely records of interesting cases as also those dealing with modifications of routine methodology will not be encouraged.

The FMS SRMS prefers the original research work done by Faculties or Management for their research work.

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From Editor's Desk



Dr. Pankaj Agarwal
Editor

Dear Readers,

I am delighted to present to you the latest issue of our esteemed management stream journal. As the Editor, it is my pleasure to bring you a collection of insightful articles and research papers that delve into the diverse realms of management and its ever-evolving landscape.

In this issue, we have curated a range of thought-provoking content that explores various aspects of contemporary management practices and strategies. Our contributors, comprising esteemed scholars and industry experts, have diligently examined current trends, challenges, and opportunities that shape the field of management today.

As always, we strive to maintain the high standards of quality and relevance in the articles we publish. Each contribution has undergone a rigorous peer-

review process to ensure that our readers receive the most accurate and valuable information. We extend our heartfelt gratitude to our dedicated reviewers and editorial board members for their expertise and commitment to maintaining the integrity of our journal.

I would also like to express my appreciation to the authors who have shared their research and insights with us. Their contributions make this issue an invaluable resource for scholars, practitioners, and students alike, enabling them to stay abreast of the latest advancements and gain fresh perspectives on the ever-evolving field of management.

We sincerely hope that this issue will ignite fruitful discussions, inspire further research, and stimulate innovation in the realm of management. We encourage you to delve into the articles that pique your interest, engage with the ideas presented, and share your thoughts with colleagues and peers.

Thank you for your continued support, and we look forward to bringing you more stimulating content in future issues. Together, let us explore and shape the future of management.

Warm regards,
Editor
Dr. Pankaj Agarwal

From the Desk of Editor-in-Chief



Dr. Mohd Danish Chishti
Editor-in-Chief

I hope this message finds you in good health and high spirits. As we embark on a new phase of knowledge dissemination and scholarly exploration, I wanted to take a moment to reflect on the journey we have undertaken together and share my thoughts on the path ahead.

Our management journal has always been a platform for the exchange of innovative ideas, cutting-edge research, and insightful perspectives. Over the years, we have witnessed remarkable contributions from scholars, practitioners, and visionaries. Your dedication to advancing the field of management has been instrumental in shaping the journal's reputation for excellence.

The landscape of management is evolving at an unprecedented pace, driven by technological advancements, changing market dynamics, and a renewed emphasis on sustainable practices. Our journal will continue to serve as a compass, guiding us through these dynamic shifts and fostering dialogue that fuels progress.

I encourage each of you to consider the journal not only as a platform for publication but as a community of thought leaders who are shaping the future of management. Your contributions, whether in the form of research articles, case studies, or thought-provoking commentaries, are the lifeblood of our journal. Together, we can spark discussions, challenge assumptions, and drive the evolution of management theory and practice.

In the spirit of collaboration and academic camaraderie, I invite you to engage actively with our journal. Share your insights, participate in peer review processes, and join us in our commitment to advancing knowledge and driving positive change. Your expertise and dedication are the cornerstones of our success, and I am deeply grateful for your continued support.

Thank you for being an integral part of our journal's journey. Let us move forward with renewed vigor, embracing the opportunities that lie ahead and collectively contributing to the advancement of management scholarship.

Editor -in- Chief
Dr. Mohd Danish Chishti

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EXAMINING THE EFFECT OF PSYCHOLOGICAL WELLBEING, PERCEIVED STRESS LEVEL, ORGANIZATIONAL COMMITMENT ON JOB SATISFACTION OF INDIAN CORPORATE EMPLOYEES DURING COVID-19 PANDEMIC

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Abstract

The COVID-19 Pandemic brought with itself prolonged sufferings and losses for the entire world. Among those impacted were also the Corporate Employees of India, who faced the brunt of businesses running in losses, shutting down or relieving employees in times of despair. Those who stayed employed during the Pandemic, worked from home or in hybrid modes, and faced challenges leading to prolonged Perceived Stress, Depression etc. which left a scar on their Physical, Mental and Psychological Wellbeing. The present study seeks to examine the effect of psychological wellbeing, perceived stress level, organizational commitment on job satisfaction during Covid-19 pandemic. Data were collected from 105 employees working in different industries such as IT/ITES energy sector, banking and education etc. using structured questionnaire. Data were analysed using multiple regression analysis in SPSS 20.0. The results of the study demonstrated that perceived stress level had negative effect on overall job satisfaction while, organizational commitment exhibited positive effect on job satisfaction of the employees. Psychological wellbeing was found to have no significant effect on overall job satisfaction. The study produced meaning theoretical and managerial implications.

Keywords: Covid-19, job satisfaction, pandemic, organizational commitment, psychological wellbeing, perceived stress level.

1. INTRODUCTION:

The novel coronavirus disease 2019 (COVID-19) affected people worldwide, it caused a health emergency to the entire globe. It was a challenge for the Government of all countries to control the pandemic and was bound to take strict steps. Social Distancing was the new way of living and we have to accept and follow it strictly. Many businesses have closed down and everywhere the lockdown has been enforced. It has impacted the economy that leads to the global crises. Medical equipment's were in demand in comparison to any other demands. The nationwide lockdown in many countries led to the closing of almost all types of public gathering including factories, offices, schools etc. (Acharya & Steffen, 2020). During the Covid pandemic many of our habits has been changed and Government has put so many rules and regulations to stop the spread of the disease. Many shops get closed, many businesses came into loss and the economy gets has impacted a lot that leads to global financial crises. During the pandemic the purchasing norms are also changed, e-commerce get on boom during the lockdown. It was really very hard to get the service facility get on activated on the remote areas also. The new concept like work from home has also emerged. Many other businesses like small scale enterprises have faced a many other challenges because of the manufacturing processes that demands the manpower to operate.

The era has come with a new work culture of work that is from home. Employees have also been gone through the job loss, retrenchment, lay-off etc. that leads to the increase in

the perceived stress levels to synchronise with the new standard of working like WFH. They have to excel with limited resources. Remote working has increased total working hours also. They have stretched their working time from early morning to late night (Davis & Green, 2020). Many of them felt burnout and experience the less time for themselves now. For others responding to calls and emails to entire day making the new notion of 'being available' all the time. The top management are very much concerned about their companies image, its reputation, existence and profitability, crises management, survival and its resultant outcomes on the company's total image as an employer will get disturbed (Adikaram et al., 2021).

Many employees are not well adjusted and having difficulty with the work from home culture, they work with less tools like webcam, headphones and quite place to work, most of the employees feel tension and are dissatisfied with their job. The uncertainty of salary and job security makes the employees very stressed and more anxious (Chandra & Mathur, 2021, Chandra, 2021; Wanninayake et al., 2021). Overall the Covid- pandemic has impacted the employees in many ways like on their health, wellbeing and commitment towards their organisation and family.

This brings us to this quantitative research study which intends to determine the impact of Covid-19 Pandemic on the Psychological Wellbeing, Perceived Stress level, Organizational Commitment & Overall Job Satisfaction of Indian Corporate Employees. This study also tries to identify how is the Overall Job Satisfaction for a typical

employee working during the Pandemic, dependent on the remaining three factors of this study - Psychological Wellbeing, Perceived Stress level and Organizational Commitment.

2. LITERATURE REVIEW:

Unexpected outbreak of Covid-19 leads to numerous mental and psychological disorders such as feeling of distress, depression, fear of infection, anger, sadness, feeling of being alone, chronic and neurotic paranoid symptoms and post-traumatic stress disorders (PTSD) in employees. Maintaining a social distance has led countless people having symptoms of emotional instability, irritation, mood swings, insomnia, unwanted angry behaviour, fear of unknown health threats and crises, and insecurity among people across the world (Brooks et al., 2020; Rubin & Wessley, 2020; Shigemura et al., 2020; Wang et al., 2011; Xiang et al., 2020; Zhang et al., 2020; Maaravi & Heller, 2020).

The work from home culture, the new system of working in a home setup changed and has many psychological impacts and also it has researched and found true that work environment, colleague's connection and managers close contact is very important for the healthy work culture.

Another research drags focus on the outcome of the disturbed work culture. Graves and Karabayeva (2020) investigated that enlarged stress, improper infrastructure, lost work environment and colleagues, high performance expectations, weak manager-employee relationship, and difficulty in maintain trust with colleagues are the side effects of virtual work environment. Job satisfaction is the contentment the employees have for his job. When everywhere there is an uncertainty of life, it must have impacted the overall productivity of the employees and their productivity also. Many researchers have supported that satisfied workers are more productive that leads to improve the organisations image.

Many researchers also found that there is a negative relationship between violation of the Psychological Wellbeing with organizational commitment and job satisfaction (Suazo, 2009; Grimmer and Oddy, 2007) that means psychological wellbeing has an impact on the job satisfaction and to the job productivity also.

Every employee has many expectations from their job, researchers have suggested that if peoples expectorations are fulfilled they are more committed to his work and are more satisfied with their jobs. Kim et al., 1996, has conducted and study and found the connection between organisational commitment and job satisfaction.

Psychological wellbeing is the important construct that generally depends on the interpersonal relationship between the people. The misunderstanding and abuse has negative impact on the psychological wellbeing. Research studies like on the US Air Force Hospital also have shown that employees whose expectations were fulfilled were more productive and more satisfied (Kim et al., 1996). Guzzo et al. (1994)

The need for social distancing and work from home generates a gap between the employer and the employee, and it somewhere leads to criticism and lack of appreciation that affects the psychological wellbeing also. Conway et al. (2011) in their studies differentiates the impact of breach and fulfillment of the Psychological Wellbeing and have found that Psychological Wellbeing fulfillment is having a positive influence on job productivity and workers attitudes.

When employees have experienced stress for long period of time as like in Covid Pandemic, they have decreased organisational commitment and having a high turnover. The proposed study can be structured as below.



Figure 1: Proposed Model

Based upon the proposed research model (Figure 1), following hypotheses are proposed:

H1: Psychological wellbeing influences overall job satisfaction

H2: Perceived stress influences overall job satisfaction

H3: Organizational commitment influences overall job satisfaction

3. METHODOLOGY:

Data for the current study were collected form 105 employees working in automobile, consumer durable, Education, Energy, Finance, Hospitality/Tourism, IT, Law, Medical, Telecom, Textile/Fabrics etc. using purposive and

snowball sampling. Data were collected by sending questionnaire in e-mail. They were asked to respond keeping in mind the period of the pandemic, when they worked for an organization (regardless of the fact that some employees may currently be associated with a different organization/industry all together). Data were collected using a structured questionnaire which was prepared from the previous literature. Five-point Likert was used to measure the response of the employees on study constructs. A six-item scale to measure psychological wellbeing was adopted from Ryff's (1995) Scales of Psychological Well Being. Perceived stress level, on the other hand, was measured with four-items. In addition, a six-item scale to measure organizational commitment was taken from Alan and Meyer (1990). Finally, overall job satisfaction was measured with four-item scale adopted from Babakus et al. (2003).

4. DATA ANALYSIS:

The general demographic profile of the respondents are detailed in Table 1. It is evident from the Table 1 that male constitute about three-fourth (76.20%) of the sample while only one-fourth were female (23.80%). Most of the respondents belong to the age category of either 18-25 years (43.80%) or 25-35 years (37.15) and only 19.05% of the respondents were of age more than 35 years. Majority of the respondents were working in IT/ITES industry (41.90%), education (13.33%) and remaining were from other industries (automobile, consumer durables, energy etc.). Most of the respondents were young working professionals with less than one year of experience (37.14%) and 1-3 years (23.80%) while about one-third 33.34% were having an experience of 3-5 years and 5.71% were having more than 5 years of experience.

Table 1: General profile of the respondents

Variable	Category	Frequency	Percentage
Gender	Male	80	76.20
	Female	25	23.80
Age	18-25	46	43.80
	25-35	39	37.15
	More than 35	20	19.05
	Automobile	3	2.85
	Consumer Durables	3	2.85
Industry	Education	14	13.33
	Energy	6	5.71
	Finance	10	9.52
	Hospitality/Tourism	7	6.67
	IT/ITES	44	41.90

Experience	IT/ITES Industry	44	41.90
	Law	3	2.85
	Medical	6	5.71
	Telecom	3	2.85
	Textile	6	5.71
	Less than 1 year	39	37.14
Experience	1-3 years	25	23.80
	3-5 years	35	33.34
	More than 5 years	6	5.71

4.1. MULTIPLE REGRESSION ANALYSIS:

Multiple regression analysis was employed on the data taking overall job satisfaction as dependent and psychological wellbeing, perceived stress and organizational commitment as independent variable. Table 2 and Table 3 presents results of the multiple regression analysis. Table 2 gives ANOVA results which indicates that regression model produces an acceptable fit as F statistics value is 9.47 ($p < 0.001$) significant.

Table 2: ANOVA

	df	SS	MS	F	Significance F
Regression	3	419.3601314	139.7867105	9.473223338	1.42762E-05
Residual	101	1490.354154	14.75598173		
Total	104	1909.714286			

Additionally, Table 3 gives results of the coefficients. It is evident from these results (Table 3) that perceived stress exhibit negative effect on overall job satisfaction ($B = -0.424$, $S.E. = 0.122$; $p = 0.001$) while organizational commitment ($B = 0.319$, $S.E. = 0.075$; $p = 0.000$) influences overall job satisfaction positively. However, psychological wellbeing was found to exhibit no significant impact on overall job satisfaction ($B = -0.002$, $S.E. = 0.072$; $p = 0.976$). In addition, these independent variables were found to explain 81.95% of the total variance in overall job satisfaction.

Table 3: Coefficients

	Coefficients (B)	Standard Error	t Stat	P-value
Intercept		10.689	2.742	3.8990.000
Psychological Wellbeing	-0.002	0.072	-0.030	0.976
Perceived Stress	-0.424	0.122	-3.477	0.001
Organizational Commitment	0.319	0.075	4.272	0.000

R-Square=81.95%

5. CONCLUSION, LIMITATION AND FUTURE RESEARCH:

The study mainly focuses on estimating the effect of psychological wellbeing, perceived stress and organizational commitment on the overall job satisfaction of the employees working in various industries in work-from-home mode during pandemic. The results demonstrate that perceived stress caused during work-from-home had negative impact on job satisfaction of the employee. In addition, organizational commitment was found to exhibit positive impact on job satisfaction. However, perceived psychological wellbeing had no impact

on job satisfaction.

One of the major limitations of the study was to small sample size. Due to time and budgetary constraints only 105 responses were collected and used in the analysis. However, a larger sample may produce more reliable and results which may be generalized for larger population. The present study only takes into account two major determinants of job satisfaction i.e., psychological wellbeing, perceived stress and organizational commitment, future study may also consider other variable such as physical health, employee productivity, employment Compensation etc. in work-from-home mode

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BRANDING STRATEGIES AND INDIAN RETAIL MARKETING

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Abstract

In today's challenge driven marketing world, it is extremely challenging for entrepreneurs to survive in the market and develop a sufficient amount of profit using standard business practices. In modern era the Retail Marketing concept is also a very lucrative technique for businesses.

The Indian retail market is one of the most lucrative among top five in the world, having an estimated economic value of US\$ 500 billion. Retail marketing additionally encompasses sales personnel management, merchandise selection and ordering, retail promotion, inventory control, and product accounting. Retail branding strategies help retailers to build a strong retail brand with the aid of technology, good design and nurturing customer relationship.

Retailing in India adds 14 to 15% of the country's GDP. With 1.2 billion inhabitants, India is one of the world's fastest extending retail markets. The retail and logistics industries in India employ approximately 40 million Indians 3.6% of the Indian population. Retail marketing strategy has to draw customer interest and stimulate refute shop planning idea through establishing competitive retail marketing assessment, targeting customer behaviors, and articulating branding.

Keywords: Retail Marketing, Branding strategies and Indian Retail Market

INTRODUCTION:

The Indian retail industry has an unwavering connection to the country's economic growth and development. Recent shifts in dynamics of customers in India have provided an opportunity for regulated modern retail models. These inventive retail designs provide customers with an extensive selection of opportunities and an ideal experience while shopping through incorporating goods, entertainment, and service under a single canopy. Big names in the established market comprise Future Corporation, Pantaloon, Tata, RPG, Reliance Trends, ITC, and others, who have tighter taxation methods and better labor law surveillance mechanisms. They have a viable supply chain management system in position, along with unique vendor connections, superior client service, efficient merchandising, and timely marketing initiatives. Despite the fact that small-scale entrepreneurs monopolize Indian retail, the recent decade has witnessed the emergence of a number of structured retailers, who are establishing stores across different modernized layouts in metropolitan areas and other significant towns.

In marketing, positioning signifies a technique that occurs when marketers strive to instill a perception or association for their item of business, brand, or organisation in the subconscious minds of those who are their intended consumers. Every time a customer encounters with your brand, you desire them to be able to recall what the brand stands for, why it is vital to them, and how it differentiate itself from rivals. By formulating an unambiguous statement of what is essential for your customers and unique

about your brand — and subsequently reiterating it with every encounter with customers — you will assist your customers generate choices about their purchases with convenience and certainty. Retail is the world's major private industry, generating 8% of GDP and employing one-sixth of the workforce. The retail commerce is projected to be worth \$7 trillion USD. Many countries have flourished exclusively as a result of retailing, and we are right now experiencing an enormous change in the retail business. In terms of India, it constitutes 14% of our GDP and is the second largest industry, following agriculture, when it comes to of the number of people engaged. According to a new study, India is the fifth most appealing shopping destination in the world and the second in Asia. It is the fifth most appealing shopping destination in the globe.

REVIEW OF LITERATURE :

1. Morschett (2006) have tried to identify types of competitive advantage within the retail industry which based on (1) quality of performance, store atmosphere, service (2) convenience (3) price. However, they concluded that price and quality are independent factors that can be mutually achieved without any trade off between them.
2. Jacoby and Kyner (1973) have found that loyalty and repeat purchase behavior of customers influenced by store attributes and customer emotions.
3. Walters, D., Knee, D (1989) have said that the retail companies are focusing on non-price attributes to distinguish themselves it means adapting certain store

attributes more closely to the specific needs of certain groups of customers. Companies such as Aldi, Lidl, and Wal-Mart have also implemented such strategies.

4. Gonzalez-Benito (2005) have stated that the competition in retail changed over the past years. Nowadays, different competing categories of store types provide specific benefits to match the needs of different customer types and shopping situations.
5. Barry Burman and Joel Evans (2006) have offered a different kind of approach to the present system of retailing. The authors have noticed that the non-traditional retailing especially Web Stores, or Electronic Retail Channels are becoming more profitable and popular because of changing tastes and styles of buyers. This has changed the competitive strategies, distribution systems and promotional strategies that are adopted by the retailers.
6. Bowd (2006) has examined a stakeholder and management perspectives of CSR in retail. They found that the symmetry between management and stakeholders' views of CSR (the core importance of obeying the laws and regulations of government, ethical conduct, community involvement, philanthropy, human rights, health & safety), limited awareness of CSR activities by stakeholders, and assessment of the benefits resulting from CSR communication (e.g. corporate reputation).
7. Rajan, Irudaya (2006) have explained that the changes in the attitude of the shoppers has resulted in firms insisting to focus on maintaining balance between the rate and quality in addition to price competitiveness.
8. Ramanathan and Hari (2008) have stated that in future the number of large-sized international chain shops will be high. Indian market has various types of retailers at present among them small-sized retailers are high in number. Mass media and word of mouth advertising are found to be the information sources of middle class families in India. Merely with lot of commercial advertisements, they will not be able to sustain their market. Once their products become familiar in the market, the companies could increase the number of customers in a slow and steady way.
9. Parrish(2010) has investigated how fashion retailers use private labeling to differentiate their products and to gain competitive advantage. This type of competitive strategy results in increased profits and market share.
10. Buchanan, Simmons and Barbara(1999) have

highlighted that consistency among the various elements of a marketing program essential in building and maintaining brand image and equity. The author suggests that this occurs because consumers have expectations about retail displays and the relationship among displayed brands.

11. Dick and Divert (2003) pointed out that the increase in consumer loyalty is considered as one among the essential strategies of marketing which is been identified by the researchers. It is therefore important to ensure that there is understanding of all the facets of consumer interests in order to understand brand loyalty and brand preferences. The consumer preferences towards one particular brand or retailer maybe associated with determination of specific factors with regards to consumer attitude and behavior.

OBJECTIVES OF THE STUDY :

- To gain insight into the marketing methods employed by retailers to strengthen their businesses.
- To investigate retailers' beliefs regarding using marketing tactics
- To find out the implications of personal factors on merchants' marketing techniques.

BRANDING:

For longevity in a marketplace that is highly competitive, a company, a product, or a brand need have a positioning concept. Brand identity and positioning are crucial to establishing a strong consumer base and brand equity.

Unique Identity- If you fail to situate your firm, you will be overlooked in a market that is fiercely competitive. Positioning is a matter of discovering the most effective approach to carve out an influential unique niche among a sea of rival brands.

The essence of the strategy - Positioning is at the heart of marketing strategy, and accurate positioning is the secret of successful marketing management. Positioning is going to take place irrespective of whether a company's management is vindictive, receptive, or inert in the process of constructing a stance. Nevertheless, by means of prudent strategic choices, companies can positively have an impact on consumer perspectives.

Competitive edge- positioning a brand is a tactical approach to acquiring a long-term competitive advantage, competitive benefit is the tactical edge that one business entity has against competitors inside its competitive industry." Having a competitive advantage helps to strengthen and position a company in the marketplace.

Image - The positioning of the item is a vital choice that a marketer must execute for the purpose to create a distinctive and influential image of its product/brand in the subconscious of its target audience compared to its opponents. Often, a product collapses simply because of poor location. In fluctuating marketplaces, positioning a firm, product line, or brand can turn out to be essential – even critical.

STRATEGIES FOR BRAND POSITIONING :

The core objective of any brand positioning plan is to cement the favorable impressions which the intended audience presently has, eliminate unfavorable images, or create a fresh perception. A marketer may employ multiple strategies, including harnessing current brands, leveraging corporate labels, product attributes and benefits, price-quality positioning, positioning against rivals, market segment positioning, and customer positioning.

Leveraging preexisting business tactics - Businesses can leverage an already-established brand name in the subconscious of consumers to diversify the product line or penetrate a fresh industry.

Corporate brand positioning strategy: In this instance, the marketer uses his corporate name/identity to broaden his company's identity.

CORPORATE BRAND POSITIONING STRATEGY

In this instance, the marketer uses his corporate name/identity to broaden his company's identity. Product positioning tackle determined by attributes and advantages

This approach to positioning is carried out by contrasting the brand among its rivals on the basis of its attributes and the advantages it provides. This is known as a USP (Unique Selling Proposition).

THE BRANDING FUTURE:

The foreseeable future of branding is predicted to be equally intriguing and hard. The subsequent insights define forthcoming branding pattern

BRANDING ON A GLOBAL SCALE:

Indian marketers will eventually catch the attention of the remaining parts of the globe and welcome an international outlook. "Think global; act local" will be enlarged to "brand global; market local." They attempt to establish brands having universal faith, appeal, and a single-minded target. Regional customs and international designs are going to be acknowledged by marketing initiatives that contribute business.

CUSTOMER ORIENTED:

In the expanding market, each customer will possess full

control. The association among brands and the individuals who purchase and utilize them will continue to be enhanced using novel marketing strategies. Methods of inquiry that assist in influencing consumers by analyzing which subjects they concern about and the reason why the way they process information, shop, and interact.

BRAND STRATEGY BECOMES CORPORATE STRATEGY:

With the customer at the core every aspect from engagement to transactions, executives is bound to catch on to the theory that all that's accomplished or said in a company which provides products relates to the brand. Presently brand strategy is supervised and monitored by the marketing team. The next day the CEO starts off by outlining brand strategy. Each chief executive officer of a customer's brand company will acknowledge the psychological and cognitive bond that people have with their company's products and services. Each chief executive officer of a customer's brand company will acknowledge the psychological and cognitive bond that people have with their company's products and services.

MEDIA WILL BECOME DECISIVE:

Personal Relationships is going to keep growing in significance, and the news outlets will be readily available to endorse it. Media will be tailored and modified. The significance of an immediate link intensifies as retailing shifts digital. Individuals are going to desire to glance at printed versions once the internet grows more prevalent. As an outcome, media for communications will be reliant on conventional and information technology sources. Fortunately internet sources will gain a competitive edge in the forthcoming years.

PUBLIC RELATIONS IS GROWING INTO AN ALL-ENCOMPASSING CREATING A BRAND EXPERTISE:

In the not-too-distant future, Public relations is going to encompass all that a company attempts to cultivate relationships with its clients. Given that businesses are known by their logos and names, the primary focus will be placed on determining reputations and goodwill. Each brand will acquire a distinct place in society, position, fame, and identity.

COMPANIES WILL APPOINT BRAND AMBASSADORS:

Companies will gain knowledge of methods to synthesize advertisements internally instead of employing advertising companies or brand consultants to do so as the cost associated with marketing and advising are going to rise. Companies count on their in-house marketing personnel

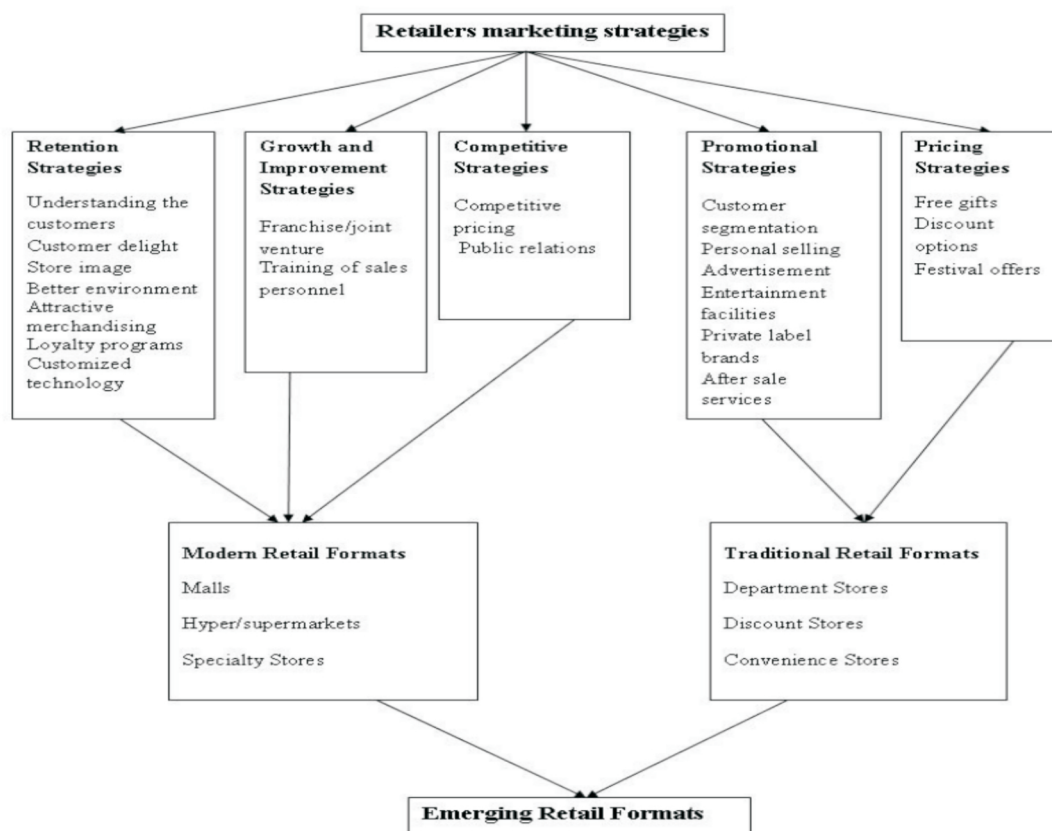
and elect the best brands in order to gain an economic edge. Whilst the application of brand experts will rise, initiatives ought to be undertaken to reduce our relying on them.

EMERGING RETAIL FORMATS FRAMEWORK AND RETAILER MARKETING STRATEGIES:

The structure illustrated above illustrates the essential approaches to marketing employed by merchants and different kinds of stores in boosting sales. This framework encompasses five forms of strategies: tactics for retention, marketing tactics, expansion and enhancement strategies, tactics for pricing, and aggressive tactics. In a similar vein

fresh retail forms can be categorized into two distinct groups: contemporary store formats and traditional retail formats. Malls, hypermarkets, and specialty stores are representations of modern retail designs. Conventional sales forms, on the other the same direction, encompass shopping centre, discount chains, and supermarkets. Moreover, the established structure illustrates that contemporary shopping formats, featuring malls, supermarkets, and concentrated stores, are more oriented regarding retention, fiercely competitive and expansion as well as enhancement tactics.

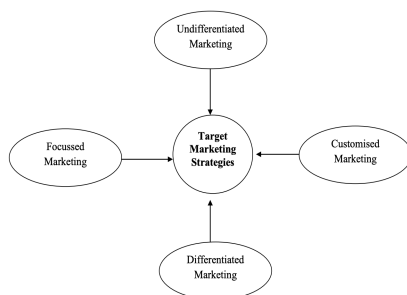
Fig- Retail Marketing Strategies



Source- International Journal of Retail Management & Research (IJRMR)

Targeting methodologies investigate the appealing qualities of groups and establish the target market. The technique of discovering targets and aligning a suitable response to them with regard to operational requirements, skills, and constraints is known as targeting. HUL delivers to an array of customer groups that have distinct requirements for goods. It has Lifebuoy and Breeze a variety for motivated customers, Hammam and Lux variants for ambitious customers, and Pears, Dove, and a more expensive variety of Lux variants for affluent clients. In regards to detergents, it offers Wheel for aspirant customers, Rin for prospective purchaser, and Surf Excel for customers who are wealthy. Considering an assessment of different categories, the organization ought to investigate various target marketing strategies. 2003; Kotler). Doyle (1998) and Jobber (1998) agree on the following distinct tactics among others:

Fig- Target Marketing Strategies



Source- Shodhganga.com

RETAILING FACES NEW CHALLENGES

Over decades, the chaotic traits of retailing hindered its development. "Lack of industry status has an impact on financing prospects and stunts industry growth," says Kishore Biyani, managing director of Pantaloon Retail India. Only those with extensive funds have been capable to hit it big in today's environment. Apart from the emergence of the Internet, businesses encounter an array of other issues.

a) Human Capital: The accessibility of competent employees and the retention of human resources is an important concern for these big merchants. Crossroads, for example, rewards excellent salaries and promotes an atmosphere of collaboration that makes employees delighted to work in such large retail businesses.

b) Space and Infrastructure: While constructing a retail shop or mall, commercial property and infrastructure are crucial. The money spent and accessibility on the two accounts hamper the retail chain's growth. A lack of additional infrastructure is also having a consequence on retail logistics as well as supply chain management.

c) Absence of Retailer-Friendly legislation: India is still lacking retailer-friendly legislation, notably ones regulating the conveyance of products across one state to a different one. Retailers have to keep a broad spectrum of products that originate throughout the country and, when necessary, from other parts of the country. Nevertheless, the question involving multiple tax levels is a challenge. Then there are laws that state stores aren't allowed to be operating seven days a week. Businesses must be open or shut down around an exact hour, causing a bearing on operations.

d) Inadequate Technical Know-How: The Indian government inhibits foreign direct investment (FDI) in the retail sector. FDI is often employed for acquiring technological innovations inputs. As a result of a shortage of FDI in this sector, advancement in terms of people, abilities and other aspects requires considerable time.

THE RETAIL SECTOR'S STRATEGIC PLAN :

The retail industry necessitates an extensive retail planning strategy. It outlines how merchants discover target market segments and determine the most appropriate store format.

The phases engaged in the comprehensive retail planning process

- 1 Establish the business objective
- 2 Perform an immediate evaluation
- 3 Determine strategic potential
- 4 Examine tactical possibilities
- 5 Identify and assign desired objectives.
- 6 Develop a retail mix for carrying out the approach.
- 7 Review achievements and implement modifications

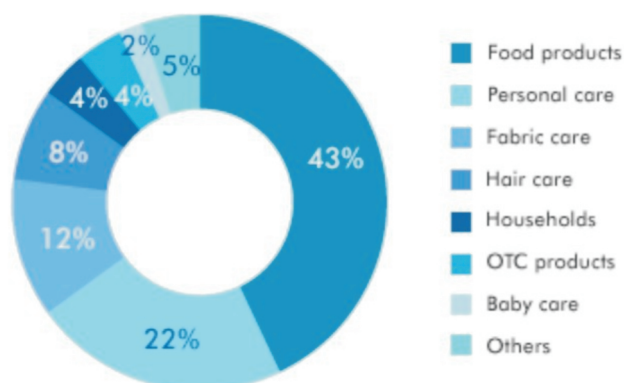
Consequently, strategic planning is going to help the store determine alternatives in light of economic theory and market appeal.

INDIA'S FMCG SECTOR:

India possesses one of the economies that is growing most rapidly worldwide, in addition to an enormous population and region. The population is over 120 million, and the vicinity ranges from J&K to Kerala, and additionally from Assam to Gujarat. Multiple industry sectors and markets are out there, which can be designated as urban, suburban, or rural. The market for rural goods is enormous and resilient to break through. Rural regions are residence to approximately 70% of India's population. This represents considerable potential for businesses in Indian markets, specifically the FMCG sector. In the years before 1991, the Indian economy was a shielded economy; however, as a result of the liberalization process, a significant amount of

MNCs have migrated to the Indian market, especially in the FMCG sector. Having a population of 1.28 billion, India is one of the globe's most significant markets in terms of purchasing capacity and growing consumer spending, following China. The Indian FMCG industry is among the top four in India, featuring a market size of more than \$2 trillion. In the past couple of decades, the FMCG sector expanded at a yearly pace of 11% on average; throughout the past five years, annualized growth accelerated at an average compounded pace of 17.3%. The FMCG sector is highlighted by an extensive number of large corporations, severe rivalry amongst structured and scattered firms, an extensive distribution structure, and relatively low costs of operation. India enjoys an edge over its competitors due to its abundance of necessary natural commodities, less expensive labor, and involvement over every link in the value chain. Throughout 2012, the nation had rising rates of inflation, delayed raises in salaries, and sluggish economic growth, all of which weakened the FMCG sector, with companies claiming lower revenue growth in their quarterly earnings. Yet, the tendency observed in 2012 escalated in 2013, especially growth being driven by rural residents as their respective positions spending power surged.

Fig-FMCG Sector in India



Source. Google.com

Culinary and dairy merchandise, medicines, electronics for consumer use, wrapped foodstuffs, everyday items, beverages, and numerous other FMCG segments of goods are covered. The beverage coffee, tea, laundry detergent, nicotine and cigarette packs, soaps and shampoos and a variety of FMCGs are illustrations of ubiquitous FMCGs.

IMPLICATIONS FOR MANAGEMENT :

The investigation equips businesses with significant insight into the future in order to deploy retail marketing techniques. in relation to the examination's findings, contemporary retail formats ought to emphasize more on

pupil retention, improvement and expansion, and aggressive marketing for the reason trendy retail formats consisting of malls, shopping centres, and specialized retailers possess greater financial capabilities than conventional store formats. As consequently, conventional forms may need to concentrate more on commercial and pricing methods. Individuals that procure in present outlets are probably fewer intrigued about price due to the fact that they tend to be more worried about range, performance, recreation, and various other associated aspects.

CONCLUSION:

Branding is a tool implemented by companies and service providers to construct a unique identity and impression for the goods and services they offer. A brand is referred to as a name, term, layout, emblem, or any additional characteristic that designates the product or service of one vendor separately from the offerings of other merchants. Branding developed in the arena of mass marketing from the advent of packaged goods in the nineteenth century. Campbell soup, Coca-Cola, Juicy Fruit gum, Aunt Jemima, Uncle Ben's rice, and Kellogg's breakfast cereal established recognizable brands. Marketers may select from two distinct tactics: commodity strategy and branding strategy. Commodity encompasses goods and amenities that can be considered substantially regimented and uniform. Food grains, vegetables, fruits, edible oil, sugar, steel, and edibles constitute all examples.

The growing popularity of the Indian retail sector corresponds to the rapid growth of the Indian economy. In India, there is tremendous potential for the expansion of regulated retailing. It can grow substantially and hold consumers by employing associated approaches, creating collaborative relationships through functional departments, and sustaining an equilibrium amongst building a reputation and marketing. Yet, neither of them are yet enjoying prosperity as a result of the considerable start-up costs needed to break even with rival businesses and engage with competitors. Recognizing all of the above issues permits retailers to remain viable and successful in the market. Currently, we are able to assert that nearly all goods and services are traded in an environment with perfect competition, where each manufacturer and vendor strives to keep up with an enormous number of opponents by demonstrating novel strategies and methods. Amidst the current economic recession, the retail industry in India is likely to see another essential shift in the coming years. Particular advantages that come from structured retail, together with impacting consumer habits and facilitating factors related to the environment, are projected to make a

substantial beneficial effect on the regulated retail market. Consumer adoption will be vital to the operation for fresh retail models. There is tremendous potential for the expansion of structured retailing in India. Employing any of the approaches, it could rise significantly and penetrate every square inch. Good dialogue between functional divisions ought to be established. Striking equilibrium amongst brand development and marketing is vital. Non-marketing variables including petrol prices, weather and other variables must be averted, and novel ideas should

always be implemented. Marketing and price approaches are chosen by department merchants, discount shops, and convenience stores ahead others. Contemporary retail designs, including malls, hypermarkets, and concentrated stores, on the contrary, embrace retention methods, competitive approaches, and expansion and enhancement tactics. A proper integration of methodology with media type is crucial, thus it is the issue that the present study intends to solve.

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- ◆ *International Journal of Retail Management & Research (IJRMR) ISSN 2277-4750 Vol.2, Issue 4 Dec 17-30*

TO ASSESS THE AVAILABILITY OF RESOURCE AND STRUCTURE FOR MANAGEMENT OF BIO MEDICAL WASTE IN SMALL, MEDIUM AND LARGE HOSPITALS OF ROHILKHAND REGION

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Abstract

INTRODUCTION: Biomedical Waste is the biggest challenge in today era as the nonsegregated or untreated waste cause infectious diseases as well as environmental degradation. Various guidelines, acts and rules came into existence for its proper management at the HCF. Management of these waste as per guidelines various Structure requirement and resource availability is most important factor to comply for bio medical waste management rule 2016

AIM & OBJECTIVE : To assess the availability of resource and structure for management of bio medical waste in small, medium and large hospitals of Rohilkhand Region.

MATERIAL AND METHODS: This study was conducted in randomly selected small, medium, and large category of hospitals. A checklist was filled at the designated health care facility through the administrators or by direct observation.

RESULTS : The results indicate that most of the small hospitals are not complying in terms of resource availability and structure requirement however the compliance are better followed by medium and large hospitals

CONCLUSION : The monitoring mechanism should be more strict and regular for all category of hospital Availability of structure requirements and resources should be ensured periodically in all category of hospitals.

INTRODUCTION:

Medical Health facilities are advancing day to day in today's era and is very important for our health and life, but waste generated from these facilities as a result of medical activities represents the main problem of living beings and environment. Management before final disposal is very important as improper management of waste which is generated causes serious health impact on the community, environment and on health workers.

BioMedical Wastes which is generated from health care facilities depend upon multiple factors such as

- Type of health care units
- Occupancy and specialization of healthcare units
- Ratio of reusable items in use
- Availability of infrastructure and resources etc.

Biomedical waste have aroused the concern world over, especially in terms of its effects on human, health and the environment.

The problems of the waste management in the hospitals and other health-care institutions is a matter of great concern for the government, authorities, environmentalists due to its numerous harmful effects

The latest and modified Rules right now applicable in India are Bio-Medical Waste Management Rules, 2016 modification 2018.

These rules are applied to all persons and Health care facilities who generate, collect, receive, store, transport, treat, dispose or handle bio-medical waste in any form or other:

Final rules under the environment (Protection) are notified on 27th July 1998, Bio Medical Waste (Management & Handling) Rules, 1998 which were amended in 2003. BMW (M) rules 2016 contains 4 schedules, 5 forms and 18 rules, which tell us about applications, definitions, operators duties and authorities, segregation, packaging, transportation, and storage of waste, standard for treatment of disposal, list and duties of prescribed authority, procedure for authorization, advisory committee, monitoring of implementation of rules in health care facilities, maintenance of records, appeal, accidental and annual reporting.

In order to fulfill the required criteria in bio medical waste rule 2016 various structure and resource availability needs to be ensured like

- o Availability of non chlorinated plastic bags
- o Availability of required chemicals
- o Availability of trolleys and bins to store and carry out waste
- o Availability of separate area for storage
- o Availability of Weighing Scale, Barcode/QR Code

Printer, Barcode/QR Code Scanner and GPS device integration with BMW application for technical evaluation. etc

RESEARCH DESIGN AND METHODOLOGY:

This study has been carried out in Rohilkhand region of Uttar Pradesh.

The districts were selected based on number of beds available. Out of nine districts, top five in terms of highest beds available were taken into study. A checklist was also developed for the selected healthcare facility to understand the availability of resources for waste management.

The purpose of this research is mainly to understand availability of structure and resources for managing Bio Medical Waste.

A Descriptive study was done to examine the medical waste management practices in hospitals of Rohilkhand region.

A checklist was developed to attain desired objective

The population for this study comprised of randomly selected hospitals both Government and private hospitals in top five districts with highest number of beds. These were selected as per data of Uttar Pradesh Pollution Control Board Lucknow submitted to National Green Tribunal in the year in 2019

Any health care setting providing treatment to patient is a Hospital

- Hospitals on the basis of number of beds are classified into Large, Medium and Small Hospitals.
- Hospitals having more than 500 beds are considered as Large Hospitals.
- Hospitals having more than 100 and up to 500 beds are considered as Medium Hospital
- Hospitals up to 100 beds are considered as Small Hospital.

INCLUSION CRITERIA:

- All the hospital authorities having beds and given the permission to conduct the research survey.

- All the Health care personnel and biomedical waste handlers who gave the informed consent.

EXCLUSION CRITERIA:

- Hospital with no bed
- Health care facilities of rural area.
- Incomplete and non-responsive questionnaire.

Rohilkhand region consist of 9 districts, Out of these 9 districts top 5 districts having highest number of beds. Bareilly, Moradabad, Bijnor, Amroha and Shahjahanpur were selected on the basis of UPPCB (Uttar Pradesh Pollution Control Board) data submitted to NGT (National Green Tribunal In 2019). The average of the total number of beds was calculated for these top five districts having highest number of beds. The checklist was made and filled to check about the availability of resources

The top 5 district as per availability of number of beds in descending form were selected. The average of total number of beds was taken and subsequently facilities were randomly selected in the ratio of 1:2:3 Big/Medium/Small hospital multiplied with the mean. Districts having divisibility factor that is the number of beds divided by mean less than 1 were taken in the ratio 1:2:3. The districts having the divisibility factor greater than 1 but less than 2 then the ratio is multiplied by 2 that is 2:4:6 similarly the district having thrice the number of beds ratio multiplied by three and multiplied by 4 if the number of beds in a district is 4 times the mean number of beds.

In total randomly selected facilities visited were = 48.

Large category hospital (more than 500 beds) = 8

Medium hospital (500 to 100 beds) = 16

Small level hospital (less than 100) visited = 24

The checklist was filled in taking structural factors/resource availability into account

The factors of partially compiled and non-compiled are considered as non-compliance.

Sl. N.	Circle	Name of Regional Office	Name of District	Total No Of HCFs		No Of Beds	No. of HCF having treatmentnet Captive facility	No. of HCF Member of CBWTF or Deep Burial	No. of HCFs not having disposal Mechanism	Estimated BMW Generated (kg/day)	If not having authorization then action taken			
				Bedded HCFs	Non Bedded HCFs						Notice	Show cause	Prosecution	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
55	6	Azamgarh	Azamgarh	287	228	5172	0	515	0	1143	131	0	0	
56			Mau	116	40	2083	0	156	0	428	57	0	0	
57			Baliya	154	88	1934	0	222	0	455	103	0	0	
58		Varanasi	Varanasi	500	226	12622	0	726	0	1539	0	0	0	
59			Chandauli	198	18	2858	0	218	0	245	0	0	0	
60			Bhadohi	122	39	1740	0	161	0	402	0	0	0	
61			Gazipur	205	56	3458	0	261	0	470	0	0	0	
62			Jaunpur	312	112	4256	0	424	0	410	0	0	0	
63		Ayodhya	Ayodhya	154	6	2179	0	160	0	373	26	0	0	
64			Ambedkar Nagar	91	24	1015	1	114	0	203	18	0	0	
65			Gonda	122	3	1633	0	125	0	302	8	0	0	
66			Behranch	131	5	1781	0	136	0	339	9	0	0	
67			Shravasti	26	13	366	0	39	0	73	8	0	0	
68		7	Bijnor	Bijnor	284	180	3178	0	464	0	599	25	0	0
69				Amroha	185	154	1991	0	339	0	353	49	0	0
70			Moradabad	Moradabad	340	640	4930	0	980	0	1022	62	0	1
71	Rampur			137	248	1720	0	385	0	295	60	0	0	
72	Sambhal			102	162	1305	0	264	0	557	121	0	0	
73	Bareilly		Bareilly	410	202	9726	4	608	0	1842	40	0	0	
74			Pilibheet	91	110	1190	0	201	0	233	9	0	0	
75			Sahjanpur	155	77	2443	0	232	0	431	5	0	0	
Total				14454	9428	253927	10	23872	109	52500	4087	17		

EG
CG

डा. री. ओ. अ. अ. अ.
मुख्य पर्यावरण अधिकारी
प्रदूषण नियंत्रण बोर्ड
लखनऊ

CHECKLIST

1. Are colour coded Foot operated Bins available at point of BMW generation ?

- ☐ Yes
☐ No
☐ Partially done

2. Are colour plastic bags available?

- ☐ Yes
☐ No
☐ Partially done

3. Biohazard symbol is available on bins?

- ☐ Yes
☐ No
☐ Partially done

4. Are the work instructions displayed at the point of segregation?

- ☐ Yes
☐ No
☐ Partially done

5. Is puncture proof container available?

- ☐ Yes
☐ No
☐ Partially done

6. Is PPE (Personal Protective Equipment) available with biomedical waste handlers?

- ☐ Yes
☐ No
☐ Partially done

7. Are sodium hypochlorite solution available?

- ☐ Yes
☐ No
☐ Partially done

8. Is safe mode of transportation of bio medical waste available?

- ☐ Yes
☐ No
☐ Partially done

9. Is Temporary storage area available?

- ☐ Yes
☐ No
☐ Partially done

10. Is Biohazard Symbol present at the temporary storage area?

- ☐ Yes
☐ No
☐ Partially done

11. Is spill kit available in hospital?

- ☐ Yes
☐ No
☐ Partially done

12. Is ETP/STP available in the hospital?

- ☐ Yes
☐ No
☐ Partially done

13. Does the hospital have agreement with CBWTF?

- ☐ Yes
☐ No
☐ Partially done

14. Does hospital have authorisation from pollution department for handling BMW?

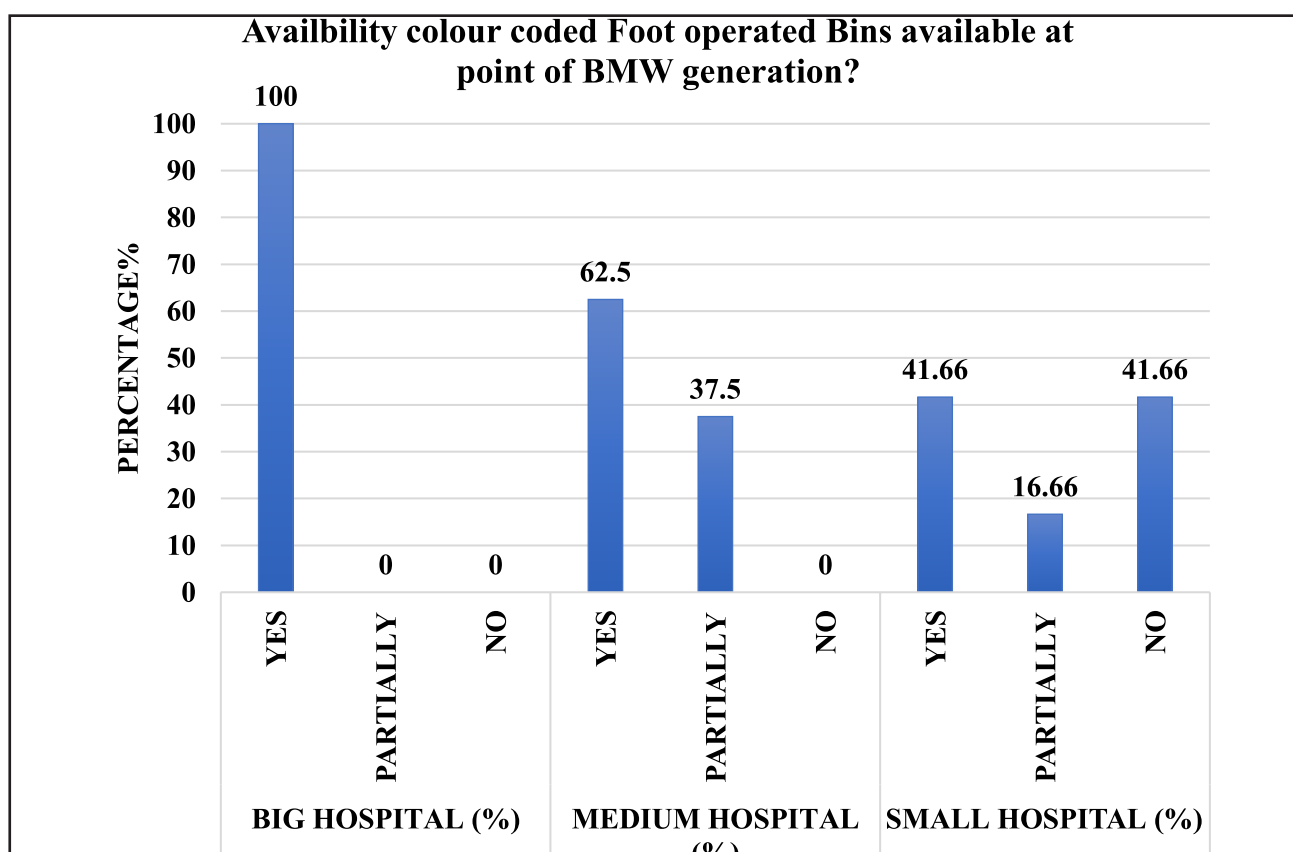
- ☐ Yes
☐ No
☐ Partially

RESULTS

**Structure/Resource availability and process assessment of health care facilities.
 (Table No. 12)**

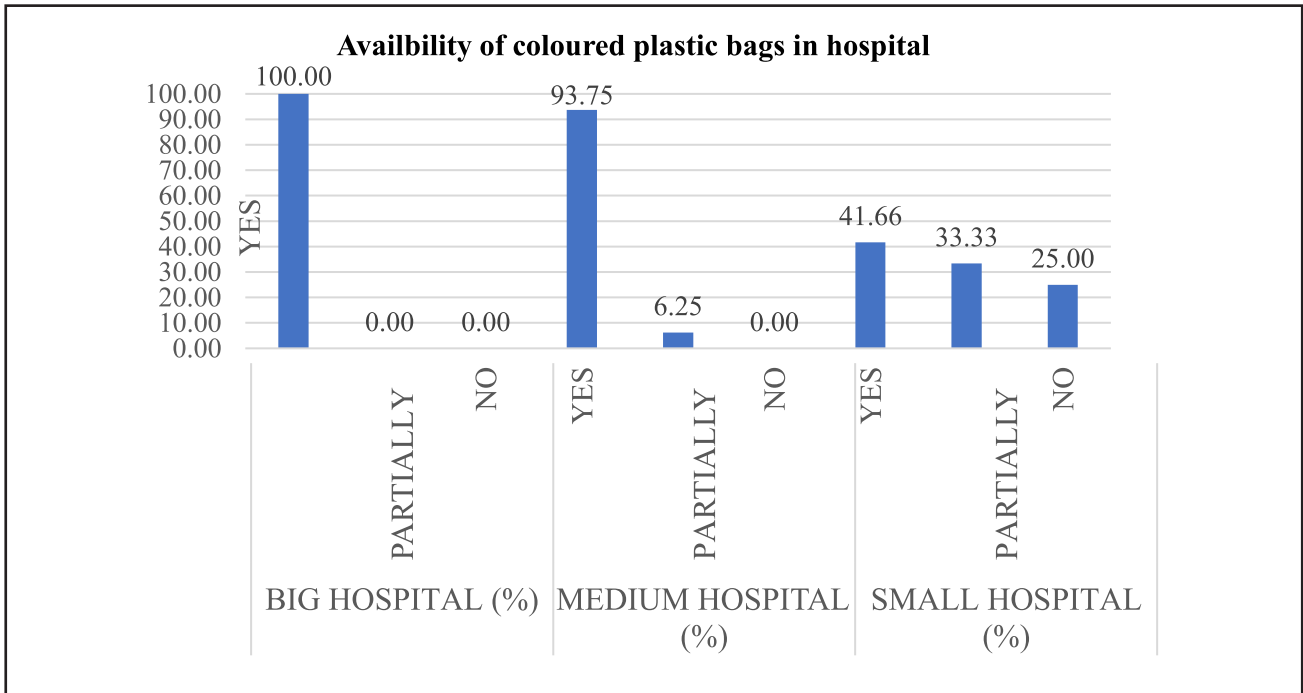
	BIG HOSPITAL (%)			MEDIUM HOSPITAL (%)			SMALL HOSPITAL (%)		
	YES	PARTIALLY	NO	YES	PARTIALLY	NO	YES	PARTIALLY	NO
Are colour coded Foot operated Bins available at point of BMW generation?	100	0	0	62.5	37.5	0	41.67	16.66	41.66
Are coloured plastic bags available?	100	0	0	93.75	6.25	0	41.67	33.33	25
Biohazard symbol is available on bins	87.5	12.5	0	93.75	6.25	0	41.67	0	58.33
Are the work instructions displayed at the point of segregation?	87.5	12.5	0	87.5	12.5	0	45.83	41.67	12.5
Is puncture proof container available?	100	0	0	100	0	0	33.33	8.33	58.33
Is PPE (PERSONNEL Protective Equipment) available with biomedical waste handlers?	100	0	0	93.75	6.25	0	45.83	0	54.16

Is sodium hypochlorite solution available?	100	0	0	100	0	0	83.33	16.66	0
Is safe mode of transportation of bio medical waste available?	100	0	0	87.5	12.5	0	4.16	62.5	33.33
Is Temporary storage area available?	100	0	0	100	0	0	33.33	12.5	54.16
Is Biohazard Symbol present at the temporary storage area?	100	0	0	100	0	0	33.33	12.5	54.16
Is spill kit available in hospital?	100	0	0	100	0	0	50	16.66	33.33
Is ETP/STP available in the hospital?	100	0	0	75	25	0	25	25	50
Does the hospital have agreement with CBWTF? .	100	0	0	93.75	6.25	0	100	0	0
Does hospital have authorisation from pollution department for handling BMW?	100	0	0	93.75	6.25	0	100	0	0



All the big hospitals have color coded bins more than required at the desired places, few of the medium level hospital following it partially as they have dustbins but not at the proper place of generation of waste same is the case

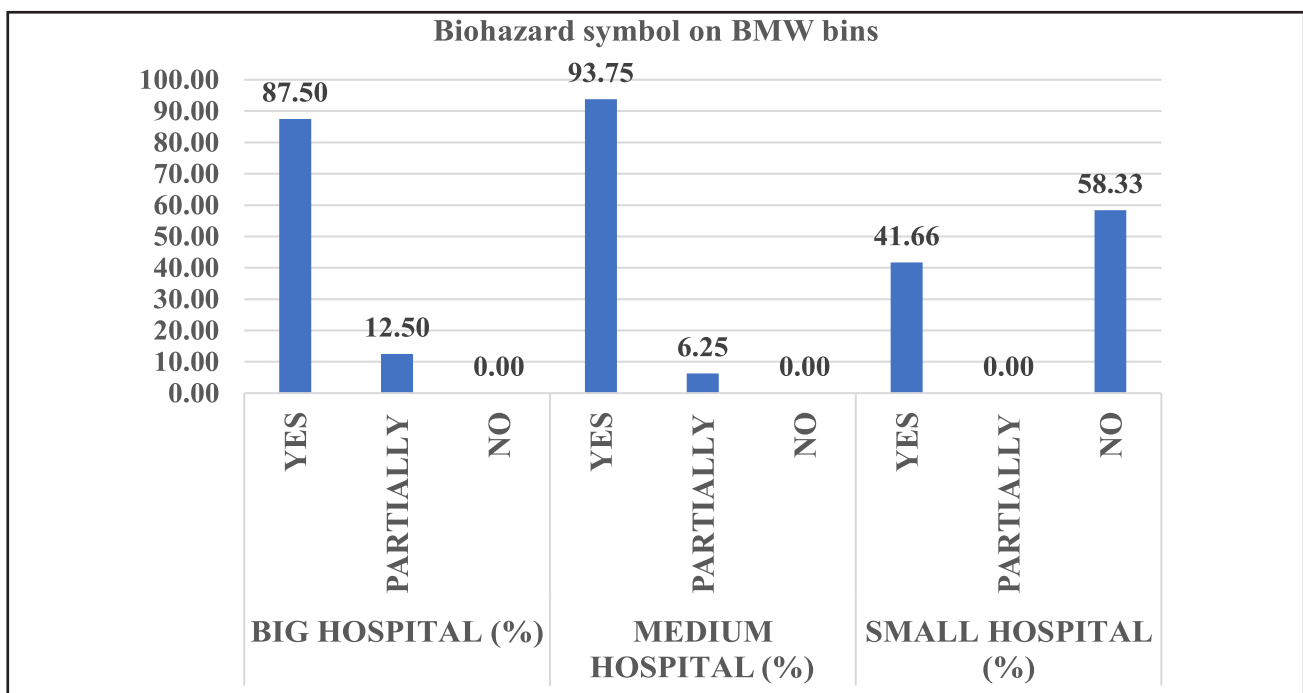
with few small hospitals while other small hospitals don't even have proper dustbin available at various site of bio medical waste generation rather they have kept few dustbins at the gate of the hospitals only and very few in the ward.



Plastic bags were found available in all bins of the hospital & placed as per the colour coding Since all the hospitals cannot be seen minutely so to ensure the availability, the stock available in the store was checked and found that all big and most of the medium hospitals have colored plastic bags except in few medium level hospital plastic bags were found missing Few small hospitals where polythins for bio

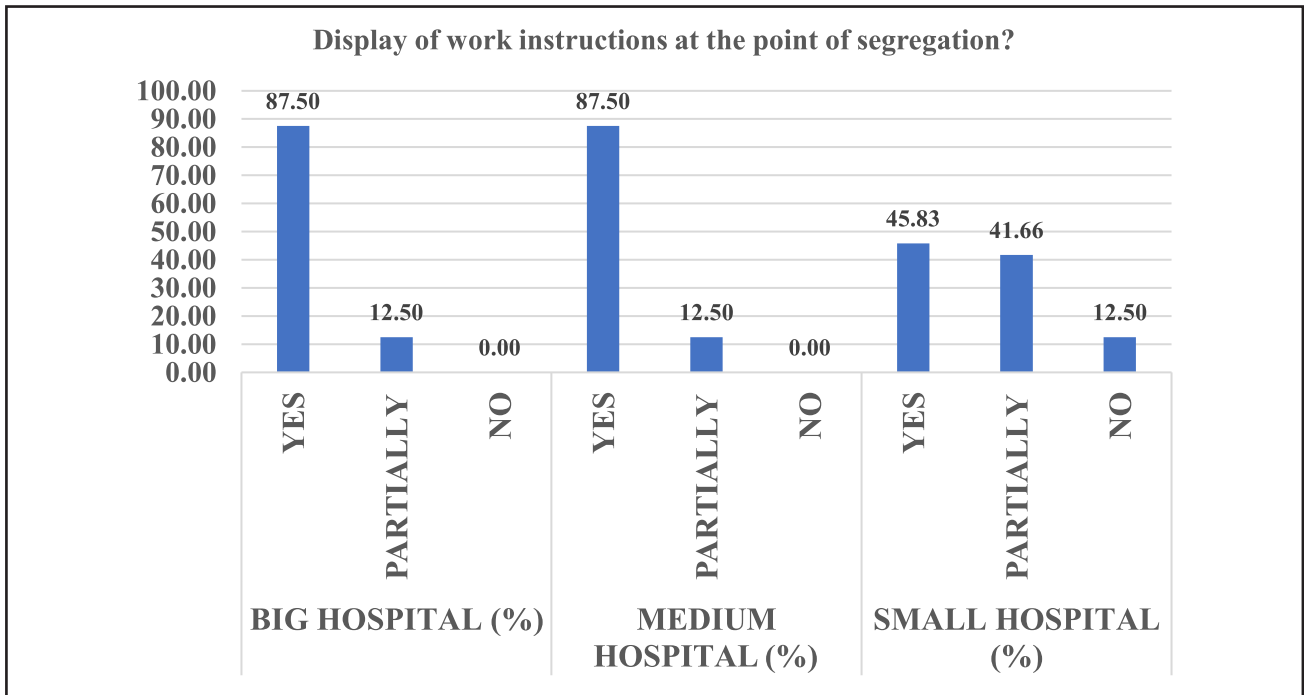
medical waste were not found it seems that these hospitals don't use plastic bags and doesn't follow the compliance for bio medical waste management.

Since plastic bags were looked for availability in the dustbin .irrespective of the less availability of the dustbin colored plastic bags if found in the dustbin are taken as fulfilled compliance.



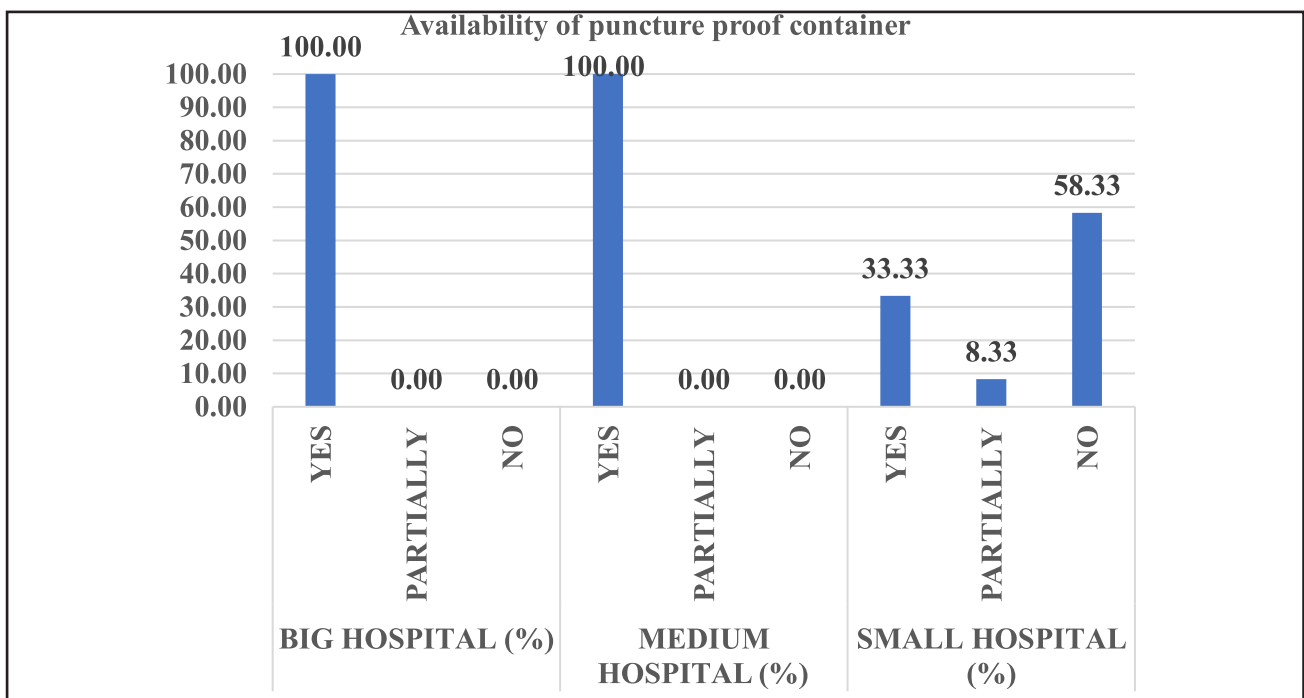
All the big hospitals have bio hazard symbol on bins except 1 big hospital where bin with yellow color have missing bio hazard symbol. The same pattern was their in the medium category hospital but the small hospital shows no

compliance as the dustbins were not having bio hazard symbol and even few dustbins although colored and foot operated seems to be like household dustbins and being used.



All big & medium hospital should have bio medical waste management work instructions displayed at the point of segregation near the dustbin area. Most of them have the

printed flex at the site the reason for small hospitals partial and no compliance is probably they lack vision and updation.

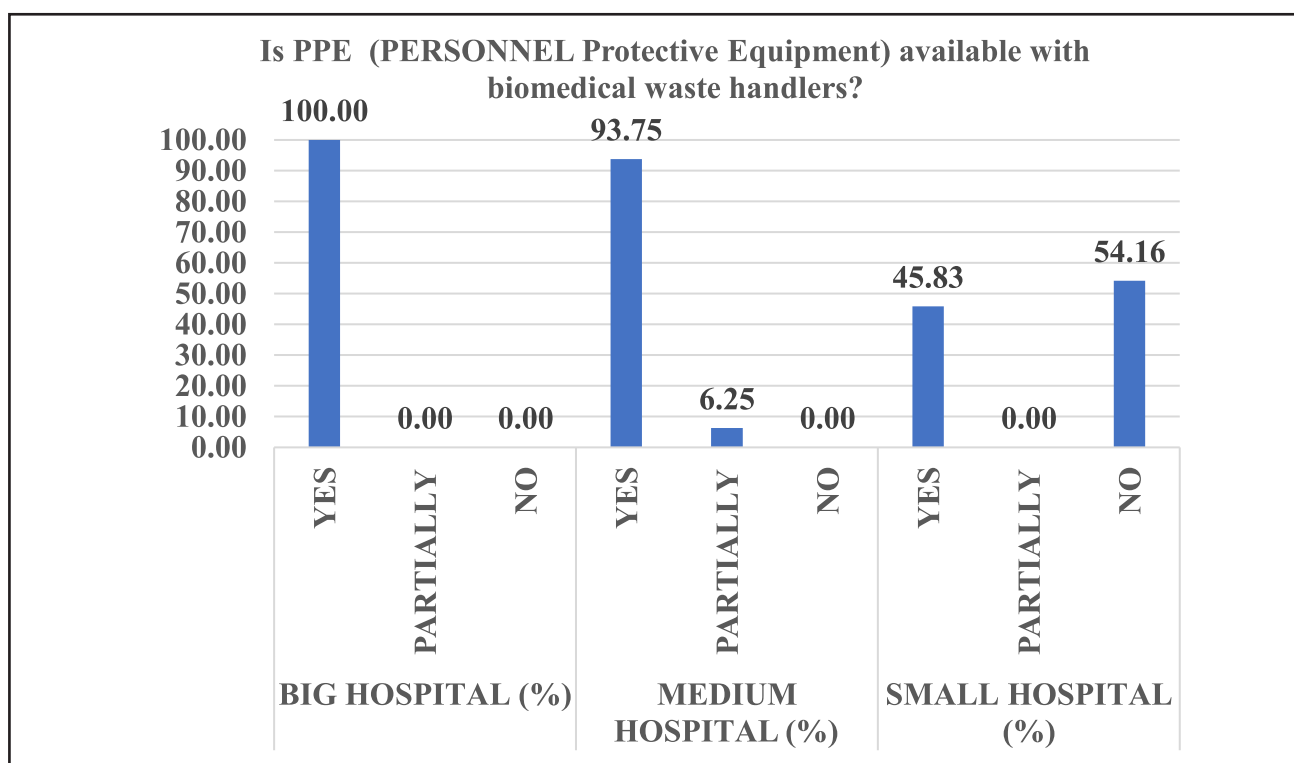


Few small hospital it was found that container was made up of card board which were taken as partial compliance but the places where the plastic bags were found wrapped around the dressing trolley were taken into no compliance.

Since puncture proof container is an important compliance in biomedical waste management.

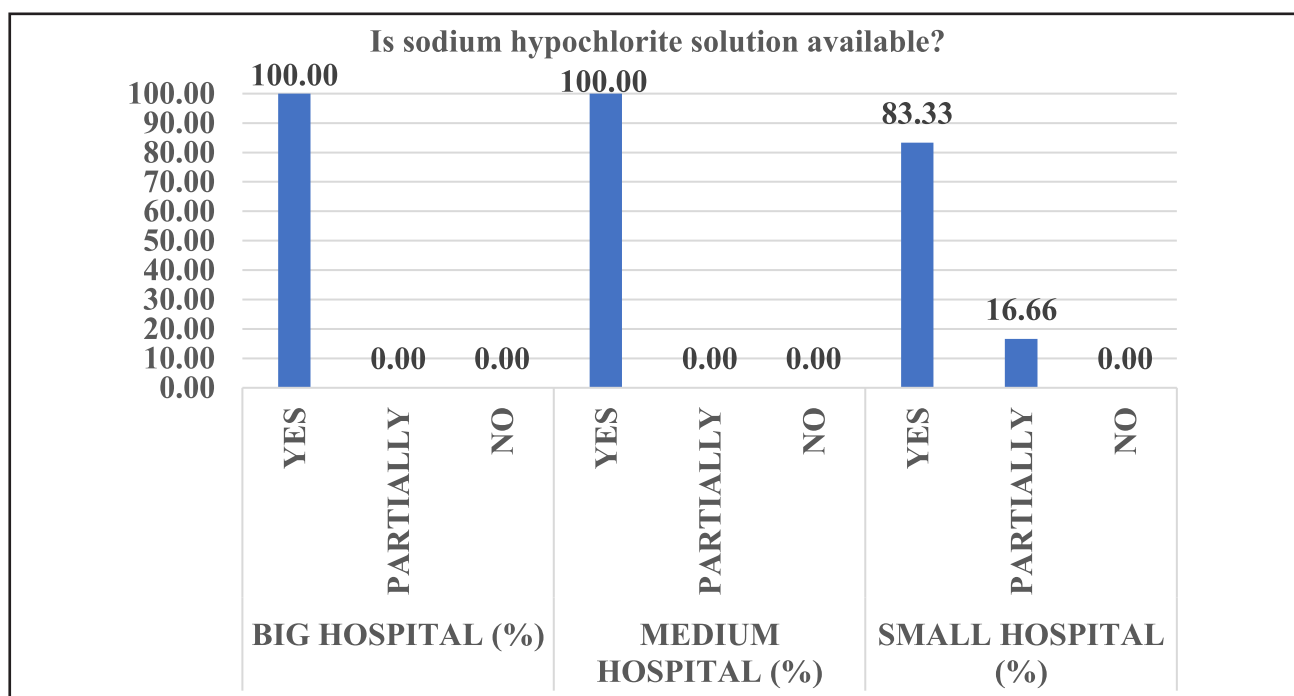
These containers are not supposed to be reused which was not checked but mere its availability was taken in to consideration. It was alarming to found such high percentage of no compliance in small hospital.

Since it can increase number of needle pricks incidences therefore such high noncompliance is a matter of concern.



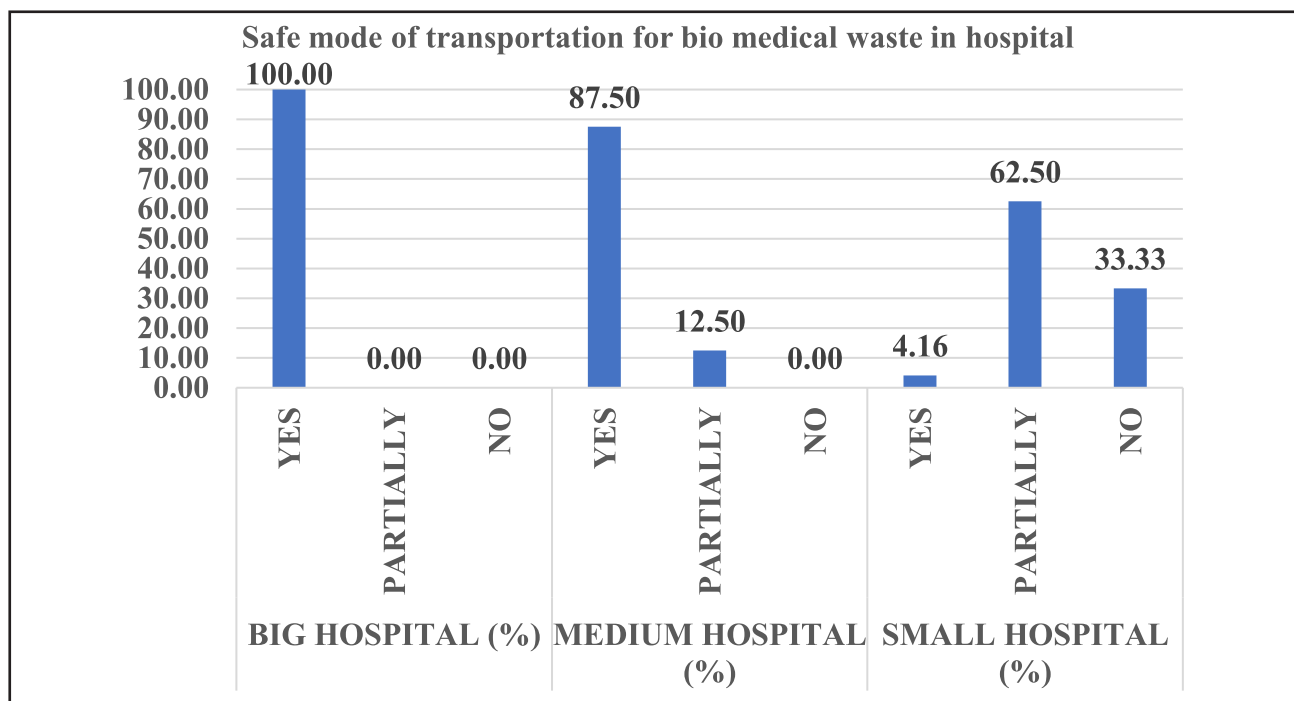
In big and medium hospital PPE was with the waste handlers however they are being used daily by them could not be ascertained but in many small hospital waste handlers have not used PPE since long neither they were available with them.

Since only the availability of PPE was checked and after ascertaining its availability compliance, partial compliance and no compliance were taken. It seems that small hospital are playing major role in non-compliance to the major point which deal with safety of employee & other.



Hypochlorite solution was an important disinfectant used during covid times therefore its availability was there in all category hospitals except few small hospitals where they

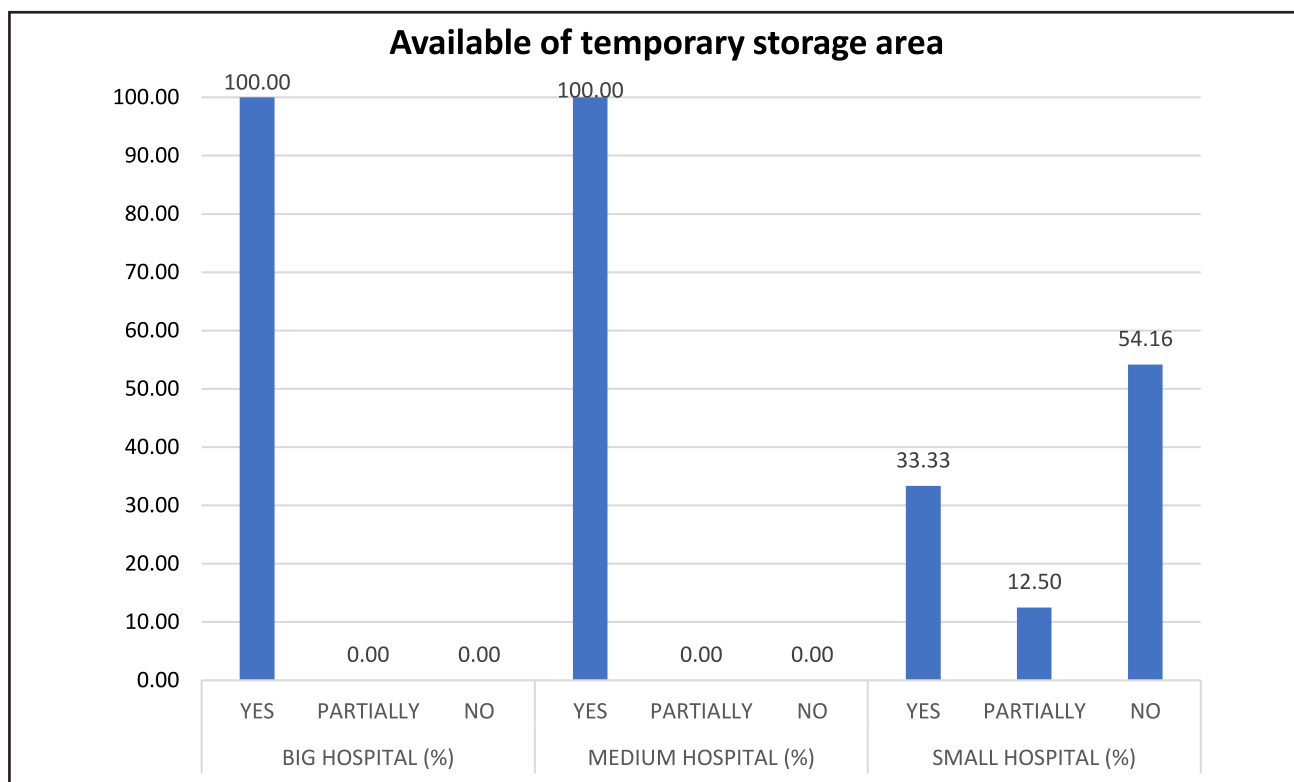
were present but the handlers don't have idea of its availability and not found at site so taken into partial compliance.



The safe mode of transportation were available in all big, medium and few small hospitals. BMW was transported with the help of closed cart and in 2 medium hospital by open cart but covered, few small hospital were found to be transporting it by carrying bags in hand through common

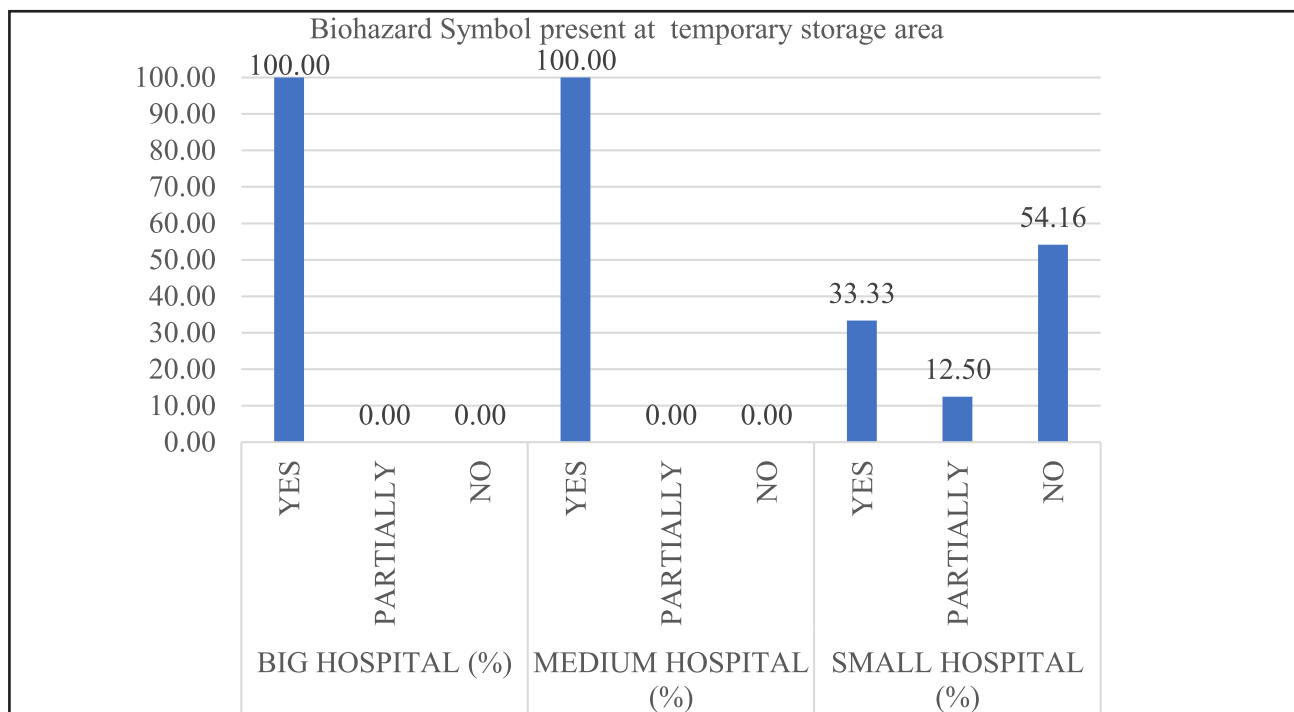
pathway.

Although safe mode of transportation was available with big, medium hospital but its availability is to be ensured in small hospitals.



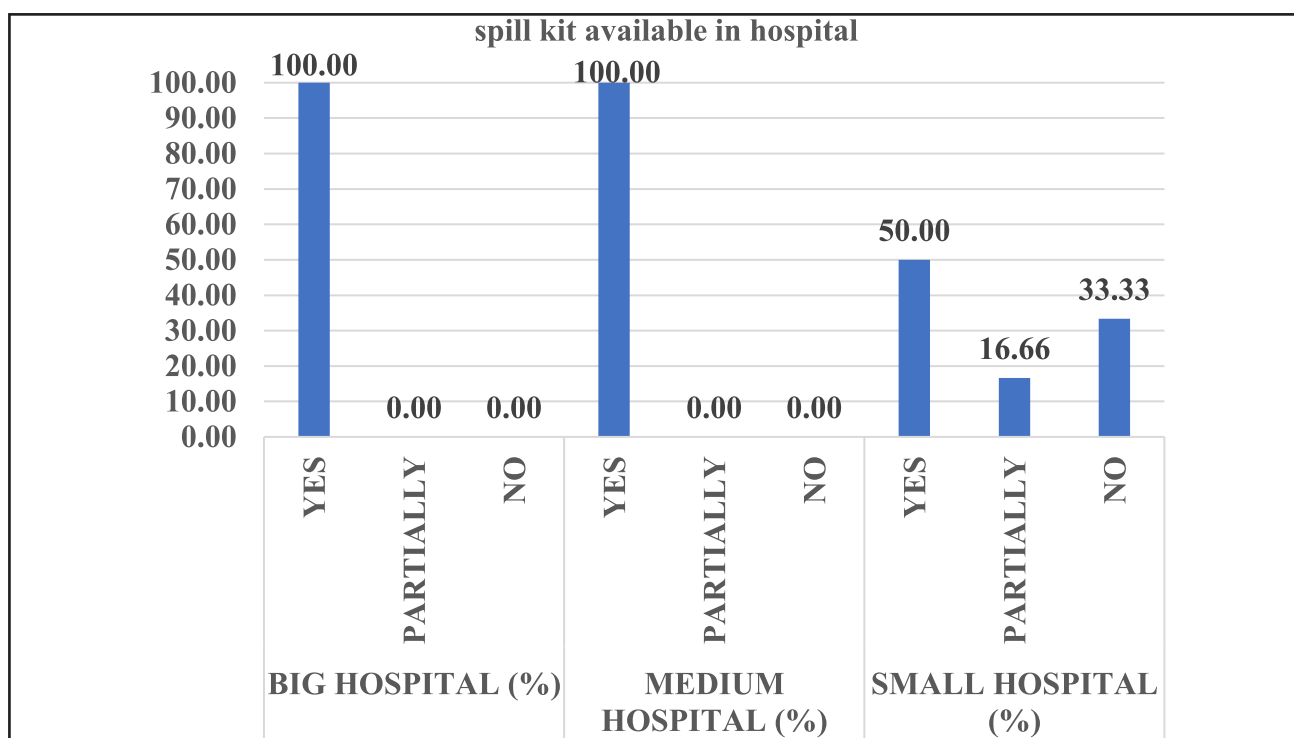
All the big and medium hospital to have temporary storage area is a mandatory requirement even though it is the requirement for small hospitals also but few small hospitals

have kept few colored dustbin at the hospital gate and made it temporary storage area but few doesn't even have that also.



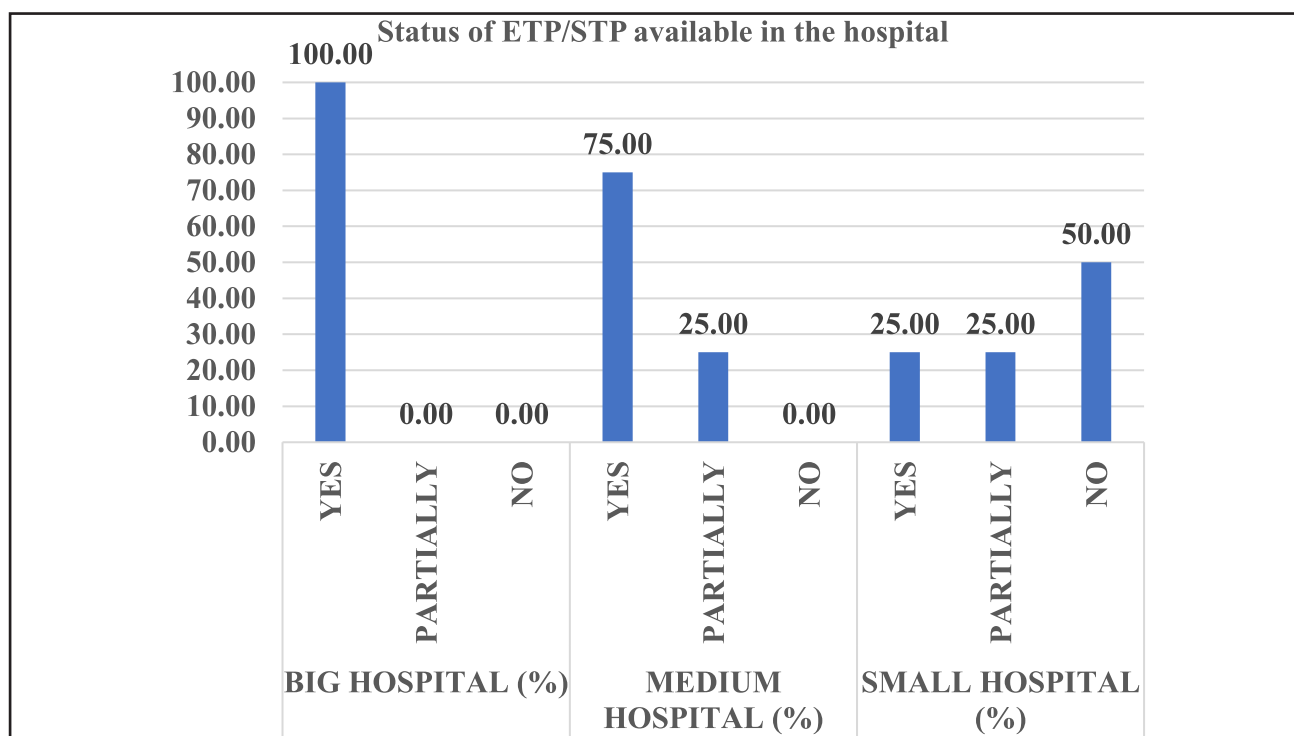
Since the availability of biohazard symbol of temporary storage area signify that it is hazardous area and nobody is

authorized to go nearby to the area without PPE and permission.



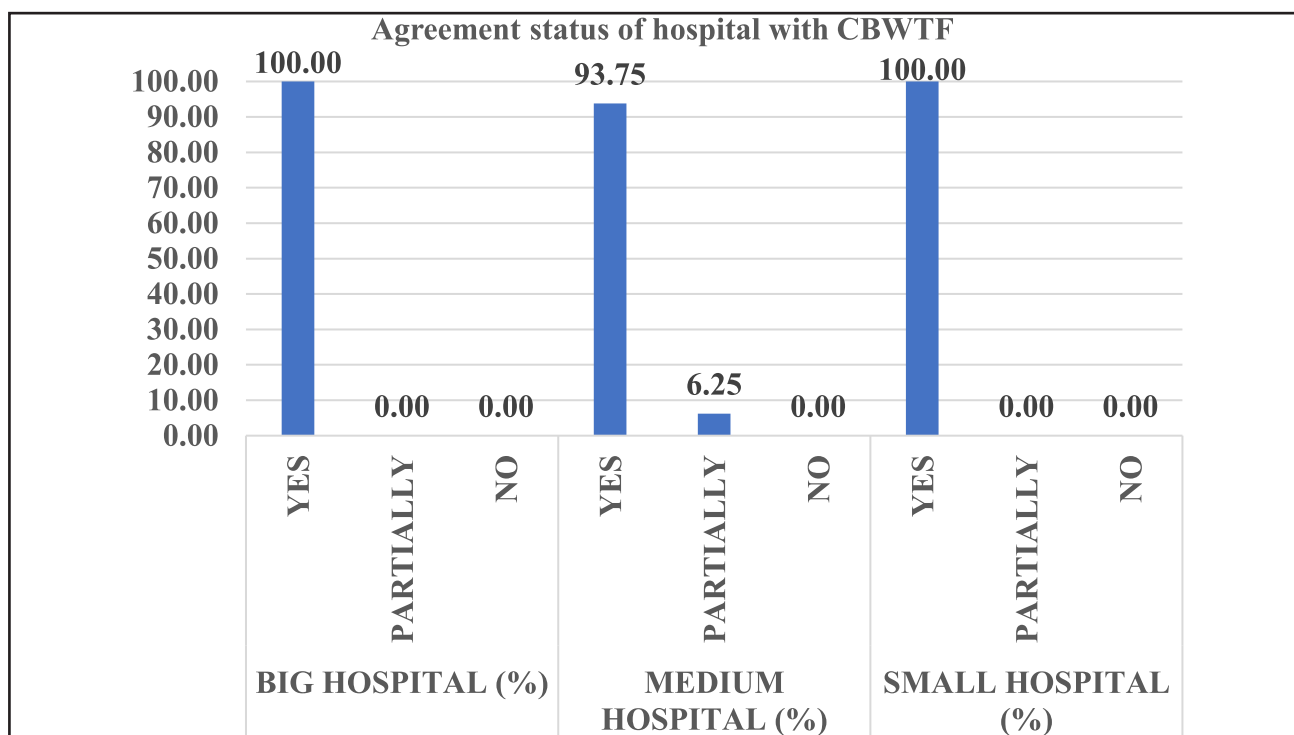
Spill kit is a major component in managing liquid waste. There are plastic bags, disinfectant, newspaper, cloth, eye glass, head cover, cotton, gloves, etc. and is used to wipe out

infection or hazardous chemical which spill on floor by wiping inward to outward circular motion.



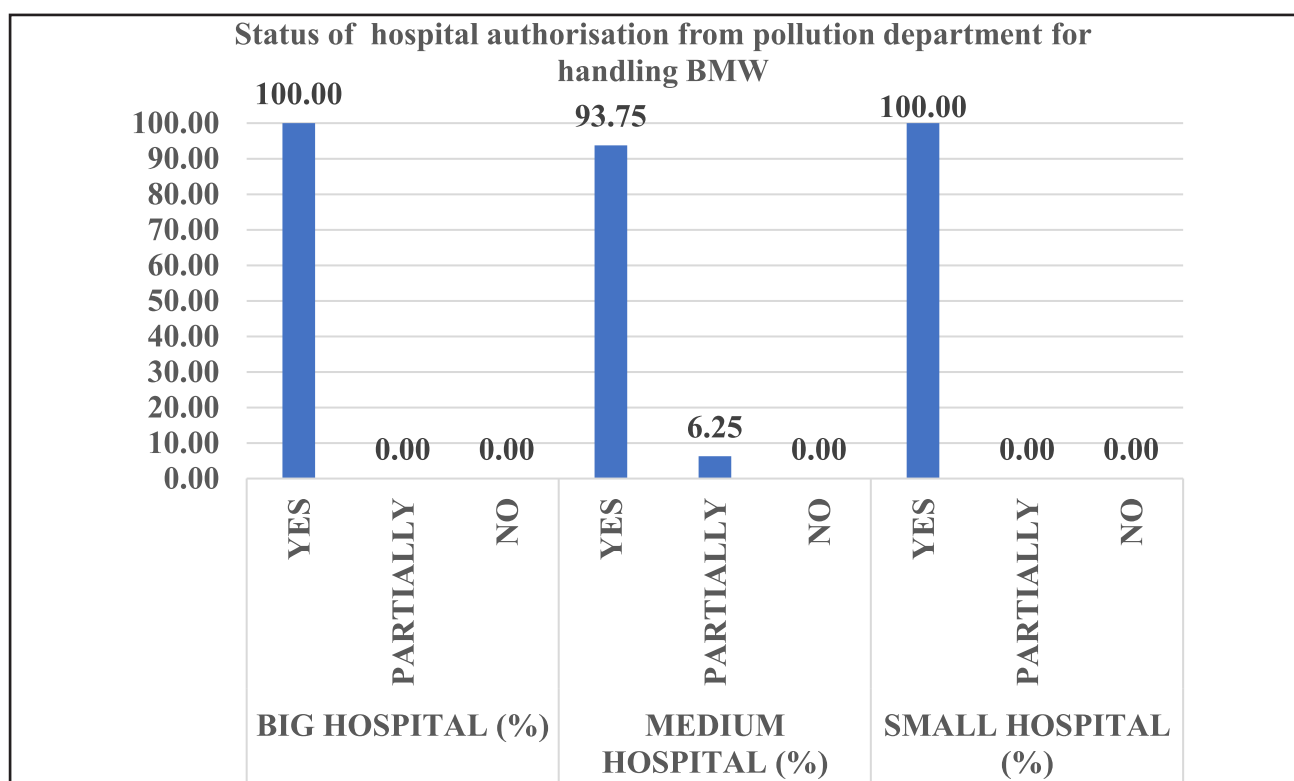
STP and ETP (sewage treatment, Effluent Treatment Plants) are important component of waste water management. The waste which comes out from the hospital is infectious & hazardous which needs to be pretreated before discharging

it into drains .therefore as per biomedical waste 2016 every hospital and laboratories should have ETP for treatment of effluent coming out to prevent infection.



Every health care setting (except who have a functional incinerator) Should have an agreement with CBWTF which can be for 1,2, or 4 year .This agreement hold

important as it needs to be submitted at CMO office for registering or renewal of facility & also it is uploaded whenever a pollution consent needs to be attained .



The HCF which have less than 200 Beds authorization to be attained from regional office and 200 Beds or more than 200 beds authorization need to be obtained from state pollution central board office lucknow on the board of report

submitted by regional office . Authorization can be taken for 1,2 or 5 years which have all the condition mentioned in it. Which needs to be compiled by health care facility

CONCLUSION AND RECOMMENDATION

Infrastructure and Resource availability like bins, plastic bags, bio hazard, display of work instruction, puncture proof container, PPE , sodium hypochlorite availability was found in most of the facilities .Availability of structure and resources should be ensured periodically in all hospitals and there should be assessment of regulatory authorities periodically regarding their usage apart from availability usage is prime important

Availability of temporary storage area, STP -ETP, agreement with CBWTF, and pollution authorization, at par

complied by big hospital, medium hospital also complied in a better manner but small hospitals required much attention in infrastructure arrangements and consumables availability

The monitoring mechanism should be more strict and regular for all category Heavy fine from warning to monetary and even closure of facility should be imposed on the health facilities depending upon level of offence for not complying to the requirement as per bio medical waste management rule

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ABBREVIATIONS

- ◆ *BMW - BioMedical Waste*
- ◆ *BMWM - Bio Medical Waste Management.*
- ◆ *HCW - Health Care Waste.*
- ◆ *HCF- Health Care facility*
- ◆ *HIV - HumanImmunodeficiencyVirus.*
- ◆ *AIDS - Acquired Immunodeficiency Syndrome.*
- ◆ *EPA - Environment Protection Act.*
- ◆ *WHO - WorldHealthOrganization.*
- ◆ *CBWTF - CommonBiomedicalWastetreatmentfacility.*
- ◆ *CPCB - Central Pollution Control Board.*
- ◆ *SES - SocioEconomicStatus.*
- ◆ *NGT - National Green Tribunal*

THE EFFECTIVENESS OF E-LEARNING IN THE WORKING OF THE CORPORATE SECTOR

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Abstract

Purpose: This research paper focuses on the effectiveness of e-learning in the corporate sector and aims to analyze its relevance and critical issues. The study encompasses internet-based learning (IBT), web-based learning (WBT), and computer-based learning (CBT), which provide employees with the flexibility to acquire new skills and knowledge. E-learning has emerged as a highly effective method of enhancing critical skills within organizations and supporting their overall growth.

Methodology: The study adopts a systematic literature review approach, examining a comprehensive range of papers published on corporate e-learning. The prominence of the research is assessed through conference papers, articles, conference reviews, and editorial sources.

Findings: In the digital era, e-learning offers employees a flexible learning environment that seamlessly integrating with their work routines. This research paper aims to draw the attention of HR professionals and academicians towards the significant impact of e-learning in corporate settings.

Research Implication: As one of the few extensive review papers on corporate e-learning, this study provides an overview of the latest research in the field. The findings contribute to existing knowledge and will be valuable for further research in this area.

Keywords: *e-learning, Internet-based learning, Web-based learning, Computer-based learning, training, Corporate sector.*

1. INTRODUCTION:

In the rapidly evolving landscape of the corporate sector, technological advancements have significantly transformed various aspects of business operations. One such transformational force is the widespread adoption of e-learning, which has emerged as a powerful tool for training and development in the corporate world. E-learning encompasses a broad range of digital learning methods and platforms that leverage technology to deliver educational content to employees, allowing them to enhance their skills, knowledge, and competencies conveniently and efficiently.

The rise of e-learning can be attributed to several factors, including the globalization of businesses, the need for continuous upskilling and reskilling in the face of ever-changing industry demands, and the flexibility it offers to learners. Traditionally, corporate training has relied on conventional classroom-style methods, which often proved to be time-consuming, costly, and less adaptive to the individual learning pace. However, with the advent of e-learning, organisations have discovered new possibilities to streamline their training processes, cater to diverse learning styles, and measure the effectiveness of their training initiatives more comprehensively.

The objective of this research paper is to investigate and evaluate the effectiveness of e-learning in the working of the corporate sector. We aim to explore the impact of e-learning on employee performance, knowledge retention, and

overall organizational productivity. By examining the experiences of various companies that have integrated e-learning into their training programs, we seek to provide valuable insights into the benefits and potential challenges of e-learning implementation.

Research Objectives-

1. To assess the impact of e-learning on employee learning outcomes, including skill development and knowledge retention.
2. Study the significance of e-learning in working in the corporate sector.
3. To present practical recommendations for organizations seeking to optimize their training and development programs through e-learning integration.

2. RESEARCH METHODOLOGY:

For this research paper on "The Effectiveness of E-Learning in the Working of the Corporate Sector," a secondary data analysis approach will be utilized. Secondary data analysis involves the collection and examination of pre-existing data from various academic sources, industry reports case studies, and other relevant publications. This methodology allows us to draw upon a wide range of existing information to gain insights into the impact of e-learning in the corporate setting.

Data Collection-

The data collection process will primarily involve accessing

and reviewing scholarly articles, research papers, conference proceedings, and reports related to e-learning in the corporate sector. Electronic databases, such as Google Scholar and Scopus to gather the required literature.

Inclusion Criteria-

To ensure the relevance and reliability of the selected studies, the following inclusion criteria will be applied during the data collection process:

1. Studies published in peer-reviewed academic journals, conference proceedings, and reputable industry reports.
2. Studies conducted within the last ten years to capture the most recent developments in e-learning practices.
3. Studies specifically focused on e-learning implementation in the corporate sector or related professional training contexts.
4. Studies that provide quantitative, qualitative, or mixed-methods research approaches to assess the effectiveness of e-learning in the corporate sector.

Data Analysis-

The acquired secondary information will be scrutinized to determine any prevailing patterns and themes pertaining to the utility of e-learning within the corporate sphere. This study's focus is to investigate the impact of online learning on staff productivity, knowledge retention and performance. To achieve this goal, it would employ strategic analysis.

Thematic Analysis-

The literature will be investigated for recurring patterns using thematic analysis. This method entails arranging data into themes or groups, facilitating in comprehending results and establishing ties between distinct study conclusions. Electronic education can be beneficial in some situations while harmful in others. Possible subjects might include learner engagement, skills acquisition, managerial advantages, etc.

Limitations-

While secondary data analysis offers several advantages, it is also subject to certain limitations, including:

1. No governing body managed the data gathering methods applied during the original research studies.
2. The inconsistency in the range of literature.
3. The likelihood of bias in selecting research sources since not all might be as accessible or representative.

Ethical Considerations-

Since this study depends solely on publicly accessible resources, no ethical concerns pertaining to human participants or privacy apply.

Significance of Secondary Data Analysis-

Corporate e-learning may be further illuminated via secondary data analysis. Synthesising outcomes from numerous research enables us to totally comprehend the content, locate consensus, and pinpoint contradictions between these studies. This study's result can help provide valuable suggestions for business companies.

3. SIGNIFICANCE OF THE STUDY:

Practical implications of e-learning in the corporate realm are at the center of this research paper. The findings will not only provide theoretical foundations but also practical insights for corporate leaders, HR managers, and training managers on integrating e-learning into their organizations. Unraveling the efficacy of e-learning helps organizations devise apt training approaches that augment employee aptitudes and enhance competitiveness.

4. LITERATURE REVIEW:

4.1 E-learning-

Altaf M.,(2009) The analysis and results have declared that employee's performance has a positive association with the effectiveness of e-learning. Therefore, effective e-learning can improve the performance of employees. Tirziu A.M., Vrabie C.,(2015) Study shows that compared to the traditional classroom, the teaching and learning of an e-learning act differently. It brings new challenges to professors and learners participating in this online learning environment. Kamal K.B., Al Aghbari M., Attia M.,(2016) The research finding shows the impact of e-training on employees' performance. The research concludes a positive and significant relationship between e-training and employees' performance. The results also indicate statistical differences in demographic variables (qualification and job experience). FATMA S.F.,(2013) The study concentrates on the education scenario, eLearning content preparation, presentation tools, medium of eLearning to spread education to the remote areas, significance and challenges of eLearning, and the future of eLearning.

4.2 Internet-based Learning-

Cook DA., Levinson AJ., Garside S., (2010) Study suggest the potential for improving efficiency in Internet-based instruction. Limayema M., Cheung C.M.K., (2011) The result showed that habit had a significant moderating effect

on the relationship between desire and continued use of the Internet-based learning technologies. These results have several implications for theory and practice. Lee SWY., Tsai CC., (2011) This study aims to investigate students' perceptions of three aspects of learning – collaboration, self-regulated learning (SRL), and information seeking (IS) in both Internet-based and traditional face-to-face learning contexts. For Internet-based learning, significant differences in collaboration and SRL were found derived from time spent on the Internet related to learning; and students' perceptions of collaboration, SRL, and IS were all positively correlated to students' online course-taking experience.

4.3 Web-based learning-

McKimm J., Jollie C., Cantillon P.,(2003) Web-based learning offers enormous opportunities to learn and access a massive amount of information and knowledge. The effectiveness of web-based learning is supported. The responsibility of teachers is to ensure that the learning environment learners need and ensure that they are effectively prepared and supported. Wasim J., Sharma SK., Khan IA., Siddiqui J.,(2014) The study's findings have concluded that the usefulness and effectiveness of the tool are contextual, depending on many different factors, including the design of the tool itself. Cook DA., Dupras DM., (2004) Teaching on the Web involves more than putting together a colorful webpage. By consistently employing principles of effective learning, educators will unlock the full potential of Web-based medical education. Sabry K., Baldwin L., (2003) The study has shown that learners have different perceptions of different types of web-based interactions. The study also shows that despite the relatively low scores in the frequency of use of the three interactions, learners' perception of their usefulness and importance remains high, which suggests that there could be other influences that need investigation in order to close such gap between "actual use" and "Perception." The results also show that most learners have a higher preference towards sequential (rather than global) learning styles, and a significant percentage of them had a moderate-strong tendency to one of the learning styles.

4.4 Computer based learning-

Moos D C., Azevedo R., Results indicate that behavioral and psychological factors are positively related to computer self-efficacy. Students who receive behavioral modeling report significantly higher computer self-efficacy than students who receive the more traditional instruction-based method when learning with CBLEs. Computer self-efficacy is related to learning outcomes and learning processes with

CBLEs. This review also offers theoretical and methodological issues for future research in computer self-efficacy. Winters F I., Greene J A., Costich C M., (2008) Study shows that self-regulated learning (SRL) processes are frequently associated with academic success than others and that SRL skills can be supported. The study also identified a few issues that researchers should aim to address in future investigations, including a more comprehensive measurement of facets of self-regulated learning and the quality of SRL processes, the seeming disconnect between SRL processes and learning outcomes, and the distinction between self-and other regulation. Kuznia K D., (2014) The results concluded that eLearning usage by employees had varying correlations with job productivity, job performance, job satisfaction, and organizational commitment. It was determined that technology alone would not get desired results; corporations need to balance eLearning strategies and managerial support.

4.5 Corporate e-learning-

Faherty R., (2003) The study shows that E-learning can provide a successful, cost-effective, accessible solution to rapidly changing corporate training needs. In order to ensure success, it is necessary to accurately assess training requirements and determine if the corporate infrastructure and culture are apposite to an E-learning initiative. Rodriguez BCP., Armellini A.,(2013) As per findings: Learners most value their interaction with the content. Online learning is considered an effective method for conducting corporate training. There is no significant relationship between online interactions and training effectiveness. The study suggests that For further research into online learning in corporate settings, understanding training interactions and changes in job performance is needed. Beinicke A., Bipp T., (2018) Study concluded that it is not the conduction of training or delivery knowledge that leads to higher levels of training success in the long run but in order to be effective, training should be designed taking especially the type of learning content (declarative or procedural knowledge) into account. Joo YJ., Lim KY., Kim SM., (2012) The study suggests that e-learning self-efficacy, intrinsic value and perceived usefulness, and ease of use affected learning flow, while intrinsic value perceived usefulness and ease of use were significant predictors of achievement. The results revealed that effectiveness and accessibility were the most influential factors for learning flow and achievement. Kumar P., GullaU.,(2011). This study shows that e-learning in the corporate sector helps to boost employee training efforts.

Strother JB.,(2002) For corporate education, online training is cost-effective, flexible, and practical. Early studies demonstrate that e-learning in business is beneficial for all—the learner, the corporation, and the customers served by the corporation.

5. CURRENT TRENDS IN E-LEARNING:

E-learning keeps evolving and will always stay atop current technologies. This section is about various current trends in online learning and how they influence corporations.

1. Microlearning-

Information is communicated by means of brief microlearning lessons. You have the ability to access the educational course on various devices. Study findings have indicated that microlearning can help to improve knowledge retention and engagement (Sudin, 2020). These bite-size lessons address the busy work schedule of many by providing quick bursts of learning.

2. Mobile Learning (m-Learning)-

By owning smartphones and tablets, users can easily reach their training materials whenever they like. More organizations are incorporating programs that enable mobile learning by having learning material accessible via handheld devices for their workforce. Research indicated that m-learning was effective at boosting productivity and increasing knowledge.

3. Gamification-

Gamification involves using game-based principles within an educational setting. Competition and achievement are stimulated by gamifying e-learning experiences, which increases knowledge retention and participation. (Hamari et al., 2014.)

4. Artificial Intelligence (AI) in Personalization-

Artificial Intelligence aids customizing online educational content according to individual students' preferences. Artificial intelligence systems examine pupil statistics such as grades, completion rates, and time spent studying to find tailored education routines. Customization to this degree results in an efficient and effective education (Davenport, 2019).

5. Virtual and Augmented Reality (VR/AR)-

VR and AR are seeing growing traction in e-learning, providing immersive and engaging learning experiences. These technologies enable learners to recreate real-life scenarios, enriching training in fields like manufacturing, healthcare, and emergency response (De Oliveira et al., 2021).

6. Social Learning and Collaborative Tools-

Facilitating peer-to-peer discussions and exchanging knowledge within disciplines is promoted by social learning tools. Increasingly, corporate e-learning platforms incorporate social learning features to promote collaboration and forge a sense of community among learners (Yang & Liu, 2019).

7. Data Analytics for Learning Insights-

Insights into learners' performance and preferences are unearthed by using data analytics. Analyzing learning analytics helps businesses detect knowledge holes, review training effectiveness, and make smart decisions to maximize learning outcomes (Lakhal et al., 2017).

6. FINDINGS AND DISCUSSION:

Findings-

- E-learning provides flexibility in terms of time and place, allowing employees to access training whenever and wherever it's needed.
- The efficiency of e-learning for organizations with constrained training budgets is highlighted in this text.
- E-learning platforms cater to various learning styles, creating an inclusive and engaging learning atmosphere across diverse areas.
- Implemented e-learning strategies can augment retention and development of knowledge among users.
- A variety of companies enhancing e-learning for their employee trainings are finding better employee performances and productivity.

Discussion-

- E-learning holds numerous advantages in the corporate world. Thanks to e-learning, employees can easily blend work and learning requirements, ultimately increasing attendance in training programs.
- Effectiveness in costs is especially vital in today's competitive business environment. E-learning reduces costs associated with traditional classroom-based training, like travel and instructor fees, making it an economically viable option.
- Adapting e-learning content to diverse learning styles boosts learner involvement and contentment. Employees are able to self-pace their learning, revisit resources as required, and access materials that match their individual preferences.
- Initiatives that have incorporated e-learning in their employee development have observed remarkable growth in worker achievement. By better-skilled

employees are more likely to showcase enhanced skill and efficiency in their roles, positively impacting overall organizational productiveness.

- Although some favorable outcomes exist, challenges still continue. Reduced learner isolation and improved social interaction can be facilitated by means of collaborative online activities and forums among employees.
- The quality and availability of e-learning content and technological resources largely determine its effectiveness. E-learning can reach its full potential only with engaging and relevant content.
- Future research may explore the comparison of e-learning efficacy with traditional methods, identifying which approach best suits specific learning objectives and employee backgrounds.
- Integrating AI and adaptive learning algorithms in e-learning platforms could enhance personalized learning experiences, tailoring to individual learner needs and preferences.
- Moreover, the outcomes of this review demonstrate e-learning's efficacy as a tool for corporate training and development. The implementation of e-learning can equip organizations to establish and maintain a highly-skilled and dedicated workforce in the business world.

7. CONCLUSION AND RECOMMENDATIONS:

Conclusion-

Conclusively, this systematic literature review has revealed beneficial results on the use of e-learning in the corporate realm. The results illustrate that online learning provides notable benefits such as adaptability, budgetary savings, scalability, and catering to multiple learning styles. Well-structured and effectively executed e-learning programs have been demonstrated to improve employee understanding and skill proficiency, consequently contributing to elevated staff productivity and greater organization effectiveness.

The study underscores some obstacles that firms must tackle to maximize the advantages of e-learning. Through the implementation of collaborative activities and communication channels, learner isolation and minimized social interactions can be countered. Furthermore, offering comprehensive technical assistance and training is vital to guarantee a smooth and pleasurable digital learning experience for all staff, regardless of their digital competence.

Recommendations-

Based on the findings of this research, the following recommendations are put forth to enhance the effectiveness of e-learning in the corporate sector:

1. **Invest in High-Quality Content:** E-learning organizations should prioritize developing engaging and interactive materials. Integrating multimedia elements, games, and real-world scenarios can enhance learning and engagement.
2. **Address Technological Infrastructure:** To guarantee a pleasant e-learning experience, companies must use reliable and user-friendly learning management systems. Routine upkeep and frequent updates should be performed to avoid technical problems and downtime.
3. **Promote Social Interaction:** Formulating collaborative learning exercises, discussion boards, and group assignments can foster social interaction between pupils, cultivating knowledge and teamwork.
4. **Offer Incentives and Recognition:** The completion of e-learning courses or achievement of specific learning objectives can be motivation-booster for employees.
5. **Provide Continuous Support and Training:** E-learning employees should be provided adequate technical assistance to handle potential challenges. Assisting customers through easily accessible customer service, FAQs, and training workshops is achievable.
6. **Conduct Periodic Assessments:** Assess e-learning programs periodically to gauge their efficacy and acquire valuable insights from students.
7. **Integrate AI and Adaptive Learning:** Grasp the incorporation of artificial intelligence and adaptive learning technologies to customize learning, providing tailored content suiting individual learner preferences and needs.
8. **Benchmark with Traditional Training:** Conduct comparative studies to evaluate e-learning's efficiency in relation to traditional training methods for varying learning objectives and employee demographics.

By applying these tips, organizations can enhance e-learning efficiency and produce a highly skilled workforce. The ongoing advancements of technology will keep e-learning as a fundamental strategy for organizations to stay thriving in the fast-changing corporate world. The implementation of e-learning and continuous refinement is vital to the accomplishment of the business world.

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EXAMINING THE PSYCHOLOGICAL EFFECTS OF COVID-19: AN IN-DEPTH STUDY ON PREVALENCE, RISK FACTORS, AND POTENTIAL INTERVENTIONS

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Abstract

The pandemic COVID-19 has had a detrimental impact on the physical and social well being of people worldwide. Continued exposure to the virus depletes the adaptation of energies and makes an individual succumb to the stressor. Loss of control over the environment leads to high-risk cardiac disorders and emotional disorders like depression, anxiety, and trauma. This research paper provides an extensive analysis of the psychological effects of COVID-19, including prevalence rates, risk factors, and potential interventions. By drawing from various studies, this paper explores the influence of the pandemic on mental health, such as social distancing, financial stress, and the experience of illness and loss. A cognitive strategy to alleviate the negative psychological impacts of the pandemic, such as psychotherapy, pharmacological treatments, and online mental health resources, is discussed in detail. In addition, a study is conducted to assess the impact of online learning on students' mental and physical health in light of the COVID-19 pandemic.

Keywords: *Stress, Social isolation, Depression, Self-esteem, Psychological*

I. INTRODUCTION

The term "mental health" refers to the condition of our mental well-being, which enables us to manage life's stresses, learn and function well, and give back to our community. Our sustainable development depends critically on the state of our mental health. As we have seen, all platforms, including education, have been moved to an online manner by COVID-19 and after the pandemic, the habit of learning online is still going on. As we've observed, kids prefer and receive higher quality education online. The fact that online education isolates students at home means they lack a sense of community and loneliness, both of which contribute to depression and self-doubt. Nobody's confidence or talents can be improved solely by their online persona; these traits can only be developed when you interact with your peers and learn what they think about the world and how they tackle problems in different ways. Online education has an impact on student's physical health as well. The practice of learning, playing, and engaging with others online completely isolates today's generation, which has a direct impact on mental health. Both the mental and physical health of students have been significantly impacted by the COVID-19 pandemic. Here are some key ways in which the pandemic has affected students' health, both before and after the pandemic.

Before COVID-19: According to a 2019 report by the American Psychological Association, anxiety and depression were among the top concerns among college students in the world. The report found that 41% of college students reported anxiety, and 36% reported depression. In

terms of physical health, college students often struggle with maintaining healthy habits due to the demands of academic work and a busy lifestyle. Lack of sleep, poor

nutrition, and insufficient physical activity are a few common problems.

After COVID -19: The pandemic has resulted in higher levels of stress, anxiety, and depression among students due to factors such as social isolation, disruption of daily routines, and uncertainty about the future. The shift to online learning has led to increased screen time and a more sedentary lifestyle, which can have negative impacts on physical health. The pandemic has also led to increased financial stress and food insecurity among students, which can impact both mental and physical health. Overall, the pandemic has brought about significant challenges for students' mental and physical health. Post Pandemic online learning can have some negative effects on students' physical health. Extended screen time can cause eye strain, headaches, and other vision issues. These issues can make it difficult for students to focus and learn effectively.

Poor posture: Sitting in front of a computer for long periods can also lead to poor posture, neck pain, and back pain. This can be particularly problematic for younger students who are still developing proper posture habits.

Sleep disturbances: With online learning, students may have more flexibility in their schedules, but this can also lead to poor sleep habits. Late-night studying and irregular sleep schedules can impact a student's physical health and academic performance.

To protect our generation from these post-pandemic effects. We must take decisive action to protect our young generation from these mental and physical health issues before they become a severe problem. There are some strategies that can help tackle online learning habits due to the pandemic that may be affecting both mental and physical health:

1. Establish a routine: Establishing a daily routine can help create a sense of structure and consistency in your life. Schedule regular breaks, mealtimes, exercise, and sleep to ensure that you are taking care of your physical and mental health.
2. Create a dedicated workspace: Set up a dedicated workspace that is comfortable, well lit, and free from distractions. This will help you stay focused and minimize stress.
3. Take breaks: It is essential to take breaks throughout the day to avoid burnout and reduce stress. Get up and stretch, take a walk, or do some light exercise to keep your mind and body refreshed.
4. Limit your screen time: Too much time in front of the screen can cause eye strain, headaches, and other health issues. Take regular breaks from your screen and try to limit your overall screen time to avoid these negative effects.
5. Stay connected with others: Online learning can be isolating, so it is important to stay connected with family, friends, and classmates. Play outdoor games which help in gaining physical health.
6. Prioritize self-care: Make time for self-care activities that promote mental and physical well-being, such as exercise, meditation, or a relaxing hobby.
7. Seek help when needed: If you are struggling with online learning or experiencing significant mental or physical health concerns, don't hesitate to seek help from a healthcare professional or mental health provider.

They can provide guidance and support to help you navigate this challenging time

According to the literature, increased activity on any digital device for at least 3 hours per day increased the rate of depression. Depression is now recognised as a major risk factor for suicidal tendencies in adolescents. A recent behavioural study concluded that the Internet community has higher rates of low self-esteem, sorrow, distress, and depression. The light emitted by cell phones may disrupt the natural sleep cycle, resulting in sleep disturbances. Sleep disruption, depression, somatic pain, and increased screen exposure all cause significant changes in office workers and students, including sleepiness and increased depressive symptomatology, which is cause for concern.

Prolonged screen use and non-ergonomic devices have an impact on postural health, including musculoskeletal diseases. It affects the neck, back, and dexterity, and raising awareness about the disorder's significance is necessary to avoid further problems.] Nonergonomic equipment requires workstations, and sitting straight with appropriate workstations and maintaining optimal posture can help prevent cumulative trauma disorders at the wrist, neck, shoulder, and back.[Shoulder pain is the most commonly

reported musculoskeletal disorder, and its prevalence is increasing, particularly with the increased use of laptop computers.

A survey found that only 34-44% of the population takes care of physical health. Poor posture can be linked to a link between online classes and physical health. The majority of students are oblivious to proper body posture, which causes pain and discomfort. Cell phone use can alter neck posture, resulting in neck pain. Using a laptop while sitting in a chair for an extended period of time may also have an impact on posture. The majority of these devices are not ergonomically designed. There is a need to investigate the impact of online classes on the mental and physical well-being of students during the COVID-19 pandemic and to raise awareness about it.

II. METHODOLOGY:

The survey was carried out online using Google Forms. The survey collected demographic information from respondents based on the inclusion and exclusion criteria. The study included all-gender college students between the ages of 18 and 25 who took at least one month of online classes. They sat for 4-6 hours or more, using a phone or laptop, and complained of severe neck and back pain. Participants with the pathological diseases, neurological deficits, or chronic orthopaedic issues were not eligible for the study. Before the survey began, informed consent was obtained, and 75 people were recruited.

Using mental and physical health assessment scales, the online survey form was designed to assess students' mental and physical health. The form was distributed online, and those who met the inclusion criteria voluntarily participated in the survey. The data was collected using four scales, two for mental health and two for physical health, each with well-established validity and reliability. The Perceived Mental Stress Scale (Psychological Stress Test) and Patient Health Questionnaire (PHQ) were used to assess mental health, while the Neck Disability Index (NDI) and Oswestry Low Back Pain Disability Index (OLBDI) were used to assess physical health. Following data collection, the results were analyzed to determine the impact of online classes on the physical and mental well-being of the students.

III. RESULTS:

The descriptive characteristics of the sample were determined using statistical analysis, and Karl Pearson's correlation coefficient was used to determine the relationship between the duration of online classes and stress, depression, neck disability, and back disability. The total sample size was 75 people (30 men and 45 women).

The majority of the population, i.e., 24%, showed high perceived stress, 57.3% had moderate stress, and 18.6% had low stress on the perceived stress test for mental well-being [Table 1]. According to the PHQ for depression, 8.6% had severe depression, 12% had moderately severe depression, 32% had mild depression, and 7.5% had minimal depression [Table 2].

Table 1: Perceived stress test

Total sample	Low stress (%)	Moderate stress (%)	High perceived stress (%)
75	14 (18.6)	43 (57.3)	18 (24)

Table 2: Patient health questionnaire

Total sample	Minimal depression (%)	Mild depression (%)	Moderate depression (%)	Moderately severe depression (%)	Severe depression (%)
75	10 (7.5)	24 (32)	18 (24)	9 (12)	14 (8.6)

The NDI projected 4% of the population with full disability, 9.3% with severe disability, 38.6% with moderate disability, and 41% with mild disability due to prolonged usage of mobile or laptop devices, respectively [Table 3]. On the OLBdi, 5.3% reported severe disability, 48% moderate disability, and 38.6% mild disability as a result of poor the ergonomics while using mobile and laptop devices, which had a direct effect on postural health. [Table 3] 8% of the population indicated no disability.

Table 3: Physical health assessment using Neck disability index and Oswestry low back disability index

Scoring for total sample (n=75)	Neck disability index (%)	Oswestry low back disability index (%)
No disability	5 (6.6)	6 (8)
Mild disability	31 (41.3)	29 (38.6)
Moderate disability	29 (38.6)	36 (48)
Severe disability	7 (9.3)	4 (5.3)
Complete disability	3 (4)	0

CONCLUSION:

The primary purpose of this research paper provide an all-encompassing comprehension of the psychological effects of COVID-19 and to present insights into ways of promoting mental health and resilience amidst continuing challenges. It is clear from the analysis of the effects of online learning on the student's mental and the physical health that stress levels have increased as a result of this style of instruction. Students' daily routines and social relationships have been upended by the abrupt switch to online learning, which has resulted in feelings of loneliness, anxiety, and melancholy. In addition, physical health problems including eye strain, back discomfort, and weight gain have been brought on by inactivity and excessive screen usage.

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SURVEY ON CHALLENGES AND STRATEGIES DURING AND POST-PANDEMIC IN INDIA

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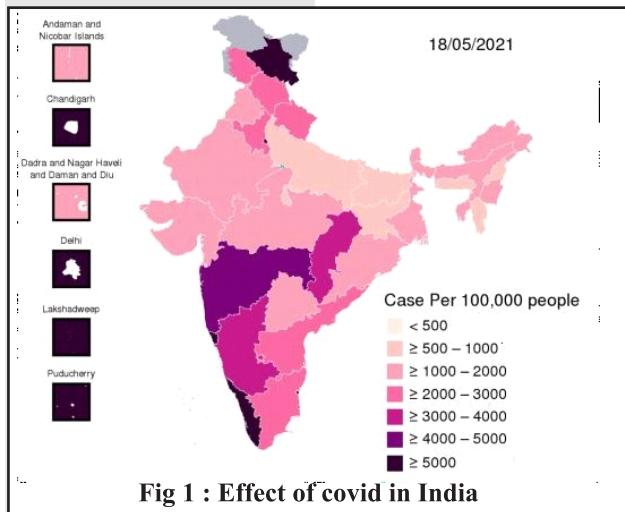
Abstract

The COVID-19 pandemic has brought unprecedented changes to the global political, economic and social landscape. While countries around the world struggle to contain the pandemic and rebuild their economies, they are also dealing with a rapidly changing geopolitical environment characterized by regional conflicts and tensions. This analytical research paper examines emerging challenges and strategies facing countries in the post-pandemic era and regional conflicts. With a particular focus on India, we examine the impact of the pandemic on different regions and analyze the geopolitical tensions that have arisen in the region. Based on the latest research and data, we identify key challenges facing countries and consider strategies that can be applied to address these challenges. Our analysis highlights the need for a collaborative, supportive, and evidence-based approach to addressing the challenges posed by the pandemic and regional conflicts. Finally, we outline a set of policy recommendations to help countries in the region build resilience, strengthen institutions, and foster greater regional cooperation to meet the challenges and regional conflicts of the post-pandemic era.

Keywords: pandemic; geopolitical environment; economic landscape; social landscape

I. INTRODUCTION

The COVID-19 pandemic has triggered a chain of events that has caused unprecedented disruption to the world order, exacerbated existing regional conflicts, and spawned new ones. As the world continues to grapple with the pandemic, the new challenges arising from the post-pandemic era and regional conflicts are becoming increasingly complex and demanding. This paper examines emerging challenges and policies in the post-pandemic era and regional conflicts and analyzes their implications for global security and stability.



II. LITERATURE REVIEW

The emergence of the 2020 COVID-19 pandemic has had far-reaching effects around the world. The pandemic has disrupted economic and social systems and exposed the vulnerabilities of health systems and institutions. The pandemic has also contributed to the emergence of regional

conflicts and geopolitical tensions. This literature review examines the impact of the pandemic on different regions with a focus on South Asia and analyzes the geopolitical tensions that have arisen in this region.

The COVID-19 pandemic has had a major impact on South Asia. According to a study by the International Monetary Fund (IMF), India is one of the regions most affected by the pandemic, with economic growth slowing sharply and poverty increasing [2]. In addition to the economic impact, the pandemic has disrupted the region's education and healthcare systems. A study by the United Nations Children's Fund (UNICEF) showed that more than 430 million of her students in South Asia or India have been affected by school closures due to the pandemic [4].

The pandemic has also contributed to the creation of regional conflicts and tensions. Tensions between India and China are on the rise, with the two countries embroiled in border disputes and military skirmishes [3].

The pandemic has also heightened tensions between India and Pakistan, with the two countries embroiled in a war of words over how to deal with the pandemic [1]. The literature on the strategies and challenges faced by countries in the post-pandemic era and in regional conflicts is still developing. Several studies have focused on the need for community cooperation and cooperation in the face of a pandemic [6]. Other research highlights the importance of building resilience and strengthening institutions to mitigate the impact of the pandemic [5].

In summary, the literature on the new challenges and strategies facing countries in the post-pandemic era and regional conflicts highlights the need for collaborative, evidence-based approaches to address the challenges posed

by pandemics and regional conflicts. I'm here. The literature emphasizes the importance of building resilience, strengthening institutions, and promoting greater regional cooperation to meet the challenges of the post-pandemic era and regional conflicts.

The post-pandemic era is marked by several emerging challenges that have created new security and stability risks. The following are some of the key challenges:

Economic Uncertainty: The COVID-19 pandemic has caused severe economic turmoil and triggered a global recession. The pandemic has exposed the vulnerability of the Global Supply chain and the vulnerability of small businesses. As the economy attempts to recover, it faces the risk of rising inflation, rising debt, and widening inequality.

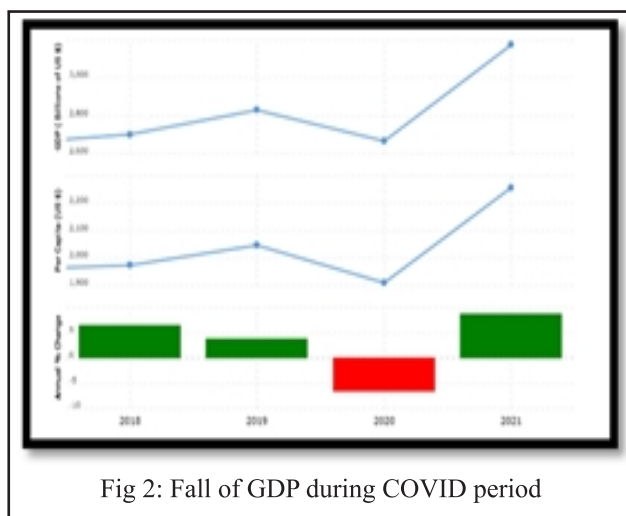


Fig 2: Fall of GDP during COVID period

Cybersecurity Threats: Reliance on digital technology during the pandemic has increased the risk of cyberattacks. The pandemic has forced organizations and governments to operate remotely, making them more vulnerable to cyberthreats. Cyberattacks on critical infrastructure and theft of sensitive data can cause significant disruption and undermine national security.

Geopolitical Tensions: The COVID-19 pandemic has exacerbated existing geopolitical tensions and created new ones. The pandemic has strained the relationship between China and India, with both countries blaming each other for the outbreak. The pandemic has also exacerbated regional conflicts, such as the ongoing conflict in the Galwan River and Arunachal Pradesh and the tensions between India and China.

Climate Change: The post-pandemic era is also marked by the continued threat of climate change. The pandemic has temporarily reduced global carbon emissions, but the long-term impact of the pandemic on climate change is still unclear. The world must continue to tackle climate change,

which poses a significant threat to global security and stability.

To address the emerging challenges in the post-pandemic and regional conflict era, a range of strategies must be employed. The following are some of the key strategies:

Strengthening Multilateralism: The post-pandemic era requires greater cooperation and coordination between nations. The United Nations and other multilateral organizations should be strengthened to address the emerging challenges. Multilateralism can help promote greater cooperation in addressing economic uncertainty, cybersecurity threats, and climate change.

Promoting Resilience: The post-pandemic era demands greater resilience. Governments and organizations must invest in building resilient systems that can withstand future shocks. This includes strengthening supply chains, investing in research and development, and building more robust cybersecurity systems.

Addressing Geopolitical Tensions: The post-pandemic era requires greater diplomacy and conflict resolution. Nations must work together to address regional conflicts and reduce geopolitical tensions. The international community must also engage with China and the United States to ease tensions and promote greater cooperation.

Tackling Climate Change: The post-pandemic era requires greater efforts to tackle climate change. Nations must work together to reduce carbon emissions and promote sustainable development. This includes investing in renewable energy, promoting energy efficiency, and adopting climate-friendly policies.

III. IMPACT OF COVID DURING PANDEMIC IN INDIA

In this section we review the impact of Covid-19 during pandemic in India in the following four main areas:

(i) Economic Uncertainty

The COVID-19 pandemic has caused significant economic disruptions in India. The government imposed a nationwide lockdown in March 2020 to contain the spread of the virus, which led to the closure of businesses and industries. The lockdown had a severe impact on the economy, with the GDP contracting by 7.7% in the financial year 2020-21 (Economic Survey, 2021). The pandemic has caused significant job losses, with many people losing their livelihoods. The informal sector, which employs a significant portion of the Indian workforce, has been hit particularly hard by the pandemic (Koduganti, 2020).

The government has implemented several measures to support the economy during the pandemic, including fiscal and monetary policy measures. The Reserve Bank of India

(RBI) has cut the policy rate several times to support economic activity, and the government has announced several relief measures, including a stimulus package of INR 20 trillion (approximately USD 270 billion) (Ministry of Finance, 2020).

(ii) Cyber Security Threats

The pandemic has caused a significant increase in cyber threats in India. The following are some of the key threats:

Phishing and Social Engineering: Cybercriminals have used phishing and social engineering techniques to exploit people's fears and vulnerabilities related to the pandemic. Cybercriminals have sent fake emails and messages, impersonating health officials and government agencies to steal personal and financial information.

Ransomware Attacks: Ransomware attacks have increased during the pandemic, with cybercriminals exploiting vulnerabilities in remote work environments. Ransomware attacks can cause significant disruptions to business operations and lead to financial losses.

Malware Attacks: Malware attacks, including viruses, worms, and Trojan horses, have also increased during the pandemic. Malware attacks can compromise data and systems, causing significant damage to businesses and individuals.

(iii) Geopolitical Tensions

The pandemic has caused significant geopolitical tensions in India, with the following being some of the key factors:

Border Disputes: India has faced border disputes with China and Pakistan, with tensions escalating during the pandemic. The border disputes have caused significant security concerns for India and led to deterioration in its relations with China and Pakistan.

Regional Cooperation: The pandemic has revealed the lack of regional cooperation in South Asia. India's relations with its neighboring countries have been strained, with countries such as Nepal and Bangladesh accusing India of neglecting their needs during the pandemic.

Vaccine Diplomacy: The vaccine diplomacy race during the pandemic has led to geopolitical tensions, with India playing a key role in supplying vaccines to other countries. However, vaccine diplomacy has also created competition between countries, with some countries accusing India of hoarding vaccines.

(iv) Climate Changes

The pandemic has caused significant disruptions to India's efforts to address climate change, with the following being some of the key factors:

Emissions Reduction: India's efforts to reduce emissions

have been impacted by the pandemic, with the lockdown measures resulting in a temporary reduction in emissions. However, the pandemic has also caused a decline in the use of renewable energy, with companies and governments focusing on economic recovery rather than climate change.

Natural Disasters: India has faced a series of natural disasters during the pandemic, including cyclones, floods, and landslides. These disasters have caused significant damage to infrastructure and the environment, and have led to increased risks to public health.

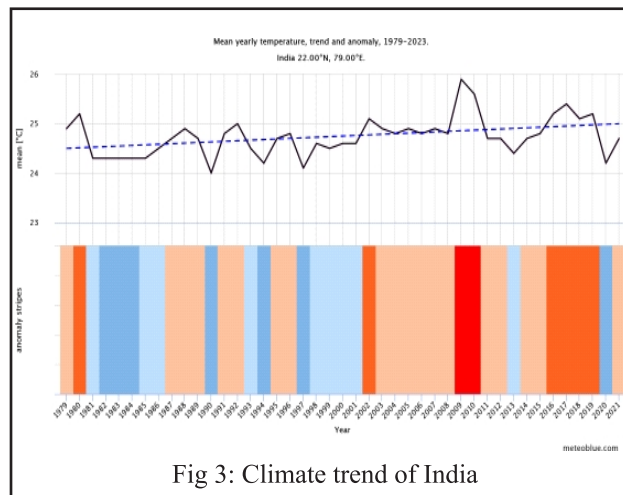


Fig 3: Climate trend of India

Air Quality: The pandemic has revealed the link between air pollution and public health, with the lockdown measures resulting in improved air quality. However, as the lockdown measures have been lifted, air pollution levels have returned to pre-pandemic levels, posing significant risks to public health.

IV. IMPACT OF COVID DURING POST-PANDEMIC IN INDIA

In this section we review the impact of Covid-19 during post-pandemic in India on the basis of same criteria mentioned in section III.

(i) Economic Uncertainty

The emerging challenges in the post-pandemic era have created new uncertainties for the Indian economy. The following are some of the key challenges:

Rising Inflation: The pandemic has caused supply chain disruptions and increased input costs, leading to rising inflation. Inflation has been above the RBI's target range of 2-6% for several months, posing a challenge for the central bank (RBI, 2021).

Increasing Debt Levels: The government's fiscal measures to support the economy during the pandemic have led to a significant increase in debt levels. The government's debt-to-GDP ratio is expected to increase to 90% in 2021-22, up

from 72.2% in 2019-20 (Economic Survey, 2021).

Widening Inequalities: The pandemic has widened the inequalities in Indian society, with the most vulnerable sections of the society bearing the brunt of the economic downturn. The pandemic has exposed the inadequacies of the social safety net in India, and there is a need for greater social protection measures.

(ii) Cyber Security Threats

The emerging challenges in the post-pandemic era have created new cyber security threats for India. The following are some of the key threats:

Remote Work: Remote work is likely to continue even after the pandemic, and this can create new vulnerabilities for cyber-attacks. Remote work environments can be less secure than office environments, and there is a need for stronger cyber security measures to address this vulnerability.

Digital Payments: The pandemic has led to an increase in digital payments, and this has created new opportunities for cybercriminals. Digital payments can be compromised through various techniques, including phishing and social engineering.

Cyber Espionage: Cyber espionage is likely to increase in the post-pandemic era, with countries engaging in cyber-attacks to steal sensitive information related to the pandemic. Cyber espionage can have significant national security implications, and there is a need for stronger cyber security measures to address this threat.

(iii) Geopolitical Tensions

The post-pandemic era is likely to create new geopolitical tensions in India. The following are some of the key factors:

Economic Competition: The pandemic has caused significant economic disruptions, and countries are likely to compete for resources and market access in the post-pandemic era. India's relations with China are likely to be strained as both countries compete for regional dominance and economic opportunities.

Climate Change: Climate change is likely to create new geopolitical tensions, with countries competing for resources and facing displacement due to rising sea levels. India's relations with its neighboring countries, such as Bangladesh and the Maldives, are likely to be affected by climate change concerns.

Cyber security: Cyber security is likely to create new geopolitical tensions, with countries engaging in cyber espionage and cyber-attacks. India's relations with China and Pakistan are likely to be strained due to cyber security concerns.

(iv) Climate Changes

The post-pandemic era is likely to create new challenges for India's efforts to address climate change. The following are some of the key factors:

Economic Recovery: India's economic recovery efforts are likely to focus on traditional industries rather than renewable energy, leading to increased emissions and reduced efforts to address climate change.

Extreme Weather Events: Climate change is likely to cause more extreme weather events, leading to increased risks to public health and the environment. India's infrastructure is likely to face significant challenges due to extreme weather events, leading to increased costs and disruptions.

Health Impacts: Climate change is likely to cause significant health impacts, with increased risks to public health due to air pollution, heat waves, and natural disasters. India's public health infrastructure is likely to face significant challenges in addressing these risks.

V. STRATEGIES TO ADDRESS THE IMPACTS OF POST PANDEMIC

In this section we review the strategies, address the post-pandemic challenges in India on the basis of same criteria mentioned in section III.

(i) Economic Uncertainty

To address the economic uncertainty in India during the pandemic and post-pandemic era, a range of strategies must be employed. The following are some of the key strategies:

Fiscal Consolidation: The government must focus on fiscal consolidation to address the rising debt levels. The government should prioritize expenditure and revenue reforms to enhance the efficiency of public spending and increase tax revenues.

Structural Reforms: The pandemic has exposed the weaknesses in the Indian economy, and there is a need for structural reforms to address these weaknesses. The government should focus on reforms in the labour market, land acquisition, and ease of doing business.

Social Protection: The government should strengthen the social protection system to address the widening inequalities. The government should increase spending on health, education, and social protection measures to support the most vulnerable sections of society.

(ii) Cyber Security

To address the cybersecurity threats in India during the pandemic and post-pandemic era, a range of strategies must be employed. The following are some of the key strategies:

Cybersecurity Awareness: There is a need for greater cybersecurity awareness among individuals and businesses. The government and private sector should invest in cybersecurity education and training programs to enhance cybersecurity awareness.

Cybersecurity Regulations: The government should implement stronger cybersecurity regulations to enhance the cybersecurity posture of businesses and individuals. The government should establish mandatory cybersecurity standards for businesses and implement penalties for non-compliance.

Cybersecurity Collaboration: There is a need for greater collaboration between the government and private sector to enhance cybersecurity preparedness. The government should establish partnerships with private sector organizations to share threat intelligence and develop cybersecurity best practices.

Cybersecurity Preparedness: India should enhance its cybersecurity preparedness to address cybersecurity threats from neighboring countries. India should establish strong cybersecurity regulations and collaborate with international partners to enhance its cybersecurity posture.

(iii) Geopolitical Tensions

To address the geopolitical tensions in India during the pandemic and post-pandemic era, a range of strategies must be employed. The following are some of the key strategies:

Diplomatic Engagement: There is a need for greater diplomatic engagement between India and its neighboring countries. India should adopt a proactive approach to address the concerns of its neighbours and engage in regional cooperation to address common challenges.

Economic Reforms: India should adopt economic reforms to enhance its competitiveness and attract foreign investment. India should diversify its trade relationships and reduce its dependence on China, while also focusing on regional economic cooperation.

(v) Climate Changes

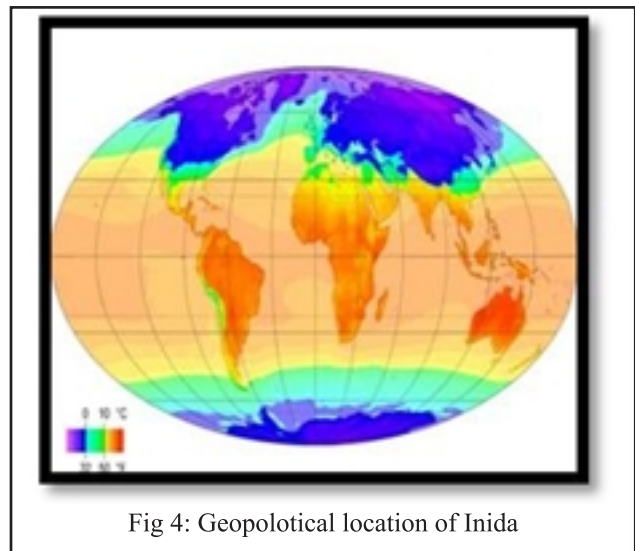
To address the challenges of climate change in India during the pandemic and post-pandemic era, a range of strategies must be employed. The following are some of the key strategies:

Renewable Energy: India must focus on renewable energy sources to reduce its dependence on fossil fuels and reduce emissions. India must enhance its efforts to expand solar, wind, and other renewable energy sources.

Green Infrastructure: India must adopt green infrastructure solutions, such as green roofs, rain gardens, and permeable pavements, to reduce the risks of extreme

weather events and improve public health.

Public Awareness: India must enhance public awareness about climate change and its impacts. India must adopt educational programs to increase public awareness about climate change and its impacts on public health, the environment, and the economy.



VI. CONCLUSION

The post-pandemic era is marked by several emerging challenges that pose significant threats to global security and stability. To address these challenges, a range of strategies must be employed, including strengthening multilateralism, promoting resilience, addressing geopolitical tensions, and tackling climate change. By working together, the international community can create a more stable and secure world that is better prepared to face future challenges.

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INNOVATIVE MECHANISMS TO RE-ENGINEER ENGINEERING EDUCATION IN INDIA

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Abstract

India has been playing the role of the diffuser of globally generated new technology. The model of India's growth is on an import-substituting industrialization model whose basis will be a novelty in idea generations, challenges, experiments, and utilities. Building an idea pipeline and the urge to explore when there are no infinite resources could be triggering for innovation. The establishment of an innovative culture in technical institutions in India will be the key. However, challenges are numerous. This paper discusses the foundation of innovation and refinement mechanisms to address some of the core challenges in engineering education in India and aligned it to that of successful engineering education models like US and China.

Keywords: *Innovative Idea, Novelty, Disruptive innovation, Innovation catalyst.*

I. INTRODUCTION:

The technical education system in India unintentionally suppressed intellectual capital. In accordance with the study of "Design in India (2011)" by the Association of the Indian Sector, Indian designing professionals are inadequately educated and insufficiently trained [1]. Approximately 3.84% of engineers are eligible in new companies in software-related employment. Perhaps 3% of engineers have advanced abilities in fields that include AI, machine learning, data engineering, and mobile technologies. Overall, productivity in these fields is roughly 1.5-1.7%. When compared to India, the United States has about four times the number of engineers with excellent programming skills. When compared to China (10.35%), a far greater proportion of Indian engineers (37.7%) are unable to write code that is free from errors. Just 40% of engineering graduates complete a summer job, and 36% complete any assignments outside of coursework.

They lack the skills needed by various sectors in the field of engineering and science. The practitioners believe there is a mismatch between the courses and current design ideas. Additionally, many Indian colleges do not recognize design as an area of study in need of specialized teaching assistance or foundation. Rather than being an alternative to design learning, the bulk of post-graduate designing programmers offer themselves as an additional aspect to engineering, the arts, or architectural foundations. A shortage of skilled and qualified design professionals is another key challenge to the path of adequately prepared designer graduates. As a result, world-class designers have not been produced by talented, creative pupils in modern education. As a result, there is an obvious need for a strong design training approach. Administrators of Centrally Sponsored Organizations, notable leaders of the Indian design

community, and speakers from the Government of India's Ministry of Human Resource Development met in early 2014 to discuss the future direction of design education in India. This resulted in the development of a statement for the future of design education in India. It focused mainly on the goals and purposes for the nation's government funded organizations for an expanded educational design system that would drive research and education towards ethical and economical ideals.

One of the manifesto's primary objectives was to establish a design backbone for engineering education [2]. It is believed that encouraging college students how to think imaginatively, compassionately, and innovatively would result in substantial value improvement and comprehensive progress. Creative thinking and imagination, both of which are important aspects of design, are regarded to offer to this. From an alternative viewpoint, it makes sense to exploit the nation's broad promise of exceptional engineering education as a conduit for educational participation. Academics and business leaders from around the globe have shown importance regarding the long-term prospects of engineering education, not just in India. In May 2013, the American Society of Engineering Education hosted a workshop that brought together individuals from the commercial and academic worlds to examine the expertise, talents, and competencies required in engineering today and in the future. The professionals discovered basic competencies that remain significant but they additionally included a number of expert capabilities such as programming, computational thinking, and creative thinking, with an emphasis on the concept of design thinking as one of the most commonly mentioned capabilities that can assist students deal with the degree of complexity and flexibility arising from this rapidly evolving field [3].

II. HIGHER TECHNICAL EDUCATION IN INDIA:

Since India gained independence, higher education has expanded rapidly. 25 universities existed in 1949–1950; 346 did so in 2008–2009. As enrollment rose from a pitiful 0.1 million to 11.2 million, the number of colleges expanded from 700 to 18,064. India saw two different eras of growth in higher education after independence. Phase I sustained growth between 1947 and 1980 led to the geographical distribution of higher education institutions and widened the higher education base. Since 1980, expansion has primarily been fueled by private enterprises. Private initiatives have been consolidated since 2000, especially in higher professional education [4]. It has given the education industry a wide-ranging dimension.

Technical education encompasses an educational approach that equips students with practical skills and knowledge needed to excel in a specific field or trade. Technical education is often delivered through vocational schools, community colleges, trade schools, and apprenticeships, and covers areas such as construction, automotive repair, healthcare, information technology, and manufacturing. Besides providing technical skills, it also emphasizes critical thinking, problem-solving, and teamwork skills, which are highly valued by employers. Ultimately, technical education contributes significantly to preparing individuals for the workforce and driving economic growth and development. Technical education is a critical aspect of workforce preparation and economic growth. It plays a significant role in closing the gap between the job market's demands and the skills available in the workforce. Competition in the job market intensifies, the importance of technical education increases. Employers today are seeking candidates with specialized skills and knowledge in specific fields, which technical education programs provide. This education empowers students to acquire the necessary expertise and skills, making them more attractive to potential employers.

III. LIMITATIONS:

Why are there fewer engineers available in software-related organizations? 75% of the 150 companies polled reported that there was a skill gap in their staff. As we enter a new era of career chances, this demonstrates a lack of information about contemporary job positions and expectations among the kids stepping into the workforce. There could be a few different reasons why some engineers may struggle to find employment at software-related companies. They are:

Insufficient skills: Engineers may struggle to find employment at software-related companies due to the fast-paced evolution of the software industry, which constantly demands engineers to have the latest skills and technologies. If an engineer's skill set is outdated or does not

align with the current needs of the industry, they may find it challenging to secure employment.

Market saturation: The software industry has seen a rise in coding bootcamps and online courses, leading to a surge of people entering the industry. This has resulted in an increasingly competitive job market, making it harder for engineers to stand out and land a job.

Inadequate soft skills: In addition to technical skills, soft skills such as communication, collaboration, and problem-solving are highly valued in the software industry. Engineers who lack these skills may face difficulty finding employment in software-related companies.

Limited professional network: Networking is crucial in finding employment in any industry, including the software industry. Engineers who have a limited network may face challenges in finding job opportunities or referrals for open positions.

Geographical location: The software industry is mainly concentrated in certain geographic areas, such as Silicon Valley, Seattle, and New York City. Engineers who reside outside of these areas may find it more challenging to secure employment at software-related companies since there are fewer job opportunities in their local area.

There is a considerable gap among trained labor present in India and work prospects in various fields, resulting in rank 1 and 2 cities being the most desirable job locations. Although the abundance of young talent, several are unsure about their professional potential. According to a WNET poll, 88.42% of those who took the test exhibited enthusiasm in an internship, showing that if given the chance to do so, they would be a useful contribution to India's regulated economy. The favorable recruiting intention and need for new graduates indicate that possibilities would be more available in 2022, and with the possibility of chances for freshers, India is likely to make a major comeback post-COVID. In 2019, the total number of internships in India surpassed one million. It is important to emphasize, however, that selecting a job should fit with one's passions, and pupils with an interest in science and technology, arts, and humanities must be equipped with a skill-driven environment in which to cultivate their talents and seek careers that match with their passions.

IV. ENGINEERING EDUCATIONAL ENVIRONMENT IN THE UNITED STATES:

United States higher proportion of engineers, almost four times who have good programming skills as compared to India because of the following factors

Education System: The education system in the United States puts emphasis on creativity, innovation, and problem-solving skills, which are important qualities for

engineers and programmers. In contrast, the education system in India often focuses on rote learning and memorization, which may not foster the same level of critical thinking and innovation.

Industry Focus: The United States has a strong tech industry, with many large technology companies and startups based in the country. This may create a greater demand for engineers and programmers with specialized skills, leading to more opportunities for individuals to develop and refine their programming abilities.

Emphasis on Soft Skills: In addition to technical skills, soft skills such as communication, teamwork, and leadership are valued in the United States. American educational institutions and employers often prioritize developing these skills alongside technical expertise, leading to more well-rounded and effective engineers and programmers.

Entrepreneurial Culture: The United States has a culture of entrepreneurship and innovation, which may inspire individuals to pursue careers in engineering and programming. Many successful startups and tech companies have been founded in the United States, providing inspiration for aspiring engineers and programmers to develop their skills and pursue careers in these fields.

Industry Specialization: The United States has a highly specialized workforce, with many individuals working in specific industries or fields such as software development, aerospace, or biotechnology. This may create opportunities for engineers and programmers to develop specialized skills that are highly valued in these industries.

Exposure to New Technologies: The United States is often at the forefront of new technological developments, with many new software tools and programming languages being developed and adopted in the country. This may give American engineers and programmers an advantage in terms of their ability to learn and work with new technologies.

V. COMPARISON OF CODING PROFICIENCY AMONG INDIAN AND CHINESE ENGINEERS:

A much higher percentage of Indian engineers (37.7%) cannot write error free code, as compared to China (10.35%) because India and China have distinct approaches to teaching programming in their educational systems. While China is known for its rigorous STEM education, the Indian educational system has been criticized for its focus on rote learning and theoretical knowledge rather than practical skills and hands-on experience. As a result, Indian engineers may have less exposure to practical coding and problem-solving skills, which can lead to difficulties in writing error-free code.

There is a high demand for engineers in India, and many companies hire individuals who have completed a programming course or certification. However, these courses may not provide the necessary depth of knowledge and practical experience required to write error-free code. In contrast, Chinese companies may have stricter hiring practices that require more advanced programming skills.

Cultural attitudes towards work, education, and creativity also differ between India and China. Creativity and innovation are encouraged in India but not necessarily rewarded in the same way as they are in China. This may influence how Indian engineers approach problem-solving and coding.

VI. APPROACHES TO IMPROVE TECHNICAL EDUCATION IN INDIA:

In India, improving technical education requires an inclusive approach that addresses various aspects of the education system. Here are some ways in which technical education can be improved in India: (i) Enhancing the Quality of Faculty: The quality of faculty in technical institutions needs to be improved. This can be done by providing better training and development opportunities to the faculty, incentivizing research and innovation, and attracting top talent through competitive salaries. (ii) Collaboration of Industry-Academia: Collaboration between technical institutions and industry is critical for enhancing the quality of technical education in India. Such collaboration can help ensure that the curriculum is relevant and up-to-date, and students are exposed to practical training and real-world challenges. (iii) Emphasizing Practical Learning: Technical education in India has traditionally focused on rote learning, which can lead to a gap between what students learn and what they need to know in the real world. Emphasizing practical learning through hands-on training, internships, and project-based learning can help bridge this gap. (iv) Curriculum Reforms: In India, the technical education curriculum needs to be updated to keep pace with the rapidly evolving technological scenarios. It should be designed to meet the needs of the industry and equip students with the skills required to succeed in the job market. (v) Improving Infrastructure: Technical education institutions in India often lack modern infrastructure and equipment, which can hinder the learning experience. Investments in modernizing the infrastructure, laboratories, and equipment can help improve the quality of technical education. India needs to create a culture that encourages entrepreneurship and innovation. Technical education institutions can play a key role in fostering this culture by providing entrepreneurship training. (vi) Encouraging Entrepreneurship: India needs to create a culture that encourages entrepreneurship and

innovation. Technical education institutions can play a key role in fostering this culture by providing entrepreneurship training, mentoring, and incubation support. (viii) Strengthening Accreditation: Accreditation is essential for maintaining quality standards in technical education institutions. Strengthening accreditation mechanisms can help ensure that only institutions that meet the required standards are allowed to offer technical education. (ix) The India Skilled Report 2022, in its ninth edition, focuses on the fundamental changes needed in training and learning to prepare for the next generation of work. The main study includes talent demand as well as supply from across India, providing industry executives, policymakers, educational institutions, scholars, specialists, and aspiring specialists with current employment information.

Evidently the importance of emotional intelligence, soft skills, and empathy will remain the assets of any organization and working professional.

CONCLUSION:

The technical education system is putting lots of stress on students to join the current technological revolution. The technical education system has to move from knowledge through absorption to knowledge through practical experimentation and innovation. Necessities are the mother of inventions; therefore the Indian education system requires a major multidimensional overhaul. This paper analyzes the innovative mechanism to re-engineer engineering education in India and establish a knowledge and skill-based ecosystem in India in the coming future.

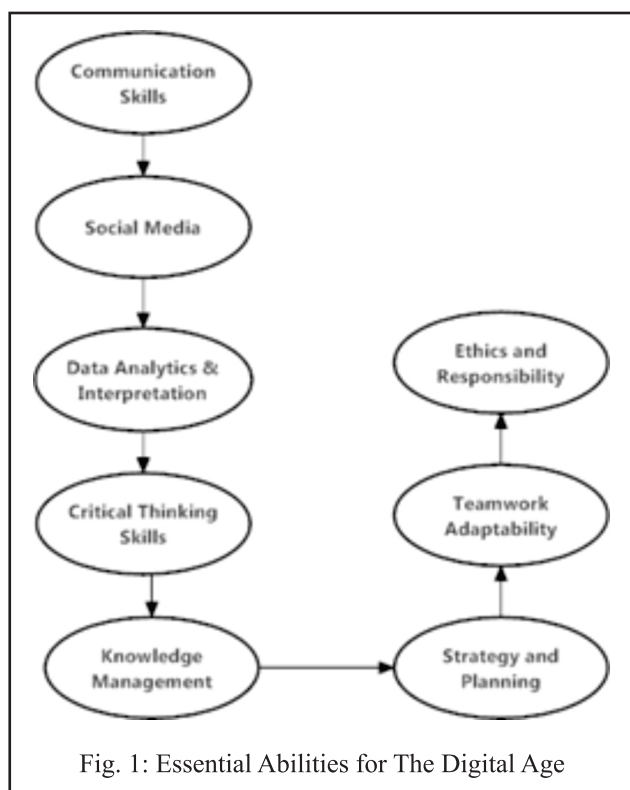


Fig. 1: Essential Abilities for The Digital Age

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Ph : 0581-2582246, 2582249, E-Mail : bizcraft@srmscet.edu



ISSN : 2231- 0231



Published by :

Faculty of Management Science
Shri Ram Murti Smarak College of Engg. & Tech., Bareilly (U.P.) India