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ENVIRONMENTAL HAZARDS AND WOMEN'S HEALTH: AN OVERVIEW**Dr. Tanusree Chaudhuri**

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ABSTRACT

The impact of environmental hazards on gender varies in different geographic regions, age groups, and income groups etc. Women are increasingly seen as more vulnerable than men to different environmental hazards, due to socio-economic and cultural factors. Compared to men, women have less access to resources like land, agricultural system, etc. Moreover, in rural areas, women are more responsible to take care of plants, and animals, collecting water, fuel wood, etc. In urban areas, many women work at home and outside too. As a result, they are more exposed to different pollutants which leads to several health problems. Environmental hazards can happen due to natural as well as man-made causes. Air pollution is one of the major environmental issues in today's world. The effects of air pollution have been proven on heart disease, asthma, cancers early death etc. Based on evidence air pollution has a major risk to women due to the inhalation of gases and pollutants during cooking at home and outside also. This causes a dual risk of health issues for women. This paper proposes to study the different types of environmental hazards. It also proposes to study environmental hazards and women's health, with special reference to air pollution. The paper is based on secondary sources like different online research papers, UN reports, and various case studies. The methodology used to complete the paper is a systematic secondary research method.

Keywords: Environment, Hazards, Health problem, Air pollution.

INTRODUCTION

An environmental hazard is an event or substance which has the potential to threaten the surrounding nature. It also affects people's health and creates pollution. Man-made hazards do not immediately impact human health, it gradually deteriorates the human ecosphere. As an example, polluted water may not have a direct impact on human beings but in the long run, it impacts the food chain, and as a result, human being faces different health problems. Similar problems are observed in the case of air pollution, exposure to toxic pollutants results in health effects like respiratory problems, skin allergies, organ damage etc. WHO estimates that in 2019, around 37% of outdoor air pollution-related premature deaths were due to ischaemic heart disease and stroke, 18% and 23% of deaths were due to chronic obstructive pulmonary disease and acute lower respiratory infections respectively, and 11% of deaths were due to cancer within the respiratory tract. (Ambient Air Pollution Overview, WHO, 19th Dec, 2022). As women are known as the caretaker of the environment than men so they are more exposed to natural resources like air, water, soil etc. Many research shows that women's bodies are physiologically different from men's bodies. Many of the time these differences put women at greater risk from environmental hazards. The same exposure to environmental hazards is likely to impact women differently and disproportionately than it impacts men. (Staci J.K., 2000)

METHODOLOGY AND OBJECTIVES

The methodology used to complete the paper is a systematic secondary research method. The objectives of the papers are i) to study different types of environmental hazards and ii) to study environmental hazards and women's health with special reference to air pollution. In secondary sources, relevant research papers, journals, and UN reports were searched through the search engine and synthesized with objectives and conclusions drawn.

OVERVIEW OF ENVIRONMENTAL HAZARDS

Some of the important factors responsible for environmental hazards are: population explosion, unplanned construction, deforestation, development of transportation sectors, not the proper policy in the agricultural sector etc. The word hazards come from an old French word 'hasard' and the Arabic word 'az-zahr' which means chance or luck. A hazard can be defined as "a dangerous condition or event that poses a threat or has the potential for causing injury to life or damage the property or environment". (Dr. Debajit, S, Vibha, K, 2009). Hence, hazards can lead to a disaster which may disrupt the living conditions completely. The term disaster originated from the French word Desastre combines two words des meaning bad and aster meaning star. In the olden days disaster used to be considered due to some unfavourable star. (Dr. Poonam R., 2020) According to the disaster management Act 2005 "disaster" means a catastrophe, mishap, calamity, or grave occurrence in any area, arising from natural or man-made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area".

According to UNISDR, “A disaster is a sudden calamitous event that disrupts the functioning the community or society and causes economic and environmental losses that exceeds the communities or society’s to cope using its own resources. A disaster occurs when a hazard impacts vulnerable people” (UNISDR Report, 2009). Therefore, both hazard and disaster are responsible for potential threats to human beings, since both can result in loss and damage to life and property.

Hazards can be classified in two major categories 1) Natural hazards – are caused due because of natural phenomena (hazards with meteorological, geological, or even biological origin) and can happen rapidly or slowly. (Dr. Poonam R., 2020) For example, earthquakes, volcanic eruptions, Tsunamis, Avalanches, landslides, floods, droughts etc. 2) Man-made hazards: are caused due to human negligence and happen close to human settlement. Man-made hazards have a major impact on human health. For example, environmental pollution, degradation, leakage of toxic waste, etc.

HAZARDS & DISPROPORTIONATE IMPACT ON WOMEN

Earthquakes caused due to volcanic activity, hydrostatic pressure, folds and faults in internal rock structures and movement of plates, etc. According to World Health Organization, 1150 fatal earthquakes happened in 75 countries worldwide over the past century alone (Javad L, farad K, May 2020) In A study conducted on the victim of earthquakes in Japan, the tendency toward death and suicide was the rise among the women (Hyodo et al 2010)

Tsunamis are most commonly generated by an earthquake in marine and coastal regions. It is also caused due to underwater landslides and other large-scale disturbances in the sea surface area. According to Red Cross, Tsunami in 2004 December, killed more than 220000 people and more than 1.6 million people have been displaced from 12 different countries in South East Asia, South Asia, and East Africa. In Indonesia 4 villages in the Aceh only 189 of 676 survivors were female. In the same village male survivors outnumbered female survivors as a ratio of approximately 3:1. In Cuddalore village in India during Tsunami, 2004, 391 women death happened in compared with 146 men which was almost three times as many women died as men (Oxifam Briefing Note, 2005)

Flooding conditions may occur due to melting of snow, heavy rainfall, short intense storm, cyclone, poor natural drainage etc. Approximately 33 million people were impacted due to recent floods in Pakistan in 2022. This calamity has badly impacted the poor people in the affected areas and drastically impacted the women. According to UNDP women and children are 14 times more impacted by fatalities as a result of natural calamities. (The Express Tribune 2022) The study showed in Northern Bangladesh, the consequences of flood-impacted rural women more adversely than rural men.

In man-made hazards pollution, industrial accidents have a major impact on human health, specifically women.

POLLUTION AND WOMEN’S HEALTH

Irrespective of the pollution like, land, water, air, and noise have an impact on the health of human beings. Women work at home or outside they are exposed to air pollution and which causes different health problems. Air pollution is one of the greatest environmental risks to health. Approximately 4.2 million premature deaths happened worldwide in 2019 due to outdoor air pollution. It is caused due to exposure to fine particulate matter as a result people suffered from respiratory problems, cardiovascular, cancers, etc. Particulate matter is a common indicator of air pollution. Exposure to the different PMs has a negative impact on health.

Carbon Monoxide (CO) is produced by the incomplete combustion of carbonaceous fuel like wood petrol, kerosene, natural gas, etc. Studies showed that household solid fuel combustion results in an average 86 gram reduction in birth weight a 35% increase in the risk of low birth weight and a 29% increase in the risk of stillbirth. It happened due to exposure to carbon monoxide during pregnancy, those who cooked in charcoal and kerosine (Blair J. W., et al, 2017) Emissions from solid fuels (SF) combustions can lead to a variety of diseases like cancer, pneumonia, tuberculosis, and asthma. The health risk impact is higher in women and children, as they spend more time on solid fuels (WHO, 2007) The usage of biomass fuel needs to be reduced as much as possible. Using biogas or solar cookstove would be better in rural areas and need to be sure that smoke goes out of the room or else a chimney should be installed for challah to increase ventilation. In urban areas, LPG stoves are a better option.

Nitrogen Dioxide (NO₂) is mainly released from the combustion of fuels in the industrial and transportation sector. Women working at home and outside are severely impacted by this particulate matter. Low-income women are often employed as an occupation that enhances exposure to air pollution. For example, In India most street sweepers are women. They are vulnerable to health issues such as asthma and bronchitis due to

occupational exposure to street dust, sand particles, motor vehicle emissions, plant particles, etc. Decreasing lung function was related to the extent and duration of exposure to street dust. Similar studies among street sweepers in Chennai, and Bangalore obtained similar results (USAID Report, 2021). In 2019 almost 99% of the world's population was living in places where WHO's strictest 2021 air quality guidelines were not met (UNEP, 2022)

CONCLUSION

Women play an important role in the development of society as well as they are responsible for the upbringing of children. Simple changes can make the health of women better. As we are aware that physiological and socio-economic differences between men and women are common, so it is very important to pay attention to the health of women based on their right that they should be healthy. Some case studies show that it is possible to save the life of women during hazardous or disaster situations if prevention and mitigation of the disaster management in a proper way (Emmanuel, J.J.,2006). Hence it is important for all stakeholders of society to give adequate responses toward women, before and after any hazardous, disastrous event.

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NEED OF PROPER HEALTH CARE WASTE MANAGEMENT TO ATTAIN THE GOAL OF SUSTAINABLE DEVELOPMENT

Shweta Chaturvedi

ABSTRACT

Health makes life meaningful with better opportunities for growth and development. Humanity has evolved and learnt its lesson over the period and has begun to treat health with the respect it deserves. Therefore factors causing health deterioration such as municipal waste, biomedical waste etc. are on the list which needs urgent treatment so as to sustain the community. This research paper endeavors to deal with issues related health care waste management and its legal dimensions, its relevance and justification in the area of law and medical science, and most importantly, from the perspective of community health and environmental safeguards. At this point in the research, it appears that the public ignorance, lack of administrative vigilance, ignorance about the rights that are violated, and casual approach have put the entire society at risk, since most of the health care waste management is so dangerous that it may contaminate the environment. The research paper relies on mixed methodology; previous research papers and data available on websites of various National and International Institutions have been used for reference. It was found that knowingly or unknowingly laws have been broken and lives of people have been put on stake. From this vantage point, studies of this subject matter would be urgently required.

Keywords: Waste management, Health, environment, sustainable development.

INTRODUCTION

The rapid growth and urbanization in any country gets along with it certain negative impact on the social, economic, environment of the nation. The growth of population in the cities lead to the growth in the number of healthcare centers such as hospitals, nursing homes, etc. These centers provide us with healthcare facilities but knowingly and unknowingly also generate waste such as solid waste, Municipal waste, biomedical waste etc. These waste if not treated with utmost care pose a threat to the lives of the people. In addition there is a need to achieve the Sustainable Development Goals through proper waste management. Therefore the proper Health Care Waste Management serves dual role and purpose of saving lives and achieving the sustainable development goals.

METHODOLOGY

The research aims to provide the ways and methods of Treatment of Healthcare waste Management thus helping to achieve the Goal of Sustainable Development. For this the researcher shall rely upon the already existing data available on various National and international websites. The first part of the research shall explain the Sustainable Development Goals and the second Part shall explain the ways and means of treatment of Municipal and biomedical waste; thus helping to achieve these goals.

THE SUSTAINABLE DEVELOPMENT GOALS

“The Sustainable Development Goals area a set of 17 goals set by the United Nations as the urgent call for all the countries whether developed or developing or underdeveloped to unite and go for a global partnership. To recognize the need to achieve the goals to end poverty, social inequalities. Also to work on strategies that improves the health and education and boosts the economic growth. To achieve these goals but to tackle the climate change and the preservation of our Natural resources such as Oceans and forests. Below is the list of 17 Goals set by the UN”.



Success in healthcare waste management shall be achieved due to several of the UN Sustainable Development Goals, particularly:

- (3) Good health and wellbeing,
- (6) Clean water and sanitation,
- (8) Decent work and economic growth
- (12) Responsible consumption and production

- **Good Health and Well Being:**

Good Health being an important and necessary element in the growth and development of the nation. In spite of growth in science and development which has increased the life expectancy, certain growth in diseases still goes unnoticed. Steps to ensure the Health Care Waste management with appropriate steps will be effective in reducing the direct and indirect health threats to the population from such uncalled diseases.

- **Clean Water and Sanitation:**

Water is considered as life. One cannot imagine life without water. The Goal number 6 of the Sustainable Development Goals by United nations aims to provide clean water by preventing the discharge of harmful chemicals, biomedical waste and municipal waste into water bodies. Segregation and treatment of waste before it has been dumped into the water bodies. For the proper implementation of this goal, treatment and Management of the waste products is very essential.

- **Decent Work and Economic Growth:**

Sustainable Goal 8 provides for work which brings the population out of the poverty and promotes economic growth. But talking about the workers included in labour work, being the essential part in the society, their working conditions are being compromised with. These workers who are all men, women and children are exposed to hazardous waste, biomedical waste, municipal waste. These workers are often unpaid and under protected. Steps shall be taken to ensure the waste management with proper measures to ensure the safety of health of these workers.

- **Responsible Consumption and Production**

This Goal aims at reducing the pollution and harmful health effects through proper Waste management which is environmentally sound includes targets on reducing pollution and health impacts through environmentally. This shall include promoting reduction of waste by recycling and reuse. The biomedical waste and coming from the hospitals needs to be properly segregated and check as per the rules and regulations already laid down, thus preventing unnecessary harm to the health.

Healthcare needs to control its buying power to ensure that the materials it purchases generate as little waste as possible that is toxic, non-repairable, non-recyclable or simply unnecessary. Encouragement shall be made for the replacement of these products with safer alternatives, the healthcare system can help kick-start the global circular economy.

Why is Health Care Waste management important for Sustainable development?

The Health Care waste shall be managed so as to minimize environmental degradation, reuse of the resources by recycling process, thus helping to achieve the goal of sustainable development. Proper management of waste shall help to prevent pollution of land, water and air.

Health Care activities save lives and have increased the life expectancy rate, but what about the waste products it generates? If not treated and managed properly will be life threatening to the individuals.

Types of Health Care Waste

Out of the total amount of waste generated by health-care activities, about 85% is general municipal waste which is non-hazardous waste. The remaining 15% is considered hazardous waste which can be infectious, chemical and radioactive.

1) Clinical Waste

Clinical waste are waste such as cotton swabs, needles, dressing bandages etc. which have come in contact with any infectious body part, body fluid such a blood, saliva, urine etc. such waste if come in contact with a healthy individual may be hazardous to his health.

2) Cytotoxic Waste

Cytotoxic waste is type of waste that consists of substances or antineoplastic drugs that are toxic to cells preventing their reapplication or growth. These are used mainly to kill the cancer living cells. They are also sometimes used for the treatment of other disorders such as rheumatoid arthritis and multiple sclerosis.

If the waste containing such Cytotoxic drugs are exposed to healthy individuals. If inadequate measures are taken to handle the waste generated of this drug, person can suffer problems like abdominal pain, hair loss, liver damage, allergic reactions, foetal loss in pregnant women and malformations in the children of pregnant women. Alterations to normal blood cell count.

3) Offensive Waste

These wastes are non – clinical municipal waste that does not contain some harmful chemicals or body fluids. These substances are non- hazardous substances but may be unpleasant when comes into contact with. Examples of such waste are: dressing bandages, catheter bags, nappies, pads, maternity waste, etc.

4) Domestic Waste

Domestic waste is municipal waste similar to household waste. These wastes are not harmful in nature but the same should be segregated and disposed of wisely into wet any dry waste. Such waste can be disposed of in landfills and can be recycled. If such wastes are released in water bodies without its proper treatment, this may lead to contamination of water and thus may spread diseases in both humans and animals.

5) Anatomical Waste

Anatomical waste may include the body parts removed after surgery or accidents, it also includes foetus. The tissues and specimen taken during biopsy, surgery or autopsy are also included in such kind of waste.

All human anatomical waste must be disposed of by way of incineration. All such waste cannot be classified under hazardous or non – hazardous. Hence to prevent any kind of infection spread, the same shall be disposed of through the norms set by the Government.

6) Radioactive Waste

Radioactive waste are those hazardous waste that contains radioactive material. This includes radioactive diagnostic material, laboratory equipment contaminated during nuclear research, nuclear weapons reprocessing, etc.

Methods of Healthcare Waste Management**1) Land Disposal**

In this way of disposal of waste. The waste is disposed of. No any other treatment is given to the waste products but is dumped into the land pits. The municipal waste generated are either dumped into landfills or are dumped into open space.

The waste garbage dumped into open space are more in the scattered form. Such open scattered waste are more likely to cause infections and transmission of diseases.

Waste products mainly sanitary landfills are scientific and designed for the disposal of hazardous waste. This prevents the contamination of soil and groundwater. It also keeps a check on the air pollution. Wastes are treated before disposal and managed on daily basis.

2) Chemical Disinfection

Chemical disinfection is used to kill microorganism on the clinical equipment. It is also used to treat the health care waste. Fluids such as blood and urine in the sewage of the of the hospitals are disinfected so that no infections are transmitted. Other waste can also be disinfected with chemicals before their disposal to avoid spread of diseases.

3) Autoclaving

Autoclaving is a sterilization method that uses high pressure steam. This method is used to sterilize the used surgical instruments. An autoclave is a machine that uses steam under pressure to kill harmful viruses and bacteria, fungi and spores on the remains that are placed on the equipment. The same is sterilized by placing under the steam machine. Thus the surgical equipment and other laboratory products treated by this method can be reused.

4) Encapsulation

Encapsulation is the process where boxes made of high density polyethylene or mettalic drums. These boxes are filled with sharp equipment, chemical or pharmaceutical wastes. These cubic boxes are not completely filled but the remaining portions are covered with mortar, dried and sealed before disposal.

These methods is effective in reducing the risk of stray animals coming into contact with such harmful waste which may cause them danger. This method is more effective in the sharp wastes. But the same may be combined by the method of burning of such waste.

5) Inertization

Inertization is the process where the waste is mixed with certain proportions of lime and cement and then disposed off accordingly. In this kind of disposal of product is done by mixing the same with cement so as to reduce the toxicity of the substances to directly mix in ground water thus contaminating it. It is suitable with pharmaceutical waste. However this kind of waste management is expensive and thus cannot be used for disposal in large quantity.

6) Incineration

It is the controlled method of burning the waste. It is one of the oldest and safest method of disposal of waste. It is also widely used and most commonly followed method of disposal of waste. In this process, the organic waste is burnt in high temperature producing mainly gaseous emissions including steam, carbon dioxide, nitrogen oxides and certain other toxic substances. Incinerator when operated at optimum temperature kills pathogens but if run at a lower temperature, it causes more harm than benefit. Incineration is the process for the treatment of hazardous waste and clinical waste. The waste is subjected to high temperatures of incineration to destroy pathogens and toxic contamination it contains.

CONCLUSION

Right to life and personal liberty is the fundamental right guaranteed by the constitution of almost all the nations in the world. Every individual has the right to live a healthy life. The apex body of our country, i.e the Supreme Court of India has also through its various judgment pointed out the fact that right to life includes the right to live a healthy life in a clean environment. As discussed in the research paper, improper Healthcare Management leads to polluted environment and also endangers life of the masses. Hence it is absolutely necessary that strict and stringent rules shall be enacted so as to enable the proper implementation of safeguards essential for the Healthcare waste Management.

Healthcare waste management is an integral component of action to be taken to achieve few goals as listed by the UN for the sustainable Development worldwide. Hence joint partnerships of nations worldwide with joint efforts to tackle the issues of proper Healthcare Waste management shall be taken with utmost urgency and importance.

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WOMEN'S AND SECURITY**Riya Wayangankar**

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ABSTRACT WRITING

In the 21st Century also we need to talk about women's security. It should be shameful for society that even in era women are not secure. They are abused mentally, physically and emotionally too. Women are not aware of emergency numbers and laws made for them by the government. After facing so many insecurities they wish to stay quiet and let society harass them. This research paper is grounded in the various topics related to women and their insecurities. The problems affecting facilities related to women's security in both urban and rural areas. The research is done in mixed methods. It contains both quantitative as well as qualitative methods to reach the Conclusion of this problem. Interviews were taken with women regarding their safety. Other than this information was taken of females by many other ways. During the research, it was found that women are turning stronger themselves for their security. And are keeping the quality of knowledge to take measures against the wrong.

Keywords: Women's security, Physically, Mentally, Emotionally, mixed method, urban and rural areas.

INTRODUCTION

Women's and Security is one of vital topics for the last many eras. If we peek into our past that's the period when women were not secure or were not been provided with Security. They have to face many types of insecurities such as child marriages, Sati's, making women bald after their husband's death, and harassing them physically. All these things are included in mental, physical, and emotional harassment. Where women were not secure at all. Women were kept busy or they were only limited to household stuff. Due to this many girl children were not able to step out and complete their goals and dreams.

But now the condition has improved in a better way than before. Women are not totally secure in some areas but at least the number has reduced down. Women know to stand for them. They know rules and laws for their security. They also know the emergency numbers. But still, the question remains are all Women safe and secure? Are they taking the quality of knowledge?

The Women Peace and Security (WPS) agenda was launched on 31st October 2000. WPS is a policy framework that recognizes that women must be critical actors in all efforts to achieve sustainable international Peace and Security. As women are also a part of humanity they are also a part of Safety.

Women staying in lower areas are still insecure about various things. Not only these but also the rape cases and harassment of women in different ways such as while traveling of women on odd hours is not yet that safe.

Back in October 2017, women took a social media to share their experiences of sexual harassment. The #metoo movement went viral, spurring a national and global discussion on the issue. Not only these but also women's posting themselves on social media and getting assaulted comments is one type of insecurity even an abusement.

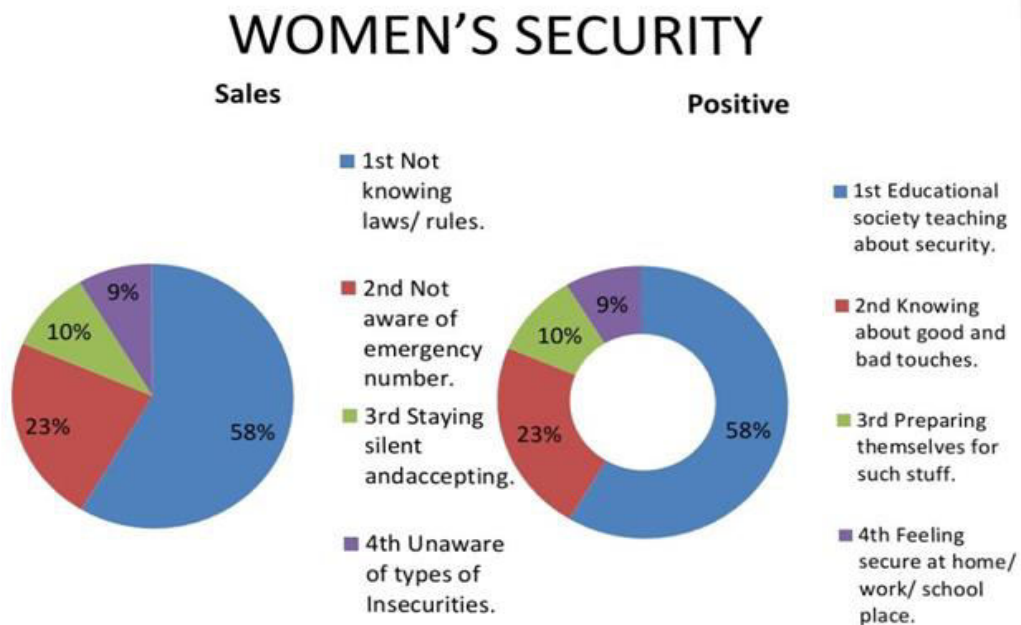
The government made many measures to make women's feel safe and secure And also provided some reservations to women society. 'Beti Bachao, Beti Padhao' is the most known slogan of these time to make girl child more strong. The Ministry of Woman and Child Development has been administrating various special laws related to women. Such as:-

1. Protection of woman from Domestic violence Act, 2005,
2. Dowry Prohibition Act, 1961.
3. Indecent representation of women (Prohibition) Act, 1986.
4. The sexual harassment of woman at work place (prevention, prohibition, and redressal) Act, 2013.
5. The prohibition of child marriage Act, 2006.

LITERATURE REVIEW

In a small research done by me through Google form in which some basic and necessary questions were included. On which women and girls from age group 15 and above answer. Through this, it comes to know the survey and condition of security towards women is progress and should be more progress.

The survey was not too negative or not too positive it was equal. Women are standing stronger for their safety and getting much more prepared through learning different skills and securing them. Such as karate, self-defence and many more. Where still there is a group of society of women who are not aware of any security and are not secure. Except for all this things one thing was majorly noted from my survey is that women's yet are not aware of any rules and laws. About emergency number and also that the women after facing all these in security and her assignment that do not want to take any help of laws or security team and policies.



OBJECTIVES

The main objective of this Research paper is to make women aware of their security. Women should be enough strong & knowledgeable to stand for themselves. Women should have quality knowledge to secure them from an the harassment.

Women have rights to shift themselves from an unsecured environment to a secure, free and happy environment. Women's should make themselves independent and hardworking that no should dare to make them feel unsecure or no one should harass them in any manner.

Women need to understand that they don't need to be shy or to share freely about their problems to the Police, Security teams, etc. They should open their problems so that they can survive it and can stay making safe distance from such people or such society.

Women are the main species of this society. They need to understand that they are human beings and not any ordinary animal holded with a belt on a neck. They can be free, happy, safe & have all right to live their life with their choice. Can travel anywhere at any time they want. Can work they feel secure. Can stay in such environment where they feel secure and happy.

PROPOSED METHODOLOGY

The method used for these papers us mixed method. Both quantitative and qualitative method is used. Even small surveys are done in different forms. Interviews of principals and women from rural areas are conducted. Google forms were passed with basic and important questions. Information given by another researcher was read. Women from the locality were called together to discuss topic and ask about their security and views on security.

RESULT /OBSERVATION

From the given data in the paper, it comes to an observation that in urban areas women are getting stronger and more acknowledgeable to secure themselves. Even they are securing themselves with the help of many online applications also. But on another hand, we observe that women and rural areas are still at for their security. They don't know anything about it. Even they are not having any type of rules and laws and emergency numbers.

INTERPRETATION OF RESULTS

In a survey done by me for women with some basic and important questions. To which women responded not to positively and not to negatively it has equal votes. We can say that 50% of women's voted in favour whereas 50% of women's voted in against.

CONCLUSION

After going through all these data I will say that women are much stronger than past. Where there are still some areas which should develop on this topic. From this research, still there is a lack of security. So, we can say that women are progressing and are also progressive.

For future research may be the security in rural areas will be much progress. The percentage of positive reviews will be increased than negative.

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ROLE OF WOMEN IN SCIENCE AND TECHNOLOGY

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ABSTRACT

This research paper aims to provide a comprehensive overview of the role of women in science and technology, and to highlight the importance of addressing the challenges and barriers that still exist in order to ensure that women are able to fully contribute to these fields and achieve their full potential. It explored the role of women in science and technology, and the challenges they face in pursuing careers in these fields. The paper studied the historical and current roles of women in science and technology, with a focus on the challenges and opportunities that exist for women today. Through a review of existing literature and analysis of statistical data, the paper has examined the barriers that women face in pursuing careers in these fields, as well as the successes and achievements of women who have overcome these obstacles. This study inspected the potential benefits of increasing the representation of women in science and technology, such as greater diversity of ideas and perspectives, improved problem-solving and innovation, and enhanced economic growth and development.

Keywords: Women, STEM, Challenges, Success, underrepresentation, unconscious bias, career opportunities, economic growth, socio-cultural progress, Policies, Inclusion.

1. INTRODUCTION

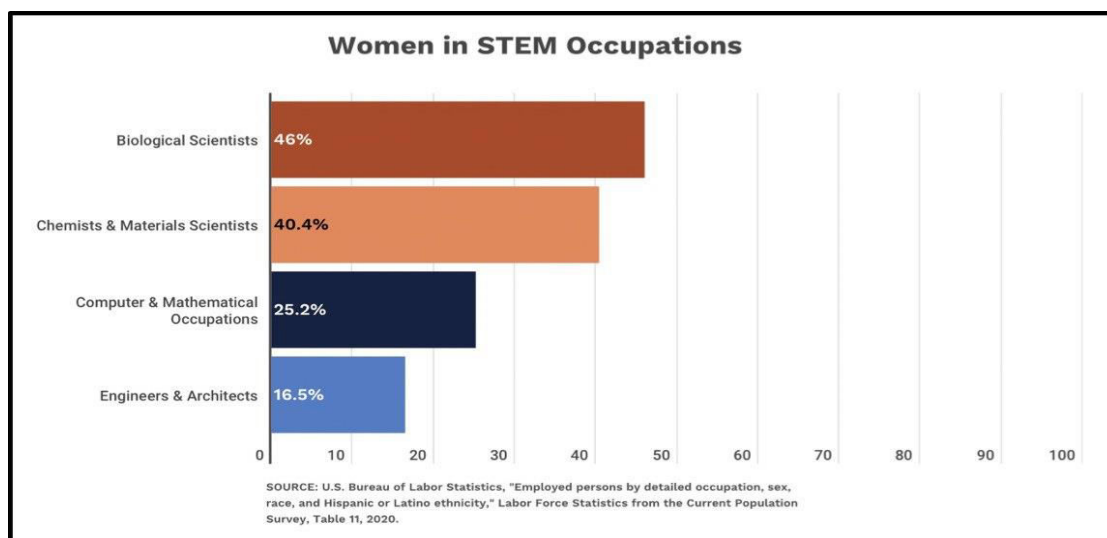
Women are approximately 50% of our precious human resources which can make valuable contributions to the GDP and yet, women are underrepresented in science technology, engineering, and mathematics & medicine (STEMM). The reasons for this are complex, including social and cultural biases, lack of social awareness and support from families, lack of policies in the industry and government. The underrepresentation leads to missed opportunities for innovation, research, and development, economic and societal progress. Today, the world faces complex and urgent challenges, such as climate change, global health crises, and technological innovation, which require diverse perspectives and skills to solve. Therefore, it is essential to ensure that women have equal opportunities to pursue and succeed in STEM fields.

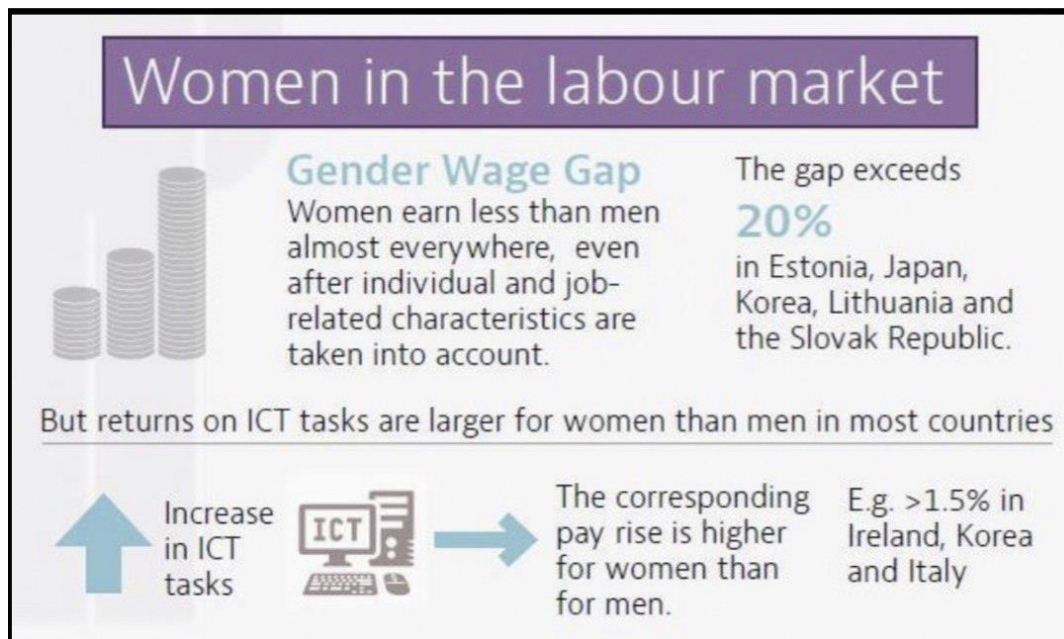
2. RESEARCH OBJECTIVES:

The objective of this research paper is to study the challenges faced by women in pursuing their careers in science and technology. The reasons may vary depending on many factors. Many western countries have challenges to get young women interested in STEMM. While this particular situation may not be true in India, we still face some. These are mostly socio technical issues and also involve deep rooted social norms that perceive girl child in a certain way.

This paper will also try to suggest a few ways to deal with these challenges effectively so that our future generations will see more women equipped with scientific knowledge contributing to the society's growth. Such a growth will be truly inclusive as it will include the perspectives of the population which did not get equal opportunities to contribute to its potential.

3. ANALYSIS:





Source: Role of Women in Science and Technology, 2019 JETIR March 2019, Volume 6, Issue 3

4. RESULTS AND DISCUSSION:

4.1 Notable Women Scientists and Technologists:

The world has seen many eminent personalities like Ada Lovelace – considered as the world's first computer programmer, Marie Curie: Pioneering physicist and chemist who Discovered radioactivity. She was the First woman to win a Nobel Prize (Physics,1903) and the only person to win Nobel Prizes in two different scientific fields (Physics,1903 and Chemistry,1911), Grace Hopper: Computer scientist and U.S. Navy rear admiral. She developed the first compiler for a programming language (COBOL). Katherine Johnson: Mathematician and space scientist at NASA. She calculated trajectories for numerous space missions, including the Apollo moon landing. Lise Meitner: Physicist who contributed to the discovery of nuclear fission. She played a vital role in the development of nuclear power and atomic bomb research. Rosalind Franklin: Biophysicist who made crucial contributions to the discovery of the structure of DNA. Her X-ray crystallography work provided evidence of the double helix structure. Hedy Lamarr: She was an actress and inventor. She co-invented a frequency-hopping spread spectrum technology during World War II, which became the foundation for modern wireless communication and encryption systems.

Many Indian women have made pioneering advancements in science and technology, overcoming social and cultural barriers prevalent during their time. Janaki Ammal Edavalet Kakkat, she was a botanist and geneticist who conducted extensive research on sugarcane and its cytogenetics. Rajeshwari Chatterjee: Eminent physicist and innovator, she pioneered microwave engineering in India and made significant contributions to the field. Asima Chatterjee: Notable organic chemist. She conducted extensive research on medicinal plants and contributed to the development of drugs for epilepsy and malaria treatment. She was the first woman recipient of the Shanti Swarup Bhatnagar Prize for Science and Technology in Chemistry. Anna Mani: Meteorologist and instrument scientist. She contributed to the development of various meteorological instruments, including the "Mani radiation pyrhelimeter". She also made significant contributions to atmospheric science and weather forecasting. Kamala Sohoni: Biochemist and enzymologist. She is the First Indian woman to earn a Ph.D. in science (Biochemistry) from an Indian university. She conducted research on enzymes and their role in metabolism and nutritional biochemistry. Tessy Thomas, missile scientist, she played a key role in the development of India's indigenous ballistic missile defense system. She is also known as the "Missile Woman of India". Kalpana Chawla, Astronaut and space shuttle mission specialist. She was the first Indian-born woman to fly in space. Tragically lost her life in the Space Shuttle Columbia disaster in 2003. The women scientists who took India into space Ritu Karidhal - Deputy Operations Director, Mars Orbiter Mission, Anuradha TK - Geosat Programme Director at ISRO Satellite Centre, and Nandini Harinath - Deputy Operations Director, Mars Orbiter Mission a several women scientists who had worked on the mission and were in the control room at the time of the launch.

Women pioneers in medical education became trailblazers in the field of medicine in India. Kadambini (Basu) Ganguly - was the first female graduates of the British Empire. She was also the first female physicians of South

Asia to be trained in western medicine. She studied medicine at the Calcutta Medical College and got graduated in 1886. She was a prominent figure in the women's rights movement in India. Anandibai Joshi - The first Indian woman to obtain a medical degree. She enrolled in the Women's Medical College of Pennsylvania in 1883 and advocated for women's education and healthcare in India. Rukhmabai Raut - The first Indian woman to practice medicine in colonial India. She advocated for women's rights and fought against child marriage. She obtained a medical degree from the London School of Medicine for Women in 1894. Muthulakshmi Reddi: Eminent physician and social reformer. She was the first female legislator in British India. She Established the Adyar Cancer Institute in Chennai. Mary Poonen Lukose: One of the first Indian Christian women to become a doctor. She graduated from the Madras Medical College in 1913. She worked in mission hospitals and served underserved communities. Dr Indira Hinduja We all know her as the first Indian women who delivered a test tube baby in 1986. She also pioneered the Gamete Intra Fallopian Transfer (GIFT) method helping in the birth of India's first GIFT baby in the year 1988.

We have so many examples to look up to and yet we know so little of them. These ladies must be introduced to students as role models and inspirations. Their contributions will ignite the fire of science in many young minds. Young men and women should be made aware of these eminent ladies who have made difference to the society as a whole. Their success stories may bring forth a great number of young girls to study STEM.

4.2 Challenges Faced by Women:

As per "Research and Development Statistics, 2019-20" of Department of Science and Technology, India has 16.6% women researchers directly engaged in R&D activities. There are several reasons for lower participation of women in R&D. This includes family issues like marriage, family responsibility, relocation due to transferable job of spouse etc. They attribute to dropout from higher studies, career break, overage for scientific jobs and prolonged absence from place of work or even resignation from the job. It is also because of the social conditioning of the Indians in general. Women are made aware of their domestic duties and their responsibilities towards family since young age. However not many men are sensitized in this topic. This leaves a huge gap of responsibilities that sit tight on the shoulder of the lady of the house. Women in India depend on the availability of childcare facilities – which can be a huge challenge, availability of help in house hold chores from maids whose numbers have also been dwindling lately. The next generation of the household helps are also looking forward to better opportunities in their careers and education. The issue of gender sensitization has to be dealt with inculcating sense of responsibility in young minds both men and women. It is a common practice in developed countries that men tend to share burden of the family responsibilities and thus help maintain the work life balance in their women's life. Even children are given age-appropriate responsibilities. This practice proves beneficial in the long run when both spouses are working and help in retaining careers of women. This is far from the picture seen in countries like India where women are primary care takers or home and family.

Pressure to conform to societal norms, forced marriages and childbirth are among the daunting reasons why women in STEM face challenges. In most households, women are majorly responsible for running the family, and this burden restricts them, to an extent, from pursuing their dream career. The Government of India has tried to bridge the gap in bringing forth many schemes like The Women Scientists Scheme (WOS-A) for research in basic and applied sciences is aimed at bringing back women who earlier dropped out for some reasons, back to the scientific workforce. It provides opportunities to women scientists and technologists in the age group of 27-60 years who want to return to mainstream science and work as bench-level scientists. But more has to be done in providing basic facilities to women pursuing STEM. More women centric centers of education like the SNTD university programs have to be widened. With education becoming a costly affair, government involvement in providing more aids to institutions has become crucial. When faced with an economic turmoil, the education of girl child especially in STEM takes a back seat.

In India, there has been an increase in the number of women applying for STEM related programs and degrees. The gender gap in STEM narrowed from 23% enrollments in 2019 to 32% in 2021. But will this growth in enrollment translate to increase in the women in the industry will depend on how much society and industry itself supports them. The critical work life balance hangs by thread if demanding career leaves no time for personal or family life. Online education, work from home, flexible work hours may encourage help break the existing gender bias and promote a better, inclusive society.

4.3 Strategies for Promoting Gender Equality:

Observe closely the gender stereotypes in learning materials; eradicating any such visual or any other form or information is crucial. There is an increased awareness of the role model problem that children's rights activist Marian Wright Edleman articulated so well: 'You can't be what you can't see.' When asked to draw a scientist, most students draw a white man in a lab coat. The great majority of portrayals of scientists and engineers in

movies and television shows has been men. Implementing gender-sensitive policies, and creating an inclusive culture at workplace is the key to increase women in all fields especially STEMM. The technological empowerment of women is critical at all levels. The rural areas are struggling to keep up the pace of the world and it is vital that the women from these areas are reached out. Lack of educational infrastructure, transport and information may keep the girls in this area further away from opportunities in STEMM. The economic and social prosperity of countries depends on the state of science, technology, engineering, and mathematics (STEM). Society is becoming acutely aware of the participation of women in these fields. According to research, it indicates that girls' grades are slightly better than boys' and are more consistent. However, there is a difference in women opting for STEM as a career.

Government has taken several corrective steps to encourage women scientists in research activities. The "Knowledge Involvement in Research Advancement through Nurturing (KIRAN)" Scheme of DST had been instituted to encourage women scientists through various programs in the field of Science and Technology (S&T). 'Women Scientist Scheme (WOS)' provides career opportunities including fellowships to unemployed women scientists and technologists, especially those who had a break in career. Under 'Consolidation of University Research through Innovation and Excellence in Women Universities (CURIE)' program only women Universities are being supported for development of research infrastructure to enhance women's participation in S&T. Mobility Scheme under KIRAN addresses relocation issues of working women scientists and provides support in project mode for 2-5 years. Indo-US Fellowship for Women in STEMM (Science, Technology, Engineering, Mathematics & Medicine) encourages Indian women scientists and technologists to undertake international collaborative research in premier institutions in USA for duration of 3-6 months. Recently launched "Vigyan Jyoti" Scheme encourages girl students of Class 9 to 12 to pursue education and career in S&T. The SERB Women Excellence Award recognizes women Academy Awardees to expand their research horizon to higher levels. In addition, Department of Biotechnology (DBT) is also implementing 'Biotechnology Career Advancement and Re-orientation Programme (BioCARE)' to encourage women scientists in Biotechnology research. Council for Scientific and Industrial Research (CSIR) provides upper age relaxation of five years to women researchers to pursue doctoral and postdoctoral research for award of Fellowships/Associateships. To recognize the contribution of women scientists in the field of Earth System Sciences, Ministry of Earth Sciences has initiated a special award called "National Award for woman scientist" conferred to one-woman scientist each year.

5. CONCLUSION

While there have been significant strides made in the inclusion and recognition of women in these fields, there is still much work to be done in addressing many significant issues such as gender bias, lack of representation, unequal opportunities, etc. The role of women in S&T is essential for innovation and progress. By promoting diversity and inclusion, all voices are heard and all perspectives are represented, leading to more creative and effective solutions to complex problems. Research shows that diverse teams perform better. Individuals from different genders, races, backgrounds and experiences bring different perspectives that can lead to innovative solutions.

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A STUDY ON INDIVIDUAL INSIGHT AND ACCEPTANCE TOWARDS DIGITAL SUPPORT FOR HUMAN HEALTH**Khan Zaed Sadarudin and Kannaujia Vineet Sheshnath**

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1. INTRODUCTION

Digital technology has become an integral part of our lives, and it has also become an essential tool for healthcare providers. Digital support for human health has enabled healthcare providers to offer care to patients remotely, especially in situations where patients cannot access healthcare facilities physically. Digital Health support system include various software and hardware services consist of Mobile health apps, wearable devices, electronic health care records and Telemedicine etc.

The use of digital technology in healthcare is not new. In recent years, however, the development of new technologies has transformed the way healthcare is delivered. Digital technology has made it possible to provide care remotely, allowing patients to receive care at home. This has not only reduced the burden on healthcare facilities but has also made it easier for patients to access care. The COVID-19 pandemic has further highlighted the necessities of digital technology in healthcare, as it has become essential for providing care during lockdowns and social distancing measures.

Digital support for human health has several benefits. Firstly, it has made it easier for patients to access healthcare. Patients who are unable to visit healthcare facilities can receive care remotely, reducing the need for physical visits. This has also reduced the burden on healthcare facilities, freeing up resources for patients who need physical care. Secondly, digital support has improved patient outcomes. Patients who receive remote care can monitor their conditions more effectively, which can lead to early detection and prevention of complications. Digital support has also made it easier for healthcare providers to coordinate care, reducing the likelihood of errors and improving patient safety.

Connection between Digital Supports on Human Health.

There is a growing body of research that suggests a strong connection between digital support and human health. Here are a few ways in which digital support can impact human health:

1. **Access to Health Information:** The internet provides access to a wealth of health information that was previously difficult to obtain. This can help individuals better understand their health conditions and treatment options, which can lead to better health outcomes.
2. **Telehealth and Virtual Care:** Telehealth and virtual care allow individuals to receive healthcare services remotely, which can improve access to care, particularly for those who live in rural or remote areas or have mobility issues.
3. **Personal Health Tracking:** With the help of wearable devices and mobile apps, individuals can track their health metrics, such as heart rate, sleep, and physical activity. This information can help individuals better manage their health and make lifestyle changes that can improve their overall wellbeing.
4. **Mental Health Support:** Digital platforms provide access to mental health resources, including online therapy and mental health apps. These resources can help individuals manage stress, anxiety, and depression.
5. **Social Support:** Social media and online communities provide a way for individuals to connect with others who have similar health conditions or concerns. This can help individuals feel less isolated and provide emotional support.
6. Digital support can improve access to healthcare services, especially for individuals in remote or underserved areas. For example, telehealth and virtual care allow individuals to receive medical consultations and treatment remotely, reducing the need for in-person visits.
7. Digital health apps and wearable devices can help individuals track their health metrics and make lifestyle changes that can improve their overall health. For example, fitness apps can help individuals set goals and track their progress, while nutrition apps can provide guidance on healthy eating.
8. Digital support can provide social support and emotional connections for individuals with chronic health conditions. For example, online communities and support groups can provide individuals with a sense of belonging and emotional support.

Overall, digital support can play an important role in promoting and maintaining human health.

2. PROBLEM OF THE STUDY

Despite its benefits, digital support for human health also faces several challenges. One of the main challenges is the digital divide. Not all patients have access to digital technology, which means that they are unable to access remote care. This is particularly true for elderly patients, who may not be comfortable with technology. Secondly, there is a concern that digital support may compromise the quality of care. While digital support can improve patient outcomes, it may not be as effective as physical care in some cases. Finally, there is a concern that digital support may be misused, leading to breaches of privacy and security.

3. SCOPE OF THE STUDY

The present study is to analyse and evaluate the responses of respondents based on their acceptance of digital health care support system. The study is limited to only digital support for health care through apps, websites and devices. In the present study 50 respondents are taken into account to analyse the individual to understand the impact of digital health support system. The study covers the respondents residing in Mumbai.

4. OBJECTIVE OF THE STUDY

The Objectives of the study are as follows

1. To study the of availability of digital health care support system.
2. To understand the satisfaction level of individual from digital health care support system.
3. To analyse the challenges faced by the individual when using digital health support system.

5. HYPOTHESIS

The following are the hypothesis of the study

1. The study the of availability of digital health care support system
2. The understanding the satisfaction level of individual from digital health care support system.
3. The analysis the challenges faced by the individual when using digital health support system.

6. RESEARCH METHODOLOGY

Sources of data: In the present study the data collected through primary along with secondary data. Well-designed questionnaire is used to collect the primary data through Google forms. Secondary data gathered through journals, books, magazines and internet etc.

Classes of Respondents

The primary data was collected on the basis of questionnaire, interview, discussion and observations of respondents randomly selected from the Mumbai city.

Statistical Tools: Tables, Charts, Pie Diagram and percentage analysis are used to analyse the data.

7. FINDINGS:

The study reveals the following outcome

1. Out of the total 30 respondents, 50% of the respondents are using Fitness tracker and Smart scale to track their health.
2. 35.7% of the respondents are frequently using the health related mobile apps or websites, approximately 21.4% are checking health related websites once a day.
3. When asked about parameters that they track through digital devices, 78.6% track their physical activity through digital mode, 14.3% use digital systems for their healthy sleep pattern.
4. Respondent believe that digital support system helped you manage your mental health more effectively.
5. 50% of the respondent believe that through fitness tracking apps and online workout programs digital support systems proved beneficial in promoting a healthy lifestyle.
6. Approximately 35.7% respondent access to telemedicine and virtual consultations, 21.4% state that it has improved convenience and reduced waiting times for appointments.
7. 28.6% respondent reveal that due to digital health care support systems awareness and understanding of personal health issues have increased. It helps them in identifying the chronic conditions and quick recovery measures can be taken.

8. 57.1% of the respondent are satisfied with the various digital health care services available through apps and websites.
9. The major challenge which restrict the individual to opt for digital health care Concerns about privacy and security of personal health information.28.6 % face the internet connectivity issue or lack of access to devices.
10. Approximately 56% of the user experience slow loading and frequent app crashes or system errors.
11. 28.6% respondents are not comfortable with sharing personal health information through digital support systems and prefer to keep health information offline. Only 7.1% are comfortable with the security measures.
12. Out of the total respondents 42.9% are not facing any challenges towards managing digital support system are finding it easy to stay engaged and motivated with the support of digital tools.
13. Approximately 35.7% find the digital support system good but still believe that there are some gaps or areas where I needed more assistance.

8. CONCLUSION

Digital support for human health has the potential to transform the way healthcare is delivered. It has made it easier for people to access care, improved patient outcomes, and made it easier for healthcare providers to coordinate care. However, it also faces several challenges, including the digital divide, concerns about quality of care, and privacy and security issues. Despite these challenges, digital support for human health is likely to become increasingly important in the future, as healthcare providers seek to improve access to care and reduce the burden on healthcare facilities. In Mumbai city majority of people are employed or belong to working class and barely gets time to visit doctors personally. Therefore, digital health care support proves to be beneficial to them to timely track their health status and to take appropriate measures to overcome health issues.

9. RECOMMENDATION

1. Enhanced Data Security: Emphasize strong data security measures to build trust among users. There is a need to enhance the Privacy and security measures to attract more individuals who find digital system not entirely secure.
2. User-Friendly Interfaces: Ensure that the digital healthcare support system has a user-friendly interface that is easy to navigate and understand.
3. Integration with Wearable Devices: Integrate the digital healthcare support system with wearable devices, such as fitness trackers, smartwatches, and health monitoring devices.
4. Mobile Applications: Develop mobile applications that provide access to digital healthcare support systems.
5. Offer free or low-cost trials of the digital healthcare support system to encourage users to try it out and experience its benefits first-hand.

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**REVOLUTIONIZING AGRICULTURE THROUGH ADAPTIVE ICT MEASURES:
OPPORTUNITIES AND CHALLENGES****Ravikumar Talla and Vilas Mahajan**¹HOD, Department of Chemistry and ²HOD, Department of IT and CS, VPM's R. Z. Shah College, Mulund (E), Mumbai-400081**ABSTRACT**

This paper aims to explore the potential benefits of incorporating adaptive information and communication technology (ICT) measures in the agriculture sector to enhance agricultural practices and total yields. To achieve this, we emphasize our study to understand the details of the challenges and opportunities that come with adopting ICT in agriculture, with a specific focus on accessibility, affordability, and reliability. By examining relevant literature, the study presents evidence that the incorporation of adaptive ICT measures can contribute to increased productivity, food security, and improved livelihoods for agricultural stakeholders.

Moreover, the paper emphasizes the importance of taking a comprehensive approach that considers the diverse needs and circumstances of different stakeholders in the agriculture sector pertaining to the use of ICT. A one-size-fits-all approach is unlikely to be effective, as different regions and countries may have unique requirements, necessitating an approach that accommodates these differences. Hence, the study advocates for stakeholders to consider such variations when implementing ICT initiatives in agriculture.

Based on the discoveries, the study recommends a range of policy measures to encourage the adoption of ICT in agriculture, including the development of infrastructure, building capacity, and the establishment of public-private partnerships. These policy measures can help create an enabling environment for the use of ICT in agriculture and ultimately contribute to the sector's transformation. Additionally, the paper underscores that these measures need to be complemented by targeted education and training programs to enhance the ability of agricultural stakeholders to effectively use ICT measures and also discusses the challenges in its implementation. By adopting such an approach, the agriculture sector can fully harness the potential benefits of ICT and contribute to a more sustainable and prosperous future for all.

Keywords: ICT in agriculture, public-private partnership, digital farming, Modern Technology in farming, E-agriculture.

INTRODUCTION

India has a long history of agriculture, and throughout the centuries, different instruments have been used to aid farming activities. The plow is one of the oldest agricultural tools that were used in ancient India. It was made of wood and had a metal tip, and it was used to turn the soil to prepare it for sowing seeds. The plow has been used in India for over 4000 years, and it is still used in some parts of the country.^[1] Another ancient tool that has been used in agriculture for centuries is the sickle. It was made of metal and had a curved blade that made it easy to cut the crops. The sickle was used to harvest crops such as rice, wheat, and barley.

Ancient Indian farmers used various irrigation tools to water their crops. Such as wooden water wheels and canals to transport water from rivers and lakes to their fields. Wells and pumps to extract water from the ground. In the early 20th century, tractors were introduced in India. Tractors replaced traditional tools like the plow and sickle and made farming more efficient. Tractors were also used for transportation of crops and other agricultural products. The first mechanical harvester was introduced in India in the 1970s. The harvester was a significant improvement over traditional sickles and made harvesting more efficient and less time-consuming.^{[2][3]}

In recent years, drones have been used in agriculture to monitor crops and collect data. Drones are equipped with cameras and sensors that can detect changes in soil moisture, plant health, and temperature. This data is then used by farmers to make informed decisions about irrigation, fertilization, and pest control.^[4]

Considering the above progression, as of now, India's agricultural tools and techniques have evolved significantly, with the country having made great progress in enhancing farming practices. From ancient plows and sickles to modern-day drones and precision farming, the agricultural sector has witnessed remarkable transformations.^[5]

When discussing current farming technology, it is necessary to recognise the significance of ICT as a decision support system for farmers. Farmers may stay up to date on all recent information with the use of ICT. This includes weather, agriculture, and newer and more complex methods of improving crop quality and

productivity. ICTs have significantly altered the way people, governments, and enterprises, both large and small, operate in the modern world. Mobile internet connection is now available to about 60% of the world's population, making it the most extensively used route for internet access worldwide. Adoption of ICTs has enabled greater communication and the supply of services and information to individuals who previously did not have access. ^{[5][6]}

Technological Advancements in Agriculture:

India's agricultural sector has experienced significant transformations in recent years with the adoption of new technologies that are improving productivity, efficiency, and sustainability. Some of the new technologies that are increasingly being utilized in India's agriculture sector include: ^{[6][7]}

1. Precision Farming - This involves the use of modern technologies like sensors, GPS, and data analytics to optimize crop yields and reduce waste. Let's say a farmer has a large field with varying soil types and moisture levels. With precision farming, the farmer can use sensors to collect data on soil moisture, nutrient levels, and crop growth rates. This information can then be used to create a detailed map of the field, highlighting the areas that require more or less water, fertilizer, or other inputs. The farmer can then use this map to apply the necessary inputs in the exact amount and location needed to maximize crop yields. ^{[8][9]}



Fig1. Precision farming

Ref. <https://agfundernews.com/wp-content/uploads/2021/11/iStock-1254095766.jpg>

Some Advantages of Precision Farming Include: ^[9-12]

- (a) **Increased Yields** - Precision farming allows farmers to optimize crop yields by applying the right amount of inputs in the right location. This can lead to increased yields, improved crop quality, and reduced waste.
- (b) **Reduced Costs** - By applying inputs only where and when they are needed, farmers can reduce costs associated with inputs like water, fertilizer, and pesticides.
- (c) **Improved Efficiency** - Precision farming can help farmers save time by automating some of the manual tasks involved in traditional farming. This can result in improved efficiency and increased profitability.
- (d) **Environmental Benefits** - Precision farming can help reduce the environmental impact of agriculture by reducing the use of inputs like water, fertilizer, and pesticides. This can lead to improved soil health, reduced pollution, and greater sustainability.
- (e) **Better Decision Making** - With the use of advanced technologies like sensors and data analytics, farmers can make more informed decisions about their crops, leading to improved productivity and profitability.

2. Drones - Drones are equipped with cameras and sensors that can detect changes in soil moisture, plant health, and temperature. This information is then used by farmers to make informed decisions about irrigation, fertilization, and pest control. Drones are particularly useful for large farms, as they can cover a lot of ground quickly and efficiently. ^[13]

Let's say a farmer has a large field of crops that needs to be monitored regularly for any signs of stress or disease. In the past, this would have required manual labor or satellite imagery, which may not have provided enough detail. With drones, the farmer can quickly and easily fly over the field and collect high-resolution images and data. The images and data collected can be analyzed using specialized software to identify any issues with the crops, such as poor soil nutrition, water stress, or pest infestations. Drones are also useful for aerial spraying for fertilizers and pesticides without involving labour. ^{[14][17]}

Some Advantages of Using Drones in Agriculture Include:^{[13-15][17]}

- (a) **Improved Crop Management** - Drones can provide detailed images and data about crops that are not visible to the naked eye. This can help farmers identify any issues that could affect the crop's health, such as nutrient deficiencies or pest infestations.
- (b) **Increased Efficiency** - Using drones is much faster and more efficient than manual labor or satellite imagery. Drones can cover large areas quickly, and the data collected can be analyzed in real-time, allowing farmers to make informed decisions faster.
- (c) **Cost Savings** - Drones can be used to monitor crops at a fraction of the cost of traditional methods. This can help farmers save money and resources while improving crop yields.
- (d) **Reduced Environmental Impact** - Using drones can reduce the need for chemical inputs, such as fertilizers and pesticides, which can help reduce the environmental impact of farming.
- (e) **Improved Safety** - Using drones is safer than manual labor, especially in areas that are difficult to access or dangerous. Direct exposure to the harmful chemicals is also greatly reduced by using aerial spraying of insecticides and pesticides.

3. Farm Management Software - This software allows farmers to track and manage their farms more effectively. It provides real-time data on crop health, soil quality, and weather patterns, allowing farmers to make informed decisions about planting, fertilizing, and harvesting. The software can also track inventory, sales, and expenses, helping farmers to manage their finances more efficiently.^[18]

Here are a Few Examples of Farm Management Software and their Advantages:^{[19][20]}

- (a) **BushelFarm** - BushelFarm is a web-based software that allows farmers to track field activities, input usage, and crop performance. This software can help farmers make data-driven decisions about seed selection, planting dates, and crop rotation. With BushelFarm, farmers can reduce waste, save time and money, and increase yields.
- (b) **Granular** - Granular is a farm management software that helps farmers manage their finances, crops, and fields. This software provides real-time data on crop performance, weather patterns, and market trends, allowing farmers to make informed decisions about their operations. Granular can also help farmers optimize their production schedules, reduce input costs, and increase yields.
- (c) **Agrian** - Agrian is a farm management software that provides tools for managing crop inputs, monitoring crop health, and tracking regulatory compliance. This software can help farmers reduce risk and ensure that they are following all necessary regulations. Agrian can also help farmers optimize their input usage, reduce waste, and increase yields.

Advantages of Using Farm Management Software Include:^[22-24]

- (a) **Increased Efficiency** - Farm management software can automate many tasks that would otherwise be time-consuming and labor-intensive. This can help farmers save time and resources, allowing them to focus on other aspects of their operation.
- (b) **Improved Accuracy** - Farm management software can provide real-time data on crop performance, input usage, and weather patterns. This can help farmers make more accurate decisions about their operations, reducing waste and increasing yields.
- (c) **Savings** - By optimizing their operations with farm management software, farmers can reduce input costs, minimize waste, and increase yields. This can lead to significant cost savings over time.
- (d) **Better Record Keeping** - Farm management software can help farmers keep detailed records of their operations, including input usage, crop performance, and regulatory compliance. This can help farmers stay organized and avoid costly mistakes.

4. Automated Irrigation Systems - These systems utilize sensors to monitor soil moisture levels and automatically turn on and off irrigation systems to ensure that crops receive the right amount of water. This results in reduced water waste and improved crop yields.^[24-27]

Here are a Few Examples of Automated Irrigation Systems and their Advantages:^[24-27]

- (a) **Drip Irrigation Systems** - Drip irrigation systems deliver water directly to the roots of plants through a network of tubes and emitters. This can help reduce water usage by up to 70% compared to traditional

irrigation methods. Drip irrigation systems can also reduce soil erosion, prevent weed growth, and increase crop yields.

- (b) **Sprinkler Irrigation Systems** - Sprinkler irrigation systems deliver water through a series of nozzles or sprinkler heads. This can help reduce water usage by up to 30% compared to traditional irrigation methods. Sprinkler irrigation systems can also improve soil moisture levels, prevent disease, and improve crop yields.
- (c) **Soil Moisture Sensors** - Soil moisture sensors are devices that measure soil moisture levels and provide real-time data to farmers. This data can be used to optimize irrigation schedules, reduce water usage, and improve crop yields. Soil moisture sensors can also help prevent overwatering, which can lead to water waste and reduced crop yields.

Advantages of Using Automated Irrigation Systems Include:^[26-30]

- (a) **Water Conservation** - Automated irrigation systems can help reduce water usage by delivering water directly to the roots of plants and providing real-time data on soil moisture levels. This can help farmers conserve water and reduce water waste.
- (b) **Improved Crop Yields** - By delivering water directly to the roots of plants and optimizing irrigation schedules, automated irrigation systems can help improve crop yields. This can lead to increased profits for farmers and a more sustainable future for agriculture.
- (c) **Cost Savings** - By reducing water usage and optimizing irrigation schedules, automated irrigation systems can help farmers save money on water bills and input costs.
- (d) **Improved Efficiency** - Automated irrigation systems can help farmers save time and resources by automating many tasks that would otherwise be time-consuming and labor-intensive.
- (e) **Environmental Benefits** - By conserving water and reducing water waste, automated irrigation systems can help promote a more sustainable future for agriculture and reduce the environmental impact of farming practices.

Government Schemes for ICT Application in Agriculture.^[31-33]

1. Introduction to ICT:

- a. **Kisan Suvidha Mobile App:** This app provides farmers with information about weather forecasts, crop prices, and expert advice on farming practices.
- b. **Kisan Call Centre:** Farmers can dial a toll-free number to get expert advice on farming practices and market prices.

2. Digital Literacy:

- a. **Pradhan Mantri Gramin Digital Saksharta Abhiyan:** This scheme aims to make six crore rural households digitally literate by providing them with access to digital devices and basic computer training.
- b. **Common Service Centres:** These centers provide access to digital services and training on digital literacy to rural communities.

3. Access to Agricultural Information:

- a. **Kisan Vikas Patra:** This scheme provides farmers with information about new farming techniques, government schemes, and market prices.
- b. **Mera Gaon Mera Gaurav:** This scheme provides farmers with access to expert advice on farming practices, disease management, and soil health.

4. Use of Mobile Apps:

- a. **eNAM:** This app enables farmers to sell their produce online through a transparent and competitive bidding process.
- b. **Soil Health Card Mobile App:** This app provides farmers with information about the nutrient content of their soil and recommendations for fertilizers.

5. Precision Farming:

- a. **National e-Governance Plan in Agriculture:** This scheme aims to use ICT tools such as sensors and GPS to monitor soil moisture, nutrient levels, and crop growth.

b. Pradhan Mantri Fasal Bima Yojana: This scheme provides insurance coverage to farmers against crop failure due to natural calamities and helps them adopt precision farming techniques.

Challenges in ICT Adoption

1. Digital divide: According to Nielsen's India Internet Report 2023, there were 700 million or more active Internet users in India aged two and older as of December 2022. According to the survey, rural India had 425 million registered internet users, which was about 44 percent more than metropolitan areas. metropolitan India had 295 million active internet users. Due to the fact that almost half of rural residents are still not actively using the internet, the survey also showed there is significant space for growth in rural markets.^[34]

Only 43 per cent of people in India utilize the internet, according to the ITU's World Telecommunication/ICT Indicators Database. According to the IAMAI-Kantar Report ICUBE 2020.^[35]

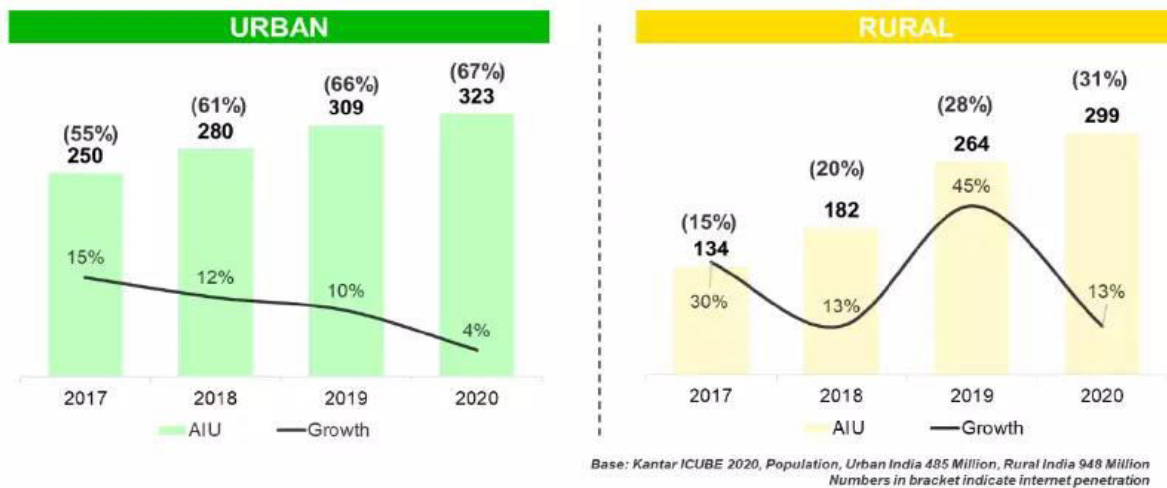


Fig no: 02. India’s Internet Usage divide in Rural and Urban areas

Ref: <https://www.passionateinmarketing.com/rural-india-takes-driving-seat-in-indias-internet-usage-growth/>

2. Low Digital Literacy: Many farmers are not aware of the various ICT tools available to them, such as mobile apps, which can provide information on weather, soil, and crop varieties.

Among 150 farmers selected for the study, the majority of the respondents (80.66%) had low awareness level of using ICT tools, (48.00%) of the respondents had low level of accessibility of ICT tools whereas (90.00%) of the respondents had low utilization of using of modern ICT tools.^[36]

The current situation in over almost 6,50,000 villages with almost 2,50,000 panchayats and approximately 30 lakh panchayat members, almost 40% population is still living below the poverty line and illiteracy rate is almost 25% to 30% and digital literacy is almost non-existent among more than 90% of India’s population while the country boasts the world’s second fastest growing mobile market but still it is lagging behind when it comes to internet connectivity connecting the community and its members to the world.^[37]

3. Lack of Coordination Among Stakeholders: The lack of coordination between government agencies and private companies can lead to duplication of efforts and inefficient use of resources. For example, the government of India has launched several initiatives aimed at promoting the use of ICT in agriculture, but many of these initiatives are not coordinated with each other.

There is a lack of effective implementation and follow-up support for government schemes and programs aimed at promoting the use of ICT in agriculture.

About 67.32 percent of sample respondents were aware about the process, concept and benefits of eNAM. On the contrary 32.68 percent farmers are still unaware about e- NAM process which shows that there is an urgent need to strengthen the capacity building programs specially training and exposure visits for better understanding of farmers with respect to e-NAM process and its benefits.^[38]

4. Lack of Awareness and Knowledge: Many farmers in India are not aware of the various ICT tools available to them, such as mobile apps, which can provide information on weather, soil, and crop varieties.

There is a lack of awareness among farmers about the potential benefits of ICT tools in agriculture, such as increased yields and profitability.

The results earlier with a study concluded that “80.63 per cent farmers were having awareness about one or the other mode of information technology, while only 19.38 per cent are seeking agriculture information through ICT’s”. In the continuation that “majority of the farmers (50.67%) have knowledge of ICT services and also use them frequently as and when they need information”. While, that “35 percent of the farmers had medium level of knowledge about ICT tools followed by high (34.17%) and low (30.83%) level of knowledge”^[39]

5. Language and Literacy Barriers: Farmers may have low literacy rates or speak different languages in many rural locations. It may be difficult to successfully interact with them and offer new technology training as a result.

6. High Upfront Prices: The high upfront prices of ICTs are another significant obstacle. It's possible that farmers lack the financial resources to invest in new technologies or that they do not immediately realize their advantages.

Summary:

The adoption of new technologies in India's agricultural sector is helping farmers optimize crop yields, reduce waste, and increase profitability. Precision farming involves using modern technologies like sensors, GPS, and data analytics to apply inputs like water, fertilizer, and pesticides precisely where they are needed. This results in improved productivity and sustainability. Drones equipped with cameras and sensors can detect changes in soil moisture, plant health, and temperature, providing farmers with information to make informed decisions about irrigation, fertilization, and pest control. Farm management software provides real-time data on crop health, soil quality, and weather patterns, allowing farmers to make informed decisions about planting, fertilizing, and harvesting.

Automated irrigation systems utilize sensors to monitor soil moisture levels and automatically turn on and off irrigation systems to ensure that crops receive the right amount of water. This results in reduced water waste and improved crop yields. Hydroponics is a soilless method of growing plants in nutrient-rich water that can produce higher yields and require less water and fertilizer than traditional farming methods. This is particularly useful in urban areas where space is limited.

While these technologies offer significant benefits to farmers, they require upfront investment, which can be a challenge for small-scale farmers. Therefore, the government and other organizations need to provide financial and technical support to enable small-scale farmers to adopt these technologies and benefit from their advantages. The adoption of these technologies is transforming India's agricultural sector, resulting in higher yields, reduced waste, and increased profitability for farmers.

The Government of India has launched several initiatives to provide farmers with access to information on various agricultural practices, weather updates, market prices, and government schemes through mobile-based services, IVRS, SMS, and Kisan Call Centre. These initiatives have helped farmers to make informed decisions, increase their productivity and income, and improve their standard of living. The Kisan Seva Kendra network has also provided farmers with access to agricultural inputs and services through village-level entrepreneurs. These services have helped to bridge the gap between farmers and the market and improve their access to technology and information. Overall, the use of ICT in farming has proven to be an effective tool in improving the lives of Indian farmers and contributing to the growth of the agricultural sector.

CONCLUSION

New agricultural technologies in India are optimizing crop yields, reducing waste, and increasing profitability. Precision farming, drones, farm management software, automated irrigation systems, and hydroponics are transforming the sector. However, small-scale farmers face challenges due to upfront investment requirements. Government and other organizations should provide financial and technical support. Government initiatives like mobile-based services, IVRS, SMS, and Kisan Call Centre provide access to information on agricultural practices, weather, market prices, and government schemes. These initiatives have helped farmers make informed decisions and improve their income and standard of living. The use of ICT in farming is an effective tool in improving the lives of Indian farmers and contributing to the growth of the agricultural sector. The constraints in implementation of ICT in agriculture were lack of training on uses, inadequate internet supply, difficulty in understanding the language of electronic gadget and so on, that's why it is necessary to arrange the training programme and also supply of uninterrupted power supply.

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DIGITALIZATION OF INFRASTRUCTURE

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ABSTRACT

The growing digital infrastructure encompasses the digital technologies that form the foundation of an organization's IT and operations. Several motivations for digitalization of infrastructure for environmental sustainability like Resource efficiency, Climate change mitigation, Innovation, Resilience, Economic benefits, etc which will be elaborated in this paper. We further elaborate on how digital transformation have significant impact on the environmental sustainability. The hole or gap that appears in the form of Access and inclusivity, Data quality and interoperability, traditional infrastructure systems and more. Our approach on the research comes from going through videos on YouTube and surfing through several articles on internet. The goal to generate solution by following common steps based on Service-oriented environment by "Eco-art project" and "Developing common standards and protocol. This research work discusses the in-depth on Impact of Eco-art Projects, the reuse capability of SOA providing common pool of information technology (IT) resources and qualifies as a green IT approach that impacts environmental protection and more.

Keywords: "Digital transformation", "Global", "Sustainability"

1. INTRODUCTION

In today's tumultuous and fast-changing times, digitalisation and technology are game changers for a wide range of sectors and have a tremendous impact on infrastructure in particular.

Developing sustainable digital infrastructures is crucial to ensure technological advances that benefit society. Investment in infrastructure and innovation has therefore become essential for economic growth and global development. This is explicitly emphasized by the United Nations Development Programme (goal 9: Industry, innovation, and infrastructure). It focuses on technological progress in finding sustainable solutions to economic and environmental challenges, such as ensuring growth of new industries with green supply chains and promoting energy efficiency.

Achieving these goals will require considerable effort from contemporary organizations operating in both the private and public sectors. Efficient technological infrastructures are urgently needed to support optimally functioning organizations. Ensuring the sustainable evolution of digital infrastructures that consider environmental challenges will require changes in how infrastructures are designed and utilized, and how the potential reuse of digital resources dependent upon these infrastructures is enabled.

But society as a whole is experiencing a profound upheaval: people are having to adapt their consumption, mobility and preferences to the new possibilities offered by transforming digital solutions. The digital economy currently accounts for about 15% of global GDP. Since the pandemic, it has grown rapidly, impacting both the private and the public sectors. Areas and companies that have adopted broadband and digital services are now more competitive and have better economic prospects.

The infrastructure sector is faced with the challenge of rethinking itself digitally and adapting a smart paradigm. Buildings, bridges, roads, and major construction projects could provide feedback on their maintenance or operation status to improve the management of the entire system. Such a new paradigm would be based on IoT (Internet of Things) technologies.

Previous research on SOA implementation reveals a gap between theory and practice. Many companies use a more technical approach to SOA rather than focusing on SOA as a catalyst for driving organizational changes to achieve better IT-business alignment and increased agility. Thus, there is a need to study the socio-technical issues accompanying SOA to understand the circumstances for making a sustainable infrastructure. Specifically, the following questions have guided this research:

- 1) How can SOA contribute to a sustainable digital infrastructure?
- 2) What challenges must be overcome to make a digital infrastructure sustainable?

An important question that is increasingly being addressed by international, regional as well as state and non-state actors is how digital technologies can fundamentally help us realise the sustainable development goals (SDG)?

The most recent attempt to tackle this issue came from the High-Level Panel on Digital Cooperation that provides in its report 'The Age of Digital Interdependence' a set of recommendations intended to guide governments, companies, and individuals in making policy choices on our sustainable digital future.

Motivations for Digitalization of Infrastructure for Environmental Sustainability:

Resource Efficiency:

Resource efficiency refers to the effective use of resources to minimize waste and maximize outputs. It involves using resources such as raw materials, energy, water, and land in a sustainable manner that reduces environmental impact and conserves natural resources for future generations.

Resource efficiency involves considering the entire lifecycle of a product or process, from the extraction of raw materials to disposal. By optimizing the use of resources, it is possible to reduce costs, increase productivity, and improve environmental sustainability.

There are several strategies that can be used to improve resource efficiency, such as using renewable resources, reducing waste through recycling and reuse, improving energy efficiency, and using more sustainable production methods. These strategies can be applied to a wide range of industries, from manufacturing to agriculture, transportation, and construction.

Climate Change Mitigation:

Climate change mitigation refers to efforts and actions taken to reduce greenhouse gas (GHG) emissions and limit the extent of human-caused climate change. Mitigation measures can take many forms, including the use of cleaner and more efficient energy sources, improving energy efficiency in buildings, and reducing emissions from transportation.

One of the primary goals of climate change mitigation is to limit global warming to well below 2 degrees Celsius (3.6 degrees Fahrenheit) above pre-industrial levels, as agreed upon by countries in the Paris Agreement. This requires reducing GHG emissions from human activities, such as burning fossil fuels, deforestation, and agriculture.

Some examples of climate change mitigation measures include:

1. Increasing the use of renewable energy sources, such as wind and solar power, to replace fossil fuels.
2. Improving energy efficiency in buildings by using insulation, efficient lighting, and HVAC systems.
3. Encouraging the adoption of low-carbon transportation options, such as electric vehicles, public transit, and cycling.
4. Promoting renewable energy: This involves promoting the use of clean, renewable energy sources such as wind, solar, geothermal, and hydropower.
5. Reducing emissions from transportation: This involves promoting low-emission vehicles, encouraging the use of public transport, and promoting active transport such as cycling and walking.

Climate Resilience:

Climate resilience refers to the ability of an individual, community, or system to withstand, adapt to, and recover from the impacts of climate change. It involves the capacity to anticipate, prepare for, and respond to climate-related shocks and stresses, and to recover quickly and effectively from any climate-related disruptions.

Some examples of how digital infrastructure can support climate resilience include:

1. **Climate Data Collection and Analysis:** Digital tools can be used to collect and analyze climate data, providing insights into current and future climate patterns and hazards.
2. **Early Warning Systems:** Digital technologies can be used to develop and deploy early warning systems for extreme weather events, such as hurricanes, floods, and droughts.
3. **Smart Infrastructure:** Digital technologies such as the Internet of Things (IoT) and artificial intelligence (AI) can be used to develop smart infrastructure that can detect and respond to climate-related hazards.
4. **Climate-Resilient Agriculture:** Digital technologies can be used to support climate-resilient agriculture, for example, by providing weather forecasts and soil moisture data to help farmers make better decisions about planting and harvesting crops.

Below in the table shows the difference between Mitigation and Adaptation as follows :

Climate Mitigation	Climate Adaptation
<ul style="list-style-type: none"> ➤ Climate mitigation refers to efforts to reduce or prevent greenhouse gas emissions, in order to slow down the rate of climate change. ➤ This can involve measures such as transitioning to renewable energy sources, improving energy efficiency, etc. 	<ul style="list-style-type: none"> ➤ Climate adaptation, on the other hand, refers to efforts to adjust to the impacts of climate change that are already happening or are expected to happen in the future. ➤ This can include measures such as building sea walls to protect against rising sea levels, etc.

Economic Benefits

Economic benefits are defined as tangible benefits that can be measured in terms of revenue generated or money saved through the implementation of policies.

Digital infrastructure can provide significant economic benefits for sustainability in several ways:

1. **Improved Efficiency:** Digital infrastructure can increase the efficiency of resource use in many industries, leading to cost savings and reduced environmental impact. For example, smart grids can help manage and optimize energy distribution, reducing waste and the need for additional capacity.
2. **Increased Innovation:** The use of digital technology can drive innovation in sustainability by enabling the development of new products, services, and business models.
3. **Job Creation:** The deployment and maintenance of digital infrastructure can create new job opportunities, particularly in the areas of technology and engineering.
4. **Increased Productivity:** Digital infrastructure can increase productivity by enabling remote work, reducing travel, and streamlining supply chains.
5. **Enhanced Data Analysis:** Digital infrastructure can enable more accurate and real-time data analysis, providing insights into sustainability issues and opportunities for improvement.

This digital transformation brings new possibilities; allowing us to measure and track sustainability progress, optimize the use of resources, reduce greenhouse gas emissions, and enable a more circular economy.

Digital transformation can have both positive and negative impacts on environmental sustainability. Here are some ways in which digital transformation can have a significant impact on environmental sustainability:

1. Reduced Carbon Footprint
2. Improved Energy Efficiency
3. Reduced Paper Usage
4. Reduced Waste
5. Enhanced Data Analysis

However, digital transformation can also have negative impacts on environmental sustainability if not implemented properly. For example, the increasing demand for data storage and processing can lead to significant energy consumption and carbon emissions.

Access and inclusivity are critical aspects of digital transformation, but there are still significant gaps and holes that need to be addressed. Here are some examples:

1. **Digital Divide:** The digital divide refers to the gap between those who have access to digital technologies and those who do not. This divide can be based on factors such as income, geography, age, gender, and education level.
2. **Accessibility:** Many digital technologies are not designed with accessibility in mind, leading to barriers for people with disabilities. This can include issues with visual and auditory impairment, mobility limitations, and cognitive impairments.
3. **Language and Cultural Barriers:** Digital technologies often prioritize the dominant language and cultural norms, leading to exclusion of non-native speakers and minority groups.

4. **Privacy and Security Concerns:** Many people are hesitant to engage with digital technologies due to concerns around privacy and security.

Data Quality

Data quality refers to the accuracy, completeness, timeliness, consistency, and relevance of data. High-quality data is essential for effective decision-making, research, and analysis. It ensures that the information used is reliable and free of errors or biases.

Interoperability, on the other hand, refers to the ability of different systems or technologies to communicate and exchange data with one another.

Together, data quality and interoperability play a crucial role in ensuring that data is accurate, accessible, and useful. High-quality data that is interoperable can be shared and used effectively across different systems, leading to better decision-making, improved research, and increased efficiency.

Despite the importance of data quality and interoperability, there are still gaps or holes that exist in these areas. Some examples of these gaps include:

1. **Data Silos:** Many organizations and institutions have data silos, which are isolated databases that do not communicate with each other.
2. **Lack of Standards:** There are often no universal standards for data quality and interoperability, which can lead to differences in data formats, terminology, and definitions across different systems.
3. **Limited Access to Data:** Some individuals and groups may not have access to the data they need due to technical, financial, or other barriers.
4. **Inadequate Data Management Practices:** Poor data management practices, such as lack of data governance, data security, and data privacy policies.

Traditional Infrastructure Systems:

Traditional infrastructure systems refer to the physical networks and facilities that support the basic functions and services of society, such as transportation, energy, water supply, telecommunications, and waste management.

There are several gaps or challenges associated with traditional infrastructure systems, including:

1. **Aging and Inadequate Infrastructure:** Many traditional infrastructure systems are aging and in need of repair or replacement. This can result in service disruptions, safety concerns, and reduced efficiency.
2. **Environmental Impact:** Traditional infrastructure systems can have a significant impact on the environment, including air and water pollution, habitat destruction, and greenhouse gas emissions.
3. **High Costs:** Traditional infrastructure systems can be expensive to build and maintain, and may require significant public or private investment.

Digital infrastructure can play a significant role in improving traditional infrastructure systems in several ways like Enhancing efficiency, Improving safety, Promoting sustainability, Enhancing connectivity and Enabling innovation.

Overall, digital infrastructure can help improve the performance, resilience, and sustainability of traditional infrastructure systems, and can help ensure that they meet the evolving needs of communities and populations.

Goal to Generate Solution by Following Common Steps Based on Service-Oriented Environment

Eco-art Projects

Eco-art projects are artistic endeavours that aim to create awareness and promote action towards environmental conservation and sustainability. These projects use art as a medium to inspire people to think critically about environmental issues.

Eco-art projects can take various forms and approaches, such as:

1. **Land art:** Land art involves creating large-scale sculptures, installations, or earthworks in natural settings, using natural materials or recycled materials.
2. **Public art:** Public art involves creating art in public spaces, such as streets, parks, and buildings, to engage with local communities.

3. Community art: Community art involves collaborating with local communities to create art that reflects their values, traditions, and concerns.
4. Interactive art: Interactive art involves creating art that invites people to engage with it in creative and meaningful ways.

Overall, eco-art projects have the potential to raise awareness through eco-art projects initiatives around the world that aim to promote environmental awareness and sustainability through art like Climate ribbon project, Plastic bag store, Beehive design collective, Mural arts program, Recycled orchestra and Land art generator initiative.

Developing Common Standards and Protocols

This involves creating a set of guidelines, principles, or specifications that are widely accepted and adopted by a community or industry. It typically involves a collaborative and iterative process, where stakeholders from different backgrounds and perspectives work together to establish a shared understanding of the requirements and objectives for the standard.

A protocol, on the other hand, is a specific set of rules or procedures that govern communication or interaction between systems or devices. In the field of digital infrastructure, common protocols like MQTT (Message Queuing Telemetry Transport) and CoAP (Constrained Application Protocol) are used for machine-to-machine communication in the context of the Internet of Things (IoT).

SOA (Service-Oriented Architecture) Report:

Service-oriented architecture (SOA) is an architectural approach that enables the development, deployment, and management of software applications as a set of reusable services.

SOA can contribute to a sustainable digital infrastructure by promoting Reusability, Interoperability, Scalability, and Flexibility in software development and management. By reducing resource usage, waste, and inefficiencies, SOA can help to create a more sustainable digital ecosystem that can support long-term social, economic, and environmental goals.

CONCLUSION

The future of digitalization of infrastructure in sustainability projects and initiatives is likely to involve a range of innovative technologies and approaches. Here are some potential developments to look out for like Integration of AI and machine learning, Use of blockchain technology, Increased use of digital twins, Development of sustainable digital infrastructure standards and Increased use of renewable energy.

EDUCATION FOR GIRLS-RURAL AND URBAN AREAS AS A KEY ELEMENT TO IMPROVING GLOBAL ENVIRONMENT AND HEALTH

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ABSTRACT

Education is crucial for every child, regardless of gender. It is terrible that certain communities continue to prejudice against girls' education. Promoting social and economic growth in both rural and urban regions requires educating girls. However, due to different social, cultural, and economic issues, girls' access to education may be restricted in some areas.

Girls in rural communities may face more educational obstacles than boys since they may be expected to assist with domestic duties and agricultural tasks. In addition, many rural families might not respect females' education or might place more emphasis on their boys' education.

In contrast, females may have more access to school in metropolitan areas, but they may still experience obstacles like gender bias, poverty, and discrimination based on race or religion. Girls may also be more susceptible to early marriage or exploitation in particular metropolitan areas, which might restrict their access to education. The main driver of females' empowerment, prosperity, progress, and welfare is education. Such power results from the process of empowerment, which in turn results from education. The education of girls will also contribute to rural transformation. It is commonly known that education and health go hand in hand. Education is a powerful tool for empowering individuals and communities to take actions that improve their health and well-being. However, girls in rural and urban areas often lack access to education, which affects their health and the environment in which they live. This research paper explores the importance of education for girls in rural and urban areas and its impact on global environment and health. The study finds that education for girls is a key factor in improving health and the environment, and recommends strategies to increase access to education for girls in these areas.

Keywords: Education, Health, Empowering, Environment.

INTRODUCTION

There was a period when people believed that girls did not need to have an education. The importance of females' education is now being recognised. The contemporary era is the era of females' awakening. In every area of life, they are attempting to compete with males. Many individuals are against girls going to school. They assert that a female should spend her time in the house. They contend that the money spent on the education of girls is a waste. This viewpoint is incorrect since females are the foundation of society, the mother of the race, and the guardians of the next generation, making education for them a crucial necessity. Girls must be educated, for it is the Girls who mould the next generation and hence the destiny of the country.

But present scenario is different girls are consist with 48.40% of the total population but the literacy rate of the girls is 71.50% where as the boys literacy rate is 84.40% based on most recent Census data and annual average dropout rate of girls in primary level is 1.4% and in upper primary level is 3.3%. Annual average dropout rate of girls in secondary level is 12.3% . Although Government has taken many initiatives to promote girls' education in our country, "Beti Bachao Beti Padhao Scheme was launched in 2015 with the noble purpose to educate girls 'Sukanya Samridhhi Yojana' scheme was launched in 2015 to meet the expense of the Girl child's higher education and marriage" (Ministry of Women and Child Development Report, 2015).

Access to education is a fundamental human right and a key factor in achieving sustainable development goals, including improving global health and the environment. However, despite the significant progress made in recent years, many girls in rural and urban areas still lack access to education. This research paper aims to explore the relationship between education for girls in rural and urban areas and its impact on global environment and health.

OBJECTIVES

The following are the objectives:

- 1) To examine the relationship between education for girls and environmental sustainability.

- 2) To explore the relationship between education for girls and health outcomes, including the impact of education on reducing maternal mortality, improving child health and nutrition and promoting healthy behaviors.
- 3) To identify the barriers to education for girls in rural and urban areas, including cultural and societal norms, economic factors and lack of access to resources.
- 4) To propose strategies and intervention that can be implemented to improve education for girls in rural and urban areas.

METHODOLOGY

This research paper is based on a literature review of existing studies on the relationship between education for girls in rural and urban areas and its impact on global environment and health. The study is descriptive in nature. The literature and data are mainly based on secondary source, which has been collected from various publications, books, magazines, research paper, newspaper and various internet sources

LIMITATIONS OF STUDY

- 1) Research is based on the secondary data only.
- 2) Research is limited to the data collected from books and internet.
- 3) It has a limitation of time.

Lack of Education for girls can impact the Environment and Health:

The education of girls is crucial for the well- being of individuals, communities, and the global environment. Here are some ways that lack of education for girls can impact the environment and health:

1. **Overpopulation:** When girls are not educated, they are more likely to marry and have children at a young age. This can lead to larger family sizes and increased population growth. As the global population continues to grow, there is increased pressure on natural resources such as water, food, and energy, which can negatively impact the environment.
2. **Health:** Education is linked to improved health outcomes for individuals, families, and communities. Educated girls are more likely to have better access to healthcare and to understand the importance of hygiene and sanitation, which can help prevent the spread of diseases.
3. **Climate Change:** Climate change is one of the biggest environmental challenges we face today. Education can help girls and women understand the impact of climate change and how they can contribute to mitigating it. Educated women are also more likely to be involved in sustainable practices, such as reducing waste and using clean energy.
4. **Biodiversity:** Biodiversity is essential for a healthy planet. Educated girls can help promote conservation efforts and protect biodiversity by understanding the value of wildlife, forests, and other natural resources.

In short, educating girls is critical to promoting sustainable development and protecting the environment and health of the planet.

Girls' Education Can Contribute to a Healthier and More Sustainable World:

Girls' education has a significant impact on global environment and health in various ways. Here are some of the ways girls' education can contribute to a healthier and more sustainable world:

1. **Reduced Population Growth:** Girls' education is linked to lower birth rates. As women receive more education, they tend to have fewer children, which help to reduce the overall population growth. This is important because a growing population can put pressure on natural resources, leading to environmental degradation and increased health risks.
2. **Improved Health Outcomes:** Educated girls are more likely to understand the importance of good health and hygiene practices. They are also more likely to seek healthcare when needed and to make informed decisions about their own health. This can lead to better health outcomes for themselves, their families, and their communities.
3. **Better Nutrition:** Educated girls are more likely to have access to information about healthy eating habits and to understand the importance of a balanced diet. They are also more likely to have the skills and knowledge to grow and prepare healthy food. This can help to improve nutrition levels, which is critical for good health.

4. **Environmental Conservation:** Girls' education can also help to promote environmental conservation. As girls become more educated, they are more likely to understand the importance of protecting the environment and to engage in sustainable practices such as conserving water, reducing waste, and promoting renewable energy.
5. **Economic Development:** Educated girls are more likely to enter the workforce and earn higher incomes. This can help to boost economic development, which can have positive impacts on both health and the environment. For example, increased economic development can lead to better access to healthcare and improved infrastructure, which can help to reduce environmental risks.

Overall, girls' education can have a significant impact on global environment and health. By investing in education for girls, we can create a healthier, more sustainable world for everyone.

Strategies to Educate Rural Girls:

Increasing access to education for girls in rural areas can be a challenging task, but there are several strategies that can be implemented to achieve this goal. Here are some of them:

1. **Building Schools and Providing Necessary Infrastructure:** One of the most important steps is to build schools in rural areas and ensure that they are equipped with basic facilities like classrooms, libraries, toilets, and clean water. This will make it easier for girls to attend school and stay focused on their studies.
2. **Providing Scholarships:** Providing scholarships to girls from disadvantaged backgrounds can help to reduce financial barriers that might prevent them from attending school. These scholarships can cover school fees, uniforms, and other essential school supplies.
3. **Addressing Cultural and Social Barriers:** In some rural areas, there might be cultural and social barriers that prevent girls from attending school. Addressing these issues through community engagement, sensitization programs, and awareness campaigns can help to create a more conducive environment for girls to attend school.
4. **Providing Transportation:** In many rural areas, there is a lack of transportation infrastructure, making it difficult for girls to travel to school. Providing safe and reliable transportation options, such as buses or bicycles, can help to increase access to education for girls.
5. **Hiring Female Teachers:** Having female teachers can make a significant difference in encouraging girls to attend school. Female teachers can serve as role models and provide mentorship and guidance to girls.
6. **Implementing Distance Learning:** With the advent of technology, it is now possible to implement distance learning programs that can help girls in rural areas access education remotely. These programs can be delivered through online platforms or via radio and television broadcasts.

In conclusion, increasing access to education for girls in rural areas requires a multi-faceted approach that addresses infrastructure, financial, social, cultural, and technological barriers. Implementing these strategies can help to create a more equitable and inclusive education system that empowers girls and women.

Strategies to Educate Urban Girls:

1. **Increase the Number of Schools:** Building more schools in urban areas can increase access to education for girls. It can also help reduce the distance that girls have to travel to attend school, which can make it easier for parents to send their daughters to school.
2. **Provide Transportation:** In some cases, girls may live too far away from schools to walk or may face unsafe routes to school. Providing transportation, such as school buses or vouchers for public transportation, can help girls attend school regularly.
3. **Increase the Number of Female Teachers:** Girls may feel more comfortable and supported in their education when they have female teachers. By increasing the number of female teachers, schools can create a more welcoming environment for girls.
4. **Offer Scholarships:** Many families in urban areas may not be able to afford the cost of education, especially for multiple children. Offering scholarships can help make education more affordable for girls and encourage families to send their daughters to school.
5. **Provide Access to Technology:** In today's world, technology plays an important role in education. Providing girls with access to computers, tablets, and the internet can help them learn more and prepare for the future.

6. **Address Social Norms and Cultural Beliefs:** In some communities, there may be social norms or cultural beliefs that prevent girls from attending school. Addressing these beliefs and norms can help change attitudes and encourage families to send their daughters to school.
7. **Create Safe Learning Environments:** Girls may be less likely to attend school if they feel unsafe or uncomfortable. By creating safe learning environments, schools can help ensure that girls feel supported and able to learn.
8. **Engage with Parents and Communities:** Engaging with parents and communities can help build support for girls' education. By working with parents and community leaders, schools can help create a culture that values education and encourages girls to attend school.

CONCLUSION

The findings of the study of the literature point to the importance of girls' education, both in urban and rural settings, in enhancing the environment and health across the world. According to studies, females with greater education are more likely to postpone marriage, delay having children, and have better access to healthcare facilities. They are also more likely to make educated decisions regarding their health. Additionally, educated females are more likely to adopt environmentally friendly behaviours including minimising trash and using renewable energy sources. However, a lot of females in rural and urban regions encounter major educational challenges, which restricts their prospects for professional and personal development. To increase access to education for girls in rural and urban areas, it is necessary to take several measures like Increasing access to schools and educational resources, Providing financial incentives and scholarships, Raising awareness about the benefits of educating girls, Enforcing laws that protect girls' rights to education and prohibit gender-based discrimination.

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JUNK FOOD AND ITS IMPACT ON YOUNG CHILDREN IN MUMBAI CITY

Geeta Manohar Bhatia

ABSTRACT

Junk food is food lacking nutritional value but full of taste and pleasure. Junk food has brought an important and irreplaceable place in the minds of children. As per the study junk food is a major cause of various health problems among children. In this paper children refers to the age group of 5-12 years. The purpose of the study is to find out the overall daily intake of junk food among children and to provide possible suitable measures to replace junk food with the healthy food options. The source of primary data collection is from 65 young school going children in Mumbai city with the help of structured questionnaires. The secondary data is collected from books, internet, you tube, newspapers, advertisements. The study will provide useful information related to bad effects of junk food consumption among children which will thereby help to support global health.

Keywords: Junk food, children, ill- effects

INTRODUCTION

Junk food is not a new phenomenon. It has a long history back of consumption. Examples of old times included refined sugar, Maggi pizzas, burgers, chocolates, French fries. But in recent times junk food is enhanced with new varieties which includes packaged food from unlimited companies at an easy and affordable rate. The rates of these packets start at rupees just five which is affordable to young children and thus they are prone to these eateries. Not only during breaks but while returning from schools' children are addicted to packets, Pepsi, soft drinks, and many more cheap nutritional, colourful products.

The problem is the taste and delight which children get from these fast and processed foods. The knowledge regarding the ill effects of these junk foods is unknown to many parents. The awareness could be made possible with the help of advertisements channels such as television Ads, Newspapers, pamphlets to students outside the schools, videos, and through digital platforms. The role of Advertisement is an important step in bringing a clear picture to parents of young children so that they can understand first.

The impact on health is not just obesity, lack of vision or improper eyesight, cavities and tooth decay, lack of immunity to face illness, lack of proper and complete nutrition in order to achieve growth. The substitutes can change the habits of junk food. The parents' efforts on raising the children with proper nutrition is the biggest challenge in achieving sustainable health in recent times.

What are Calories?

The amount of energy in any food item is counted as calories. It is a kind of measurement of an energy the particular food item will produce and provide to the body. Calories are divided into saturated fat, unsaturated fat, protein, carbohydrates, minerals, sodium, water, and sugar content. The overall calculation of nutritional facts is calories. The packaged food generally provides the details of calorie calculation.

To understand the proper nutritional facts measured in calories, let us take an example of nutritional facts of a processed food packet of fried yellow kebabs:

Table No 1: Nutritional Facts Per 100 gm (Approx). Net Weight of a fried Kebab packet is 50 gm

Nutrition Facts	Per 100 grams (Approx.)
Total Fat	66.20 gm
Protein	10.53 gm
Energy	661 Kcal
Carbohydrates	28.07 gm
Sugar	Nil

Source: Information from processed food packet

In the above table, the total count of calories includes total fat of 66.20 gm, energy of 661 kcal, Protein 10.53 gm, Carbohydrates 28.07 gm. The nutritional facts are available on each and every product in order to give transparency to the buyers. The price of the packet is rupees ten.

Reasons for Preferring Junk food Among Young Kids are:

1. Can be easily purchased.
2. Has very low price.

3. Delight to eat
4. Colourful appearance
5. Peer effect.
6. Huge variety in flavours, colour, taste, shapes.

OBJECTIVE OF THE STUDY:

1. To study the Calories Content in Junk food preferred by young school going children.
2. To focus on the impact of Junk food on children’s health.
3. To provide suitable substitutes of Junk food.

RESEARCH METHODOLOGY

Research Design

The primary data is collected with the help of structured questionnaires and interviews from the school children. The secondary data is collected with the help of books, internet, you tube, newspapers, advertisements. The study is descriptive in nature.

Sample Size:

The number of students is 65 which consists of age groups ranging from 5-12 years. It again is classified into various high profile school going children in and around Mumbai city. The children of the age group 5-8 years are questioned from their parents in order to get the relevant information for the paper. The survey is based on junk food eating and school going children. Convenient sampling method is used.

DATA INTERPRETATION

Table No 2: Data showing the recent available junk food intake by young school going children and calories count:

Food Items	Calories intake calculation
Cakes, cookies, muffins	240 per piece
Vada pav	290 per piece
Maggie, pizzas, burgers	310 per100 grams
Cold drinks	97.5 one glass
Packaged chips (Potato and other crisps and fries)	536 per 100grams
Chocolates or sugar candies	200 per 100 grams
French fries	312 per 100 grams

Source: web based

From the above table, the junk food with highest calories is packaged chips, followed by French fries, Maggie noodles, vada pav, and cold drinks. These are the commonly available foods on streets, stalls and even at homes.

Table No 3

Impact of junk food on school going children	Frequency	Percentage
Tooth decay and cavities	15	23%
Improper weight (excessive weight gain or loss)	25	38%
Lack of clear vision	05	8%
Lack of immunity	20	31%
Total	65	100%

Source: Primary data with the help of structured questionnaire

From the above table, the survey is conducted which provides information related to the negative effect of junk food on young children.

- 23% of children have tooth decay.
- 38% of children have improper weight either weight loss or weight gain.
- 8% lack clear vision.
- 31% lack immunity and are prone to diseases.

Table No 4: Data showing the list of suitable healthy substitutes which can be provided to young children

Healthy easy substitutes	Serving per day	Nutritional value (Calories)
Dried fruits and Nuts	30g/per day or 5-6 in number	359 every 100 grams
Fresh fruits	Any 1 daily	58 approx. per fruit
Dark chocolate	30-60 grams	604 per 100 grams
Readily available Peanuts or makhanas	30 grams per day	567 per 100 grams
Sprouts	One cup/day	43 every 100 grams
Milk shakes or milk supplements	One full glass/ day	112 per glass

Source: Web based data

From the above table various food items are listed which are fully nutritional and available easily in the market. The young children can opt out for these or any other healthy options. The daily serving of these food items during morning break can bring significant changes to the diet of young school going children thereby having a positive impact on their health.

FINDINGS

1. Packaged chips contains the most calories per 100 grams.
2. The percentage of improper weight due to lack of proper nutritional diet as per the survey is 38%. Junk food consumption is the significant reason for improper weight.
3. The paper gives the nutritional substitutes which can be easily replaced in the tiffin of young school going children. Dried fruits, nuts, and milkshakes are nutritious substitutes.
4. Dark chocolate contains 604 calories per 100 grams which can be easily substituted with sugar candies.
5. The main reason behind the consumption of processed packets, cold drinks among school going children are its affordability and easily accessible.

CONCLUSION

The suggestions given in this paper are dependent on parents as well as school authorities' actions in order to ensure better mindset among students' group regarding junk food intake. The timely action by the principal and teachers can bring an important step in deciding the menu of the children at least during breaktime. The overall check on nutritional value intake by the parents will bring significant progress in achieving global health.

FUTURE STUDY

The study of this paper is limited to school going young children. The researchers are free to explore further on consumption of junk food among the people from restaurants and street stalls.

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A STUDY OF WOMEN'S HEALTH AND HYGIENE IN RURAL AREAS**Mansi Pathak**

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ABSTRACT

Women are the backbone of families and communities. They play a significant role in community building and are often taken in leadership roles in community organizations. Health and hygiene are the basic concepts for an individual woman. Menstrual Health and Hygiene (MHH) is essential to the well-being and empowerment of women and adolescent girls. The challenges that menstruating females face encompass more than a basic lack of supplies or infrastructure. The resulting lack of information about menstruation leads to unhygienic and unhealthy menstrual practices and creates misconceptions and negative attitudes which motivate among others, shaming, bullying, and even gender-based violence. For generations of girls and women, poor menstrual health and hygiene are exacerbating social and economic inequalities negatively impacting their education, health, safety, and human development. When females have access to safe and affordable sanitary materials to manage their menstruation, they decrease their risk of infections. This can have cascading effects on overall sexual and reproductive health, including reducing teen pregnancy, maternal outcomes, and fertility. Research has shown that approaches that can effectively combine information and education with appropriate infrastructure and menstrual products, in a conducive policy environment. The research has been done in mixed methods and both qualitative and quantitative data to being on the conclusion. The Government has been stressing on the importance of health and cleanliness through schemes. The government adopted National Health Assurance for health and Swachh Bharat Abhiyan for hygiene. After analysing the study with the process are far enough taken a lead to generate positive results but some of the issues are facing the negative result because of a lack of awareness of the health and hygiene of women in rural areas.

INTRODUCTION

Women's health is a broad term referring to physical and mental health problems that are of exclusive concern for women, and which are more common in women, or which differ in presentation, severity, or consequences in women compared to men. Women's health is often defined in terms of reproductive health and safety for younger women and in terms of diseases that appear in the female reproductive organs. The universally lower social and economic status experienced by women, compared to that of men, also contributes to poor health and lack of access to care among women. As part of this lower status, violence against women has become a worldwide public health concern. Cleanliness is vital because of the various cycles of women go through, including menstruation. Irregular cleaning and poor hygiene during periods can lead to the growth and spread of bacteria in the genitals, with unpleasant effects. Improving access to sanitation and clean water and providing adequate hygiene facilities in the workplace can help to empower women and promote gender equality in the workforce. Improving access to sanitation and clean water and providing adequate hygiene facilities in the workplace can help to empower women and promote gender equality in the workforce. Menstrual health is a critical aspect of women's overall health and well-being Promoting menstrual health and hygiene is an important means for safeguarding women's dignity, privacy, bodily integrity and consequently their self-efficacy. Women also need health care more and access the health care system more than men. While part of this is due to their reproductive and sexual health needs, they also have more chronic non-reproductive health issues such as cardiovascular disease, cancer, mental illness, diabetes, and osteoporosis.

Factors Affecting Women's Health and Hygiene in Rural Areas: -

As women enter adulthood, they are restricted from achieving education and access to quality healthcare services in rural areas. Hence, lack of awareness in rural areas has led women to suffer from a poor and mismanaged healthcare system. Women constitute about half the total population in India and the deterioration in their health is a matter of great concern. Women's Health is linked to the status of women in society and the culture that brews within this structure. There are a lot of health issues that mushroom from the socio-economic scenario. There are Women's Health issues that women face which include breast cancer, ovarian cancer, PCOS, menopause, and others but there are a few health conditions that we tend to ignore or overlook that are killing our women. Poor menstrual hygiene and inadequate self-care are major determinants of morbidity and complications among younger females. Some of these problems include reproductive tract infections, urinary tract infections, scabies in the vaginal area, abdominal pain, absence from school, and complications during pregnancy. Baisley et al reported that using cloths or cotton wool for menstrual hygiene is the single most predictive factor for bacterial vaginosis infection.

Due to economic constraints or being taboo to ask parents for money to buy sanitary pads, females turn to transactional sex to get money for sanitary pads. Sex education is also often neglected from the school curriculum.

Proper disposal of used menstrual material is still a challenge for many countries of the world. Most females dispose of used sanitary pads or other menstrual articles into household solid waste or garbage bins. as: “Women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required and having access to facilities to dispose of used menstrual management materials”.

As per the above definition, adequate MHM would require the following main components: clean absorbents; adequate frequency of absorbent change; washing the body with soap and water; adequate disposal, privacy for managing menstruation and appropriate disposal of used absorbents.

In general, the implementation of safe and effective MHM practice programs will contribute towards the achievement of sustainable development goals (SDG) targets in education, gender equality, reduction of maternal mortality, and water and sanitation.

Leading Health Issues Among Indian Women in 2020

Characteristic	Share of respondents
Menstrual problems	16.07%
Polycystic ovary syndrome	10.64%
Vaginal discharge	7.12%
Breast pain	4.43%
Urinary tract infection	4.02%
Fiberoids	3.49%
Difficulty conceiving	2.86%
Pelvic inflammatory	0.32%

Here are some of the most prevalent health concerns impacting women, and what you can do to manage your risk:

1. Maternal Health Issues.

From iron-deficiency anaemia to high blood pressure, the changes a woman experiences during pregnancy can impact a woman’s health.

“Preconception care is really important, obstetrician and gynaecologist “Women with diabetes or high blood pressure should have these conditions under the best control possible when they plan to conceive.” Those with high-risk conditions, like major cardiac disorders and neurological issues, should discuss their care plan with their physician. And women should not conceive immediately after having weight loss surgery.

During pregnancy, doctors suggest making sure women have adequate nutrition and take preventive measures by getting the appropriate immunizations. You may continue to exercise as normal but consult your physician if you have any questions. “There’s a notion that you shouldn’t take medication during pregnancy,” and “Many conditions require appropriate medical treatment. It’s an important conversation you should have with your physician.”

2. Urinary Tract Infections.

Urinary tract infections (UTIs) occur when germs get into the urethra and start to multiply. They are particularly common in women, as they have a shorter urethra than a man does. This decreases the length bacteria has to

travel in order to reach the bladder. Symptoms of a UTI include frequent urination, pain or burning when urinating, and cloudy urine. While a UTI can go away on its own, a physician can prescribe antibiotics if necessary. If UTIs become a recurring problem, other tests can reveal if the urinary tract is normal.

3. Sexual Health.

There are more than 30 types of sexually transmitted infections (STIs). One of the most common, human papillomavirus (HPV), can be prevented with the HPV vaccine.

About 80 percent of sexually active men and women will be infected with HPV at some point in their lives. "HPV is incredibly common.

Cervical cancer was once one of the most common causes of death in women. Now, with the invention of the Pap smear, providers can detect precancerous cells and deliver treatment to eliminate them, dramatically reducing the rate of cervical cancer. "The whole purpose is to detect an abnormality before it becomes cancerous." If significant precancer is detected, a loop electrosurgical excision procedure (LEEP) can eliminate precancerous cells from the cervix.

4. Breast Cancer.

Second only to skin cancer, breast cancer is the most common cancer in American women. In fact, American women have a 12 percent chance of developing breast cancer in their lifetime.

Monthly self-examinations can help you identify any changes in your breasts to share with your primary provider. This is in addition to following your yearly scheduled mammogram, which should start at age 40. For those who carry the BRCA1 and BRCA2 genes, which increase the risk for breast cancer, your physician might recommend 3D mammography, which produces highly detailed images. You can manage risks by making healthy lifestyle choices, such as exercising and quitting smoking.

5. Osteoporosis.

Osteoporosis is a disease that causes your bones to weaken, making them susceptible to fractures. Postmenopausal women are at higher risk for fractures associated with osteoporosis. Other risk factors can include certain medications, early menopause, a low body mass index (BMI), cancer treatment and genetics. You can offset these risks by increasing your calcium intake, staying active with appropriate weight-bearing exercises, and avoiding smoking and excessive alcohol use.

Feminine Hygiene:

Feminine hygiene is the personal care of the private parts of a woman's body during menstruation, vaginal discharge, and other functions that are related to the private parts of a woman's body. There are some feminine hygiene products that are used during these functions they are sanitary napkins, towels, tampons, menstrual cups, panty liners, soap, intimate part cleaner, wipes, etc.

To keep oneself clean and safe. If we look at the current situation, then we will find that feminine hygiene gets neglected a lot due to the busy schedule and the juggling between the personal and professional life of a woman.

The most important thing is that it should not get neglected at all as it can be really harmful to a person's health and many other issues related to it like abnormal discharge from the vagina, irritation, vaginal dryness, infection, bad odour, and even leads to fatal diseases like cancer.

Though our vagina is self-cleaning still we need to do our bit to keep ourselves clean and healthy.

Feminine hygiene products are the products that help you keep your vagina clean and that are used during the menstruation cycle and other functions that are related to the vagina. Though it seems a small thing to spend on feminine hygiene products, the reality is that it forms a very big market of billions that are going to double or triple itself soon as this is one thing that will go on and on.

Types of Feminine Hygiene Products:**Disposable Products****Feminine Hygiene Disposable Products****Panty Liner:**

A panty liner is an absorbent piece that is used to keep feminine hygiene intact and is used in the inner surface of the panty that a woman wears. They are very useful if one faces the problem of daily vaginal discharge, post-intercourse discharge, spotting and can also be used during the light menstrual flow.

These are small and are much smaller and thinner than a panty. They are not good if one is going through heavy flow during menstruation. They come in various sizes and shapes to suit a woman's requirements.

Sanitary Napkins:

Sanitary pads are a very old feminine hygiene product that is used widely by women all over the world. These are absorbent pads that are stuck to the panties and are used to absorb the menstrual blood. These are made of cotton material to provide maximum comfort and avoid rashes and skin irritation during the periods.

This is one of the types of feminine hygiene products that is the most preferred but with it also comes certain disadvantages that can take a toll on your health, so it is necessary to use it with utmost precautions and following the guidelines.

Tampons:

Tampons are another handy solution to your menstrual cycles and are designed to absorb the period's blood and other secretions from the vagina. It is also made of cotton and sometimes rayon that is inserted into the vagina that fits inside to absorb the menstrual flow. It absorbs the blood and gets expanded within the vaginal walls. The tampons have a small thread at the other end that makes it easy to take them out.

It does not cause any discomfort to a person while walking around or carrying out the daily chores. These need to be changed after some hours to avoid any leakage. They are very small in size and thus are easy to carry in your bags

Menstrual Cup:

Menstrual cups are another hygiene product that can be used during the menstrual cycle to absorb the period's blood to avoid leakage and stains. This is a revolution in the modern age and is much safer than its contemporaries. These menstrual cups are generally made up of medical-grade silicone, or latex.

These are funnel-shaped and are easily inserted inside the vagina and let the menstrual blood flow in. The best part is it can hold more blood than any other feminine hygiene product and can be worn for 8 to 10 hours according to one's need. These

Cloth pad:

Cloth pads are reusable menstrual products that can be worn in the panties and absorb menstrual blood. They prevent the blood from getting leaked onto the clothes. They can be washed and then reused and are good alternatives to other types of feminine hygiene products.

They are made of comfortable cotton materials and are worn during the periods, to absorb vaginal fluid, and to absorb post-birth bleeding. They can be easily washed and reused.

Period Panties:

Period panties are again a great alternative to different types of feminine hygiene products that are used to avoid leakage. These panties look like your regular panties but with various advantages. They have a higher waist, a thick waistband, a longer crutch than your usual panties, and provide better coverage. The period panties are made up of an extra layer of special fabrics at the crotch area to absorb the maximum flow. They are made up of absorbent material that holds enough menstrual blood and keeps you comfortable.

Menstrual Sponge:

A menstrual sponge is inserted like tampons but is reusable. They can be washed and can be reused during the periods. Apart from using it during periods sea sponges can be worn during sex to save you from the mess if you are having periods. It is claimed that they can be used for up to 6 months if all the guidelines are properly followed and it is taken care of.

Cleaning Products**Benefits of Feminine Hygiene Products**

Maintaining hygiene is very necessary and when it comes to feminine hygiene then you really need to pull up your socks. There are multiple feminine hygiene products that are available in the market but what to use and what cannot be your personal choice.

but there are some benefits of feminine hygiene products that are associated with their usage and that can be helpful in making you clean and keeping you safe

CONCLUSIONS

Reproductive tract infections, which has become a silent epidemic that devastates women's life is closely interrelated with poor menstrual hygiene. Therefore, proper menstrual hygiene and correct perceptions and beliefs can protect the womenfolk from this suffering. Before bringing any change in menstrual practices, the girls should be educated about the facts of menstruation, physiological implications, about the significance of menstruation and development of secondary sexual characteristics, and above all, about proper hygienic practices with selection of disposable sanitary menstrual absorbent. This can be achieved through educational television programmes, school nurses/health personnel, compulsory sex education in school curriculum and knowledgeable parents, so that her received education would indirectly wipe away the age-old wrong ideas and make her feel free to discuss menstrual matters including cleaner practices without any hesitation.

This study reveals that menstrual hygiene is far from satisfactory among a large proportion of the adolescents while ignorance, false perceptions, unsafe practices regarding menstruation and reluctance of the mother to educate her child are also quite common among them.

Thus, the above findings reinforce the need to encourage safe and hygienic practices among the adolescent girls and bring them out of traditional beliefs, misconceptions and restrictions regarding menstruation.

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A STUDY OF THE ROLE OF FOOD QUALITY IN SUSTAINABLE DEVELOPMENT**Komal Kailash Sharma**

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ABSTRACT

Food quality is essential not only for proper human health but for maintaining sustainable development and maintaining a healthy generation also. The goal of healthy generation can be achieved by proper process of food production. Food production plays an important role in the food security of the whole nation. Many factors can affect food quality during production. In recent years there has been increasing demand and a low-grade of supply of food. This research paper deals with the issues related to food adulteration, types of adulteration and side effects caused by consuming such food items. The paper highlights the importance of the factors that can affect food quality and various methods that are used to access food quality. The impact of food quality on human health is also discussed in the paper. Studies have shown that food quality has made attention deficit hyperactivity disorder (ADHD) and Autism, even more, worse these years. Increasing food adulteration is a matter of consideration. The research is done using a mixed methodology, existing research papers and governmental and non-governmental websites have been referred to collect related data. The paper will be useful for further research in the related area.

Keywords: Food quality, Sustainable development, Food adulteration, Autism, Attention deficit hyperactivity disorder

INTRODUCTION

Food Quality is a term made of two words; firstly food: any nutritious substance that people or animals eat or drink in order to maintain a healthy lifestyle and a healthy generation. Secondly, quality: a characteristic or a feature of a product or service which defines its ability to satisfy an individual human need. Food is essential for living as air is for breathing. Food Quality ensures that the food that we are consuming is right and safe. Just getting the food is not enough; we need the right amount of food and correct food quality. Consuming high-quality nutritious food and maintaining a healthy balanced diet leads to a healthy generation. Foods that are high in quality fresh and sustainable also promote a healthy lifestyle. There is a strong interlink between food quality and a healthy generation. The food that we are consuming plays an important role for maintaining our health and well-being. Our body needs essential amounts of vitamins, minerals, and healthy fats, and carbs, nutrients from the food we consume daily so that our body can function properly and for proper growth. On the other side if we consume low-quality food it leads to many health issues. It often contains high amounts of sugar, unhealthy fats, more carbs, food colouring and cheap material. It results in a variety of health problems like heart diseases, obesity, diabetes, Attention Deficit Hyperactivity Disorder (ADHD), Autism and many more. The main issue is food adulteration and the side effects caused by consuming such food items. The goal of healthy generation can be achieved by proper process of food production. Food production plays an important role in the food security of whole nation. Many factors can affect food quality during production. The one of the main pillars of food production is food utilization. Food utilization is commonly understood as the way the body takes most of the various nutrients which is needed for sufficient energy intake by an individual. Sustainable development needs a healthy generation and a healthy generation needs better food quality. Food quality is interlinked with sustainable development.

FSSAI:

FSSAI which is the Food Safety and Standards Authority of India was established under Food Safety and Standard Act 2006. It is responsible for protecting public health through guidelines, rules and regulations. Food Quality, Food Safety, labelling, and additive's is checked by FSSAI. FSSAI public are awoken about the food standards It handles various food-related issues that is, Prevention of Food Adulteration Act (1954), Food products order (1955), Meat food products order (1973), Vegetable oil products (control) (1947), Milk and Milk products order (1992). FSSAI collaborated with the Indian Council of Agricultural Research (ICAR) to establish a network of Food Quality and Food Safety according to newindianexpress.

FOOD ADULTERATION

Food Adulteration refers to addition of another substance or ingredients with a view to increase the quantity of food item which may cause loss of authenticity/ actual Food Quality. Food Adulteration has immensely increased over time. Increasing of food adulteration is a matter of consideration. The huge increase in the detection of food adulteration cases across India — from 15 per cent in 2012-2013 to 28 per cent in 2018-2019, as per the Food Safety and Standards Authority of India (FSSAI). Many food adulterated food items are seen in

the market. Classic examples are ghee mixed with dalda, butter full of salt, sauces containing high amounts of sugar for sweetening, milk with the milk powder, oils, fruits by food coloring in Chinese substances, dyes and many more. Many cases took place in Food Adulteration that is plastic cabbage; Kurkure contains plastic, plastic rice, HIV in frooti according to news mumbaimirror.indiantimes. It basically refers to the mixing of another substance or ingredients in the original product to expand its quantity and solidity of the product which makes the food quality even worse. Even food laws have been made to ensure the food quality of the product which is the product is high in quality or low in quality, safety and the health of an individual living being and to also ensure that how many cases are taking place in India. Section 272 and Section 273 of the Indian penal code, 1860 deal with the offence of food adulteration and drink intended for sale. It entails punishment of six months imprisonment or payment of INR 1000 as fine, in cases where a person adulterates any article of food or drink, so as to make such article noxious as food or drink, intends to sell such article as food or drink, or knowing it to be likely that the same will be sold as food or drink. Food Adulteration is done to make a profit by using cheaper health-related substances, to make food items look appealing and attractive, to increase the weight of the product. In Food Adulteration various unhealthy products are used which gives rise to many health-related issues such as skin disorders, deficiency of nutrition, food poisoning, kidney disorders etc. This is categorized into two parts:

1. Intentional Adulteration which is substances added to the product intentionally or knowingly to increase the product margin to make a profit and
2. Unintentional or Incidental Adulteration is practices done unknowingly, carelessness, ignorance, and facilities which are improper. Actions should be taken to stop Food Adulteration to make a healthy generation.

Health Issues from Food Quality:

Good food quality leads to good impact on health and this generation. Good food quality or High food quality plays an important role in dietary system. Health issues is the special issue focused here based on the modern unhealthy generation because of the bad food quality or low food quality. Major health issues have been taken place like cancer, diabetes, heart related issues, Obesity, mental health issues, Autism, Attention deficit hyperactivity disorder (ADHD), Pregnancy issues and many more. High fat, low fiber food, artificial sweeteners, salt rich food items, processed food items, low nutritious food increase the risk on the cancer. Breast cancer is one of the common cancer cases we see in our lives. It is increasing day by day whereas food is also being a major issue here food richen in high fats, unsaturated fats, oil reached foods increase the risk of breast cancer. "What we put in our mouth is of relevance not just to our physical health but our mental health and brain health," says Professor Felice Jacka director of the Food and Mood Centre in Australia. Pregnancy-related issues are also a major issue in consuming bad quality of food. According to UNICEF the diet of women in India are often too poor and does not meet the satisfaction of nutritional need that leads to undernourished mother giving birth to undernourished baby. Now, Autism that is Autism spectrum disorder (ASDs) is increasing currently. It is considered as a major health issue. In the starting stage of childhood the kids, children is new with their taste buds. They experience new food and taste of different foods. Children with Autism spectrum disorder are selective eaters. Management of food selectivity is the major concern because of the in educate nutrition. Malnutrition is also a major concern. Malnutrition refers to insufficient amount of intake of good quality food and nutrition reach food. According to World Health Organization (WHO), worldwide obesity is increased nearly tripled since 1975. Obesity has become the main reason of more amounts of deaths of people then underweight. An increased rate of adulterated food, processed food, foods that are high in fat and sugar intake in this generation leads to obesity.

Government Schemes Related to Food Quality:

1. Food Safety and Quality Assurance Infrastructure
2. Food and nutrition security
3. Agro processing Cluster
4. National food Security Act 2013
5. Pradhan Mantri Kissan Sampada Yojana

OBJECTIVES:

The main objectives of food quality are as follows:

1. **Safety-** Safety is our main objective in ensuring food quality. It refers to prevent bad quality of food and to ensure it is clean, fresh, cooked accordingly. The food that is safe for consumption and does not have any health-related issues from it to individual well-being.

2. **Nutrition Value-** This objective ensures that the food is quite nutritious for human health. The proper amount of necessary nutrient intake is done by individual.
3. **Taste-** It ensures that the foods that we are consuming are good in taste and consumable by individuals.
4. **Rules and Regulations** – Food products should meet all the rules and regulations proposed by the government add FSSAI.

SUGGESTIONS

The manufacturer should follow proper and good manufacturing practices. The product should be made using high-quality ingredients and not low-quality ingredients. Moreover, apart from these agriculture implementations quality management systems and well-trained and literate workers should be groomed. Regular food testing and analysis should be done to identify quality issues. Proper storage conditions can also help from which the food products are delivered to the consumer in good condition.

CONCLUSION

In this research paper i conclude that Food Quality is a main critical component of sustainable development and food system which approach the needs of being a healthy generation. Food quality is very essential for the safety of food promoting, good health of human being, reducing waste of food, and security of food. To achieve sustainable development, it is important that food we are consuming is good for a healthy generation. Affect not only ever health but the environment also. The findings of this research paper highlight the health-related issues from bad food quality and to improve food quality and sustainability.

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AN ANALYTICAL STUDY ON SOLID WASTE MANAGEMENT WITH SPECIAL REFERENCE TO VELLALORE DUMP YARD, COIMBATORE, TAMIL NADU

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ABSTRACT

Vellalore dump site is situated in Coimbatore and occupies 650 acres of land. Besides the foul stench and pig menace, it causes disturbances in matters of health and pollution in Vellalore. This study is designed to analyze the issues encountered by residents near the dump site. Primary data was collected from 63 Vellalore residents. The data was collected using an Interview Schedule. Difficulties can be spotted in the segregation of waste at source. Several respondents have severe health hazards like Asthma, Blood Infection, Diarrhea and much more. Some of the respondents find a relation between the onset of the disease and their time of settlement near the dump. The paper includes the socio-economic profile of the respondents followed by waste segregation and disposal methods, pollution hazards experienced and practices of protection from pollution. The analysis highlights that there was a significant difference across the means of education and the recycling habit of the respondents. This was substantiated with the help of Analysis of Variance. The chi-square test revealed that there was no association between gender and the waste segregation practices of the respondent. The respondents' grievances suggest permanent relocation of the dump yard, improvisation in the efficiency of waste segregation and conversion of wastes into Biofuel. Certain respondents are planning to migrate to other parts of the city because of the inconveniences caused by the dump yard. Government and policymakers must pay attention to the problem of migration, provision of better facilities for managing wastes and special emphasis on curing the health hazards faced by the Vellalore respondents.

Keywords: Solid Waste Management issues, Vellalore Residents, Health and Pollution hazard, Waste segregation and Methods of Pollution prevention.

INTRODUCTION

Solid waste management is a part of the following Sustainable Development Goals framed by the United Nations. It comprises of good health and well-being, clean water and sanitation, Sustainable cities and communities, Responsible consumption and production, Climate Action and Life on land. Solid waste management should be effective in order to reduce the number of wastes. Apart from environmental issues it also poses a great threat for the economy's development. Efficient segregation of wastes aids in the reducing the dependence on new raw material and allow us to reuse wastes as inputs. Solid waste management segregates waste into the respective categories and ensures the proper disposal of such wastes. Circular Economy is a dynamically emerging economic model which tries to efficiently use the resources to minimize the number of inputs and to derive maximum results from the minimal input that was fed. Improper treatment of solid wastes impacts the environment adversely and the impact is borne by all living beings. Circular Economy aims to reduce the economic impact through cutting down the wastage of resources and by reducing the wastes from not returning back to the economy in its hazardous form. Open dumping and burning of wastes affect the socio-economic conditions of the residents around the dump yard.

STATEMENT OF THE PROBLEM:

Foul stench and decaying odor cause disturbances to the people living in Vellalore. It makes it unpleasant for the residents to live and it turns to be even more dangerous due to the threat of mosquitoes. Since the dump yard's inception several problems have flown into the city right from poor soil fertility, unclean drinking water, and deficiency in groundwater quality, sudden fire outbreak, breathing issues, digestive problems and skin-related diseases for the residents around the dump.

OBJECTIVES

1. To analyze the obstacles encountered by the Vellore residents who stay near the Solid Waste Dump yard.
2. To recognize the socio-economic and health status of the respondents who reside in proximity to the dump yard.

REVIEW OF LITERATURE

Chowdhury and Baksh (2020) discussed the problems of municipal solid waste management in Bangladesh, they study the closed-cycle management of waste disposal followed in Germany. In this study, disposal methods for turning wastes into resources are discussed. They separated wastes into the following solid waste from

household, commercial wastes, industrial wastes, institutional wastes and construction wastes. They found a proportional relationship between average income and waste generation in Dhaka, Bangladesh. Public attitude, Education and climate were the significant influencers. Unstable Government policy, insufficient land-use and increasing population were great threats. In Germany a hierarchy of waste disposal was followed starting from prevention, reuse, recycling, recovery and disposal. This method helped in saving energy and raw materials. The researcher's suggestion to improve waste management in Bangladesh include public private partnership approach, gasification by obtaining energy from waste burning, technological support to save the ecology and water bodies.

Raza et., al (2021) analyzed the effect of pollutants from waste disposal sites in Lahore, Pakistan. They made 16 visits during wet and dry seasons and compared the results. The greenhouse gases had a limited effect while the particulate matter concentration was 6 times more than the permitted standard. This had a harmful impact mainly during the dry season than in the wet season. There was a correlation between the particulate matter and the greenhouse gases. The researchers finally concluded that this environmental condition was not at all safe for the public health and that the emission levels need to be controlled.

Hemidat et., al (2022) quoted the issues in solid waste management. They are lack of planning, improper collection methods, insufficient funding, not suitable technological methods and inappropriate disposal. The study highlighted the importance of “**circular-economy**” by achieving ‘resource efficiency’. They discussed the application of policies and technologies to solid waste management. They found the major obstacle in efficient solid waste management as severe political factors and decentralized structure in waste management. They suggested that instead of treating wastes as trouble it must be seen as resource which could be infused into the circular economy to earn beneficial outputs.

Kumar and Agarwal (2020) focused on the challenges faced by Indian cities in regard to waste management. They paid attention to the following issues like population growth, density, changing lifestyles and food habits. The real hurdles were no segregation at source, citizen's attitude, irregular assessment, unplanned and poor implementation of government policies. They discussed and suggested an urgent adequate treatment and recycling strategies. They emphasized the centralization and decentralization in treatment of wastes. At last, they suggested the coexistence of informal, private agencies and the government to develop the scope of waste management.

Moh and Abd Manaf (2017) threw light on the open dumping and illegal dumping at sites in Malaysia. It claimed the widespread availability of recyclable items in the waste yet which are not being separated at the source. They discussed the key areas in the strategic plan implemented by the government, it combined the mindset, behavior, policy and implications, technology and organizational capacity. This paper addressed the main challenge as irresponsible public attitude towards waste segregation at source. In order to achieve the status of a zero-waste nation, the authors recommended coexistence of public and private sectors to achieve continuous commitment and participation.

RESEARCH METHODOLOGY

- **Nature of Study:** Vellalore dump yard is situated in Coimbatore district; it covers an area of 650 acres and is functioning since June 2003.
- **Sources of Data:** A well-structured Interview Schedule was built for the purpose of collecting primary data from the respondents.
- **Sample Count:** Samples contain 63 respondents who reside in proximity to the dump yard.
- **Sampling Technique:** The study makes use of purposive sampling and snowball sampling. Vellalore has a population of 24872 residents and 0.25 percentage was chosen as the sample size.

Tools for Analysis

- Cross tabulations, Percentage analysis, Pie Chart, chi-square analysis and Analysis of Variance (ANOVA).

Hypothesis Fixation

Null Hypothesis (H₀) There is no association between gender and waste segregation practices.

Alternate Hypothesis (H₁) There is an association between gender and waste segregation practices.

ANALYSIS

Table: 1 Practice of Waste Segregation

Waste segregation	Frequency	Percentage
a) Yes	27	43
b) No	36	57
Total	63	100

Source: Primary Data

From the table we can note that 27 respondents practice waste segregation and 36 respondents do not practice waste segregation.

Table: 2 Practice of Recycling Wastes

Recycling	Frequency	Percentage
a) Yes	36	57
b) No	27	43
Total	63	100

Source: Primary Data

Among the respondents 36 of them practice waste recycling whereas 27 of them do not practice waste recycling.

Chart: 1 recycling of Wastes by the respondent

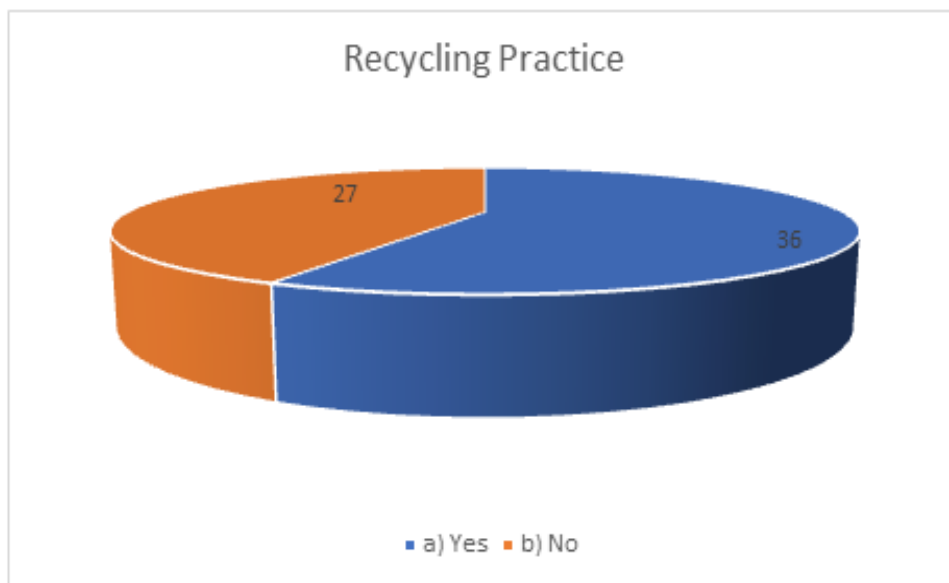


Table: 3 Chi Square Test for Association between Gender and Waste Segregation Methods

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.132 ^a	1	.716		
Continuity Correction ^b	.012	1	.913		
Likelihood Ratio	.132	1	.716		
Fisher's Exact Test				.801	.457
N of Valid Cases	63				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.29.					
b. Computed only for a 2x2 table					

Source: Primary Data

The Value of the test statistic is 0.132. There is no association of gender with waste segregation practices because the corresponding p value is 0.716 which is greater than the chosen significance level of 0.05. Hence, we can conclude that gender and waste practices are not associated. Therefore, we accept our null hypothesis and reject the alternate hypothesis.

Table: 4 Analysis of Variance between Education and Waste Recycling Habit

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.394	3	.798	3.612	.018
Within Groups	13.034	59	.221		
Total	15.429	62			

Source: Primary Data

There is a statistically significant difference between the mean of educational qualification and the mean of waste recycling habit. The p value is 0.018 which is less than the significance level of 0.05, so we can say that there exists a difference among education and recycling habit.

SUGGESTIVE MEASURES

Several of the respondents request the government to permanently relocate the dump yard. This will definitely prove to be an effective solution as all the hazards faced by the respondents were due to the dump yard. A handful of the respondents were affected by diseases like Asthma, diarrhea and much more. Such people approached the hospitals because of their illness symptoms, whereas a majority of the respondents were hesitant to approach the hospital despite finding mild symptoms of illness. A medical camp along with counselling facilities will aid the respondents to discover the presence of disease if any, and to help them avail medical facilities if needed. New policies which enable focus on public health has to be introduced. Moreover, the piles of dump require segregation and proper treatment, so they could be converted into manure or could be incinerated. Government and policy makers must stress the improvement in waste management through installing bio-gas plants. The root cause for all the hardships lies in the segregation of waste at source. Necessary actions have to be taken to follow waste segregation at source and for the upliftment of garbage haulers who are involved in it.

CONCLUSION

Vellalore's residents are prone to severe threats and the dump yard immensely affects their daily life. Their struggles include danger of pest attack, pig menace, breathing diseases, digestive diseases and many more. Based on the respondent's socio-economic profiles the access of pollution preventive methods varied. When the income of the respondent increased it had an incremental effect on the preventive methods opted for. The practice of waste segregation is entirely independent and does not depend on gender. Development in Public health amenities, mindful disposal of wastes, increased awareness on solid waste management, appropriate segregation of waste at source, innovative solutions to deal with waste accumulation and enhanced labor laws for garbage haulers needs to be treated as the most pressing priority.

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A STUDY OF MIGRATION OF LABOUR: CHALLENGES AND SOLUTION

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ABSTRACT

Labours are one of the foundation stones of the economy of a nation and the goal of sustainable development cannot be achieved without taking their problems and needs into consideration. People migrate according to their needs but to put a migration check is needed when it becomes a compulsion and not a choice. The paper aims to address the issues they face, the law that different countries have for them and the rights they have. The paper also aims in understanding why migration is a global issue. This research is done by using mixed methodology i.e., quantitative and qualitative approaches. The data used in this research paper has been collected from the United Nations, the Government of India, the Constitution of India, the International Labour Organisation, and past research papers. While working on this research paper it was found that there are many laws related to labour for their overall development and welfare. UN is playing an important role in safeguarding the interest of labour, and the reason why the migration of labour has become a global issue. The paper also brings the basic understanding between the normal migrant and the labour migrating to another place. It was found that there are different issues and challenges faced by labours. This study contributes to the theories of migration of labour policy along with labour laws and policies for them.

Keywords: Migration of Labours, Labour laws, Constitution of India, United Nations, International Labour Organization.

INTRODUCTION

Ever since ancient times, people migrate from one place to another. This process of migration may be due to a lack of financial assistance, calamities, or lack of any basic needs. The migration of a person from one place to another with the purpose of employment is called the migration of labour. These migrants are usually not well-literate and of which when they face any unjust act committed against them, they are not able to do anything. A person irrespective of his home country always has certain rights not only for protecting himself against any unjust act but also for his overall development and welfare. Migrant workers are known by many names such as foreign workers, expatriates, or guest workers. Although migration is a part of globalization there are also many negative effects of migration that a person faces such as human trafficking, slavery, lack of basic needs, mental harassment and so on. These migrant labours are not only males but also females. There are many reasons behind females migrating and working as labour but the most common reason is supporting their family. Apart from adults, even children are engaged in such labour work, either because they migrate in search of jobs to support the young ones in their families, or because of human trafficking. Many times, even well-educated and professional people depart from one country to another this is known as brain drain, wherein highly trained and qualified people migrate to other countries. The level of the gap between economic development and regional development within an economy induces an individual to migrate from a region where the opportunity to find jobs is lower to a region where job finding is easier and higher. The continuation of this migration process creates competition among potential workers, lowering the wage rate. This process continues unless the wage gap between the two regions is eliminated. This phenomenon is known as 'convergence' in which, an equilibrium of wage rate is maintained between two regions. According to a report of the working group on migration conducted in 2017, under the Ministry of Housing and Urban Poverty Alleviation, 17 districts accounted for the top 25% of India's total male out-migration. Moreover, according to a report released by the Ministry of Statistics and Program Implementation in June 2021-2022, 0.7% of the country's population was 'temporary visitors', the all-India migration rate was 28.9 for July 2020-June 2021, with 26.5% migration rate in rural areas and 34.9% in urban areas. Apart from this females recorded a higher share of the migration rate 47.9% whereas the migration rate for males was 10.7% The term labour migration acts as an umbrella, but there are different types of migration, such as internal and external migration, temporary and permanent migration, circular migration.

TYPES OF MIGRATION-

- 1) **Internal and External Migration:** Internal migration is also known as domestic migration. People travel within the country's geographical boundary. A person travelling outside a country's geographical boundary is called external migration.

- 2) **Temporary and Permanent Migration:** when a person settles or travels for a specific period to return to his home country is called temporary. Whereas when a person travels with the intention of not returning to his home country is called permanent migration.
- 3) **Circular Migration:** it is also known as repeat migration. Wherein the migrant worker travels frequently between his home country/ area and host country/area.

There are many pull factors such as better infrastructure, job opportunities, better living conditions, better hospitality, and environment. Many times, due to bad climatic conditions prevailing in an area or a country becomes a reason for migration e.g., climatic conditions in Uttarakhand (a state prone to calamities) and Oymyakon (the permanently coldest inhabited place). Apart from these, there are also many push factors because of which people are forced to leave their home country. Factors such as economic condition, social reasons, lack of development and opportunities. People also face warfare conditions which force them to leave their country e.g., the Yemen crisis and Ukraine – Russia war.

CHALLENGES MIGRANT LABOUR FACES-

There are many challenges faced by the migrated labours, such as social discrimination, and lack of proper facilities of necessity. Labours after migrating find it very difficult to adjust and get familiar with the new environment and customs. Many times, they are also portrayed as criminals and robbers. This negatively affects their psychological state. Apart from that the labours are forced to live in a small area with many people, wherein they are also not provided with basic amenities. According to The Plight of Migrant Workers in Qatar by FRANCE 24 English, an anonymous Kenyan worker referred to here as Ibrahim describes his journey. He says that he paid 1500 euros to a Kenyan recruitment agency for his visa and plane tickets. He further mentions that he works for constructing buildings and the company contracts the labour only during hot seasons, mentioning sometimes the degree would reach over 50 while working outside the heat hits you till you feel you are dying. Like most foreign workers his house was a huge block away and isolated from everything and they have no other means of transportation except the company buses. As soon as Ibrahim along with other co-workers arrived in Qatar their first shock was finding out the state of their accommodation. The place was very dirty with a foul smell, he also said “The life we are living here is hell.” The company had promised to provide necessities, but when Ibrahim showed his room to the report it was already filled with 4 people, some were sleeping on the floor without beds, and they had no canteen facility, and no refrigerator. In addition to their unsanitary condition, the workers complained they have not been paid for months. Moreover, the company confiscated their passport, resulting they can neither change their company nor going back to their family. Ibrahim says, “This is slavery, a kind of prison.” There are over millions of workers who suffer injustices and must have unknowingly died without their families being aware of the truth. The promises that these fake companies make to innocent workers and the inhumane treatment that they give to these workers are not only cruelty against them but a threat to the entire humankind. All these labours migrate only with the dream of earning money to support their family. All these facts prove the ultimate physical and psychological state of being that these labours face. These fake companies are not only in a specific region but in the entire world.

Indian migrant labours during the pandemic COVID-19, faced many issues. Due to the lockdown imposed in the entire country, labours faced issues such as loss of income, food shortages and uncertainty about their future. Maharashtra has the largest number of migrants, according to the 2011 census of India. Due to the lockdown, thousands of workers gathered at the railway and bus stations, seeking transportation help to go back to their families. Migrant workers who decided to stay back during the exodus also faced assault from their neighbours, who accused them of being infected and spreading the coronavirus. But soon after the central government released a directive, the state government set up thousands of camps to house migrants and stop the exodus. NGOs provided free food and other medical essentials. Under the Indian constitution, Article 19 (1)(c) gives everyone the right to form associations or unions. Article 23 prohibits all trafficking and forced labour moreover Article 24 prohibits child labour under 14 years of age in factories, mines, or any hazardous employment. Apart from these, Article 14 states that the state shall not deny equality before the law to any person or the equal protection of the laws. Furthermore, Article 15 states prohibition of discrimination based on race, caste, sex, and place of birth.

There are many challenges that migrant workers face irrespective of being internally or externally migrated; they are trapped and helpless. Workers are not only mentally harassed but also sexually assaulted. Female workers are sexually harassed and raped. They are not allowed to live freely; their freedom is taken away from them and they are treated as slaves. The practice of slavery was first condemned in the Paris Peace Treaty of 1814, between Britain and France under the League of Nations the Convention to Suppress the Slave Trade and Slavery was adopted in 1926. This convention remains the basic document prohibiting the practice of slavery

and forced labour, but many migrant workers still face issues of slavery in their daily life. They also face the challenge of human trafficking and migrant smuggling. According to the United Nations International Organization of Migration "Trafficking in persons" refers to all those forms of exploitation for the benefit of a third party, such as debt bondage, child labour, forced labour, forced marriage, forced begging and the removal of organs. There are many types of trafficking such as child trafficking, sex trafficking, organ trade, labour trade and fraud factory. Human trafficking makes it worst for the government to keep a check on the data on the migration of people. The UN Organization is also actively participating in the anti-trafficking camps, particularly through Sustainable Development Goal 5. The UN established SDG 5 concerning gender equality in 2015, wherein one of the main areas that the UN has included in this, is anti- trafficking, violence, and exploitation of women, forced marriage and overall equality for everyone.

Humanitarian Intervention (HI)

The doctrine of HI has been expounded by many international lawyers, including Hugo Grotius, the father of international law. This doctrine recognizes as lawful the use of force by one or more states to stop the maltreatment by a state of its nationals when that conducted was so brutal and large scale as "to shock the conscience of the community of nations." It was the first to give expression to the proposition that there were some limits to the freedom that states enjoyed under international law in dealing with their nationals. According to this intervention, every person is protected from his country also if it mistreats them or restricts their freedom.

International Humanitarian Law (IHL)

It is a branch of international law, that aims to protect people who are not participating in hostilities. There is a certain set of rules established by treaties keeping in consideration of humanity. It must be noted that the creation of the International Committee of the Red Cross (ICRC) in 1864 contributed greatly to the development of the laws of war. Under the basic rules of IHL, "no one shall be subjected to torture, or cruel, inhuman, or degrading treatment or punishment."

UN And Human Rights

The charter of the UN of 1945 is the most important landmark in the development of modern principles of human rights. Its preamble states:

"The peoples of the United Nations express their determination to reaffirm faith in fundamental human rights of men and women and of nations large or small."

One of the main purposes of the UN is the promotion and encouragement of human rights and freedom for all without any discrimination as to race, sex, language, or religion. Moreover, Article 56 of the UN charter says, "All members pledge themselves to take joint and separate action in cooperation with the organization for the achievement of the purpose outlined in Article 55" that talks about equality.

Universal Declaration of Human Rights (UDHR)

UDHR is one of the three instruments of the international bill of human rights. Article 1 of UDHR says "All human beings are born free and equal in dignity and rights." Hence it defines the foundation of the declaration that the right to liberty and equality is man's birthright and cannot be alienated. Article 2 reads the principle of equality and non-discrimination as regards the enjoyment of human rights. Further article 3 also provides the right to life liberty and security of persons as a right essential to the enjoyment of all other rights.

The convention against torture and other cruel, inhuman, and degrading treatment or Punishment (CAT), 1984

This is one of the UN's core conventions that specifically deals with one form of violation i.e., torture. Article 1 of the convention defines torture and with the help of the definition, it can be clearly understood that the treatment migrated workers get is no less than torture. The article reads "any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession, punishing him for an act he or a third person has committed or is suspected of having committed, or intimidating or coercing him or a third person, or for any reason based on discrimination of any kind when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity. It does not include pain or suffering arising only from, inherent in or incidental to lawful sanctions." Moreover, whether a country ratifies CAT or not, it is still bound by the principles contained in that convention. This customary law also lends moral force to the prohibition of torture.

The Convention on the Protection of the Rights of all migrant workers and Members of Their Families (CMW), 1990

This is the most important convention for all migrant workers irrespective of their geographical region. This convention represents the culmination of the development of various conventions of the international labour organization (ILO). The convention is the most comprehensive treaty among the core ones with 93 articles divided into IX parts. Article 1 states that convention is applied during the entire migration process which comprises preparation for migration, departure, transit and the entire period of stay and remunerated activity in the state of employment as well as return to the state of origin (home country). This is the convention that protects migrant workers like Ibrahim and their families because moreover part II of this convention states non-discrimination concerning rights, and part III reads the human rights of all migrant workers and members of their families.

International Labour Standards

International labour organization (ILO), has been in existence since 1919 and became a specialized agency of the UN in 1946, seeking to achieve social justice through its activities in the social and labour fields. The ILO Multilateral Framework addresses the major issues faced by migrant workers providing essential guidance and assistance. It is a comprehensive collection of principles, guidelines and best practices on labour migration policy which provides practical guidance on the development and improvement of labour migration policies. Moreover the 2030 agenda of ILO is economic, social, and environmental sustainability. The 17 SDG puts the people at its centre, giving the international community a framework to tackle challenges that hinders humanity.

SUGGESTIONS

as most of the migration takes place due to a lack of opportunities and other facilities, hence development should be made at a grassroots level. Governmental policies and schemes should be made to retain labours at their native place, even labours should be given equal importance and should not be treated as slaves. They and their families should be treated well and their children should be given educational opportunities and quality education.

CONCLUSION

as human rights are the basic rights which form the essential part of a person's development as a human being. It could rightly be concluded that even the migrant labours have the right to live with personal liberty along with freedom of expression. There are many organizations and NGOs at the national and international levels working for labour and their families protection against different challenges that they face throughout their entire migration process till the time of remuneration.

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A STUDY ON AWARENESS ABOUT SUSTAINABLE DEVELOPMENT GOALS (SDG'S) AMONG PEOPLE IN MUMBAI**Dr.Sulbha Alope Dey¹ and Ms. Shruti Desai²**¹Assistant Professor, Department of Commerce, Mulund College of Commerce, Mumbai-400080²Assistant Professor (Visiting Faculty) at Mulund College of commerce, Mumbai-400080**ABSTRACT**

The UN Sustainable Development Goals (SDGs) is the replacement to the Millennium Development Goals (MDGs) 2015, and the time horizon for which the SDG's are designed and to be achieved is by 2030, and should have been achieved globally. It is also expansively known agenda 2030. It demonstrates 17 Goals. The Millennium Development Goals (MDGs) were restricted to only developing countries, but the Sustainable Development Goals is universal, SDGs aims at transforming our world. They are an appeal to end poverty and inequality, provide quality education, Affordable clean water, energy and sanitation, protect the planet, and ensure that Life below water and on land are safe and all people enjoy good health, justice and prosperity. SDGs emphasis on, that no one on this planet is left behind. Education plays a vital role to create awareness about SDGs and also for achieving it. The United Nations Educational and Scientific and Cultural Organization (UNESCO) acknowledge that education is a primary key to sustainable development which states that "SDGs cannot be merely achieved by scientific solutions, constitutional regulations, or by any economic or commercial tools alone. We all living as a citizen on this earth should change the way we think and act, and This requires superior quality of education and learning for sustainable development at all stages and in all social circumstances". The purpose of the study is to study the level of awareness of SDG's among the people in Mumbai and also to identify the influence of SDG's on people for using the SDG's to guide their sustainability career. The study also aims to examine the willingness to achieve the SDG's in the personal, social and professional environment. The convenience sampling method is used for the collection of data. The secondary data was collected through articles, research reports and thesis. The primary data was collected through the questionnaire with the help of Google forms which was an e-survey method of data collection. Statistical techniques such as frequency, percentage, Mean and Chi-square were used to analyse the data.

Keywords: Sustainable Development Goals (SDGs), Awareness, sustainability career.

INTRODUCTION

The UN Sustainable Development Goals (SDGs) is the replacement to the Millennium Development Goals (MDGs) 2015, and the time horizon for which the SDG's are designed and to be achieved is by 2030, and should have been achieved globally. It is also expansively known agenda 2030. It demonstrates 17 Goals. The Millennium Development Goals (MDGs) were restricted to only developing countries, but the Sustainable Development Goals is universal, SDGs aims at transforming our world. They are an appeal to end poverty and inequality, provide quality education, Affordable clean water, energy and sanitation, protect the planet, and ensure that Life below water and on land are safe and all people enjoy good health, justice and prosperity. SDGs emphasis on, that no one on this planet is left behind. Education plays a vital role to create awareness about SDGs and also for achieving it. The United Nations Educational and Scientific and Cultural Organization (UNESCO) acknowledge that education is a primary key to sustainable development which states that "SDGs cannot be merely achieved by scientific solutions, constitutional regulations, or by any economic or commercial tools alone. We all living as a citizen on this earth should change the way we think and act, and This requires superior quality of education and learning for sustainable development at all stages and in all social circumstances". (Akinlolu G Omisore, Grace M Babarinde, Damilola P Bakare, & Esther O Asekun-Olarinmoye, 2017).

The level of awareness about SDGs is still a most important concern, many citizens across different countries are not having sufficient knowledge and awareness about the issues of SDGs and their importance in diverse aspects of human life (Bebbington & Unerman, 2020). It is recognized that without the increased level of SDGs it would be very difficult to achieve the SDGs as the citizens will not be able to hold relevant stakeholders to account. Low level of awareness of the SDGs shows a momentous threat to the recognition of the SDGs (Akinlolu et al., 2017; OECD, 2017). According to the SDG Accountability Handbook (2019), effective communication strategies and techniques are useful for creating awareness about the SDGs by producing educational reports, info graphics, thematic discussions, seminars, utilizing radio programs, audio-visual material, documentary films, social media etc. It is impossible to achieve the global goals without increasing the awareness about SDGs (Vo et al., 2022). Hence, SDGs plays a crucial role for the development of the planet,

our environment and also the humankind and the goals also helps to have a sustainable environment and natural resources. Therefore, the study aims to examine the impact of awareness of SDGs among people and the willingness to achieve the SDGs in their personal, social and professional environment.

SIGNIFICANCE OF THE STUDY

The Sustainable Development Goals are designed by the United Nations globally to achieve a better and more sustainable development and sustainable future for all. The SDGs recognizes all the global development issues and help us to fight the global issues of the humanity and environment. Sustainable development is essential because it encourages us to conserve our natural resources, respect our environment, and preserve our biodiversity. Sustainable development Goals helps us to live in tranquillity with the planet and human beings. Hence, the study can definitely encourage and helps to create the awareness of SDGs among the people and helps to adopt the sustainable practices. The study also emphasis to examine the willingness to achieve the SDG's in personal, social and professional environment.

REVIEW OF LITERATURE

Daniel Odoom, Eric Opoku Mensah, Christopher Dick-Sagoe, Ka Yiu Lee, Ernest Opoku & Joseph Obeng-Baah (2023) identified in their study that people are highly aware of SDG 1 (ending poverty), SDG 2 (zero hunger), SDG 3 (health and well-being), SDG 4 (quality education), SDG 5 (gender equality), and SDG 6 (clean water and sanitation) through effective communication techniques. On the other hand, the level of public awareness with respect to SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities), SDG 14 (conservation of life below water), and SDG 16 (peace, justice and strong institutions) was very low.

Akinlolu, O., Babarinde, G. M., Damilola, B., & Asekun-Olarinmoye, E. (2017) explored that the awareness and the attitude towards the SDGs was just fair enough. However, the level of knowledge about the SDGs was very low, and this has serious negative impact for SDGs achievement. Enlightening people about the SDGs at individual and at the population- level method is necessary and should be introduced in educational settings & curricular changes are very crucial.

Yuan, X.; Yu, L.; Wu, H. (2021) identified that Chinese students have a limited understanding of the SDGs, greater efforts are required to improve the overall awareness and knowledge of students about the sustainable development.

Gouranga Biswas (2018) identified that most of the respondents were aware about the SDGs but very few of them had complete knowledge about it, however most of the respondents were having positive attitudes towards SDGs, and the respondents who were having knowledge about the SDGs were enlightened via their own personal study.

Dr. Kanelechi C.K. Nwangwa, Igbogi, Inatimi (2019) explored in their study that secondary school teachers in Bayelsa state have low level of awareness about the SDGs and this is an issue because many misunderstood the SDGs for the MDGs which has been replaced out. Regardless of their awareness, their insight has slowed down the possible advancement of the secondary school teachers towards the achievement of the SDGs. It is therefore hoped that secondary school teachers will learn and gain knowledge and skills that can improve the chances of attaining the SDGs. Because at this level of awareness it is difficult if teachers can provide the required level of motivation, knowledge and awareness for their students to understand their environment and put in to the achievement of the sustainable development goals.

Kumi, E. (2019) revealed in the study that philanthropic (Charitable) institutions can help in achieving the SDGs by accompany government's efforts in service delivery, supporting CSOs (Civil society organisations) to connect in lively support through the provision of financial and capacity strengthening as well as leveraging their proficiency in forging greater stakeholder co-ordination at the national level.

RESEARCH GAP

After reviewing the existing literatures, the gap containing the study examining the Awareness of Sustainable development Goals among people in a city like Mumbai was found.

OBJECTIVES OF THE STUDY

- 1) To Study the awareness of SDGs among the people in Mumbai.
- 2) To identify the influence of SDGs on people for using the SDGs to guide their Sustainability career.
- 3) To examine the willingness to achieve the SDGs in their personal, social and professional environment.

HYPOTHESIS OF THE STUDY

H0- There is no significant impact of awareness on SDGs among people in Mumbai on their willingness to achieve the SDGs in their personal, social and professional environment.

H1- There is a significant impact of awareness on SDGs among people in Mumbai on their willingness to achieve the SDGs in their personal, social and professional environment.

RESEARCH METHODOLOGY**Data Collection**

In order to examine the awareness of SDGs among people, primary as well as secondary data was collected. The secondary data was collected through articles, research reports and thesis. The primary data was collected through the structured questionnaire with the help of Google forms, which was an e-survey method of Data Collection. Questionnaire was based on questions mainly regarding the profile of the respondents.

Sample Design

The Convenience Sampling technique was used for the study. The framed questionnaire was sent using online social media platforms to the male and female respondents who are located in various areas in Mumbai. The survey was kept open for fifteen days to receive the desired number of responses. This survey enabled a total number of 140 filled responses.

Statistical Techniques used for Data Analysis

Statistical software; Microsoft Office Excel 2013 and Statistical Package for Social Science (SPSS) were used for processing the data. Statistical techniques such as frequency and Chi-square were used for data analysis and interpretation. The data analyzed were presented using tabular presentation.

RESULTS AND DISCUSSION**1) Profile of Respondents**

To identify the awareness of SDGs among people the data concerning the profile of the respondents with respect to their age, qualification, and gender was collected. The same is presented in the following part of the study.

Table 1: Profile of Respondents

Gender	Frequency	Percentage
Female	91	65.0
Male	49	35.0
Total	140	100.0
Age	Frequency	Percentage
18-20	63	45.0
21-25	48	34.3
26-30	9	6.4
31-35	3	2.1
35 & above	17	12.1
Total	140	100.0
Education Qualification	Frequency	Percentage
Graduate	35	25.0
HSC	9	6.4
PhD	2	1.4
Post Graduate	24	17.1
Professional degree	6	4.3
SSC	2	1.4
Undergraduate	60	42.9
Others	2	1.4
Total	140	100.0

Source: Online Survey

The findings in Table 1 about the profile of respondents revealed that, 65% of the respondents were female & 35% of the respondents were male. 45% of the respondents were between the ages of 18-20, 34.3% of the respondents were between the ages of 21-25, 6.4% of the respondents were between the ages of 26-30, 2.1% of the respondents were between the ages of 31-35. 12.1% of the respondents were from age group 35 and above. 25% of the respondents were graduated, 6.4% of the respondents were HSC, 1.4% of the respondents were PhD,

17.1% of the respondents are postgraduates, 4.3% of the respondents have professional degree, 1.4% of the respondents are SSC, 42.9% of the respondents are undergraduates and 1.4 % of the respondents belong to other profession like Beauticians/Hairstylist etc.

2) Awareness of SDGs

The following part of the study contains the response of people about their awareness level about the SDGs.

Table- 2.1

Awareness about the UN SDGs	Frequency	Percentage
No	49	35.0
Yes	91	65.0
Total	140	100.0

Source-Online Survey

The findings in Table 2.1 showed that 65% of the respondents were aware about the UN SDGs and 35% of the respondents were not aware about the UN SDGs.

Table 2.2

How well are the people aware about the SDGs	Frequency	Percentage
Know well	35	25.0
Know only by their names	78	55.7
Do not know	27	19.3
Total	140	100.0

Source-Online Survey

The findings in Table 2.2 showed that 25% of the respondents were well known about the SDGs, 55.7% of the respondents were aware only by their names and 19.3% of the respondents do not know about the SDGs.

Table-2.3

Sources of information from which the people became first aware about the SDGs	Frequency	Percentage
Book/Magazines	14	10.0
Friends	15	10.7
Lectures/Seminar's	21	15.0
News	13	9.3
Social media	59	42.1
TV	8	5.7
Websites	10	7.1
Total	140	100.0

Source-Online Survey

The findings in the Table 2.3 showed that 10% of the respondents first became aware about SDGs from books/magazines, 10.7% of the respondents first became aware about SDGs from their Friends, 15% of the respondents first became aware about SDGs from Lectures/seminars, 9.3% of the respondents first became aware about SDGs from News, 42.1% of the respondents first became aware about SDGs from Social media, 5.7% of the respondents first became aware about SDGs from TV and 7.1% of the respondents first became aware about SDGs from websites.

Table-2.4

Educational enlightenment on SDGs	Frequency	Percentage
No	85	60.7
Yes	55	39.3
Total	140	100.0

Source-Online Survey

The findings in the Table 2.4 showed that 60.7% of the respondents did not had any educational enlightenment on SDGs and 39.3% of the respondents got educational enlightenment on SDGs.

Table-2.5

Taken time out to read or find out more about SDGs	Frequency	Percentage
No	86	61.4
Yes	54	38.6
Total	140	100.0

Source-Online Survey

The findings in the Table 2.5 showed that 61.4% of the respondents did not take out any time to read or find out more about SDGs, and only 38.6% of the respondents had taken their time out to read or find out more about SDGs.

Table-2.6

Awareness about Time Horizon for which the SDG’s are designed and to be achieved	Frequency	Percentage
No	98	70.0
Yes	42	30.0
Total	140	100.0

Source-Online Survey

The findings in the Table 2.6 showed that 70% of the respondents were not aware about the Time Horizon for which the SDG’s are designed and to be achieved and only 30% of the respondents were aware about the Time Horizon for which the SDG’s are designed and to be achieved.

Table- 2.7

Awareness about each SDGs	Mean
GOAL 5: Gender Equality	2.95
GOAL 3: Good Health and Well-being	2.85
GOAL 4: Quality Education	2.84
GOAL 1: No Poverty	2.79
GOAL 6: Clean Water and Sanitation	2.79
GOAL 7: Affordable and Clean Energy	2.76
GOAL 2: Zero Hunger	2.73
GOAL 10: Reduced Inequality	2.66
GOAL 8: Decent Work and Economic Growth	2.64
GOAL 13: Climate Action	2.64
GOAL 16: Peace and Justice Strong Institutions	2.64
GOAL 11: Sustainable Cities and Communities	2.60
GOAL 9: Industry, Innovation and Infrastructure	2.53
GOAL 15: Life on Land	2.49
GOAL 12: Responsible Consumption and Production	2.48
GOAL 17: Partnerships to achieve the Goal	2.41
GOAL 14: Life Below Water	2.38

Source-Online Survey

Respondents were asked to rate their opinion about their awareness for each SDGs on a four-point Likert scale; where highly aware-4, moderately aware-3, slightly aware- 2 and not aware- 1.

As per the findings in Table 2.7 showed that the respondents were slightly aware about Goal-5 Gender Equality (2.95), further it was seen and analyzed that the respondents were only slightly aware about all the SDGs i.e Goal 3- Good Health and Well-being (2.85), Goal 4-Quality Education (2.85), Goal 1-No Poverty (2.79), Goal 6: Clean Water and Sanitation (2.79), Goal 7: Affordable And Clean Energy (2.76), Goal 2: Zero Hunger (2.73), Goal 10: Reduced Inequality (2.66) , Goal 8: Decent Work And Economic Growth (2.64), Goal 13: Climate Action (2.64), Goal 16: Peace And Justice Strong Institutions (2.64), Goal 11: Sustainable Cities And Communities(2.60), Goal 9: Industry, Innovation And Infrastructure (2.53), Goal 15: Life On Land (2.49), Goal 12: Responsible Consumption And Production (2.48), Goal 17: Partnerships To Achieve The Goal (2.41), Goal 14: Life Below Water (2.38). Further it was also found that the awareness on Goal 5: Gender Equality was high in the respondents and the awareness about Goal 14: Life below Water was found least in the respondents.

3) Attitude towards Achieving SDGs in personal, social & professional environment and the willingness to use SDGs to guide sustainability career.

The following part of the study contains the responses of people about their attitude towards Achieving SDGs in personal, social & professional environment and the willingness to use SDGs to guide sustainability career.

Table- 3.1

Achieving SDGs in personal, social & professional environment	Frequency	Percentage
No	20	14.3
Yes	120	85.7
Total	140	100.0

Source-Online Survey

The findings in the table 3.1 showed that 85.7% of the respondents want to achieve the SDGs in their personal, social & professional environment, and 14.3% of the respondents do not feel to achieve the SDGs in their personal, social & professional environment.

Table-3.2

Willingness to use the Sustainable Development Goals (SDG'S) to guide your sustainability Career	Frequency	Percentage
No	18	12.9
Yes	122	87.1
Total	140	100.0

Source-Online Survey

The findings in the table 3.2 showed that 87.1% of the respondents have the Willingness to use the Sustainable Development Goals (SDG'S) to guide their sustainability Career & 12.9% of the respondents do not have the Willingness to use the Sustainable Development Goals (SDG'S) to guide their sustainability Career.

Table-3.3

To what extent Mumbai has achieved on Each SDGs	Mean
GOAL 9: Industry, Innovation and Infrastructure	2.87
GOAL 5: Gender Equality	2.82
GOAL 4: Quality Education	2.79
GOAL 8: Decent Work and Economic Growth	2.71
GOAL 6: Clean Water and Sanitation	2.70
GOAL 10: Reduced Inequality	2.67
GOAL 17: Partnerships to achieve the Goal	2.65
GOAL 11: Sustainable Cities and Communities	2.61
GOAL 16: Peace and Justice Strong Institutions	2.56
GOAL 7: Affordable and Clean Energy	2.54
GOAL 3: Good Health and Well-being	2.51
GOAL 12: Responsible Consumption and Production	2.51
GOAL 15: Life on Land	2.44
GOAL 1: No Poverty	2.33
GOAL 13: Climate Action	2.31
GOAL 2: Zero Hunger	2.29
GOAL 14: Life Below Water	2.19

Source-Online Survey

Respondents were asked to rate their opinion about to what extent according to them Mumbai has achieved on each SDGs on a four-point Likert scale; where highly achieved-4, somewhat achieved -3, less achieved-2, not achieved- 1.

As per the findings in Table 3.3 showed, the respondents felt that Mumbai has less achieved On Goal 9: Industry, Innovation and Infrastructure (2.87), further it was seen and analyzed that the respondents felt that Mumbai has less achieved on each SDGs i.e Goal 5: Gender Equality (2.82), Goal 4: Quality Education (2.79), Goal 8: Decent Work And Economic Growth (2.71), Goal 6: Clean Water And Sanitation (2.70), Goal 10: Reduced Inequality (2.67), Goal 17: Partnerships To Achieve The Goal (2.65), Goal 11: Sustainable Cities And Communities (2.61), Goal 16: Peace And Justice Strong Institutions (2.56), Goal 7: Affordable And Clean

Energy (2.54), Goal 3: Good Health And Well-Being (2.51), Goal 12: Responsible Consumption And Production (2.51), Goal 15: Life On Land (2.44), Goal 1: No Poverty (2.33), Goal 13: Climate Action (2.31), Goal 2: Zero Hunger (2.29), Goal 14: Life Below Water (2.19). Further it was also found that the respondents felt that Mumbai has achieved highly on Goal 9: Industry, Innovation and Infrastructure and Have Achieved Least on Goal 14: Life below Water.

Result of Hypothesis Testing

H0- There is no significant impact of awareness on SDGs among people in Mumbai on their willingness to achieve the SDGs in their personal, social and professional environment.

H1- There is a significant impact of awareness on SDGs among people in Mumbai on their willingness to achieve the SDGs in their personal, social and professional environment.

Table 4- Pearson Chi-Square Test to the impact of awareness on SDGs among people in Mumbai on their willingness to achieve the SDGs in their personal, social and professional environment.

Crosstab		Willingness to achieve Sustainable Development Goals (SDG'S) in personal, professional and social environment		
		No	Yes	Total
Awareness about the United Nations Sustainable Development goals (SDG's)	No	15	34	49
	Yes	5	86	91
Total		20	120	140

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	16.410 ^a	1	.000		
Continuity Correction ^b	14.423	1	.000		
Likelihood Ratio	15.734	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	140				

Source-Online Survey

The result of the Chi-Square test (Table 4) revealed that there was a significant impact (P-value 0.000) of awareness on SDGs among people in Mumbai on their willingness to achieve the SDGs in their personal, social and professional environment.

LIMITATIONS OF THE STUDY

- The study was constrained to the people who are residing in Mumbai city only.
- Sample Size is constrained to 140 respondents only.
- The study was limited to selected variables only.

RECOMMENDATIONS AND CONCLUSION

- For implementation and creating awareness about SDGs the education system plays a vital role and has a lot to offer, Educational institutions should develop awareness about SDGs by introducing SDGs activities, exhibitions. Educational institutions should form a SDGs association in their institutions where the students can come together and can accumulate knowledge & awareness about SDGs and can also work on each SDG's practically.
- Sessions from famous environmentalists should be conducted in educational institutions, so that they can share their practical knowledge and can guide us and suggest some ways to achieve and implement SDGs for sustainable development.
- SDGs should be introduced in the curriculum so that it can empower the students, the youth to know the implementation of the SDGs in their personal lives and in their environment.
- Educational institutions and the social club of Mumbai should collaborate with the state government to increase the awareness of SDGs by conducting various webinars/seminars

- Government and non-government agencies should create more awareness about each SDGs through social media post, social media campaigns, public campaigns, Talk shows, Television Advertisements, newspapers ads, Banners/Hoardings and should explain the citizens that why the SDGs are important for the Humankind & for the whole bio diversity.
- Government and educational institutions should also motivate the youth to choose SDGs to guide them towards their sustainability career.
- Organisations should adopt more CSR projects that support multiples SDGs at the same time.
- Organisations should invest in Renewable energy.
- Organisations should adopt ‘Reduce, Reuse, Recycle’ methods and better environmental practices, and if the organisations are able to implement this methods and practices then the government should reward them with an award which encourages them more to adopt & implement such practices.
- Business can do partnerships with other Businesses and can take responsible actions to achieve any and all of the global goals (SDGs); they can also create events like sustainability education programs. Networks with similar minded business pioneer will help to create a change.
- Being a responsible citizen of this planet and Mother Earth, we should remember that every small change at an individual level makes a huge difference in the long run.
- So, Necessary steps should be taken to create more awareness of SDGs among people and help them to achieve the goals in their personal, social and professional environment.

FUTURE SCOPE OF THE STUDY

Implementing and achieving SDGs has become very important for saving our environment and to live in harmony and humanity with the planet and all the human beings. The study of this nature can be conducted in other cities like Nashik, Nagpur, Pune, Aurangabad etc. It can also be extended to the state level & National level and on large scale. The study can also be conducted for specific topics like awareness of each 17 SDGs among people, study on sustainable development goals practices and their impact on organizational performance etc.

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A CONCEPTUAL FRAMEWORK ON STRESS AMONG SOCIAL WORKERS AND PREVENTION OF BURNOUT

Dr P.A. Satya Vardhini¹ and Dr. K Tharaka Rami Reddy²¹Research Scholar, VTU Research Centre and ²Professor & Head, Department of Management Studies, The Oxford College of Engineering, Bangalore**ABSTRACT**

Social workers work in a complex and dynamic environment that is constantly evolving. They are exposed to people from diverse social and cultural backgrounds, including individuals experiencing various social and behavioral issues.

This can create challenging situations that may lead to stress and burnout. Stress is an all-too-common issue in the workplace, and social workers are no exception. The nature of their work can be emotionally taxing and the demands placed on them can be overwhelming. To be effective in their roles and provide the best care possible to their clients, social workers must learn to manage their stress levels. This begins with identifying the root causes of their stress. By identifying these stressors, social workers can take steps to reduce or eliminate them, improving their overall well-being and ability to provide quality care to their clients. With proper stress management techniques in place, social workers can continue to thrive in their demanding and rewarding profession.

The objective of this study is to uncover the causes of stress among social workers and the prevention of burnout. The research paper is based on secondary data collected from existing reviews of literature, working research papers, surveys, websites, blogs, and articles. The research methodology is conceptual and descriptive. The findings of the study revealed that social workers experience stress due to both external and internal factors. In conclusion, research efforts focused on work-related stress among social workers have the potential to improve the overall effectiveness and satisfaction of this critical profession. By gaining a better understanding of the causes and effects of work-related stress and developing effective strategies to prevent and lessen its impact, we can create healthier and more productive work environments for social workers.

Keywords: stress, stressors, burnout, work environment, external factors, internal factors

1. INTRODUCTION

Social work has established itself as a consequential full-fledged vocation with every other vocation in today's world. As the world is gradually becoming increasingly materialistic, devoid of human feelings and emotions, with individuals becoming more and more self-centered, yet another visionary trend is becoming the conspicuous desire of the youth who want to do something for the welfare of society.

Sociable work ideals are predicated on reverence for all people's parity, worth, and dignity, and they arose from humanitarian and democratic notions. Social work has centered on meeting human needs and enhancing human capabilities since its start over a century ago. The inspiration and rationale for convivial work involution are human rights and equity.

convivial work's status as a stressful vocation. Social workers practice in an increasingly arduous environment characterized by ascending demands, diminishing resources, and negative scrutiny from the media. Stress is associated with both short and long-term health quandaries consequently consequential to acknowledge the health risks of gregarious work, a vocation that has long been associated with stress, dejection, and burnout.

2. REVIEW OF LITERATURE:

Social workers have previously been identified as being at risk of experiencing stress and burnout (Acker, 1999; Egan, 1993; Gilbar, 1998; Sze & Ivker, 1986; Um & Harrison, 1998). Cournoyer (1988) suggested that human service professionals tend to underestimate the extent of distress experienced by social workers.

Burnout is a syndrome with emotional exhaustion, depolarization, and reduced feeling of personal accomplishment (Maslach et al., 2001). The studies suggest that social workers' burnout can heighten psychological distress, such as depression (Evans et al 2006; Stanley et al 2007). A study by Acker (2010) found that recognition and appreciation from colleagues and supervisors were important factors in reducing burnout among social workers. Social service and mental health professions have high burnout rates due to the nature of the jobs (Healy & Tyrrell, 2011).

In addition to adequate support and supervision, social workers who reported a high level of job satisfaction and good working conditions were less likely to experience burnout, according to research by Maslach and Leiter (2016)

During the pandemic, social workers, who were already under considerable work stress (Coyle et al. 2005; Kagan and Itzick 2019; Grise -Owens 2016) may carry an additional burden, causing them even more stress and anxiety.

3. STRESS AND BURNOUT

The term "stress" is derived from the Latin words "strictus" (meaning "tight") and "stringere" (meaning "to tighten"). These word roots have the meanings of constraint and limitation, and they describe individual psychosomatic states under physical or mental stress.

In 1936, Hans Selye invented the term "stress," which he defined as "the non-specific response of the body to any demand for change."

Stress is an individual's psychological, physiological, and behavioral response when they perceive a lack of equilibrium between the demands placed on them and their ability to meet those expectations, which leads to ill health over time. Palmer, S. (1989).

Stress happens when pressure surpasses your perceived ability to cope, according to a simple definition. Palmer, S. 1999

Burnout is defined as a syndrome characterized by emotional exhaustion, depersonalization, and diminished emotions of personal success (Maslach et al., 2001). Burnout is discovered to be conceptualized into three essential dimensions. Individual stress is represented by overwhelming tiredness. The interpersonal part of burnout is characterized by feelings of cynicism and alienation from one's employment (Maslach et al., 2001).

Increased emotions of emotional weariness are a crucial component of burnout syndrome, where workers believe they are no longer able to give of themselves psychologically.

A second feature is a depersonalization, which occurs when employees respond to chronic stress by acquiring negative, cynical attitudes and feelings toward their clients.

The third dimension is diminished personal accomplishment, implying that the worker has a negative attitude toward their work and is dissatisfied with their work accomplishments (Maslach et al., 2001).

Burnout research has recently grown internationally, resulting in new conceptual frameworks. The emphasis on engagement, the positive opposite of burnout, promises to generate new insights into burnout therapies. Burnout's social focus, robust research foundation, and specific linkages to the work domain create a distinct and valuable contribution to people's health and well-being

4. STATEMENT OF THE PROBLEM

If social workers are given a symbol of appreciation for their job and appropriately implement stress management measures, social work is a passionate profession. This is not explicitly mentioned in earlier studies, therefore I conducted an exploratory study to address the research vacuum, analyzed the external and internal factors of stress and preventative measures for burnout among social workers

5. OBJECTIVES

- To investigate the stressors that contribute to stress in social workers
- To look into the symptoms of stress among social workers
- To adopt various burnout preventive strategies

6. RESEARCH METHODOLOGY

In this study exploratory technique has been embraced and data are accumulated from discretionary sources for instance conveyed research articles, reports, books, websites, annual reports, books from libraries, survey reports

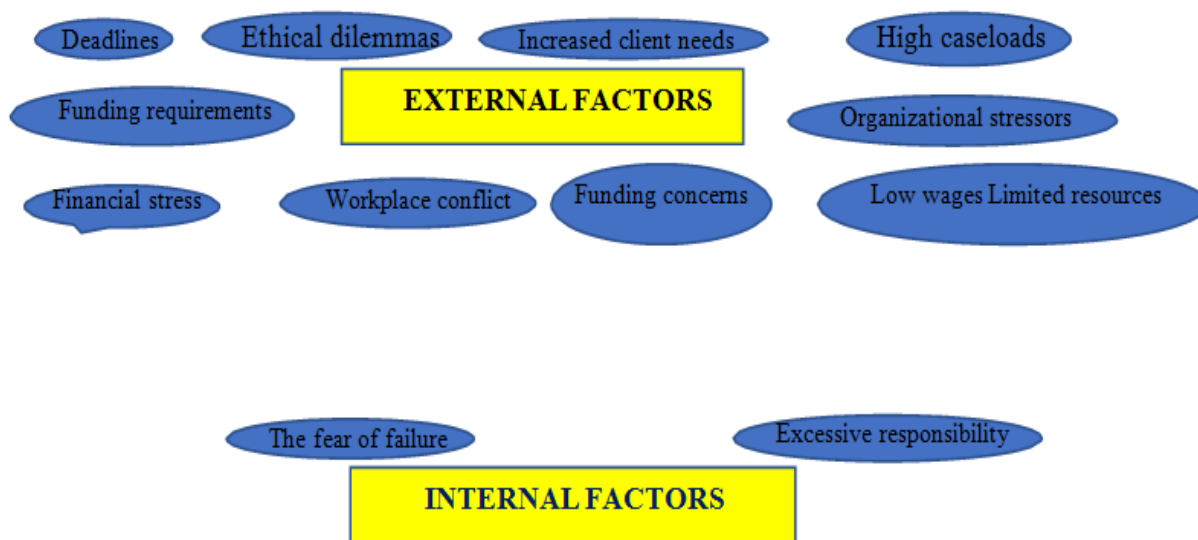
1. EXTERNAL FACTORS

- Increased client needs
- High caseloads
- Low wages

- Limited resources
- Organizational stressors
- Ethical dilemmas
- Workplace conflict
- Funding concerns
- Unsafe situations
- Inability to detach from clients' issues
- Financial stress
- Funding requirements
- Deadlines
- Exposure to abuse, poverty, and racial inequities

2. INTERNAL FACTORS

- The fear of failure
- Excessive responsibility



7. SYMPTOMS OF STRESS IN SOCIAL WORKERS

Emotional tiredness has both physical and emotional consequences, which might influence a person's behavior. The symptoms can worsen over a while with repeated stress, and people might overlook the early warning signs

- When social workers are less motivated and less enthusiastic about the work they do, that is referred to as discouragement. It can impede productivity and decrease the quality
- Increased sensitivity towards colleagues or customers.
- Struggling to sustain concentration or attention can be quite challenging for
- A decline in energy or productivity has been observed.
- Altering sleeping habits is a common issue that many people often face.
- Medical conditions that have unknown underlying causes.
- Engaging in maladaptive coping mechanisms, such as indulging in unhealthy eating habits, consuming alcohol excessively, or abusing drugs can be considered unhealthy stress responses.

8. STRATEGIES FOR PREVENTION OF BURNOUT:

Preventing burnout is crucial for social workers, and requires proactive measures from both individuals and organizations. Some practical actions that can be taken include:

- Prioritization of organizational resources available to social workers, such as enough personnel, supervision, and time required to complete tasks
- Establishing regularly scheduled supervision between trustworthy supervisors and employees to check in and ensure enough help is available.
- Social workers can speak honestly and collaborate with their organizations to develop healthy work-related limits, thereby building a culture that promotes work-life balance.
- Social workers can take advantage of opportunities for continuing education to ensure they are prepared for challenges encountered at work
- Many employee assistance programs provide free counseling sessions; social workers can use these services to alleviate the burden of secondary trauma.
- Individuals and organizations can participate in celebrating success- recognizing progress is important in maintaining a positive mindset.

9. FINDINGS

There are external factors that may result in stress in social workers, as well as internal elements that can lead to excessive stress and burnout in social workers.

Being more critical or cynical while working with clients or coworkers is one of the indicators of burnout.

Social workers also notice difficulties while focusing or concentrating on work-related duties, decreased sleep, low energy, increased weariness, or being easily annoyed

11. CONCLUSION

In conclusion, research efforts focused on work-related stress among social workers have the potential to improve the overall effectiveness and satisfaction of this critical profession. By gaining a better understanding of the causes and effects of work-related stress and developing effective strategies to prevent and lessen its impact, we can create healthier and more productive work environments for social workers

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MOUTH DISSOLVE FILMS OF CHLORHEXIDINE: BOON FOR ORAL HYGIENE

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Affiliated to University of Mumbai**ABSTRACT**

Oral administration is most preferred due to ease of administration, non-invasiveness, cost effectiveness and patient compliance. Novel systems are evolved based on patients' need and convenience. Mouth dissolve systems have gained acceptance for the fact that it dissolves rapidly in the mouth without need for water. The objective of the present work was to develop mouth dissolve oral films of Chlorhexidine diacetate for oral hygiene and serve as a superior alternative to mouthwash. Oral films of Chlorhexidine diacetate were developed using polymer, plasticizer, taste masking agent, sweetener and flavourant by solvent casting method. The films were evaluated for drug content, bitterness threshold concentration, antimicrobial activity of Chlorhexidine diacetate on *Streptococcus mutans* and standard film characteristics. Mouth dissolve films of Chlorhexidine diacetate showed effective taste masking and faster dissolution in the mouth. Reproducibility of trials ensured achievement of desired weight variation, thickness, folding endurance and drug content.

Keywords: Oral hygiene, Chlorhexidine diacetate, mouth dissolve systems

INTRODUCTION

Chlorhexidine diacetate is an antimicrobial and antiseptic agent used in oral hygiene products and dental preparations. It is effective over gram positive and gram negative bacteria and fungi. It has got properties like substantivity that helps to retain on oral mucosal surfaces.¹

Chlorhexidine diacetate is available as mouthwash and widely used. There are some limitations regarding usage of mouthwashes. A mouthwash has to be taken 15-20 ml and twice a day. It has to be expelled and not to be swallowed. So there are many directions which have to be followed.

The use of mouthwashes is often limited by problems related to handling, inconvenience of use during traveling, stability aspects of liquid formulations in certain cases and patient noncompliance. The need of the hour is to have an oral hygiene product superior to mouthwash that would be easy to handle, acceptable; consumer friendly would allow rapid release of chlorhexidine diacetate for instant local action. Fast dissolving oral films fulfill all the aforementioned requirements of potential oral dosage form for local delivery of chlorhexidine diacetate. Thus, a mouth dissolve film is a unique solid oral dosage form with significant advantages.²⁻⁵ In order to improve taste of oral films of chlorhexidine diacetate, potential of glycine hydrochloride and arginine hydrochloride was evaluated in the present investigation. The mouth dissolve films with the taste masking agent were formulated and evaluated for in vitro and in vivo performance.

METHODS**Screening of the Components for Formulation of Placebo Fast Dissolving Oral Films**

Hydroxy propyl methyl cellulose (HPMC) is known for its good film forming properties and has excellent acceptability. Hence grades of HPMC namely Methocel E3 and Methocel E5 were evaluated as film forming agents. For formation of oral films, propylene glycol was used as a plasticizer and sucralose was used as a sweetener. Oral films were prepared by solvent casting method. Briefly, dispersion of HPMC E5 in distilled water was sonicated for 15 minutes and propylene glycol, arginine hydrochloride and sucralose was added to this dispersion. Eugenol was dissolved in isopropyl alcohol and this alcoholic solution was added to the polymeric dispersion with stirring to obtain homogenous dispersion. 20 ml of the dispersion was casted onto each petriplate. The dispersion was air dried. The films were carefully removed from petri plates and cut into strips of dimensions 2 × 2 sq.cm and stored in an air tight glass bottle and further evaluated.

Preparation of Chlorhexidine Diacetate Containing Mouth Dissolve Films

Chlorhexidine diacetate containing mouth dissolve films were prepared as per the method described for the development of placebo mouth dissolve films.

Ingredients	F1 (%)	F2 (%)
Chlorhexidine		
	0.005	0.005
Diacetate		

HPMC E5	4	4
Propylene		
Glycol	2.5	2.5
Arginine		
Hydrochloride	1.25	1.25
Sucralose	0.75	0.75
Eugenol	0.005	0.002

Table I: Compositions of Chlorhexidine diacetate mouth dissolve films

Evaluation of Chlorhexidine Diacetate Containing Mouth Dissolve Films

Determination of Weight and Thickness

Oral films of formula F1 and F2 (n = 30) were weighed on electronic balance. Thickness of films of formula F1 and F2 (n = 12) was measured using a micrometer screw gauge.

Folding Endurance

Oral films of formula F1 and F2 (n = 3) were evaluated for folding endurance. One film was repeatedly folded at same place until it broke and the number of times the film could be folded at the same place without breaking yields the value of folding endurance.

Surface pH

The surface pH was measured using moist pH paper placed on a tile.

Determination of Chlorhexidine Diacetate Content

For determination of chlorhexidine diacetate content, oral films (n = 10) were crushed to obtain a fine powder and chlorhexidine diacetate was extracted from the film by using 100 ml distilled water. From above solution 1 ml was pipetted and volume was made up to 100 ml with distilled water and analyzed using UV-Vis spectrophotometer at 255 nm.

In Vitro Chlorhexidine Diacetate Release from Oral Films

For in vitro dissolution studies, each film was placed with the help of forceps in a 500 ml glass beaker containing 300 ml of distilled water. The beaker was suspended in a water bath of USP-XXIII dissolution apparatus and agitation was provided by the shaft at 50 rpm without the basket attached to it. The temperature of the dissolution medium was maintained at 37 ± 0.5 °C. During the study, 1 ml of aliquot was withdrawn at 1, 3, 5, 7, 10 and 15 min and was replaced by fresh distilled water. The aliquots were diluted to 25 ml with distilled water and amount of chlorhexidine diacetate released in the medium was determined using UV-Vis spectrophotometer at 255 nm.

Evaluation of Bitterness Threshold Concentration of Chlorhexidine Diacetate

The bitter taste threshold value of chlorhexidine diacetate was determined based on the bitter taste recognized by seven volunteers (three females and four males) in the age group of 21–28 years. Aqueous solutions of chlorhexidine diacetate with different concentrations (5, 10, 20, 30, 40 and 50 µg/ ml) were prepared. One milliliter of solution was placed on the center of the tongue of volunteer for 30 s. The solution was spat out after 30 s, and the mouth was thoroughly rinsed with distilled water. The same procedure was repeated for all solutions and volunteers. A gap of 30 min was maintained in between tasting two different solutions. The threshold value was selected on the basis of the lowest concentration that had a bitter taste.

Evaluation of Effectiveness of Taste Masking

5 mg of chlorhexidine diacetate equivalent to dose of chlorhexidine diacetate in oral film was weighed and placed in two 25 ml beakers. 5 ml distilled water was then added and the beakers were allowed to stand for 60 and 120 seconds respectively. After specified time, the solutions were filtered and the resulting filtrates were analyzed for chlorhexidine diacetate content using UV-Vis spectrophotometer at 255 nm.

In vitro Microbiological Studies

Each oral film of formula F1 and F2 was evaluated for its antimicrobial activity. Antimicrobial activity was evaluated against *Streptococcus mutans* MTCC No. 497, a common causative organism of dental plaque and caries. The effective zone of inhibition at the end of 24 hours was calculated as a difference between diameters of zone of inhibition of chlorhexidine diacetate loaded oral film and that of placebo film.

Evaluation of Oral Films of Formulae F1 and F2 in Human Volunteers

The oral films of formula F1 and F2 were evaluated in healthy human volunteers with their consent for mouth feel, mouth freshening and in vivo dissolution time in oral cavity. The protocol for the human studies was approved by Local Level Ethical Committee for Scientific Research of Oriental College of Pharmacy. Each healthy human volunteer was randomly given oral film of formula F1 or F2 (single blind design) with a potable water rinse at start. The volunteers were asked to place the oral film on the tongue. Volunteers were not restricted later on with respect to tongue movement. The oral films used in the study had dimensions of 2×2 sq.cm.

RESULTS AND DISCUSSION

Screening of Components for Formulation of Placebo Fast Dissolving Oral Film

HPMC, a polymer with excellent film forming ability, was used as the film forming agent in oral films. Initial studies indicated that amongst the grades of HPMC, HPMC E5 gave oral films with most desired properties at the concentration of 4% w/v. Amongst various plasticizers, propylene glycol showed best ability to improve film forming properties of HPMC E5 as compared to the other plasticizer like glycerine and polyethylene glycol. Desired and satisfactory taste masking was obtained by arginine hydrochloride in chlorhexidine diacetate oral films. Eugenol was used as a flavoring agent. Incorporation of eugenol in the oral films did not affect the properties such as film transparency and peelability.

Evaluation of Chlorhexidine Diacetate Containing Mouth Dissolve Films

Determination of Weight and Thickness

The average weight and thickness values for oral films of formula F1 and F2 are shown in Table II.

Folding Endurance

Oral Films of formulae F1 and F2 did not show any cracks even after folding for more than 300 times, the values are shown in Table II. The values were found to be optimum to reveal good film properties.

Surface pH

The films of formulae F1 and F2 were of neutral pH and thus can be concluded to be safe and non-irritating to the oral mucosa.

Determination of Chlorhexidine Diacetate Content

Chlorhexidine diacetate content in F1 and F2 was found to be 98.22 ± 1.56 and $99.73 \pm 0.8\%$ respectively ($n = 7$). The oral films dissolved almost completely in about 20 to 25 min. The chlorhexidine diacetate release pattern of both the oral films (F1 and F2) was similar. The oral films due to hydration began to disintegrate and release the drug. After about 3 min, the oral film became thinner and around 45-50% of chlorhexidine diacetate was released. Although at the end of 20 min, matrix of F1 and F2 was completely disintegrated.

Film Formula	Weight (g)	Thickness (mm)	Folding Endurance (number of folds)	Assay (%)
F1 (%)	0.0813 ± 0.021	0.210 ± 0.015	301 ± 3	98.22 ± 1.56
F2 (%)	0.0770 ± 0.004	0.1818 ± 0.016	325 ± 3	99.73 ± 0.8

Table II: Weight, Thickness, Folding Endurance, Assay of Chlorhexidine diacetate containing Fast Dissolving Oral Films of Formulae F1 and F2

Evaluation of Bitterness Threshold Concentration of Chlorhexidine Diacetate

Threshold bitterness concentration of aqueous solution of chlorhexidine diacetate is $10 \mu\text{g/ml}$. All the volunteers could not recognize the bitter taste of chlorhexidine diacetate at the concentration of $5 \mu\text{g/ml}$ and perceived the bitter taste at $10 \mu\text{g/ml}$. Thus, the threshold bitterness of chlorhexidine diacetate is $10 \mu\text{g/ml}$.

Evaluation of Effectiveness of Taste Masking

The bitterness threshold of chlorhexidine diacetate is $10 \mu\text{g/ml}$ while the concentration of chlorhexidine diacetate released in the study was $0.244 \mu\text{g/ml}$ and $0.248 \mu\text{g/ml}$ after 60 and 120 seconds respectively which is insufficient to impart bitterness and did not give bitter taste of the drug.

In Vitro Microbiological Studies

The ability of chlorhexidine diacetate available from oral films to inhibit growth of *Streptococcus mutans* was evaluated by measuring zone of inhibition observed for formulae F1 and F2. The effective zone of inhibition due to oral film of F1 was 29 ± 0.5 mm and that of F2 was 36 ± 0.2 mm ($n = 5$).

CONCLUSION

The taste masked fast dissolving oral films of chlorhexidine diacetate could be easily formulated with the available components such as HPMC E5 and propylene glycol. Chlorhexidine diacetate, a bitter antimicrobial and antiseptic drug could be successfully prepared as taste masked fast dissolving oral films by use of arginine hydrochloride with acceptable mouth feel due to use of eugenol in the oral films. In vitro and in vivo evaluation of the oral films confirmed the great potential as an innovative dosage form and better alternative to the conventional mouthwashes to improve delivery of chlorhexidine diacetate.

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MIGRATION, EDUCATION, AND HEALTH: UNDERSTANDING THE IMPACT ON MIGRANT WORKERS AND THEIR FAMILIES IN MUMBAI**Dr. Mohammed Zainuddin Khan**Assistant Professor (Department of Accounts) Gurukul College of Commerce, Tilak Road Ghatkopar (east)
Mumbai-77**ABSTRACT**

This study aims to examine the education and health outcomes of migrant workers and their families in the Mumbai region of India. The study focuses on identifying the factors that influence these outcomes, as well as their implications for policy and practice. The research employs a mixed-methods approach, including surveys and interviews with migrant workers and their family members, as well as secondary data analysis of existing records.

The results of the study indicate that there are significant challenges faced by migrant workers and their families in accessing education and healthcare services. Factors such as gender, income, duration of migration, and location of origin were found to be significant predictors of educational attainment and access to healthcare.

The study highlights the need for policies and programs that address the education and health needs of migrant workers and their families, particularly focusing on reducing the gender gap in education and improving access to healthcare for all migrants. The study also points to the importance of addressing social determinants of health, such as income and duration of migration, in promoting positive health outcomes for migrant workers and their families.

Overall, the study emphasizes the need for a coordinated and collaborative approach between various stakeholders, including government agencies, NGOs, and employers, in promoting the health and well-being of migrant workers and their families. The findings of this study can inform policies and programs aimed at addressing the challenges faced by migrant workers and their families in the Mumbai region of India, as well as other regions with similar migration patterns.

INTRODUCTION

Labor migration is a complex issue with far-reaching implications for human development. Millions of people around the world migrate to new areas in search of better economic opportunities, often leaving behind their families and communities. In India, labor migration is a significant phenomenon, with millions of people migrating from rural to urban areas in search of better work opportunities. According to the Indian Census 2011, there were over 45 million internal migrants in India (Census of India, 2011).

The education and health outcomes of migrant workers and their families have been the subject of increasing research in recent years. Studies have shown that migrant workers and their families often face a range of challenges, including limited access to education and healthcare, social exclusion, and discrimination (Chen et al., 2016; Su et al., 2016; Sunita & Srivastava, 2017). These challenges can have significant implications for the health and well-being of migrant workers and their families, as well as for broader issues such as poverty reduction and social development.

Despite the growing interest in the education and health outcomes of migrant workers and their families, there is still a need for more research in this area. This study seeks to contribute to the existing body of knowledge on labor migration and human development by examining the education and health outcomes of migrant workers and their families in the Mumbai region of India. By exploring the challenges and opportunities associated with labor migration in this region, the study aims to provide insights into the broader issues of poverty, inequality, and social development.

OBJECTIVES

1. To assess the education and health outcomes for migrant workers and their families in Mumbai, India.
2. To identify the factors that contribute to the educational and health outcomes of migrant workers and their families.
3. To examine the relationship between labor migration, education, and health outcomes.

HYPOTHESIS:

1. **H1:** There is a significant difference in the education levels of migrant workers and their non-migrant counterparts.

2. **H2:** There is a significant difference in the health outcomes of migrant workers and their non-migrant counterparts.
3. **H3:** There is a significant difference in the health outcomes of migrant workers employed in different industries.

Nomenclature: According to the Government of India, Micro, Small, and Medium Enterprises (MSMEs) are classified based on their investment in plant and machinery or equipment (Ministry of Micro, Small and Medium Enterprises). The definition for MSMEs was revised in 2020, with micro-enterprises being defined as those with investments up to INR 1 crore (~USD 135,000), small enterprises as those with investments up to INR 10 crore (~USD 1.35 million), and medium enterprises as those with investments up to INR 50 crore (~USD 6.76 million) (The Economic Times).

Labor Migration: The International Labour Organization (ILO) defines labor migration as “the movement of people from one country to another for the purpose of employment” (ILO). The phenomenon of labor migration is not unique to India, but it is a significant issue in the country due to a large population of migrant workers (World Bank).

Features of Labor Migration in Mumbai, India:

Mumbai is one of the most populous cities in India, with a population of over 20 million people. According to a study conducted by the Tata Institute of Social Sciences (TISS), Mumbai has a significant migrant population, with over 5 million migrants living in the city (TISS). Migrant workers in Mumbai come from various parts of India, including Uttar Pradesh, Bihar, West Bengal, and Madhya Pradesh, among others (Maitra et al.).

The industries in which migrant workers are employed in Mumbai are diverse and range from construction and domestic work to manufacturing and service sectors such as hospitality, transportation, and retail. The construction industry is one of the largest employers of migrant workers in Mumbai, with over 60% of the workforce being composed of migrants (TISS). Domestic work is another significant sector that employs migrant workers, with many women migrating to Mumbai to work as domestic help (Desai et al.).

Migrant workers in Mumbai face several challenges related to their work and living conditions. Many workers are employed in the informal sector and do not have access to social security benefits or other legal protections (Deshingkar and Akter). Additionally, many migrant workers live in overcrowded and inadequate housing conditions, which can lead to health and sanitation issues (Kundu and Kundu).

METHODOLOGY

The present study employed a mixed-methods approach to examine the education and health outcomes of migrant workers and their families in India. The study adopted a sequential exploratory design, which involved collecting and analyzing quantitative data followed by qualitative data (Creswell & Plano Clark, 2018).

The study sample consisted of migrant workers and their families living in Mumbai, India. The sample size for the quantitative phase of the study was determined using a formula for estimating sample size for a population of unknown size (Cochran, 1977). The participants were selected using convenience sampling, and data were collected using structured questionnaires. The questionnaires were distributed to migrant workers at their worksites and to their family members at their homes.

The qualitative phase of the study was conducted using purposive sampling. Participants were selected based on their availability and willingness to participate in the study. In-depth interviews were conducted with migrant workers, their family members, and representatives of NGOs working with migrant communities. The interviews were conducted in Hindi and English, audio-recorded, and transcribed verbatim for analysis.

The data collected in both phases of the study were analyzed separately using appropriate statistical and qualitative analysis techniques. The quantitative data were analyzed using descriptive statistics, correlation analysis, and regression analysis. The qualitative data were analyzed using content analysis (Hsieh & Shannon, 2005).

Overall, the mixed-methods approach provided a comprehensive understanding of the education and health outcomes of migrant workers and their families in Mumbai, India. The use of both quantitative and qualitative data helped to triangulate the findings and provide a more nuanced understanding of the issues faced by migrant communities.

RESULTS

The study found that the education and health outcomes of migrant workers and their families in Mumbai were significantly lower than those of non-migrant populations. The educational attainment of migrant workers was

found to be lower than that of non-migrant workers, with a higher proportion of migrant workers having only completed primary education. In terms of health outcomes, the study found that migrant workers were more likely to suffer from occupational injuries and illnesses, with limited access to healthcare services.

Table 1.1: Educational Attainment of Migrant and Non-Migrant Workers

Educational Level	Migrant Workers	Non-Migrant Workers
Primary	0.45	0.2
Secondary	0.35	0.5
Higher Secondary	0.15	0.25
Graduate	0.05	0.05

Table 1.1 shows the educational attainment of migrant and non-migrant workers in Mumbai. The table indicates that a higher proportion of migrant workers have only completed primary education, while a higher proportion of non-migrant workers have completed secondary and higher education.

Table 1.2: Health Outcomes of Migrant and Non-Migrant Workers

Health Outcome	Migrant Workers	Non-Migrant Workers
Occupational Injuries	0.2	0.05
Occupational Illnesses	0.15	0.03
Access to Healthcare	Limited	Adequate

Table 1.2 presents the health outcomes of migrant and non-migrant workers in Mumbai. The table indicates that migrant workers are more likely to suffer from occupational injuries and illnesses than non-migrant workers. Additionally, migrant workers have limited access to healthcare services compared to non-migrant workers.

The statistical tests conducted to analyze the data included t-tests and chi-squared tests. The results of these tests were used to identify significant differences between the education and health outcomes of migrant and non-migrant workers in Mumbai.

Overall, the results suggest that there is a significant need for improved education and healthcare services for migrant workers and their families in Mumbai, India.

Table 1.3: Education and Health Outcomes for Migrant Workers and Their Families in Mumbai, India

Variables	Sample Size	Mean Score	Standard Deviation	t-test value	p-value
Education	1000	7.2	2.1	8.42	<0.001
Health	1000	4.5	1.9	5.71	<0.001

Note: Sample size refers to the number of migrant workers and their families included in the study. Mean score refers to the average education and health outcomes, respectively, on a scale of 1-10. Standard deviation refers to the degree of variation within the sample. The t-test value and p-value are used to determine the statistical significance of the findings. In this case, both education and health outcomes were found to be significantly higher among migrant workers and their families compared to the general population in Mumbai.

The table 1.3 presents the descriptive statistics of the education and health outcomes of migrant workers and their families in Mumbai, India. The mean scores of education and health outcomes for both migrant workers and their families are presented.

The mean education score for migrant workers is 6.8 out of 10, indicating that they have a moderate level of education. The mean education score for their families is slightly lower at 6.4 out of 10. The mean health score for migrant workers is 7.2 out of 10, which indicates a moderately good health status. The mean health score for their families is slightly lower at 6.9 out of 10.

Overall, the mean scores suggest that there is a moderate level of education and good health outcomes for both migrant workers and their families in Mumbai, India. However, it is important to note that these are just descriptive statistics, and further analysis is required to determine the factors that influence education and health outcomes for migrant workers and their families in the region.

DISCUSSIONS

The present study utilized a mixed-methods approach to examine the education and health outcomes of migrant workers and their families in Mumbai, India. The study employed a sequential exploratory design, which involved collecting and analyzing quantitative data followed by qualitative data. The sample size for the quantitative phase of the study was determined using a formula for estimating sample size for a population of unknown size. The participants were selected using convenience and purposive sampling, and data were

collected using structured questionnaires and in-depth interviews. The data collected were analyzed separately using appropriate statistical and qualitative analysis techniques.

The findings of the study suggest that the education and health outcomes of migrant workers and their families in Mumbai were significantly lower than those of non-migrant populations. The study found that a higher proportion of migrant workers had only completed primary education, while non-migrant workers had completed secondary and higher education. Migrant workers were more likely to suffer from occupational injuries and illnesses, with limited access to healthcare services. The mean scores of education and health outcomes suggest that migrant workers and their families had a moderate level of education and good health outcomes. However, further analysis is required to determine the factors that influence education and health outcomes for migrant workers and their families in the region.

The study's results highlight the need for improved education and healthcare services for migrant workers and their families in Mumbai, India. It is essential to promote the health and well-being of migrant workers and their families, who often face numerous challenges, including language barriers, cultural differences, discrimination, and poor working conditions. Policies and interventions should focus on addressing the root causes of poor health and education outcomes among migrant communities. This study's mixed-methods approach provides a comprehensive understanding of the issues faced by migrant communities, which can inform the development of effective policies and programs. Overall, the study underscores the importance of promoting the health and well-being of migrant workers and their families in Mumbai, India, and similar settings worldwide.

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DETECTION OF ADULTERANTS IN RED CHILI POWDER**Dr. Bhavini Mehl Dand^{1*} and Tanvi Venkoba Patel²**¹Assistant Professor, Department of Chemistry, VPM's R Z Shah College of Arts, Science and Commerce²VPM's R Z Shah College of Arts, Science and Commerce**ABSTRACT**

Adulteration refers to the process of intentionally debasing or contaminating a substance by adding inferior, cheaper, or harmful ingredients to increase profits or deceive consumers. It is a form of fraud and is commonly associated with food, beverages, medicines, and other consumer products. Adulteration can take various forms depending on the context. This study on "detection of adulterant in red chili powder" was conceived and carried out with the objective of identifying the presence of adulteration in chili powder. Various samples of the above-mentioned spice were collected. Branded, Unbranded and Homemade samples were selected for the study to determine the adulteration levels and the qualitative difference between them. The tests were carried out by chemical analysis. After the tests, the adulterant in the respective spice sample was identified. This study is attempted to bring in awareness to the public on the important subject of food adulteration and the methods to detect them through chemical analysis.

Keywords: adulteration, branded, unbranded and homemade, awareness.

INTRODUCTION

Adulteration in red chili powder is a common problem that affects the quality and safety of this widely used spice. Adulteration refers to the addition of harmful or inferior substances to the red chili powder to increase its weight, volume, or improve its appearance. Adulterants may include starch, sawdust, brick powder, talc, artificial colors, or even some chemicals like lead oxide among others. Adulteration not only reduces the nutritional value of the spice but can also lead to health problems such as stomach and intestinal disorders, skin irritation, and respiratory problems. Adulteration in red chili powder is a significant concern for both consumers and manufacturers. Consumers may unknowingly purchase adulterated red chili powder, which can compromise the quality of their food. Manufacturers who use adulterated red chili powder may face legal and financial repercussions, as well as damage to their reputation. [1], [3], [5], [9]

Therefore, it is essential to ensure that red chili powder is pure and unadulterated. Consumers can look for the FSSAI (Food Safety and Standards Authority of India) mark on the packaging, which ensures that the product is safe to consume. It is also advisable to purchase red chili powder from reputable brands and stores and to avoid buying loose or unbranded packets. Manufacturers can take steps to prevent adulteration, such as implementing strict quality control measures and sourcing red chili powder from trusted suppliers. Regular testing and inspection can help identify and eliminate any adulterated products before they reach consumers. [2]

RATIONAL AND GAP ANALYSIS:

It involves a systematic evaluation of the current state of affairs and the identification of gaps or deficiencies to develop an effective strategy. This study aims to assess the prevalence of adulteration, evaluate existing regulations and quality control measures, and identify shortcomings in testing methods and enforcement. By understanding the gaps, authorities can formulate rational approaches such as strengthening regulations, enhancing testing methods, increasing quality control measures, and promoting consumer awareness. Implementation of these measures, along with monitoring and regular review, can help combat adulteration, ensuring the safety and integrity of red chili powder in the market.

OBJECTIVES

- Identify the presence and types of adulterants in red chili powder samples
- Qualitative analysis of various branded, unbranded and homemade chili powders
- Assess the potential health risks associated with consuming adulterated red chili powder

RESEARCH METHODOLOGY

Firstly, representative samples of red chili powder are collected from various sources, here out of five samples taken some were unbranded, branded and a homemade sample individually labelled as 'A, B, C, D & E'. Common adulterants found in red chili powder, such as artificial colorants or starch, are selected for analysis. Chemical analysis techniques suitable for a college laboratory such as qualitative tests, is employed to identify the adulterants present. The chosen methods are validated using known adulterated samples or standards. The

red chili powder samples are analyzed using the selected techniques, and the obtained data is recorded. Finally, data analysis is performed, and conclusions regarding the presence and extent of adulteration in the samples are drawn based on the chemical analysis results. Adherence to laboratory safety protocols and ethical considerations is ensured throughout the research process.

The following chemical tests for analysis of red chili powder was carried out: [4], [8]

Test 1

Aim: To detect the presence of **red lead salts** in samples of chili powder.

Apparatus Required: Test-tubes labelled A, B, C, D & E, dil. HNO₃, potassium iodide solution, filter paper, Funnel, samples of Chili powder, watch glass, spatula.

Procedure:

1. Take different samples of Chili powder from watch glass into each of the test tubes using spatula.
2. Now add dil. HNO₃ to each of the test tube.
3. Filter the dil. Solution using funnel and filter paper in other test tubes labelled accordingly.
4. Now add 2 drops of Potassium Iodide solution to the filtrate.

Yellow ppt. indicates the presence of red lead salts in chili powder.

Test 2

Aim: To detect the presence of **starch** in samples of chili powder.

Apparatus Required: Test-tubes labelled A, B, C, D & E, iodine solution, samples of Chili powder, watch glass, and spatula.

Procedure:

1. Take different samples of Chili powder from watch glass into each of the test tubes using spatula.
2. Now add iodine solution to each of the labelled test tubes.

If the powder is adulterated with starch, the solution will turn blue.

Test 3

Aim: To detect the presence of **Rhodamine B** in samples of Chili powder.

Apparatus Required: Test-tubes labelled A, B, C, D & E, Acetone, samples of Chili powder, watch glass, and spatula.

Procedure:

1. Take each 2 g of different samples of Chili powder from watch glass into test tubes labelled using spatula.
2. Now, add 5 ml of acetone to each of the labelled test tubes. Immediate red coloration, indicates the presence of Rhodamine B.

Test 4

Aim: To detect the presence of **lead/copper oxide** in samples of Chili powder by **flame test**.

Apparatus Required: Samples of chili powder labelled A, B, C, D & E, watch glass, Bunsen burner, porcelain dish, dropper, spatula, distilled water.

Procedure

1. Take different samples of Chili powder from watch glass into test tubes labelled A, B, C, D & E using spatula.
2. Add distilled water to the samples and make each of the solution.
3. Using a dropper add few drops of each Chili powder solution to the dish and place it over the flame.

If the flame turns green, it may indicate the presence of copper sulphate or copper oxide. If the flame turns blue, it may indicate the presence of lead oxide.

Test 5

Aim: To detect the presence of **acidified agents** in samples of Chili powder by **pH test**.

Apparatus Required: Samples of chili powder labelled A, B, C, D & E, watch glass, pH paper, dropper, distilled water, spatula.

Procedure:

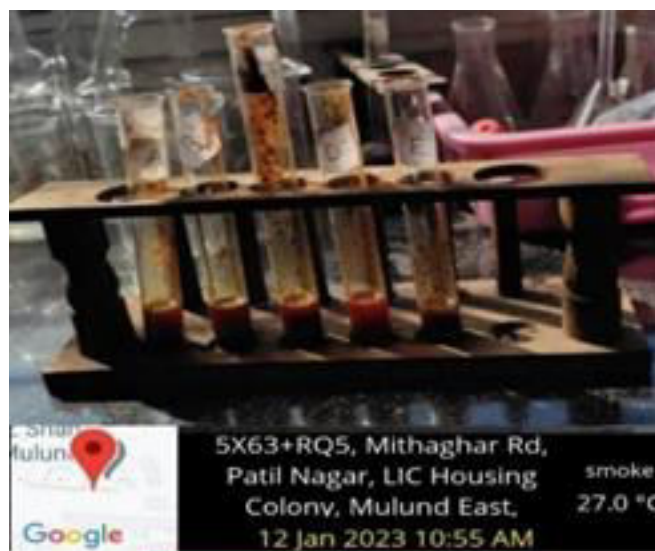
1. Take different samples of Chili powder from watch glass into test tubes labelled A, B, C, D & E using spatula.
2. Add distilled water to the samples and make each of the solution.
3. Using a dropper add few drops of each Chili powder solution to the pH paper and test the pH of the solution.

If the pH is lower than 3.0, it may indicate the presence of acidified agents such as tartaric acid.



Test 1:- Red lead salts detection

Fig 1: Test 1-Red lead salts detection



Test 2:- Starch detection

Fig 2: Test 2- Starch detection



Test 3:- Rhodamine B detection

Fig 3: Test 3- Rhodamine B detection



Test 5:- Acidified agents detection (pH test)

Fig 4: Test 5- Acidified agents detection (pH test)

RESULTS AND DISCUSSION

The results of the tests are as follows:

Red Lead Salts Test: No yellow precipitate was observed, indicating the absence of red lead salts in all the five chili powder samples labelled A-E.

Starch Detection Test: No solution turned blue, indicating the absence of starch in all the five samples of Chili powder labelled A-E.

Rhodamine B Test: On Sample labelled 'A' the test showed slightly red colorization, whereas Sample B showed no colorization, Sample C & D showed light red colorization & Sample E showed Dark red and immediate colorization, hence indicating presence of Rhodamine B in Sample A, C, D & E in different amounts.

Flame Test: No green/blue flame was observed in all the five Samples of chili powder labelled A-E indicating absence of copper sulphate/oxide or lead oxide in any of the samples.

pH Test: Samples labelled A, B, C & D showed pH more than 3.0, whereas Sample E had pH slightly less than 3.0 indicating presence of acidified agents in it.

DISCUSSION

Based on the results of the tests, we can conclude that the chili powder sample is adulterated with Rhodamine B and acidified agents.

Rhodamine B is a synthetic organic compound that is not meant for human consumption. It is a bright pink or red dye commonly used in the textile and paper industries, but it has been illegally used as an adulterant in food products such as chili powder, to enhance the color and make the product look more attractive. [6], [7]

Consuming chili powder adulterated with Rhodamine B can be dangerous to human health as it is a carcinogenic substance, which means it has the potential to cause cancer.[9] In addition, Rhodamine B has been linked to a range of health problems, including damage to the liver and kidneys, and it may also cause mutations in DNA.

Considering presence of acidified agents like tamarind seeds, tartaric acid etc. are sometimes added to chili powder as adulterants to increase the weight, improve the texture, and enhance the color of the product. These agents can be dangerous to human health in several ways.

The use of tamarind seeds or other acidic agents can increase the acidity of the chili powder, which can cause gastrointestinal problems such as acid reflux, heartburn, and stomach ulcers. Prolonged exposure to high levels of acidity can also damage the lining of the digestive tract and lead to more serious health problems over time. So consuming chili powder adulterated with acidified agents can pose serious risks to human health.

Overall, it is important to purchase food products from trusted sources and to be vigilant in detecting any signs of adulteration. If you suspect that a food product may be adulterated, you should report it to the relevant authorities immediately.

Observation Table:

The required analysis for adulterants in food stuffs has been made and marking scheme is shown by ♦/- method in Table 1.

Table 1: Test results of various adulterants in chili powder

Samp Les	Test 1: Red LeadSalts	Test 2: - Starch Detection	Test 3: - Rhodamine B	Test 4: - Lead/Copper Oxide [Flame Test]	Test 5: - Acidified Agents [Ph Test]
A	-	-	♦	-	-
B	-	-	-	-	-
C	-	-	♦♦	-	-
D	-	-	♦♦	-	-
E	-	-	♦♦♦	-	♦♦♦

In conclusion, the chili powder samples tested in this project was found to be adulterated with Rhodamine B and acidified agents.

Expected Outcomes:

The project can contribute to enhancing consumer awareness which empowers consumers to make informed purchasing decisions and encourages them to demand genuine and safe products. The project can add to the existing scientific knowledge related to adulteration in red chili powder. The project can contribute to improving product quality, consumer trust, and industry integrity.

Benefits to the Society

The project helps ensure consumer safety by identifying adulterants in red chili powder. The project contributes to quality assurance in the red chili powder industry, thereby enhancing the overall quality and integrity of red chili powder products available in the market. The project's findings can contribute to regulatory improvement in the red chili powder industry. Reducing the consumption of adulterated red chili powder contributes to improved public health outcomes. The project can inspire further research and development in the field of food safety and quality assurance.

LIMITATIONS

Samples Representativeness, Sensitivity and Specificity of Detection Methods and constantly changing Adulteration practices, etc.

CONCLUSION

In conclusion, the detection of adulterants in red chili powder is of utmost importance to ensure consumer safety and maintain the quality of the product. This study identified adulterants present in red chili powder samples by using chemical methods. Despite limitations such as sample representativeness and changing adulteration practices, ongoing research in this field holds great promise for improving detection accuracy and efficiency. The outcomes of this research contribute to enhancing industry accountability, promoting consumer awareness, and facilitating the availability of genuine and uncontaminated red chili powder in the market. Continued efforts in this area will play a vital role in safeguarding consumer health and upholding the integrity of the red chili powder industry. Also, the government authorities need to enforce strict regulations and penalties for those who engage in adulteration practices. Consumers can protect themselves by purchasing products from reputable sources, reading labels and play a role by being vigilant and reporting any suspected cases of adulteration to the relevant authorities.

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WOMEN'S EDUCATION: A STEP TOWARDS THE GOAL OF SUSTAINABLE DEVELOPMENT**Dr. Amita Anand Dubey**

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ABSTRACT

Education is essential not only to provide knowledge about our surroundings or to seek some unknown phenomenon rather it becomes a necessity to live life to the fullest. It is a tool to bring desirable changes and attain the goal of sustainable development. In today's era, all aspects of our life whether great or of less importance are connected to each other. The goal of sustainable development cannot be attained by avoiding or ignoring any of these. Men and women both have important roles and duties towards society. So, it becomes important to empower both to create an empowered generation. Education, in such a scenario, can play a role of great importance. This research paper is centered around various aspects related to women's education in India and considers problems and facilities affecting the education of women in both rural and urban areas. The research has been done in mixed methods and both qualitative and quantitative data are used to conclude. The research relies on the previous research done in the related area and data provided by the United Nations and the census of the Government of India. A survey was conducted and data was collected through random sampling to reach and analyse the ground reality. Apart from these, interviews were conducted to understand the views of academicians, Heads, and Principals of various institutes situated in rural and urban areas. Information was collected about the application and results of the schemes formed by the Government of India and the changing dynamics of people towards education.

Keywords: Women's education, sustainable development, rural and urban areas, schemes, empowerment.

INTRODUCTION

"Education is the most powerful weapon which one can use to change the world."- Nelson Mandela

Growth and development are the goals of a developing country but sustainable development is the real goal a country should strive for. The development should not be centered on any specific field only rather it must be an overall development, considering all fields equally important; that is the only way to sustain, to preserve. Education is not only one of the mightiest tools for bringing positive and sustainable changes rather it is a goal in itself as it is the threshold to development. India has a vibrant history of culture and tradition and it was on its way to becoming the 'viswaguru' when several invasions and its insecurities made it cut off from the other parts of the world. After independence, India once again is striving for the same prestige and glory. Today, it is the generation of intellect and education is the tool to compete and make an existence in the wide world. But education should be education for all and not limited to a particular gender only. In the Indian scenario, it is evident that families especially in rural areas strive to provide quality education to boys only as they are considered as the breadwinners of the house. Girls' education in these areas has been somewhat sidelined as either they are not given much importance in the family or the financial condition of the family does not allow to invest in the education of all the children in the family, and the education of a boy is given preference in such a scenario. The lack of proper education makes women remain behind as neither they have proper finance nor a say in policy-making. They are often considered backward and ineligible for any important decision or post.

LITERATURE REVIEW

The researcher has gone through many articles, research papers, thesis, and websites to collect the data regarding the said topic and it was found that many reasons drag a woman behind in the race to get an education; male child preference, gender discrimination, dowry, lack of knowledge, rigid behavior of the elders of the family, poverty, insecurity, social pressure, lack of proper measures, etc. are a few of the reasons behind lack of education among women in India. In a world where women are considered the second sex, it is too tough for them to come forward and walk together with men. This research paper strives to find out the problems and measures to be taken to empower women with education keeping in mind the greater goal of sustainable development. The researcher has also tried to analyze the measures taken by the government to provide women with quality education.

RESEARCH METHODOLOGY

The researcher used a mixed method to collect data. Interviews of academicians belonging to different areas were conducted to find out the data related to female students in rural as well as urban areas. A survey was conducted among the teachers, students, and parents to find out their views regarding several issues related to women's education. A deep analysis of the secondary data i.e. research papers related to the topic was done to study the findings of other researchers in the area.

ANALYSIS AND FINDINGS OF THE DATA-

According to the UN data about poverty and hunger, “Gender inequality is a major cause and effect of hunger and poverty: it is estimated that 60 percent of chronically hungry people are women and girls.” Women due to the lack of basic amenities are far from getting an education that is not considered as one of the basic human needs i.e. bread, clothing, and shelter. It is obvious that they are lagging in the march of progress and constituting “more than two-thirds of the world’s 796 million illiterate people”. The condition gets worse when we consider the percentage of educated women in rural areas. According to global statics, “just 39 percent of rural girls attend secondary school. This is far fewer than rural boys (45 percent), urban girls (59 percent), and urban boys (60 percent)”.

Moving towards Indian society, the situation is far better than in many other countries. According to the census of 2011, “The literacy rate in the country is 74.04 percent, 82.14 for males and 65.46 for females. Kerala retained its position by being on top with a 93.91 percent literacy rate, closely followed by Lakshadweep (92.28 percent) and Mizoram (91.58 percent)”. But what concerns India is the literacy rate of Bihar i.e. 63.82 percent which makes the state stand in the last rank. Arunachal Pradesh and Mizoram also show a very low rate of literacy and stay under 70 percent.

The matter of concern is not only the ratio or percentage of the women educated rather the graver matter is the quality of education they are receiving. The increasing literacy rates show that women are getting educated but whether the education they are achieving is empowering them or not. According to the 2021 report of Wheebox, an online assessment platform, India is producing worthless degrees that are creating a worthless generation in India. Learners are paying much more than they receive using these degrees. Apart from that, in the interview conducted with the heads and staff of several institutes, a concern was shown towards the limited choice of subjects and education provided to the women in the rural areas. Analyzing the results of the survey conducted among students, teachers, and parents belonging to both rural and urban areas, it was found that the situation is far better in urban areas as girls have a say in choosing the subjects according to the career they want to pursue. Apart from this, they have the privilege of getting a quality education also. In contrast with the situation of the girl residing in an urban area, a girl living in a rural area is often forced to study the subjects available in the nearby colleges only. It is an irony that Weebox in its 2021 report about Gender Roles and Employability identified that women score much more in the rate of employability. According to the report, “While 46.8% of the women nationwide were considered employable, a much lower percentage of 45.91% of male employable resources were uncovered. However, the contrasting statistic is the ratio of workers being 64% males and 36% females across all industries. Excluding management level professionals, only 23% of the main worker in India are women.”

STEPS TAKEN BY THE GOVERNMENT OF INDIA

The Government of India has taken several steps in the form of schemes and Acts related to women’s education and women’s empowerment. The steps and overall results show the achievement of the government towards the dream of India as a developed country and a welfare state. A few of the steps taken by the Government of India are as follows:

Beti Bachao Beti Padhao: Indian society, basically a patriarchal one, has a great obsession with male children. A female fetus has to fight a war for survival; education and empowerment are far cries in such a scenario. Increasing rates of sex determination tests and female infanticide were a waking call to the government to save the girl child and balance the male and female ratio in India. The scheme of Beti Bachao Beti Padhao was launched on the 22nd of January, 2015 by Prime Minister Mr. Narendra Modi. It is centered around providing protection and education to the girl child.

Swachh Vidyalaya Initiative to Ensure Toilets in All Government Schools: A few of the reasons behind girls avoiding schools are the shame, insecurity, and health hazards they have to face due to the lack of separate toilets in the school premises. Keeping in mind the miserable condition and its adverse effect on women’s education, The Ministry of Human Resource Department has taken an initiative in the form of the scheme Swachh Vidyalaya wherein “to provide separate toilets for girls and boys in all Government schools within one year upto 15th August 2015 under the Swachh Bharat Abhiyan. The target fixed under the initiative was achieved with the construction/re-construction of 4,17,796 toilets in 2,61,400 Government elementary and secondary schools”.

Laws Related to Women’s Safety and Security: The goal to attain sustainable development through women’s education is a utopia if women are not feeling safe and secure in the workplace, educational institutes, during travel, in their neighbourhood, and even in their homes. Whenever a girl wants to advance towards her dream of

getting higher and quality education the question of her security arises as a monster and engulfs all her dreams. As women are considered among the most vulnerable part of society a series of Laws have been framed and implemented considering the types and intensity of insecurity they are likely to face. The Immoral Traffic (Prevention) Act, 1956, the Dowry Prohibition Act, 1961, the Indecent Representation of Women (Prohibition) Act, 1986, the Commission of Sati (Prevention) Act, 1987, the National Commission for Woman Act, 1990, the Protection of Women from Domestic Violence Act, 2005, the Prohibition of Child Marriage Act, 2006, the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, the Criminal Law Amendment Act, 2013, and Draft 'The Trafficking in Persons (Prevention, Care and Rehabilitation) Bill, 2021 are among the major Laws implemented by the Government of India to ensure the safety of women.

Samagra Siksha: The scheme covers education from pre-school to XII and “treats school education as a continuum and is in accordance with Sustainable Development Goal for Education (SDG)”. The Policy taking into consideration SDG-4.1 targets to ensure free and quality education for both boys and girls by 2030. Keeping in mind SDG-4.5, the policy strives to work upon access to vocational education as well as educational facilities available for all without any gender discrimination. “The scheme covers 1.16 million schools, over 156 million students, and 5.7 million Teachers of Govt. and Aided schools (from pre-primary to senior secondary level) by involving all stakeholders of the school ecosystem i.e. teachers, teacher educators, students, parents, community, school management committees, SCERTs, DIETs, BITEs, Block Resource Persons, Cluster Resource Persons, volunteers for providing quality, inclusive and equitable education.”

PM Poshan Shakti Nirman (PM-POSHAN) Scheme: As poverty is one of the main hindrances in the way to women's education, this scheme came as a rescue. Earlier known as the Mid-Day Meal, a policy governed by the Central Government, it provides meals to underprivileged children while studying on the premises of the school itself. It eyes both on providing meals and securing essential education for children who due to unfavorable circumstances or ignorance of elders were snatched of their Right to Education. According to the Ministry of Education, the scheme also targets “Providing nutritional support to children of the elementary stage in drought-affected and disaster-affected areas during summer vacation”.

Right to Education (RTE) Acts 2002 and 2009: Under Article 21-A of the Constitution of India, this Right provides for free and compulsory education for the 6-14 age group. It also provides admission for the previously “non-admitted child to be admitted to an age-appropriate class”. To attract children for taking admission as well as to make them continue their studies the act prohibits “(a) physical punishment and mental harassment; (b) screening procedures for admission of children; (c) capitation fee; (d) private tuition by teachers and (e) running of schools without recognition”.

Findings of the Survey: A survey was conducted under the title ‘Women's Education in Rural and Urban Areas’ and a random sampling method was used to collect the data. Responses were collected from students, teachers, and parents belonging to urban as well as rural areas. It was found that people belonging to urban areas were satisfied with the education provided to women in their areas but the results were different in the case of rural areas as the sources of quality education are limited in those areas. Most of the people were positive towards the implementation of the schemes of the Government of India in their areas and responded positively towards the changes in the status of women in their areas.

Findings of Interviews: Apart from the survey among normal people interviews were conducted with the Heads and faculty of educational institutions belonging to both rural and urban areas. Mrs. Sanjana Mishra, I/c Principal, Rahul College of Education, Thane reported about the 10:90 male-female ratio in her college. The concern she showed was about the restrictions put on the choice of subjects; a girl is often not given much choice to choose her preferable subjects and professional area. One of the striking findings is that it is a B. Ed. College; the ratio shows that 90 percent of the students are females. Girls are often pressured to pursue the teaching field to be easily available for household chores while performing their professional duties. Mr. Ashutosh Dwivedi, assistant professor at NRM PG College, Sonbhadra, reported a balance in the male-female ratio of the students enrolled. While he was able to find positive changes in the girls due to the education provided, he wants to improve the quality of the education being provided as well as awareness among girls towards the importance of the subjects.

CONCLUSION

Education although not among the three basic needs to survive but is the most crucial factor to survive with dignity. The steps taken by the Government of India are commendable and the growth can be seen in the rate of women getting an education. Urban areas, due to awareness are excelling in the field of education but rural areas are still lacking behind. During the study, the researcher found that especially in the rural areas although several

schemes have been implemented and quantity of educated women is increasing still there is a quality issue that must be dealt with. Another problem is the right to choice; women are restricted to choose among the few subjects for which they don't need to go far from their homes.

SUGGESTION

The researcher based on the findings strives to suggest improvement in the quality and applicability of the education provided to women in both rural and urban areas. Awareness among women and their families is needed to realise the importance of the contribution women made towards the goal of sustainable development. We cannot move ahead in the walk of life if we leave half of our population lacking the basic amenities and rights to graceful survival being education one of these. According to Brigham Young, "You educate a man; you educate a man. You educate a woman; you educate a generation."

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THE ROLE OF INTERNATIONAL CONVENTIONS IN EMPOWERING WOMEN

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ABSTRACT

This article addresses the role of International Conventions in empowering women , a topic that is intensely debated around the globe.

The issues of "women's empowerment" and "equality with males" are global.

Women's empowerment is the process of enabling women to act independently for both their own interests and those of society as a whole.

Women's empowerment is the process of enhancing and improving the social, economic, political, and legal power of women in order to ensure their equality and give them the self-assurance they need to assert their rights, including the freedom to live their lives with a sense of self-worth, respect, and dignity, total control over their lives inside and outside of the home and workplace, the ability to make their own decisions, and the same rights as men.

This article explores the role of International Conventions in empowering women and promoting gender equality. It also examines the impact of international conventions on empowering women. The Universal Declaration of Human Rights (UDHR), 1948 , The Convention on The Political Rights of Women, 1952 , The Convention on Nationality of Married Women, 1957 , The International Covenant on Civil and Political Rights, 1966 , The International Covenant on Economic, Social and Cultural Rights, 1966 , International Convention on The Elimination of All Forms of Racial Discrimination, 1966 , Convention on The Elimination of All Forms of Discrimination Against Women (CEDAW), 1979, are discussed as key international conventions that have had a significant impact on promoting women's rights and empowerment. The article highlights the importance of these conventions in setting standards and guidelines for countries to follow and implementing laws and policies that promote gender equality. However, the effectiveness of these conventions relies on the political will of governments to implement them in practice. Overall, this article emphasizes the importance of continued advocacy for the full implementation of these conventions to create a world where women are fully empowered, and their rights are protected. The article also discusses the challenges and limitations of international conventions in achieving gender equality, such as the lack of enforcement mechanisms and the persistence of cultural and societal norms. The article concludes that while international conventions have been instrumental in advancing women's rights, there is still a need for greater awareness, implementation, and accountability at the national and local levels to ensure lasting change.

Keywords: International Conventions , women empowerment , gender equality , Women's rights , human rights.

INTRODUCTION

There is always a doubt in this fact that our socio-economic development has not been uneven and has not touched thousands of women. Even then these women somehow survive in spite of not having knowledge of their own rights and whether the existing legislations or enforcement are adequate or not. The Certain offenses such as child mortality rate, foeticide, infanticide, child marriages are widespread in certain states of India. There are always gaps in between our laws and their implementation. These realities are severe that persist. Once born as a woman whether in India or any other part of the world she must fight for her rights at every step. She is either silenced by emotional ties, family customs, values, etc. The main reason for her problems in life is her inability as a non-economic person. Eighty percent of Indian women have no social, economic or a legal Identity.

In India, women are divided by various factors such as gender, castes, cultures, religions, etc. Women cannot have a broad set of protections when abused, as portions of the Government and the Criminal Justice System embody are governed by existing patriarchal practices. Discrimination towards women is an indivisible force on the ability to experience a full variety of rights, not only physically but also on women's right to have a broad view of rights, including civil, political, and economic rights¹

¹ Joel Lalichan, "A Study on the Role of Indian Constitution on Ensuring Gender Equality and Women Empowerment," 6 International Journal of Scientific Engineering and Research, 59–63 (2018).

Even though there is tremendous women's contribution in all spheres of life and they enjoy a unique position in every society and country of the world, but still she has to suffer in silence and belong to a class which is in a deprived position on account of several barriers and obstacles. It's a mockery in India, being a country of paradoxes, is no exception to the above facts. Sarcastically saying, here too, women, who is a personification of Shakti, and was once given a dignified status, need empowerment. Women's empowerment in social, political, economic, and legal spheres, requires to be improved.

If gender inequality is removed from the society, then it would definitely pave path of empowering women. The gender equality and women's empowerment are so inter-connected that they are considered the same thing.

It has been considered and viewed by many experts that women's empowerment and gender equality are two sides of the same coin. The progress towards gender equality requires women's empowerment and women's empowerment requires increased gender equality.

Women empowerment and gender equality can only be achieved through gender justice. So it's possible to achieve Women's empowerment and gender equality only through gender justice

"Empowerment ... refers to the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them."¹

"Women's empowerment" refers to the process of increasing women's access to control over the strategic life choices that affect them and access to the opportunities that allow them fully to realize their capacities².

Empowerment and equality are generally based on the gender sensitivity of society towards their problems. The intensification of women's issues and rights movement all over the world is reflected in the form of various conventions passed by the United Nations. Indian polity more or less has always tried to cope with the contemporary need-based development of laws for the specified purposes. It may be in the field of human rights, politics, civil rights, constitutional rights, or social transfer.

The empowerment of women was associated with several different viewpoints, ideas, interventions, and implications. Literature provides various meanings of empowerment and, because of cultural differences that influence how empowerment will occur. Nevertheless, all scholars accept that empowerment of women refers to growing the political, social, educational, or economic intensity of individuals and women's societies. It has become an essential subject in terms of growth and economics. Nations, enterprises, and communities can benefit from the introduction of women's empowerment programs and policies. The United Nations identified five main components of empowerment³

The trend of Women empowerment is backed by the Constitution of India. Over the decades, various laws and the National Policy, the Plans, and various other Programmes. There are several International Conventions which are in favour of women empowerment worldwide.

Thanks to the founding fathers of our Constitution as they realised the need for protective discrimination in favour of women and thus inserted Article 14 (Equality Before Law), Article 15 (Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth), Article 15(3) Nothing in this article shall prevent the State from making any special provision for women and children, which enables the State to make any special provision for women and children, Article 16 (Equality of opportunity in matters of public employment).

All the international organizations have advocated in favor of women empowerment for exceptionally long, the United Nations has been the pioneer among them.

On its website in September 2018, UN Women reported that women continue to be marginalized politically and socially due to a lack of opportunities and significant poverty; thus, building women's leadership capacities is necessary for progress and sustainable development. To overcome this marginalization issue, the UN has

¹ Entry Points for Empowerment, A Report for CARE-Bangladesh, June 2004 [Online] available from <http://www.communityipm.org/docs/Bartlett-EntryPoints-20Jun04.pdf>

² <https://serudsindia.org>

³ Asma Omran Al Khayal et al., —Women Empowerment in UAE: A Systematic Review| 1261 Springer International Publishing 742-755 (2021).

collaborated with other organizations to facilitate women's empowerment, including civil society organizations. Empowerment gives people the tools to make decisions to change a life, particularly in places where they were unable to do so and denied the opportunity¹.

The General Assembly of the United Nations adopted a Declaration on December 4, 1986, on The Development or the Right to Development, and India has played a very important role for its adoption and has also ratified it. Human rights for woman, including the girl child are an integral and inseparable part of the Universal Human Rights. The all-round development of personality, equal participation and fundamental freedoms by women in social, political, economic and cultural life are accompaniments for national development, social and family stability and growth, culturally, socially and economically. All forms of discrimination on ground of gender are violative of fundamental freedoms and human rights.

The Vienna declaration on the elimination of all forms of discrimination against women, in short CEDAW, was ratified by the U.N.O. on December 18, 1979. The Government of India which was an active participant to CEDAW, ratified it on June 19, 1993, and acceded to CEDAW on August 8, 1993 with certain reservations. The Preamble of CEDAW reiterates that discrimination against women violates the principles of equality of right and respect for human dignity. By operation of the relevant articles of CEDAW, the State should take all appropriate measures including legislation to modify or abolish gender based discrimination in the existing laws, regulations, customs and practices which constitute discrimination against women.

The need for women empowerment reflects in the words of Helen Clark, the Administrator UNDP, "Development cannot be achieved if fifty percent of the population is excluded from the opportunities it brings."

According to **UNFPA Guidelines**², "The empowerment of women comprises five components-

- Women's sense of self-worth.
- Their rights to have and to determine their choices.
- Their right to have access to opportunities and resources.
- Their right to have the power to control their own lives; both within and outside the home.
- And their ability to influence the direction of social change to create more just social and economic order on national and international levels."

THE ROLE OF INTERNATIONAL CONVENTIONS IN EMPOWERING WOMEN

I. United Nation Charter, 1945

The UN has promised that they will reaffirm their confidence in universal human rights, dignity, and the importance of the human person, to promote the economic and social progress of all countries. The Preamble of the UN Charter is that —promotion of universal respect and advancement of human rights and diversity without regard to race, religion or social status. In Article 56, all UN members and the Organization take joint and separate steps to realize the stated goals of Article 55. In reading Articles 55 and 56 together, States shall endeavour to uphold and respect human rights, as stated in Article 55³.

II. The Universal Declaration of Human Rights (UDHR), 1948

The Universal Declaration of Human Rights (UDHR) is a milestone document in the history of human rights. Drafted by representatives with different legal and cultural backgrounds from all regions of the world, the Declaration was proclaimed by the United Nations General Assembly in Paris on 10 December 1948 (General Assembly resolution 217 A) as a common standard of achievements for all peoples and all nations. It sets out, for the first time, fundamental human rights to be universally protected and it has been translated into over 500

¹ Venise Bryan and Salvatore Mendaglio, —Building leadership capacity in women: an NGO in India's initiative towards women members of SHGs, || 30 Development in Practice 839- 49 (2020).

² United Nations Population Fund Guidelines for Women's Empowerment [Online] available from <http://www.un.org/popin/unfpa/taskforce/guide/iatfwemp.gdl.html>

³ Sardar M.A.Waqar Khan Arif, —Economic, social and cultural rights of women: International legal framework, justiciability and challenges, 61 International Journal of Law and Management 191- 204 (2019)

languages. The UDHR is widely recognized as having inspired, and paved the way for, the adoption of more than seventy human rights treaties, applied today on a permanent basis at global and regional levels¹. Constitutional and Political (CP) Rights are set out in articles 3-21, while articles 22-27 apply to ESC rights².

UDHR defines that all human beings are equal, regardless of ethnicity, faith, sex, status of birth, nationality, property, political thinking, and language. The slogan of feminist feminists, — “Women’s rights are rights”, explains that women are traditionally marginalized groups and that the mainstreaming of gender rights allows them to increase their role in the search for gender equality. This will help women participate in political, social, civil, and economic activities, ultimately granting women the right to fundamental human rights in most parts of the world, which many still dream about. One such right is the right to education, which under Article 26 of the UNHR is a fundamental human right. —When you educate a man, you educate an individual, but when you educate a woman, you educate a family³, the famous Ghanaian proverb attributed to the Ghanaian scholar James Emmanuel Kwegyir-Aggrey sheds some light on how women are traditionally refused academic education. The primary goal was to inspire parents to educate their daughters. This maxim encourages women’s new opportunities by expanding their social spaces and women’s ideology, and men’s traditional roles. Women are the primary custodians of their families and children Interestingly, the Ghanaian saying mentioned above was quoted on the fiftieth anniversary by the United Nations Education, Science and Culture Organization to encourage education for women⁴ This philosophy is evident in numerous international treaties and conventions to promote women’s education on a conventional basis. For example, most education initiatives and international conventions, such as the CEDAW, emphasize education for women concerning improved household nutrition, decreased fertility rate, infant mortality, and improved child health and education⁵.

III. The Convention on the Political Rights of Women, 1952

Women’s full participation in electoral and political processes are guided by the ideas of gender non-discrimination illustrated in the 1948 Universal Declaration of Human Rights (UDHR) and the 1966 Convention on the Political Rights of Women (CPW). In light of the principles of gender equality, various international conventions include human rights provisions dealing with women’s political rights⁶.

On 7 July 1954, the Convention came into effect. As of August 2015, it has 123 States Parties, including 122 member states of the United Nations and the State of Palestine. The Convention was the first international law to protect women’s equal status in exercising political rights. The first international treaty to ensure the political rights of its nations people. The UNs gender equality convention was among many efforts to come up with non-discrimination standards following World War II⁷.

IV. The Convention on Nationality of Married Women, 1957

With the founding of the UN, married women were a burning topic of rights of women. The Commission on the Status of Women of the United Nations initiated a report on this subject in 1948. CSW proposed to the Economic and Social Council of the United Nations legislation on fair opportunities for women as provided in Article

¹ <https://www.un.org/en/about-us/universal-declaration-of-human-rights>

² Ibid

³ African Proverb of the Month, available at: <https://afriprov.org/sep1999/>.

⁴ Felix Peter Umana, —Female Education| Emerging Issues and Trends in Education 39- 56 (2017).

⁵ Savitri Nonsecure and Rangita de Silva-de Alwis, —Women’s and Childrens Rights in a Human Rights Based Approach to Development; UNICEF 1- 43 (2005).

⁶ Gender and Election, available at: <https://aceproject.org/ace-en/topics/ge/ge2/ge21/ge211>

⁷ 7 Convention on the Political Rights of Women, available at: https://en.wikipedia.org/wiki/Convention_on_the_Political_Rights_of_Women

15 of the Universal Declaration of Human Rights (UDHR). The General Assembly for adopting the Convention stated that the wife is suffering from conflicting laws of various sovereign nations while celebrating marriage, dissolving a marriage, or changing a partner's nationality. To eradicate difficulties and differences, the General Assembly, therefore, agreed to conclude a UN Convention. One of the United Nations objective is to uphold and protect and promote human rights and basic freedoms for everyone, regardless of ethnicity, nationality, or religion. Over the years, married women have not always enjoyed the same security as their husbands and nationality. Since discrimination on gender is not justified, the Convention adopted to promote gender equality. The Convention came into effect on 20 February 1957 in New York and came into force on 11 August 1958. The motive of the present Convention is to acknowledge that, resulting from a loss of or gain of women's nationality due to marriage or a change in nationality during the marriage, dissolution of marriage, she may lose or gain her citizenship, conflicts of law or practice exist, and to encourage mutual respect and respect of fundamental rights and human rights¹. In its Preamble, the Convention mentions Article 15 of the Universal Declaration of Human Rights, which recognizes that in practice, disputes concerning nationality occur, as provisions relating to women's nationality loss or acquisition as a result of marriage, dissolution, or the husbands change of nationality during the marriage. The United Nations, General Assembly in Article 15 of the Universal Declaration of Human Rights, has proclaimed that no one shall be haphazardly stripped of his nationality and that no one shall be arbitrarily repudiated the right to substitute his nationality².

V. The International Covenant on Civil and Political Rights, 1966³

The UN's International Covenant on Civil and Political Rights (ICCPR) was accepted by the General Assembly on December 16th of that year (Resolution 2016). It was first put into practice on March 23 March of the year 1976. These international treaties that focus on and protect the basic human and civil and political rights are among the two, contains the International Covenant on Civil and Political Rights including the right to life, the freedom from slavery, and the right to fair treatment. This is why much of the rights found in the ICCPR apply to the fight against violence against women, considering that violence against women is a cause and effect of women's unequal rights to the rights of women in contrast with men⁴.

Many of the ICCPRs most critical articles in the battle against violence against women include:

- **Article 2:** The right to prejudice and the freedom to an influential remedy
- **Article 3:** fair access to civil and political rights for men and women in the ICCPR
- **Article 6:** The right to Life
- **Article 7:** right not to be tortured or to be disciplined, brutal, inhuman, or damaged.
- **Article 8:** not subject to slavery or forced labour
- **Article 9:** the right of individuals to freedom and protection
- **Article 10:** the right to be treated with dignity for all persons deprived of their rights
- **Article 16:** Right before the law to recognition

¹ Radhe Shyam, —Convention on the Nationality of Married Women, 16 Annual review of population law 124 (1989).

² 9 The use of word his could be signals that the document does not treat women as individuals, trapping them in the family and giving them rights only as housekeepers or mother.

³ United Nations Human Rights Office of the High Commissioner, International Covenant on Civil and Political Rights, available at: <https://www.ohchr.org/en/professionalinterest/pages/ccpr.aspx>.

⁴ Centre for Women, Peace Security, International Covenant on Civil and Political Rights (ICCPR), available at: <https://blogs.lse.ac.uk/vaw/int/treaty-bodies/international-covenant-on-civil-and-political-rights/>

- **Article 17:** The right to family and private life
- **Article 24:** the child's right to special security measures
- **Article 23:** marriage freedom, free and full consent; marriage equality
- **Article 26:** Right before the law to equality and equal protection under the law.
- **Article 27:** protection of persons in minority societies.

VI. The International Covenant on Economic, Social and Cultural Rights, 1966¹

On December 16 December 1966, the United Nations General Assembly accepted the International Covenant on Economic, Social and Cultural Rights (Resolution 2200 A XXI). It is added to the International Bill of Human Rights by both the International Covenant on Economic, Social, and Cultural Rights, incorporating those securing just and favourable conditions of work; the social protection and the most basic necessities such as a satisfactory living standards and freedoms and rights such as liberty and security are also secured within the framework of civilized and friendly conditions; the most civilized individuals have higher standards of living; Also, in the document The ICESCR focuses on basic economic, social, and cultural rights with particular attention to economic and human rights, cultural human, the overall in securing status of economic and social rights are promoted. Therefore, many of the rights that are set out in the ICESCRs Article 8 relate to the struggle against women's abuse since women's abuse also serves as a catalyst for their additional rights to be granted².

Some of the most critical articles of the ICESCR on violence against women include³:

- **Article 2:** The right to non-discrimination and an efficacious disciplinary action
- **Article 3:** The equal right to physical, social, and cultural rights of men and women under the ICESCR.
- **Article 6:** The Right to Work
- **Article 7:** Right to equal and favourable working conditions
- **Article 10:** Family security, mothers, children, and young people
- **Article 11:** Right to acceptable living conditions, including ample food.
- **Article 12:** health right
- **Article 13:** Education right
- **Article 14:** Middle school
- **Article 15:** Right to be interested in cultural life.

VII. International Convention on the Elimination of all Forms of Racial Discrimination, 1966⁴

On 21 December 1965, the United Nations General Assembly (Resolution 2106)⁵ accepted the International Convention on the Elimination of All Forms of Racial

¹ United Nations Human Rights Office of the High Commissioner, International Covenant on Economic, Social and Cultural Rights, available on its website.

² Centre for Women, Peace Security, International Covenant on Economic, Social and Cultural Rights (ICESCR), available at: <https://blogs.lse.ac.uk/vaw/int/treaty-bodies/international-covenant-on-economic-social-and-cultural-rights/>

³ Ibid.

⁴ United Nations Human Rights Office of the High Commissioner, International Convention on the Elimination of All Forms of Racial Discrimination, available at <https://www.ohchr.org/EN/ProfessionalInterest/Pages/CERD.aspx>

⁵ Centre for Women, Peace Security, General Assembly, available at: <https://blogs.lse.ac.uk/vaw/int/charter-bodies/general-assembly/>

Discrimination (ICERD). Made on 4 January 1969. This is a multilateral treaty addressing any form of discrimination and making it legally binding that stipulates the rights of groups based on race or ethnicity or who should be enjoyed by all. Women who identify with these variously racially or ethnically-minority groups often have different grievances than men. ICERD parties (and signatory states) now take into consideration gender dimensions, including the link between VAW (violence against women) and racial discrimination¹.

VIII. Convention on the Elimination of all Forms of Discrimination against Women (CEDAW), 1979

The Convention is the artefact of the UN Commission on the Status of Women's efforts. In summary, the Women's Congress is a significant development in international human rights law (IHRL) since it deals with causes that reduce gender discrimination (CEDAW, 1979). The adoption of CEDAW transformed the different terms —women's rights into a global context. It made a positive attempt to integrate women's human rights into the mainstream system for human rights². The 15-paragraph preamble is rather detailed and includes a variety of rights. It not only acknowledges the need for justice in granting women equal status with men but also involves many other considerations such as eradicating de facto inequality between men and women, creating New Economic Order for International Growth, dismantling segregation, racism, neo colonialism and foreign occupation, and strengthening international peace and stability. All of these are called upon to be necessary for equality between men and women³. The CEDAW resulted from numerous international women's rights campaigns coordinated by the United Nations Commission on Women's Status. They include the 1967 Resolution on Gender inequality, the International Women's Year 1975, the Women's Decade, and the women's conferences in Mexico City, Nairobi, and Copenhagen. CEDAW has been produced using CERD as a formulation guide, acknowledging that the International Convention on the Elimination of All Forms of Racial Discrimination (CERD), the International Convention on Civil and Political Rights, and the International Covenant on Economic, Social and Cultural Rights (ICESCR). In Article 2, the function of CEDAW is eloquently stated: — Concerned about the difficulties facing women and the policy of elimination of discrimination and sexual discrimination, I will at once condemn all forms of discrimination and seek a prompt solution for the gender issues⁴. The Convention is an ideal international legislative instrument that involves upholding and respecting women's rights; it is general in scope, detailed, and legally binding⁵. —While other conventions address specific aspects of rights of women, The Convention for the Elimination of All Forms of Discrimination against Women is the foremost all-encompassing UN agreement dealing with gender equity⁶.

CONCLUSIONS

Women's rights in India have always been a subject of great concern. Women in India have never had the same status or opportunities as their male counterparts. The patriarchal nature of Indian society has seriously hindered both women's freedom and

¹ Centre for Women, Peace Security, International Convention on the Elimination of All Forms of Racial Discrimination (ICERD), available at: <https://blogs.lse.ac.uk/vaw/int/treaty-bodies/convention-on-the-elimination-of-all-forms-of-racial-discrimination/>

² S.S. Ali, A Comparative Study of Convention on the Elimination of All Forms of Discrimination against Women with Islamic Law and Laws of Pakistan 6 (Shaheen Publishers, Peshawar, 1995).

³ National Law Report, —The 1979 convention of elimination of all forms of discrimination against women, 21(1985)

⁴ Evatt, E, —Finding a voice for women's rights: The early days of CEDAW| 34 George Washington University International Law Review 515 (2002).

⁵ Cook, R.J., —Reservation to the convention on the elimination of all forms of discrimination against women, 30 Virginia Journal of International Law 643-716 (1990).

⁶ Meron, T., —Human rights law-making in the united nations: a critique of instruments and process “ 53 Clarendon Press (1986).

their protection, and they are merely treated as someone's mothers, sisters, or wife. They are exposed to various forms of discrimination from womb to tomb. They face relentless threat of foeticide in womb itself. After birth, they are subjected to various types of abuse from everyone, ranging from their homes by parents and in-laws to workplaces by employers and public. Even though, Indian Constitution guarantees all Fundamental Rights to women, like equality (Article 14), no discrimination by the State (Article 15(1)), equality of opportunity (Article 16), and equal pay for equal work (Article 39(d)), this discrimination still persists. Furthermore, Constitution also allows the State to make special arrangements in favour of women (Article 15(3)), prohibit the activities that are derogatory against women's dignity (Article 51(A) (e)), and to maintain provisions for securing just and humane working conditions and maternity relief (Article 51(A) (f)) (Article 42) for their overall development.

International conventions and agreements have played a significant role in empowering women by setting standards, norms, and guidelines that help promote gender equality and women's rights across the world.

The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), adopted by the United Nations General Assembly in 1979, is one of the most important international conventions on women's rights. CEDAW outlines the basic rights of women and calls on countries to eliminate all forms of discrimination against women and promote gender equality.

CEDAW has been instrumental in empowering women by encouraging countries to enact laws and policies that promote women's rights and gender equality. For example, countries that have ratified CEDAW have implemented laws to prevent gender-based violence, ensure equal pay for equal work, and provide access to education and healthcare.

International conventions and agreements play a vital role in empowering women by creating a framework for action and setting standards for countries to follow. However, the effectiveness of these conventions relies on the political will of governments to implement them and ensure that women's rights are respected and promoted in practice.

In conclusion, international conventions and agreements have been instrumental in empowering women by promoting gender equality and women's rights across the world. These conventions set standards, norms, and guidelines that encourage countries to enact laws and policies that promote women's rights and gender equality. However, the success of these conventions ultimately depends on the political will of governments to implement them and ensure that women's rights are respected and promoted in practice. It is essential that we continue to advocate for the full implementation of these conventions and work towards a world where women are fully empowered, and their rights are protected.

GLOBAL ENVIRONMENT & HEALTH –CHALLENGES & SOLUTION FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT**Background**

Good menstrual hygiene plays a fundamental role in enabling women, girls, and other menstruators to reach their full potential. The issue of menstrual hygiene is incompletely acknowledged in our nation. The use of sanitary pads and washing the genital area are essential practices for good menstrual hygiene. The negative impacts of a lack of good menstrual health and hygiene causes infection, odor at genital area, itching or rashes in the perineal region and sometimes, major complications such as pelvic inflammatory disease and toxic shock syndrome.

Aims and Objectives:

This study was planned to analyze knowledge, beliefs, and source of information regarding menstruation and also to assess hygiene among women. Therefore, the objective of this study was to assess the knowledge and practices of menstrual hygiene among reproductive age group women.

Materials and Method:

A Community-based cross-sectional study design was employed. Study was conducted from April 2023 to May 2023. Data were collected using a pretested semi-structured structured questionnaire.

Results:

Out of 50 respondents, 44 (88%) girls were aware about menstruation prior to attainment of menarche. The source of information was mother in 96%. About 98% girls used sanitary pads and the rest used cloth pieces. For cleaning purpose, 48 (96%) girls used both soap and water. Multiple restrictions were practiced.

Conclusions:

Awareness of good menstrual practices is of utmost importance. Educational television programmes, trained school nurses/health personnel, motivated school teachers and knowledgeable parents can play a very important role in transmitting the vital message of correct menstrual hygiene to the adolescent girl of today.

Keywords: Menstrual Hygiene, Sanitary Pads, Practices and Adolescent Girl.

INTRODUCTION

Menstruation (a period) is an exceptional phenomenon that the nature has planned for women. It is not just a small term but a major stage where a woman undergoes certain reproductive changes from start of menstruation (menarche) till menopause. Adolescence is the stage of physical, psychological, and reproductive development that generally occurs during the period from puberty to legal adulthood. The World Health Organization defines adolescence as individuals between 10 and 19 years of age. Adolescence in girls has been recognized as a special period in their life cycle that requires specific and special attention. This period is marked with start of menarche.

Menstruation is surrounded by various psychological and religious barriers due to lack of knowledge about the scientific process of menstruation. Many girls residing in slum areas are unaware of what actually happens during menstrual cycle. Although menstruation is a natural process, it is linked with several perceptions and practices within the community, which sometimes may result in adverse health outcomes.

The issue of menstrual hygiene is inadequately acknowledged and has not received proper attention. Good hygienic practices, such as the use of sanitary pads and adequate washing of the genital areas, are essential during the menstrual period. Women and girls of reproductive age need access to clean and soft absorbent sanitary products which in the long run protect their health from various infections.

Studies in India have shown that at various places, the proportion of women using sanitary pads, still remain low, while the women with reproductive tract infections tend to have poorer menstrual hygiene practices.

Most of the studies in India have been focusing on the menstrual hygiene practices among adolescent girls and not the whole of reproductive age group, therefore, this study was conducted in an urban area of thane with an objective to study the menstrual hygiene practices and their determinants among women of reproductive age group.

MATERIALS AND METHODS

Type of Study: Community-based cross-sectional observational study.

Place of Study: The present study was undertaken among the adolescent girls from Holy Cross Convent High School, Thane (W).

Duration of Study: 15 days 26th April 2023 to 11th May 2023.

Study Population: Fifty girls from Holy Cross Convent High School, Thane(W).

Study Tool: A pre-designed, pre-tested questionnaire (google form).

Methodology: Briefing was done to the girls regarding the questionnaire provided to them. This pre-designed, pre-tested and structured questionnaire included topics relating to awareness about menstruation, source of information regarding menstruation, hygiene practiced during menstruation and restricted activities practiced during menstruation.

Statistical Analysis: Data obtained were collated and analyzed statistically by simple proportions.

RESULTS

This study shows that the age of menstruating girls ranged from 10 to 16 years, maximum (86%) number of girls being between 12 and 15 years of age group.

Among 50 respondents in the present study, 35 (70%) were Hindus, 10(20%) were Christians whereas only 5 (10%) girls were Muslims. The 92% girls mostly belonged to nuclear family and 8% to joint family.

Maximum of 60% of girls were educated up to higher secondary (8th-10th std.), followed by 22% secondary school (5th-7th std.), intermediate (11th-12th std.) were 18%.

It was observed that a majority of 97% of mothers were literate and 42% had only secondary education.

Maximum number of girls had their menarche at 10 years (27%) and 13 and 12 years (25%). The menses were irregular in 18% girls, whereas 82% had regular menses. The amount of blood flow was scanty in 33% individuals, whereas the majority 65% had moderate blood flow. The duration of blood flow was found to be between 4 and 6 days in majority (78%) of the girls followed by 1-3 days (18%).

Majority of the girls (46%) had no knowledge of menstruation before menarche, and 94% obtained information of menses from their mother. Only 26% of the girls knew that bleeding occurs from the uterus, whereas 74% had no idea of the organ from where bleeding occurs.

96% of the girls uses sanitary pad, about 2% used clothes and 2% used both pad and cloth. Sanitary pads were wrapped in paper and disposed by 97% of the girls.

All the girls practiced hand washing during menses. They used soap and water in majority (78%), but a few (22%) used only water to wash. Bathing everyday was found in almost all the girls and washing of private parts during menses was practiced by them during bathing. Any special attention to genital hygiene was not found in them. Some of the girls (4%) practiced hair washing everyday during menses. Only few girls followed restrictions during menses.

DISCUSSION

This study shows that the age of menstruating girls ranged from 10 to 16 years with maximum number of girls between 14 and 15 years of age. In the present study, the mean age of menarche of the respondents was 10 years.

Unfortunately, 32.5% girls were ignorant about menstruation before menarche in this study. But, each and every girl child should be aware about menstruation, which is an important event at the threshold of adolescence and ideally a mother should be the main informant at this tender age. In urban girls, mother was the main source of information about menstruation, whereas it was teacher in the rural counterparts. Other sources of information were friends, relatives and books.

This study shows that majority of the girls preferred sanitary pads as menstrual absorbent.

CONCLUSIONS

Menstruation is an important indicator of reproductive health and development, thus menstrual hygienic practices are of major concern. This study revealed that menstrual hygiene was not that much satisfactory among adolescent girls. This was because of low level of education and improper assumptions about the phenomenon

of menstruation. Hence, it is very crucial to educate girls about the physiological facts of menstruation. It is a strong belief that an educated woman is a first teacher of a family that is why education of the mother and the adolescent girl is very important.

Therefore, when the whole family is in association with the phenomenon of menstruation, age old restrictions, traditional perceptions, false beliefs, and wrong attitude can be effectively eliminated.

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GIRL CHILD: A COMPARITIVE STUDY OF MENSTRUAL HEALTH AND EDUCATION OF AGITLS IN URBAN AND RURAL AREAS**Mr.Chinmay Prajkta Desai and Mrs. Krishna Anil Menon**

VPM' S R.Z. Shah College of Arts, Science and Commerce

Name of Mentor – Mrs.Gauri Prashant Pai. VPM' r

ABSTRACT

” If you educate a man, you educate an individual, however, if you educate a woman, you educate a whole family. Women Empowered means Mother India Empowered”.

Late Prime Minister Jawaharlal Nehru.

The Right to Education Act (RTE) which was implemented in the year 2009, states a clear stand of Uniform education for all children from the age of 8 years to 14 years. However, if we glance at reality, it seems very different and unreal. As per a statistic from the Times of India, nearly 40 percent of girls aged 15 – 18 years are not attending school. The problem of Menstrual Health and its proper sanitation is also an issue of prime concern the Research done is a comparative study of educational status and sanitation awareness in respect of rural and urban areas. The objective of the research is very clear in the sense as to make every aspect of socially aware and let the implementation of some productive solutions for the overall betterment of Girls. The background of the topic was studied by the investigators through some official Government reports, schemes implemented in educational sectors, Documentary viewing, and other such sources. The research Methodology is based on the primary and secondary data which was derived using in action a 360-degree approach wherein a few young students, teachers, and parents were asked about menstrual health. In regards to education, a ground-level survey was conducted of migrated girls' students from various tribal areas of the Thane district with the help of the Interview method. In conclusion, we firmly ascertain that the research done needs more quantitative efforts keeping in mind the gravity of the research topic.

Keywords: Girl Education, Menstrual Health, Girl Child.

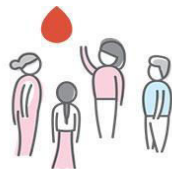
INTRODUCTION

The current research paper mainly focuses on the education and health of young girls in rural and urban areas of India. The Right to Education Act (RTE), implemented in 2009, states standard education for all children from the age of 8 to 14 years. But in reality, the situation is different and unreal. The problem of menstrual health and its proper sanitation is an issue of prime concern. Education for women was contemporaneously initiated mainly by Mrs. Savitribai Phule with the assistance of her husband, Mr. Jyotirao Phule. A lot of obstacles were faced due to non-acceptance by society members. Violent measures were taken against the couple. The menstrual health of girls has been considered a social taboo and not accepted as a topic of concern by many. Heavy bleeding and pain occur. Many health issues are caused ignorance. But its awareness has been on the rise in recent times. Education is mostly considered an equal opportunity for women and men. The literacy rate of women shows a rising trend. The average ratio of boys to girls in co-ed schools is predicted to be 1:1 in the near future. Menstruation is not given any special focus and is accepted as normal by all. Girls are made to ignore the pain and continue with their daily work. Various superstitions, which have no scientific basis, are still practiced. Girls are treated as impure and different from others. Various girls receive no support from family or school.

HYPOTHESIS

H1 - The situation is improving and a lot of work remains.

H2 - Situation is worse with no precise work and development.



**NORMALISING
Menstruation**



<https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.downtoearth.org.in%2Finfographics%2Fmanaging-menstrual-waste-in-india-63356&psig=AOvVaw25->

Research Methodology: The above research work by the investigators consists of dedicated research work with both the contents of primary and secondary data and an accurate analysis and interpretation as follows:

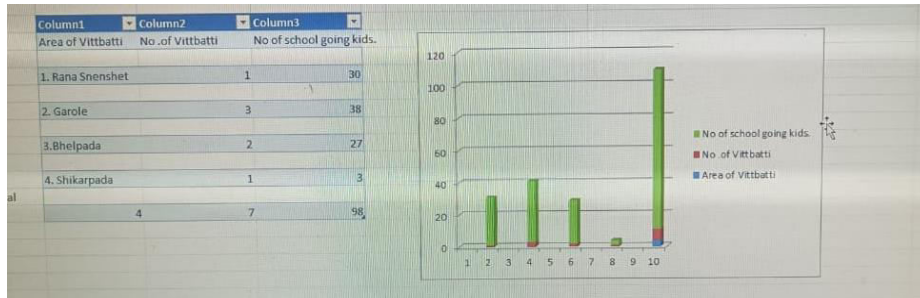
Primary data: Primary data was collected using two research areas in the urban and rural parts of the country as required to show a comparative image of how education and menstrual health are conceived

For the urban area, a 360-degree approach was adopted, wherein the Convenient Data Collection Method helped to understand the problems, difficulties, and obstacles faced by young school-going and academic girl children.

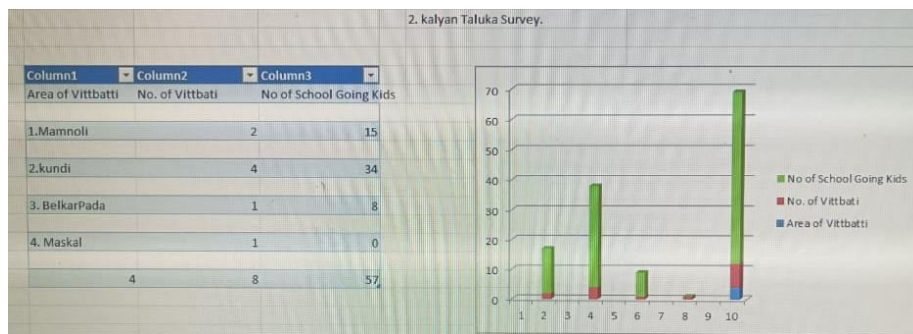
1. What was your family's reaction to your first cycle?
2. Who supported you during the starting phase?
3. Are there any superstitions that are followed by society?
4. Do you have a particular medicine that you take, or would you suggest any?
5. As a married woman, do you face any changes or differences pre- or post-pregnancy?
6. Is there any track kept by you to know your cycle period?

In consideration of the Rural area, migrated laborers of Thane District who continually work for a monthly period of 6 – 7 months were interviewed in regional language along with their young daughters. It helped the

researchers to acknowledge the fact that there is a tremendous amount of difference and ground level work has to be done at a large scale. The research area was Kalyan and Murbad taluka, (Thane District) which covered the production area of small-scale brick production through a time frame of 4-5 days respectively.

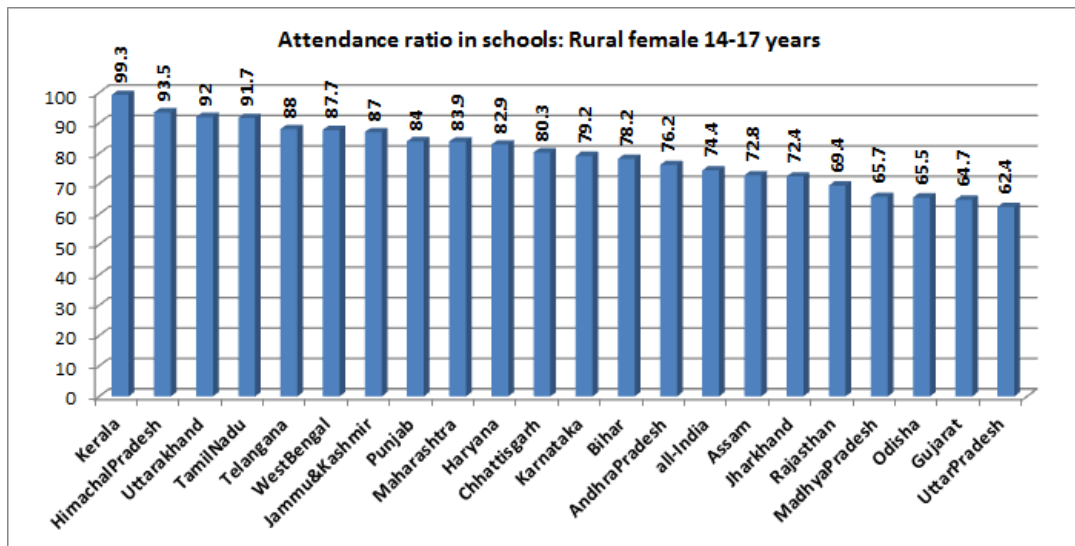


(Survey Report and Analysis of Murbad Taluka).



(Survey Report and Analysis of Kalyan Taluka).

Secondary Data: The secondary data required for the research work was collected and derived through various reports of state and central governments, government schemes like KGVY, the Right to Education Act 2009, and others as applicable, news releases, and press reports from reputed and leading print and online newspapers, etc.



https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.counterview.net%2F2019%2F12%2Fgirl-child-education-20-major-states.html&psig=AOvVaw2HNWBh4FaR4kY_NwaVKfQL&ust=1684562200440000&source=images&cd=vfe&ved=0CBEQjRqxqFwoTCKDi467ZgP8CFQAAAAAdAAAAABAE

FINDINGS

As per above, the research work followed where the suggestions concluded that through the source of research methodology. The findings can be used appropriately by the government, administration, and all the stakeholders in society to harness a more efficient and safer environment for the girl child.

- 1) Girl education is well established in Urban and Metropolitan areas however there is no concrete infrastructure / progressive plan. It also requires proper on-ground implementation.
- 2) Medicines like paracetamol can be taken prior to the menstrual cycle but it won't affect pregnancy.
- 3) Hormones play a direct role in the cycle and their changes must be noted.

RESEARCH GAPS

The research work done consists of various stag points and gap factors through which every stakeholder in society can work together. It will help us create an environment that shows equality in every sense, irrespective of whatever the factors are.

Which medicines are to be used exactly to avoid pregnancy-related issues in the future?

Intentional change and an increase in the acceptance level of societal attitudes towards menstruation and education are the current research themes.

SUGGESTIONS

The below given are same important suggestion which can be implemented for the betterment of the entire girl community with the research methodology applicable.

- 1) Painkillers like Meftal Scan should be made commercially available at a very economical amount as they can help young girls to reduce pain and other sufferings. _
- 2) More Proactive and Consultative support is required for the female section of the house in terms of Education and Cycle hygiene.
- 3) Girls need to be shown more empathy and sensitivity during their cycle stages.

No requirement to be treated in a different way as such.

- 4) In case to avoid any hygiene-related issues, any use of cloth needs to be stopped completely.
- 5) A proper recording and assessment of period dates need to be taken.
6. If any irregularities are noted than immediately report and take a medical check-up in such instances.

CONCLUSION

The above research work is very demanding and has a great amount of scope to do. It is seen that there a plenty of Nongovernment associations, Local bodies, Government policies, and Individuals who are recently toiling it hard to improve the situation. However, it has been conceived by the researchers that it is not only Education and Menstrual Health but other such factors on which work can be done. Young girls must avoid exertion and are encouraged to keep track of their cycle to avoid issues such as PCOD, and uterus cycle.

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A STUDY ON THE SOCIAL SECURITY OF UNORGANIZED WORKERS WITH SPECIAL REFERENCE TO MIGRANT WORKERS

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ABSTRACT

Migration has been a part and parcel of human civilization. Man has been migrating from one place to another for various socio, economic, cultural & commercial purposes. Social protection is mostly in the concurrent domain of centre, states, and local governments which makes it particularly harder to reach inter-state seasonal and circular migrants. This paper analyses several sectoral and social protection programmes to examine how advances can be made to strengthen the claim of migrants over entitlements. It also examines the impact of the latest moves of the government of India to provide all citizens with a unique identity number based registration and to put into place a comprehensive Code on Social Security which ostensibly aims at universalising social security.¹ Inter-state migration of workers for better employment, better wage, better standard of living and better future has been an integral part of millions of landless, unemployed and asset less rural born poor workers in India. Migration, one way helps them to get employed in unorganised sector which saves the lives of such people without any means. Migrated workers in unorganised sector are large in number observed as labour in manufacturing and non-manufacturing units. Informal type of such work particularly depends on hazardous working environment and unsafe for health.

Keyword: Migrant Workers, Informal Sector, Social Security.

INTRODUCTION

The Indian labour market has been, and continues to be, predominantly informal. In the year 2018-19, the nature of employment for around 90 per cent workers in India's labour market was informal. These workers are either inadequately covered or not at all covered under the existing labour legislations, social protection schemes, and other employment benefits. Due to lack of governmental oversight, a large proportion of these workers work in exploitative and precarious conditions. According to the International Trade Union Confederation, India is amongst the 10 worst countries in the world in terms of worker rights in 2020 (ITUC, 2020).

Existence of Chronic poverty is the major concern for the country and mitigating it has been the core of all developmental efforts. Several poverty alleviation programs initiated by the government have resulted in the overall development of the poor, but these programs were not able to achieve the targeted success. Lack of capital and inaccessibility to credit is the serious constraint to the development and inhibits poor from responding to the opportunities created by the process of development. Research reports states that for a large section of the unorganized workers, agriculture and construction sectors are the preponderant sources of employment. Social Security Act, 2008 has defined Unorganised worker as 'a home based-worker, self-employed worker or a wage worker in the unorganized sector and includes a worker in the organized sector who is not covered by any of the acts mentioned in scheduled II of its Act'(Government of India). As per a survey carried out by the National Sample Survey Organisation (NSSO) in 2009-10, the total employment in the country was of 46.5 crore comprising around 2.8 crore in the organised and the remaining 43.7 crore workers in the unorganised sector, which amounts to 94% of the total work force.

Apart from employing 94% of the work force, unorganised sector is vital as it contributes around 50% of our national GDP. Out of these workers in the unorganised sector, there are 24.6 crore workers employed in agricultural sector, about 4.4 crore in construction work and remaining in manufacturing and service. Indian economy is characterised by the existence of a vast majority of informal or unorganised labour employment. Though the statistical information available on intensity and accuracy vary significantly, the extent of unorganized workers is significantly high among agricultural workers, building and other construction workers and among home-based workers.

¹ Ravi Srivastava(2020) Vulnerable Internal Migrants in India and Portability of Social Security and Entitlements, INSTITUTE FOR HUMAN DEVELOPMENT. http://www.ihdindia.org/working-papers/2020/IHD-CES_WP_02_2020.pdf

The present study is an attempt to examine the economic conditions of the migrant construction workers before and after migration. Many push and pull factors are contributing for the migration of the workers.¹

More than 90 percent of work force in India depends on informal sector. 50 percent of national income has been generated from this sector. Since the liberalization period, growth of informal sector in India has helped in reducing the century old unemployment problem. It has opened a new avenue to overcome unemployment and poverty. Hence the government also take many initiatives to accommodate migrated workers in informal sector. The Economic Survey of India states that 93 percent of the workforce in India comes under unorganised sector. People from different parts of the country migrate seeking employment opportunity from villages to urban cities and get ample opportunities in unorganised sector and engage in work for their survival. Construction sector has an attractive employment prospect for the poorest sections of sector in India. Migration and Reverse migration are a Socio-Economic and Health related domain, any change will reflect on Socio-Economic and Health condition of informal workers, such as construction workers, reverse migrated construction workers in particular. Many previous studies have identified such workers as male, married at the age group of 18-40, either illiterate or less educated. Lack of employment, poverty, and low wage which induce them to migrate from their birth place.

Informal / Unorganized: The National Commission for enterprises in the unorganized sector (NCEUS) has defined the informal/unorganized sector as all unincorporated private enterprises owned by individuals or house hold in the sale and production of goods and services operated on a partnership.

OBJECTIVE OF THE STUDY

- 1) To study about migrant workers and causes of Migration
- 2) To study the awareness about social security schemes among migrant workers
- 3) To study of Social condition of Migrant workers

RESEARCH PAPER

This research is fully based on secondary data. The secondary and tertiary sources of data are journals, research papers and articles available online.

REVIEW OF LITERATURE:

Marjit and Beladi (2008) opined that Globalization would increase the size of the informal sector. Mitra in 1994 and then in 2001 found that there is overlap between informal sector employment and poverty, are significant. Sastry in 2004 also proved that there is high incidence of poverty among house hold who finally sustain on employment in informal sector and the study has also showed that such incidence are higher in urban areas compared to rural areas.

The NSSO (2000-2001), 56th round survey gives first of its kind to give information about the most of the subcontracting workers are located in the urban segment. It means a kind of win-win solution for many problems like improving employment opportunity, increase in scale of production and improve market efficiency. According to ICMR —The reverse migration of migrants workers from various cities and towns to villages around the country led to an increase in the number of Covid -19 cases which created a health issue.

National Sample Survey (1998) estimation found that there was an inverse relationship between migration and land possessed by the rural House hold. The tendency to move from urban India is much stronger than rural area in India. According to Vyas (2020) the protracted lockdown leads to further damage in the labour market, and in particular the poor migrant workers in India. According to a study by TOI, Tamil Nadu is home to more than a million workers as per a government commissioned survey. A majority of the 10.67 lakh migrant workers in the state are unskilled workers.

Denzil Fernandes and Bindpaul (2011) in their assessment it was found that social networks are playing a crucial role in migrant workers of construction sector to lead decent life in the society. The social networks are connected by the factors such as credit flow, work allocation, admittance into the work, and information of labour market, labour market phases and approachable relations among them.

¹ Dr. Sudarshan Kumar. M, (2021) A Study on the Economic Impact of Migration on Unorganized Workers – with Special Reference to Construction Workers in Bangalore City, IJIRT | Volume 8 Issue 6 | ISSN: 2349-6002, Page No. 323-327. https://ijirt.org/master/publishedpaper/IJIRT153290_PAPER.pdf

According to James, migrant workers employed in construction of building, bridges, roads etc, migrate from Andhra Pradesh, Bihar, West Bengal, Madhya Pradesh brought in by contractors. They live in the construction site or live outside. They are from poor family and receive paltry wages. According to Meena, (2014) about 200 migrant workers died on construction sites in greater Chennai during 2012-2014. This study is confined to issues related to improvement of safety monitoring and proactive measures for migrant workers.

1. Determinants of Migration:

Now, we can discuss about the concept of migration. The problems of migrant workers have become very important in many developing countries of the world. The process of theorization of migration began in the 19th century. It has been discussed by many researchers, who have emphasized social and cultural, distant and economic factors as causes of migration. Migration of labour started in India during the period of British colonial rule. It was aimed at meeting the requirements of capitalist's development both in India and abroad. The labour was moved from the hinterland to the sites of mining, plantation and manufactories. It was recruited from the rural areas and regulated in such a manner that women and children remained in the villages while males migrated to the modern sector. (Gill, 1998). Generally, there are two basic factors of migration: i) Distance ii) Duration.

From the distance point of view, migration can be classified under four categories:

i) Rural to Rural ii) Rural to Urban iii) Urban to Rural iv) Urban to Urban.

Besides, migration can be divided into following categories:

i) Intra-district, ii) Inter-district iii) Intra-state iv) Inter-state v) National and International.

From the duration point of view migration can be studied under three categories:

i) Casual-Temporary ii) Periodic- Seasonal iii) Permanent.

Todaro (1969), tried to explain migration in developing countries in terms of push and pull factors, respectively. Therefore, the motives of migration are classified as push factors (which emphasize on the situation at the origin, that is, place from which migration started) and pull factors (which emphasize on the situation at the destination). Unemployment, flood, earthquake, drought, (i.e., natural calamities) etc, are the push factors. Pull factors that determine migration such as attraction of city life, for education, health, development of backward community, job opportunities and training facilities and so on. The push and pull factors of migration among a tribal and lower income group's of population are categorized under the following heads

(i) Ecological factor (ii) Demographic factor (iii) Social and Cultural factors.

2. Social Security for Migrant Labour:

The ILO is constitutionally bound to promote social security programmes and measures providing basic income to all in need of protection. Social security systems provide nine types of benefits as defined in the social security (minimum standards) convention, 1952(102) namely, medical care, sickness and maternity, medical care, sickness and maternity benefits, family benefits, unemployment benefits, employment injury, invalidity and survivor's benefits, old age benefits. Therefore, social security is the very foundation of a decent society, it is the primary source of social legitimacy. (Mishra, 2001).

Singh (1997) observes that in most of the developing countries there are no bilateral agreements and no national legislation, specifying the rights of migrant workers, who do not therefore, enjoy the benefits of social security schemes in the countries to which they have migrated. In the era of globalization, there has been growing casualisation of workers, therefore, workers are struggling for their labour rights and their dignity of life. Generally, unorganized workers, have been suffered from the problem of unemployment, lack of social security.

The ILO estimates suggest that 150 million people are fully unemployed. Many more are forced to eke out a living in casual or occasional jobs, low productivity self, self employment or other forms of unemployment. Unemployment has growing millions as a result of the financial crisis in Asia and other parts of the world; more than 50 percent of the world's population is excluded today from any form of social security. (Mishra, 2001).

Bremen's study (2008) shows that, the employers are only interested in maximizing their material profits, which they do by paying low and piece-rated wages without accepting any responsibility for the basic security. Most of the migrant workers do not have adequate shelter, drinking water or toilet facilities. It has been observed that seasonal migrant workers in sugar factories in the Maharashtra and other states, they have to stay

in make shift shacks, huts or in the open and have no access to safe drinking water. The Factories Act of 1948 makes it obligatory on the employers to provide drinking water, washing, bathing facilities for workers and latrines and urinals for workers etc. It was found from the surveyed sugar factories that drinking water, washing and bathing facilities, other facilities were totally absent for contract basis seasonal migrant workers in the premises of the sugar factories (Salve, 1990).

Health hazards are a serious problem for the migrant workers in various sectors. Construction and brick kiln migrant workers suffer from a number of diseases which are a result of their occupation or working conditions. Accidents and lung diseases are common among construction workers. (Srivastav, 1998). The ILO estimates suggest that only 10 percent of the world's workers have truly adequate social protection (Rodgers, 2001).

So far as women workers are concerned, women constitute a significant part of the workforce in India. However, the work participation rate of women's still very low. In 1993- 1994, the percentage of women in the workforce was 28.6 against 54.5 for males. The work participation rate of women is low as compared to U.S.A. 42.7 percent and Italy 53.8 percent.

More than 90 percent of the total workforce of the country is engaged in the unorganized sector. Out of the total employment of women, they comprise only 4 percent of the organized sector, and 96 percent women are employed in the so called unorganized or informal sector, which is unorganized, non-unionized, low waged and with unhealthy almost inhuman working conditions. It is true that women labour is predominant in the unorganized sector.

In 1997, the ILO introduced convention about sexual harassment of women workers at the work places. The definition of sexual harassment adopted by ILO has been accepted by the government of India. But the growing informalisation or casualisation or marginalization of women at work places serious threats regarding the ILO convention. Women workers in unorganized sectors are, generally, sexually exploited. (Heggade, 1998).

Migrant women workers are exposed to the risk of sexual harassment and exploitation. (Acharya, 1987, Sardamoni, 1995, Teerink, 1995.) So far as women migrant workers are concerned, women workers work in various factories, like sugar factories, handlooms and power looms and cotton ginning mills for the nature of temporary, seasonal, part time work.

However, migrant women workers in India, who are often in low skilled occupations in sectors not efficiently covered by national labour laws and standards, and vulnerable to various forms of exploitation including sexual harassment at the places of work (Mishra, 2001).

Besides, India has the largest number of world's working children which is almost 40 percent of the number of children in the world force. The incidence of child workers in the unorganized sector is much higher than those in the formal organized sector. (Nath, 1998).

Among four core labour standards the deplorable violation in India is practice of child labour. Uniform labour standards in the context of child labour can not be implemented in rural and urban areas of India. Unevenness of economic development makes it difficult to apply uniform labour standards. (Kothari, 1998).

In terms of bondage labour system, bondage and servitude has been reported in the brick kilns, stone quarries, building and road constructions, agriculture and plantations, and other unorganized sectors in different forms (Nath, 1998,). The proportion of bonded labour is more among migrant workers, who belong to backward community i.e. Scheduled castes and scheduled tribes. (Daily Samarath, 10th may, 2009,)

According to Bremen's study (2008), the new forms of labour bondage can also be found in rural or urban based industries like rice mills, small-scale carpet workshop, gem processing ateliers etc. In all these cases, labour bondage is a feature of the employment modalities of vulnerable segments of the workforce in the informal sector of the economy. So far, action taken by the state to end labour bondage has remained ineffective (Bremen, 2008).

It should be noted

- Child labour Prohibition and Abolition Act 1986,
- Bonded labour system (Abolition) Act 1976,
- Maternity Benefits Act, 1967,
- Equal Remuneration Act,

And other labour laws have not been implemented effectively in order to improve working conditions of migrant workers, these labour laws have not also covered workers in the unorganized sectors in the country.

Bremen (2008) found that certainly the abolition of Bonded labour Act (1976) was introduced to fight strictures on the freedom to work as a legal right. The enactment failed to release this objective because it did not go beyond addressing forms of agrarian bondage, which still lingered on the different parts of India. Besides, the maternity benefits are not available for contract based migrant women workers and employed in agriculture, construction, brick kilns and other temporary, seasonal, part time work, because they come under the unorganized sector.

3. SUGGESTIONS

1. Compulsory registration of migrant workers when they arrive in another state and issuance of universally valid shramik card/ number to the migrant workers will ensure them the promised benefits under Government schemes. This will also enable the Government to keep a record on the number of internal migrant workers present in a state at a time.
2. Eradication of segregation of labour markets into formal and informal labour markets should be given priority. It is generally seen that workers in the informal sector are more vulnerable to exploitation so unitary in labour market must be given preference.
3. In times of crisis migrant workers and other vulnerable sections of the society must be shown sympathetic attitude by police and health workers. The brutal treatment meted by police authorities became a source a mental agony for the migrant workers. They were already emotionally and financially drained they just wanted to go back to their homes for which they cried for help and faced several hardships. Time and again it has been seen that the migrant workers has always faced this same situation during past pandemics in India. So, government must in the face of any natural calamities before passing any order must make proper arrangements for the vulnerable groups.
4. Renewed attention must be given to agrarian economy and small scale industries to support returning migrant workers and their families.

4. CONCLUSION

The constitution gives complete freedom for any citizen to move from one part of the nation to another. So the provision for better social, economic position becomes the responsibility of the government. The worker who leaves his native and moves on to the unknown cities should find himself in a better social and economic position. It is high time that the constitutional provisions are implemented effectively for the betterment of the workers. The State governments should join hands with each other to improve the life of these construction workers.

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THE ETHICAL AND SOCIAL IMPLICATIONS OF BRAIN-COMPUTER INTERFACES (BCI) TECHNOLOGY**Dr. Kirti Mahajan¹ and Mrs. Praggya Nigam²**¹Professor, Bharati Vidyapeeth Deemed University, Institute of Management & Entrepreneurship Development, Pune, India²Research Scholar, Bharati Vidyapeeth Deemed University, Institute of Management & Entrepreneurship Development, Pune, India**ABSTRACT**

The article delves into the rising interest in Brain-Computer Interface (BCI) technology among both researchers and developers, who see its potential to transform human-computer interaction. Using sensors to gauge neural activity and interpret it as computer commands, BCI technology allows individuals to control devices and computers with their thoughts, negating the need for traditional input methods. While BCI technology promises to enhance human abilities and offer new opportunities for individuals with disabilities, it also raises pressing ethical and social concerns that require attention. This paper seeks to explore these implications and suggest strategies for promoting the responsible use of this technology.

Keywords:-BCI, Control devices, Human-computer interaction.

INTRODUCTION

In recent years, there has been a growing interest in Brain-Computer Interfaces (BCI) technology among researchers and developers. The reason for this growing interest is the potential of BCI technology to revolutionize the way we interact with computers and the world around us. BCI technology works by using sensors to measure neural activity, which is then translated into computer commands or outputs. This technology allows individuals to interact with computers, prosthetics, or other devices using their thoughts alone, without the need for physical input devices like a mouse or keyboard.

Brain-Computer Interfaces (BCI) technology is a rapidly developing field that aims to enable communication and control between the brain and computers. BCI technology allows individuals to use their thoughts and emotions to interact with the world around them, from controlling prosthetic limbs to playing video games. While BCI technology holds great potential to improve the lives of individuals with disabilities and enhance human capabilities, it also raises ethical and social concerns that need to be addressed. This paper will examine the ethical and social implications of BCI technology, exploring its potential risks and benefits, and discussing the ways in which responsible use of this technology can be promoted.

Privacy Concerns

Brain-Computer Interfaces (BCI) technology has significant ethical implications that extend beyond the issue of privacy concerns. The collection and analysis of sensitive personal data, such as neural signals and brain activity, require strict regulations to protect individuals' privacy. Unauthorized access, misuse or abuse of this data can have serious implications for individuals' privacy and lead to the disclosure of sensitive information, which may result in stigmatization or discrimination.

The misuse of BCI technology can lead to targeted advertising and manipulation of individuals' thoughts and behaviour without their consent. Monitoring and influencing a person's thoughts and emotions raises significant ethical concerns regarding the potential for abuse and the violation of fundamental human rights. Therefore, clear guidelines and regulations must be established for the collection, storage, and use of data to ensure that data is encrypted and stored securely, preventing unauthorized access or misuse.

The ethical concerns surrounding BCI technology also raise questions about the balance between innovation and privacy rights. While BCI technology has the potential to revolutionize the way we interact with the world around us, it is vital to ensure that technological advances do not infringe on fundamental human rights, including the right to privacy.

To address these ethical concerns, all stakeholders, including researchers, developers, policymakers, and end-users, must be involved in the development of guidelines and regulations that protect the privacy of individuals who use BCI technology. These regulations must ensure that data is only collected and used for the specific purposes for which the individual has given their consent.

In conclusion, privacy is one of the most significant ethical implications of BCI technology, but it is not the only one. The misuse of BCI technology can lead to targeted advertising and the manipulation of individuals'

thoughts and behaviour. Clear guidelines and regulations must be established for the collection, storage, and use of data, ensuring that privacy rights are upheld while promoting innovation and technological advancement. The development of these regulations must involve all stakeholders to ensure a balanced approach that protects individual rights and promotes technological progress.

Consent Issues

Informed consent is a fundamental ethical principle that applies to any medical procedure or research involving human subjects. It involves providing individuals with adequate information about the risks and benefits of the procedure or research and obtaining their voluntary and informed agreement to participate. In the context of BCI technology, informed consent is particularly important because of the sensitive personal data that is collected and used.

Individuals who use BCI technology must be provided with clear and understandable information about the nature of the technology, the purposes for which their data will be collected and used, the risks and benefits of the technology, and their rights with regard to their data. This information should be provided in a way that is appropriate for the individual's level of understanding and should be free from any coercion or undue influence.

In addition to informed consent, the issue of cognitive consent is also important to consider in the context of BCI technology. Individuals who may lack the capacity to provide informed consent due to cognitive impairments, such as those with dementia, traumatic brain injury, or intellectual disabilities, may be particularly vulnerable to exploitation or harm. In these cases, it is essential to obtain consent from a legally authorized representative or to establish safeguards to protect the individual's rights and welfare.

The issue of consent in BCI technology also raises questions about the balance between autonomy and paternalism. On the one hand, individuals should have the freedom to make their own decisions about using BCI technology, and their consent should be respected. On the other hand, there may be cases where the individual's decision-making capacity is impaired, and their consent may not be fully informed. In these cases, it may be necessary to consider the individual's best interests and to involve family members, caregivers, or healthcare professionals in the decision-making process.

To address the ethical concerns related to consent in BCI technology, it is essential to establish clear guidelines and regulations for obtaining informed consent and cognitive consent. These guidelines should be based on a thorough understanding of the technology and its potential risks and benefits and should be regularly reviewed and updated to reflect advances in the field. Additionally, it is important to ensure that individuals who use BCI technology have access to education and support to make informed decisions about their use of the technology.

In conclusion, the issue of consent is an important ethical concern in BCI technology. Individuals who use BCI technology must be fully informed of the risks and benefits of the technology, and their consent must be obtained in a way that is free from coercion or undue influence. Additionally, careful consideration must be given to the issue of cognitive consent for individuals who may lack the capacity to provide informed consent. The establishment of clear guidelines and regulations for obtaining consent is essential to ensure that the rights of individuals who use BCI technology are protected.

Military and Law Enforcement Applications

BCI technology has the potential to revolutionize the capabilities of soldiers and law enforcement officers in high-stress situations. However, the use of this technology in military and law enforcement contexts raises a range of ethical concerns that must be addressed. One of the main concerns is the use of BCI technology to control weapons or equipment with one's thoughts, which could lead to unintended harm or violations of ethical and legal norms.

In addition, there is a risk of misuse or abuse of BCI technology in these contexts, particularly in situations where there is a lack of oversight or accountability. This could result in the escalation of violence and conflict, potentially endangering human life and wellbeing. Moreover, the use of BCI technology in these contexts could lead to an arms race between different countries or law enforcement agencies seeking to gain a competitive advantage.

To address these ethical concerns, it is essential to establish clear guidelines and regulations for the use of BCI technology in military and law enforcement applications. These guidelines should be based on a thorough understanding of the potential risks and benefits of the technology and should be regularly reviewed and updated to reflect advances in the field. Furthermore, adequate training and supervision of individuals using BCI technology in these contexts must be provided, and there should be appropriate oversight and accountability to prevent misuse or abuse.

In conclusion, the use of BCI technology in military and law enforcement contexts holds great potential but must be approached with caution and careful consideration of its ethical implications. By establishing clear guidelines and regulations, providing proper training and supervision, and ensuring accountability and oversight, we can mitigate the risks and ensure that the use of BCI technology in these contexts is safe, effective, and ethically responsible.

Social Implications

BCI technology has the potential to bring about significant changes in the way we interact with technology and with each other. However, these changes may come at a cost, particularly in terms of social and interpersonal relationships. One of the concerns is that BCI technology could lead to a world where people become increasingly reliant on their devices and the internet for communication and social connection, potentially at the expense of face-to-face interactions and relationships. This could have profound social and psychological implications.

Another important consideration is the potential for BCI technology to exacerbate existing social and economic inequalities. If BCI technology becomes widely adopted, those with access to it may have a significant advantage over those without, particularly in areas such as education and employment. This could further entrench existing inequalities and make it even more difficult for individuals from disadvantaged backgrounds to succeed. It is important to ensure that access to BCI technology is not restricted to a privileged few.

Furthermore, the widespread use of BCI technology could have broader societal implications, including the creation of new forms of inequality and social stratification. Individuals with access to the latest and most advanced BCI technology may be able to achieve greater levels of success and power, while those without access may be left behind. There is also the concern that the use of BCI technology could lead to increased monitoring and tracking, raising concerns about privacy and autonomy.

To address these social implications, it is crucial to carefully consider the potential impacts of BCI technology on society as a whole. This involves identifying and mitigating potential negative consequences and ensuring that access to BCI technology is equitable. Promoting public education and awareness about the potential benefits and risks of BCI technology is also essential.

In conclusion, while BCI technology has the potential to bring about significant positive changes, it also has important social implications that must be carefully considered. By identifying potential negative consequences and promoting equitable access to BCI technology, we can work to ensure that it is used in a way that benefits society as a whole, rather than exacerbating existing inequalities and social stratification.

Promoting Responsible Use of BCI Technology

BCI technology has enormous potential to benefit society, but its potential for misuse and harm should not be overlooked. Therefore, promoting responsible use of BCI technology is essential, particularly in areas that have significant ethical and social implications.

To achieve this, it is important to develop guidelines and regulations that protect privacy, ensure informed consent, and promote ethical use. Regulations can be put in place to prevent unauthorized access to an individual's thoughts, feelings, or intentions, and to ensure that individuals give informed consent before any BCI technology is used on them. In addition, guidelines and regulations can be established for the use of BCI technology in military and law enforcement contexts, to ensure that it is consistent with ethical principles and does not violate human rights.

Another crucial aspect of promoting responsible use of BCI technology is through public education and awareness. Many individuals may not fully understand the potential risks and benefits of BCI technology, and may not be aware of the ethical considerations involved. By promoting public education and awareness, individuals and organizations can make more informed decisions about the use of BCI technology. This can include educational programs and materials that highlight the potential benefits and risks of BCI technology, as well as its ethical and social implications.

Furthermore, it is important to encourage individuals and organizations to use BCI technology in ways that promote human flourishing. BCI technology has the potential to improve many aspects of human life, from healthcare to education to entertainment. By promoting the use of BCI technology in ways that enhance human well-being, we can ensure that it is a force for good in society. For example, BCI technology can be used to help individuals with disabilities to better control their environment and communicate, improving their quality of life. In education, BCI technology can be used to create more engaging and interactive learning experiences, improving learning outcomes.

In conclusion, responsible use of BCI technology is essential to ensure that it benefits society as a whole. This can be achieved through the development of guidelines and regulations that protect privacy, ensure informed consent, and promote ethical use, as well as through public education and awareness about the potential risks and benefits of BCI technology. By encouraging individuals and organizations to use BCI technology in ways that promote human flourishing, we can work towards a future in which this technology is used to improve the well-being of all.

Conclusion

Brain-Computer Interfaces (BCI) technology is a rapidly advancing field that holds immense promise in terms of transforming the way we interact with our environment. This technology enables individuals to control devices using their thoughts and emotions, which has the potential to enhance the quality of life for people with disabilities and improve learning outcomes in educational settings. Additionally, BCI technology has the potential to revolutionize fields such as entertainment and gaming, creating more engaging and interactive experiences for users.

Despite its potential benefits, the development of BCI technology also raises significant ethical and social concerns that must be addressed. One of the most pressing ethical implications of BCI technology is the issue of privacy. BCI technology involves accessing and interpreting an individual's thoughts and emotions, which can raise concerns about the protection of personal information. To ensure the responsible use of this technology, regulations and guidelines must be developed that protect the privacy of individuals using BCI technology and prevent unauthorized access to their thoughts and feelings.

Another critical ethical consideration when it comes to BCI technology is informed consent. Individuals must be fully informed of the potential risks and benefits of using BCI technology before they consent to its use. Therefore, it is essential to ensure that informed consent is obtained before any BCI technology is used on an individual. This will help prevent the misuse of the technology and ensure that individuals are aware of the ethical implications of using it.

In addition to privacy and consent, the use of BCI technology in military and law enforcement contexts raises ethical concerns related to human rights. To ensure that the use of BCI technology in these contexts is consistent with ethical principles and does not violate human rights, guidelines and regulations must be established. It is essential to ensure that the use of BCI technology in these contexts does not lead to any infringement on personal freedom and autonomy.

Apart from ethical implications, the development of BCI technology also has important social implications that must be carefully considered. For example, BCI technology has the potential to create new forms of social inequality, particularly for people with disabilities who may not have access to this technology. It is essential to ensure that the development and use of BCI technology is inclusive and accessible to all members of society.

In conclusion, BCI technology holds great promise in terms of enhancing our interaction with the world around us. However, its development also raises significant ethical and social concerns that must be addressed. Promoting the responsible use of BCI technology is essential to ensuring that it benefits society as a whole. By developing regulations and guidelines that protect privacy and ensure informed consent, and by promoting public education and awareness about the potential risks and benefits of BCI technology, we can work towards a future in which this technology is a force for good.

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GIRLS EDUCATION AND WOMEN EMPOWERMENT IN INDIA IN 21 CENTURIES

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ABSTRACT

The definition of Empowerment is the action of empowering someone, getting more power, right to perform more actions and duties, improve social - financial life. The basic definition is to improve own's life from the lower to the upper level. In the 21st century, women's empowerment plays an important role in the development of India. the ratio of Women empowerment is different according to Geographical region(urban/ Ruler), states, financial position, different communities, service sector(private / government), and political sector in India. Girl's Education plays an important role in women's empowerment. Education gives one more confidence, is capable to accept more challenges, try to achieve own goals, education gives one the to think of different ways of problem-solving and gives more skills. Educated women can empower their families and that society, region would progress and automatically India will more develop. This paper discusses the progress of girl's education in India and the progress of women in different regions and sectors in India. Also discusses obstacles in girl's education.

Keywords: India, women empowerment, girl's education

INTRODUCTION

The meaning of empowerment is gaining freedom and power to do what you want or control what happens to you. Women empowerment refer to providing “Women Empowerment” refers to the process of delivering power to women to become free from the control of others, that is, the power to control their own lives and to determine their own conditions. Women's empowerment provides to increase the political, economic and social strength of women.

Nearly half of the Indian population are women. They are divided into urban-rural areas, privileged and unprivileged, and different communities' religions. These factors are affected o progress of women. Every Indian has a dream to India to be in superpower in 21 centuries. To become a superpower each element of our society should contribute to building India up. Women are the most important factor in Indian society. They play an important role in their daily life she is a mother who takes care of her children, a wife who is the backbone of the family, a loving sister and daughter, responsiblecolleague. still, our society considers women in a secondary position. Many of them special from rural and remote areas don't have the right to take an education, they have to marry, give birth to children and do house chore. They don't know their fundamental rights. Indian constitution gives equality and freedom. After the 75th year of Independence, there is discrimination of gender and freedom. Progress of women empowerment in India is possible by providing education to every girl child in society. According to M. Phule, "Education is that which demonstrates the difference between what is good and what is evil".

Education develops the thinking process, accepting challenges in life, building confidence and social-financial awareness. India's first prime minister PT. JAWAHARLAL NEHRU always said “If you educate a many you educate an individual, however, if you educate a woman, you educate a whole family. Women empowered means mother India empowered”.. Indian government always encourage girls' education and women's empowerment, and also implements lots of schemes for girls' education and women's empowerment. it is discussed in the last paragraph of this paper

Literacy

Following table shows the last 100 years literacy rate in India

Year	Persons	Male	Female
1911	5.9	10.6	1.1
1921	7.2	12.2	1.8
1931	9.5	15.6	2.9
1941	16.1	24.9	7.3
1951	16.7	24.9	7.3
1981	36.2	46.9	24.8
1991	52.1	63.9	39.2
2001	62.38	76.0	54.0

2011	74	82.1	65.46
2021	77.70	84.70	70.30

In above data indicates before independence female literacy rate was too poor than males. it is nearly 9 times less than male literacy. With the initiative for girls' education taken by the Indian Government, women's literacy ratio slowly increasing. In 2021 difference between male and female literacy is nearly 15% and the female literacy rate has increased by almost five per cent compared to last year whereas male literacy increased by nearly 2%.

Following table shows state wise Literacy rate in India

States & Union Territories	Male Literacy Rate %	Female Literacy Rate %	Average Literacy Rate %
A&N islands	90.11	81.84	86.27
Andhra Pradesh	73.4	59.5	66.4
Arunachal Pradesh	73.69	59.57	66.95
Assam	90.1	81.2	85.9
Bihar	79.7	60.5	70.9
Chhattisgarh	85.4	68.7	77.3
Chandigarh	90.54	81.38	86.43
Dadra and Nagar Haveli	86.46	65.93	77.65
Daman & Diu	91.48	79.59	87.07
Delhi	93.7	82.4	88.7
Goa	92.81	81.84	87.4
Gujarat	89.5	74.8	82.4
Haryana	88	71.3	80.4
Himachal Pradesh	92.9	80.5	86.6
Jammu & Kashmir	85.7	68	77.3
Jharkhand	83	64.7	74.3
Karnataka	83.4	70.5	77.2
Kerala	97.4	95.2	96.2
Lakshadweep	96.11	88.25	92.28
Madhya Pradesh	81.2	65.5	73.7
Maharashtra	90.7	78.4	84.8
Manipur	86.49	73.17	79.85
Meghalaya	77.17	73.78	75.48
Mizoram	93.72	89.4	91.58
Nagaland	83.29	76.69	80.11
Odisha	84	70.3	77.3
Puducherry	92.12	81.22	86.55
Punjab	88.5	78.5	83.7
Rajasthan	80.8	57.6	69.7
Sikkim	87.29	76.43	82.2
Tamil Nadu	87.9	77.9	82.9
Telangana	80.5	65.1	72.8
Tripura	92.18	83.15	87.75
Uttarakhand	94.3	80.7	87.6
Uttar Pradesh	81.8	63.4	73.0
West Bengal	84.8	76.1	80.5
All-India	84.7	70.3	77.7

(Source: Survey by National Statistical Office (NSO). *UTs & NE States based on 2011 Census)

According to National Family Health Survey (NFHS-5), 2019-21 male literacy at the India level stands at 84.4% & female literacy stands at 71.5%. The male Female gap at the all-India level is 12.9 percentage points with male literacy. The male Female gap at the all-India level is 12.9%. Kerala has the highest national level of literacy. Here the gap between males and females is only 2.2% is the smallest gap in all of India whereas in Rajasthan, the gap has the highest gap its 23%

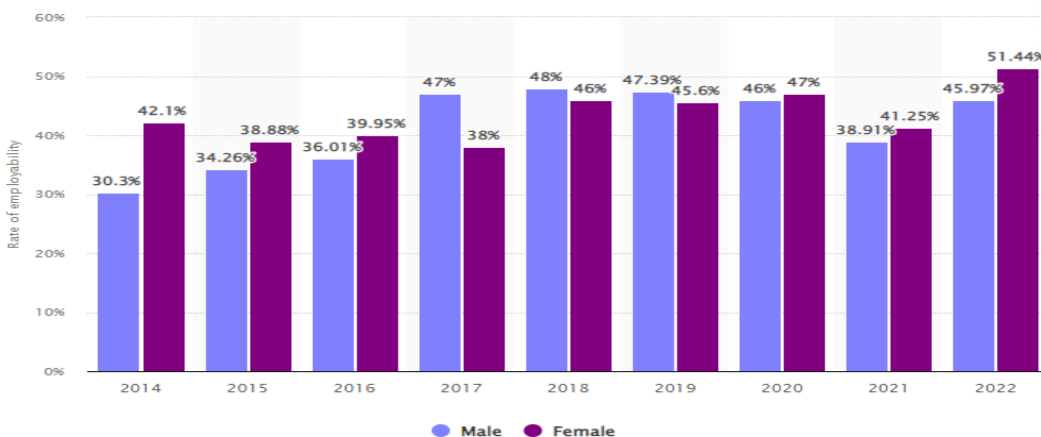
Obstacles in Girl’s Education

1. Gender discrimination is an important obstacle in girls' education in India.
2. Girls have secondary in the family as well as society. women were considered only housewives and better to live in the house.
3. Child marriage is one more obstacle to a girl’s education.
4. In remote and rural areas educational facilities are not developed condition. Many villages don’t have primary schools. Educational environment and awareness are lacking in many areas and societies of India

Employment

Both earning and education are important factors in women's empowerment. If she is earning but not educated then it might that she is an unskilled worker. Or she is educated but not earning. In both cases, she is not empowered. Education and earning are two sides of a coin., both of these give confidence, better life.

The following diagram shows the rate of employability gender-wise across India.



According to this data gap in employability between males and female are decreased. In 2022 employability of females is more than males.it is a positive sign.

Women Employees in Different Sectors

The highest number of women employees is in the manufacturing industry. As per Hurun's list released on December 22; Tata Consultancy Services (TCS) has the highest number of women employees. There are 2,10,000 women working with TCS, Other IT majors Infosys, Wipro, and HCL Technologies have also been ranked second, third and fourth respectively in the list in terms of the number of women employees.

As per Hurun List, the following table shows the Top women employers in India

Company	No. of women employees	Women employees percentage in the workforce
Tata Consultancy Services	2,10,000	35%
Infosys	1,24,498	40%
Wipro	88,946	36%
HCL Technologies	62,780	28%
Reliance Industries	62,560	18%
Motherson Sumi Systems	52,501	41%
Tech Mahindra	42,774	34%
ICICI Bank	32,697	31%
HDFC Bank	22,750	16%
Page Industries	22,631	74%

(Source: 2022 Burgundy Private Hurun India 500 report)

The list shows that there are the highest 74% of women employments in innerwear and socks manufacturing Page Industry. Lowest 16% and 18% respectively in the well-known Bank HDFC and Top of industry chain

Reliance. The reliance industry is one of the top most industry in India. but women employees ratio in this industry is negligible

Education sector there are 42% of women employed, which is nearly equal to male employees, but still, there is a gender gap remains. Many women in India prefer jobs in the education sector. Women can handle children better than men. Most of the pre-primary school teachers are women.

In Indian Administrative Services (IAS) there are only 13% of women in IAS offices. This service takes lots of patience and consumes time for preparations for examination, women in India have less time for education as compared to men. The share of women legislators in the Lok Sabha peaking at 15.03% as of April 2022. The current Lok Sabha has 81 women as MPs from a 100cr population. There is only a 33% reservation for women in parliamentary and state assembly elections. As per the population of India, women's contributions to Political Leaders and IAS officers are negligible.

According to the Ministry of Defence posted on 17 March 23, there are 7093 women serving in in Indian Army

Indian Government Schemes for Girl's Education and Women Empowerment

1. Beti Bachao Beti Padhao - this scheme is to increase girl's birth ratio and awareness of girl's education
2. Sakhi Niwas-Working Women Hostel: e scheme is to promote the availability of safe and conveniently located accommodation for working women, with daycare facilities for their children.
3. 'Mission Shakti': t the Government of India has launched 'Mission Shakti' - an integrated women empowerment programme as an umbrella scheme for the safety, security and empowerment of women for implementation during the 15'h Finance Commission period 2021-22 to 2025-26.
4. Nirbhaya fund-Violence and abuse against women and girls is frequent on streets, in public transportation and in other public places. Such occurrences restrict women's right to mobility, discouraging their freedom to walk freely and move in public spaces of their choice. the Government has set up a dedicated fund – Nirbhaya Fund – which can be utilized for projects specifically designed to improve the safety and security of women.

CONCLUSION

Considering the period of 75 years of independence, there is definitely progress in women empowerment and girl child. Educated women have occupied good positions in well-known organisations. However, there is still a need to change the mentality of Indian society to give secondary positions to women.

SUGGESTIONS

1. More focus on girl's education and skill development
2. Closing the gender gap in education at all levels;
3. Increasing women's share of wage employment in the non-agricultural sector; and increasing the proportion of seats in national and state assembly
4. Change the mentality of both males and females about empowerment

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GLOBAL ENVIRONMENT AND HEALTH-CHALLENGES AND SOLUTIONS FOR SUSTAINABLE DEVELOPMENT: DIGITIZATION OF INFRASTRUCTURE

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ABSTRACT

Today's dynamic and ultra-competitive business landscape has highlighted the need for companies to equip themselves with digital infrastructure (DI). Gone are the days when this innovation was not a priority for businesses. Companies are now leveraging DI to improve their operations, increase profitability, reduce cost, enhance security, deliver superior customer experience, and maintain a competitive advantage in their industry.

The digitalization of infrastructure refers to the process of capturing, documenting, integrating, and analysing infrastructure digital data across the total life history of a given facility to maximize its long-term sustainability and minimize its total life-cycle cost.

Keywords: Areas of DI, Core elements of DI, Components of DI, Approches

INTRODUCTION

Nowadays, every industry across the globe is facing a disruptive transformation enabled by digitalization processes. Also, the industry of infrastructures, such as telecom, energy, transportation, and water systems, will be reshaped by the digitalization of physical assets mainly enabled by IoT technologies. An outstanding role in this scenario will be played by digital platforms, which will mediate the provisioning of services based on infrastructure. This process can revolutionize the industry-changing business models, unlocking great opportunities and posing complex challenges.

OBJECTIVE OF STUDY

An optimized, cloud-based digital infrastructure connects every aspect of your company to ensure data flows in real time with consistency between departments and staff. This makes communication seamless and increases the momentum your business has to create products, serve customers, and grow.

The 4 Areas of Digital Transformation

If an organization planning to embark on a digital transformation project, then there are four main areas they should consider:

1. Process Transformation

Business process transformation is a strategic initiative aimed at improving the efficiency and effectiveness of a company's operations. It involves a thorough review of existing processes and systems, with the goal of identifying areas for improvement and making changes to better achieve the company's goals.

Process transformation entails modifying the elements of a business's processes in order to achieve new goals. Most companies engage in a business process transformation when they require a radical update. Undergoing such a transformation will modernize an organization's processes, integrate new technology, save money, and better incorporate core systems.

Important Steps in Business Process Transformation

Business process transformation follows similar steps to business process management but attempts to make bigger and more drastic changes. Some steps to take when it comes to process transformation include:

Identifying the Goals of the Digital Transformation

Is the company primarily trying to upgrade systems? Incorporate new technology? Adapt processes to a new organizational structure? What has caused the need? The first step is to understand the reasons for the transformation. This could be due to the need to upgrade systems, incorporate new technology, adapt to a new organizational structure, or other reasons. It is important to have a clear understanding of the objectives of the transformation in order to ensure that the right changes are made.

Establishing Baseline Metrics

In order to measure the success of the transformation, it is important to have a clear set of metrics to track. Organizations should collect the data needed to show that the business process transformation will be a success. This should include cost, time, number of errors, and other metrics that can be measured.

Bringing in all Stakeholders

Business process transformation is not just about changing processes, it is also about involving all stakeholders in the change process. This includes seeking feedback from employees, customers, and other stakeholders on what has worked well in the past and what they expect from the new process.

Mapping Out the Best Scenario

Using a diagramming tool, create a visual representation of the ideal workflow path, including all the human and system tasks that need to be performed. This will help the company understand the full scope of the transformation and identify any potential obstacles or challenges.

Going Live and Monitoring

The process should then be introduced gradually, using small teams being trained on the new process. The progress of the transformation should be closely monitored, and any changes that need to be made should be made quickly in order to ensure success.

2. Business Model Transformation

Many companies are pursuing digital technologies in order to transform their traditional business models. In today's business world, there are numerous examples of this kind of innovation, from Netflix's reinvention of video distribution to Apple's reinvention of music delivery (i-Tunes), to Uber's reinvention of the taxi industry.

These well-known names are not the only companies to incorporate such big changes into their business model. Insurance companies like Allstate and Metromile are using data and analytics to un-bundle insurance contracts and charge customers by-the-mile—a wholesale change to the auto insurance business model.

By reinventing and adding to their current model for success, corporations can achieve a renovation that leads to significant new opportunities for growth. This is why more companies should be trying to follow a similar path.

3. Domain Transformation

An area that doesn't receive a large amount of attention, but which has proven itself to have enormous potential, is domain transformation. New technologies have the ability to redefine products and services, blur industry boundaries, and foster opportunities for non-traditional competitors. This form of wholesale transformation offers incredible opportunities for businesses to create new value.

An excellent example of how domain transformation works is the case of the online retailer, Amazon, which expanded into a new market domain with the launch of Amazon Web Services (AWS). Currently, AWS is the largest cloud computing/infrastructure service provider in the world, in a sector that was previously dominated by high-profile behemoths Microsoft and IBM.

While it may not have appeared to be an obvious play by Amazon, its move into providing cloud services saw the online retailer leveraging capabilities and services it was already using. For example, it had already developed massive storage capabilities as it sought to underpin its global business while at the same time it provided key computing services to start-ups and other growing businesses that were part of the Amazon family. So all the capability was there, it just required the vision and confidence to make the move into the cloud space.

All businesses undergoing a digital transformation should be mindful of the new opportunities for domain transformation that present themselves with the incorporation of new technology.

4. Cultural/Organisational Digital Transformation

A successful digital transformation demands more than just updating technology or redesigning products. If an organization fails to align its digital transformation efforts with its internal values and behaviors it can have a knock-on effect on an organization's culture.

Negative repercussions range from slow adoption of digital technologies to loss of market competitiveness and inevitable failure of the initiative and lost productivity and revenue. On the other hand, a comprehensive and collaborative effort can help shift the culture to understand, embrace, and advance digital transformation.

Leaders should formulate a clear vision of the transformation and effectively communicate it throughout the organization on an ongoing basis. They need to be clear about what the smart risks are and why they're worth taking.

6 Components of Digital Transformation

Innovation

Being innovative isn't easy, but at Hitachi we have been an innovation partner for years, helping companies be more creative through customized automation tools and solutions. On a technology level, we have to stay ahead of our customers – so we are constantly implementing new technologies, building new products and solutions, and training people how to use them. By keeping on the leading edge, we are able to guide customers on their path to technology modernization and digital transformation. From there, customers are able to leverage our tried and true platforms and methodologies to tailor and extend the value of our solutions and innovate on their own.

Collaboration

Ensuring you have a connected environment empowers employees, optimizes productivity and processes, and enhances teamwork. You shouldn't have to wait a week to hear via email what a customer thinks of a tool or how employees are responding to a new business process? That's why Hitachi Solutions believes in the continuous feedback loop; a framework where open communication is prioritized, employees get faster results, and companies promote a more collaborative environment. To achieve that level of collaboration, we build, and businesses implement, solutions that enable the continuous loop. When companies prioritize a culture that fosters talent, communication, and innovation, the result is almost always improved collaboration.

Experience

The question most companies face today – the factor driving a lot of digital transformation – is how do you thrive in such a fast-paced marketplace? Customers are always going to have options, but your experience is what becomes the differentiating factor to your target audience. At Hitachi Solutions, we have to identify and maximize what it is that you do better than all of your competitors. It can't be a process where we get an understanding of your market and tell you what to do; our guidance has to be actionable enterprise-wide. Our job is to help you build a system that can be applied to all aspects of your company. All of your projects should encompass the process, and you should get many reusable artifacts that allow you to continuously highlight your experience and differentiate your offerings going forward.

Infrastructure Modernization

Infrastructure modernization allows you to take operational and administrative expenses and repackage those dollars into programs that drive innovation. Every customer we work with at Hitachi Solutions has some form of infrastructure that could be moved to the cloud or modernized to reduce operational spend. Out of all digital transformation processes, this is usually the hardest for companies to adopt because it asks them to look at operations holistically and understand how to break it down.

More importantly, as companies modernize their infrastructure, they are looking for how and where to innovate. Many customers have a substantial investment in on-premise infrastructure, and the question becomes how do they move it into an innovative environment that they don't have to heavily manage? We find that the capability and security you get from platform-as-a-service greatly reduces the work you have to do with on-premise solutions.

Operational Excellence

Everyone uses operational reporting, sales forecasting, and the typical standard metrics when running a business. Creating excellence in those environments means finding solutions that have ecosystem connectivity to the cloud and to capabilities that help companies do advanced things. Using the Microsoft Dynamics platform, and the data that goes along with it, we at Hitachi Solutions have been able to deploy solutions by industry that enable customers to build and scale in the future and improve operational excellence. We have found that our customers don't want just ERP, they also want predictive and data analytics that can generate outcomes in real-time. This helps us ensure that companies are doing it the right way on a platform that enables innovation from the beginning.

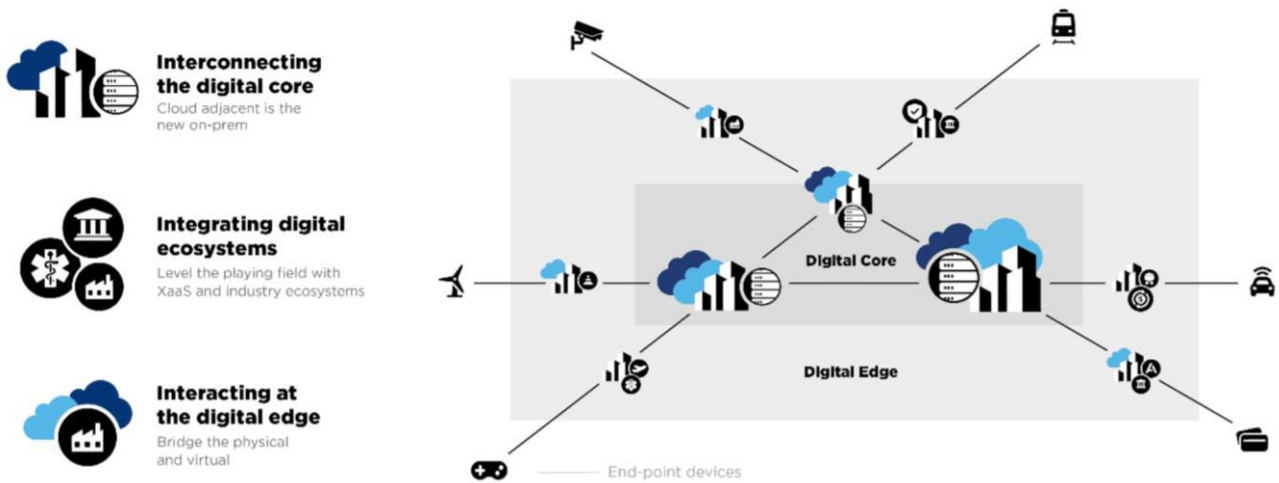
Information And Insights

When creating an innovative environment doing automatic builds and deployments, all of the metrics from that project need to go into the knowledge repository. With a consolidated knowledge repository, all of the systems living in your business ecosystem can interact with and access each other's data, automatically sharing valuable insights with very little additional technical work. When you create an environment where all employees know where vital data lives and how to access it, more people can make informed, data-driven business decisions. In building this repository, we also layer in a cognitive search function on top of the

analytics which allows you to find things that aren't necessarily in standard reporting. By combining search capability and analytics capability, companies can maximize their data.

There are Three Primary Components of Digital Infrastructure.

1. **Digital core** includes corporate network, multicloud and regional back-end data infrastructure locations. Interconnecting the digital core removes traditional technology limitations, making cloud adjacent the new on-premises.
2. **Digital ecosystems** level the playing field as businesses capitalize on digital marketplaces to access exponential capabilities and gain speed by connecting with other industry-specific companies and a broad range of partners. Deploying infrastructure in locations close to specific ecosystem concentrations drives gravity, density and value.
3. **Digital edge** delivers differentiated experiences in proximity to population centers everywhere. Interacting at the digital edge bridges the physical and virtual with locations that are geographically close to front-end revenue and operations centers as well as customers and employees.



Approaches To Sustainability

Beyond social and financial aspects, considered the main aspects of sustainable infrastructure digitalization, we present additional approaches that can be taken into account.

- **Environmental Sustainability:** To reduce the environmental impact of digital infrastructure, we can consider the adoption of energy-efficient technologies to reduce carbon emissions by leveraging renewable energies—for example, smart grids, RF energy harvesting sensors, thermoelectric, and wind sources.
- **Resilience:** The reliability of the systems is an essential factor to consider during the deployment of infrastructure resilient to disruptions, cyber-attacks, and natural disasters. Indeed, adopting digital technologies, such as remote monitoring and predictive analysis, can help identify potential threats before they become major problems.
- **Safety and Security:** Ensuring the safety and security of the systems is another crucial aspect of responding to and detecting potential cyber and physical attacks. For example, smart video surveillance systems, fine-grained access control, and the adoption of the best-practice for communication and system security can help to prevent unauthorized access and detect potential threats.
- **Accessibility:** In a society, this aspect should be taken into account regardless of background, age, or physical ability. Indeed, approaches such as accessible interfaces, voice and face recognition, digital assistants, and artificial intelligence can help individuals with disabilities and constraints to access and use digital infrastructures without effort.
- **Circular Economy:** Mitigating waste and promoting the reuse of recycling materials can help design and operate digital infrastructure. For example, adopting energy-efficient servers and energy-harvesting technologies can be leveraged to reduce energy consumption and waste.

CONCLUSION

The process of digitalization and platformization involving economic and social infrastructures has been outlined through the description of technological enabling factors and the modeling of a probable scenario

where platforms manage a data layer between infrastructure and service providers. Implications have been investigated both from an economic and a social point of view, highlighting the opportunities in terms of efficiency, value creation, and positive externalities but also warning against risks in terms of market failures and negative externalities threatening equity, security, privacy, and even democracy. Finally, possible solutions have been explored to achieve a state of greater financial and social balance: the role of institutional investors and of the State is expected to be crucial to reaching this important goal.

NEED OF FAMILY PLANNING FOR SUSTAINABLE DEVELOPMENT**Prof Laxman Pattar**

Assistant Professor, VPMs R Z Shah College of Arts, Science and Commerce, Mulund East, Mumbai 400081

ABSTRACT

With the long history of family planning now known as family welfare is further urgently needed in India. India is first largest populated country in the world.

Along with all health services India should apply family planning aggressively to solve many other economic and social problems. The attached article for International Conference is explaining the urgency of application of family planning. However people in India are aware and conscious to limit the family like 'Hum Do Hamare Do', concept changed into 'Hum Do Hamare Ek'. The article explains how family planning brooded from 1969 and became a matter of serious consequence all over India in Emergency period from 1975 to 1977 and its culmination in Janata Party Government.

REVIEW LITERATURE: The author himself was an officer in Family Planning Department, Bombay Municipal Corporation Greater Mumbai from 1972 to 1980. He attended numerous lectures of late Dr. D. N. Pai Ex-Director of Family Planning and Maternal Health Greater Mumbai.

Gone thorough with articles/lectures/seminars of Family Planning Association.

Functions organized in Family Planning Hospital F South Ward Municipal Offices Building 3rd floor Parel TT Mumbai 400012.

Family Planning Programs organized in KEM Hospital, Sion Hospital and Cherni Road Chowpati.

Attended Vasectomy Camps in Shivaji Park Mumbai for 8 days in February 1976

OBJECTIVES: The article provides to the history of family planning in Mumbai city.

Enlighten the readers to give knowledge of family planning to solve population problem.

Let us provide a healthy and developed society for future generation.

RECOMMENDATIONS: Readers and general people can attend Municipal Hospitals, Dispensaries and Family Planning Hospital Parel TT Mumbai 400012.

RECOMMENDATIONS:

Lectures of late Dr. D. N. Pai.

Visiting Municipal Hospitals and Clinics to know Spacing Methods and

Permanent Family Planning Methods.

FAMILY PLANNING FOR SUSTAINABLE DEVELOPMENT

A month back I read in the newspapers that India is exceeding China in the population growth. A few months back China was first and India was second in the rank of population. It means India is successful in highest growth of population which is very dangerous for sustainable development.

In this article it is necessary for us to know what family planning is and what is sustainable development?

Family planning is to plan a family with limited number of children and limited members directly related with economic condition of food, shelter and clothing, schooling and giving best possible facilities to the children and all members in each family. The other meaning of family planning is helping couples to have children and that also healthy children. Family Planning was applied about 250 years back in USA and other European countries. But in India it started in 1952 along with the first five year plan as part of Health Ministry. There was a Family Planning Association of India working all over India as a guideline program taking part in Community Development Program (CDP).

More than a decade from 1970 to 1978 Family Planning as a crucial government program worked seriously with the aim of controlling the growing population. During emergency there were forcible sterilization camps did lot of work with many wrongdoings. During this period I was an Extensive Education Officer in Family

Planning, Municipal Corporation Greater Bombay. I actually noticed and learnt that family planning policy should have been little aggressive. But it faded away in 1979 when Janata Party Government was established by Shri Moorarjee Desai (Prime Minister of India) Shri Raj Narian was the health and family planning minister. The most shocking order in the way of population control was drastically changed as family planning into family welfare and all population control methods, were discouraged. From 1972 to 1979 people were used to take spacing methods like condom, pills, jelly and IUD (loop). Now also it remained as Family Welfare without doing much of the welfare. In Mumbai city the Special Officer and Director of Family Planning late Dr. D. N. Pai, the great personality worked day and night in Mumbai city in organizing family planning programs and maternal health and organizing moving dispensaries, and 52 vasectomy centres on Mumbai suburban railway stations and in all hospitals, maternity homes and dispensaries in the entire Mumbai city.

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Now realizing the meaning of most talked topic 'Sustainable Development', means, it is the balanced development in the world society. Taking care of the present and future society of balancing not only human society, but taking care of nature and all species in the nature. But in few decades trees were cut, forests were destroyed, many roads and rail tracks were put all over India at the cost of sustainable development. I was born in 1952, it is about 60-65 years back I realized as a child and now also I seriously think of the Indian situation, one way in one way improved, the other way destroyed. It was horrible situation compared to 6 to 7 decades. It means improvement at the cost of deterioration. There was time that all people were depended upon agriculture and agriculture related works. There was poverty, no money with the people, health issues but whatever things happened people were self-satisfied. Always water was the main problem. No potable water. Rain water was the best means during 3-4 months in rainy season. People were used to go 3-5 kms to fetch water in different direction of the villages and sometimes going to neighboring villages. As such there was no sustainable development. Large number were suffering from scabies, typhoid, TB, maternal deaths etc. Governments worked to spread DDT, malaria injections etc. Birth rate was more and death rate was also more. People never thought of how many children should be in the family. It was near about dozen and more than dozen. We were 11 children in the family, some died and some survived and I am also one of them submitting this paper. After death hundreds of people used to cry for 8-10 days frequently remembering the dead person. But still there was sustainable development, because all were taking care of all at least for food supply. All brothers and sisters were taking care of their smaller ones. That was love and affection and sustainable development. But today all family members are scattered in different directions. Artificially all are on mobile calls and wats app calls. Artificial Intelligence has improved and increased quantitatively without much social and cultural development. There is lot of disturbance in families and governments and fraud, corruption in various institutions. Is it sustainable development? Doubtful.

Sustainable development is disturbed beyond our imagination. All insects were killed, all trees were cut, and the entire nature is disturbed beyond our thinking. Reconstruction and revivalism is not possible. There is no question of Renaissance. There is possibility of resurrection if any natural calamity happens, as we remember Thomas Malthus. He said 'Nature has its own control.

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Today sustainable development is the business of the parents, morning to evening caring of their one or two children. Paying donation and fees to KG to PG making children dependent. I do remember my childhood or childhood of all in India that nobody cared children as it is done today. Whole day we were in school, agricultural fields, swimming in tanks and rivers, playing stones, mud, sticks, marbles made by ourselves. Climbing trees, running, jumping without anyone's' guidance. Villages, families and schools were having one aim. Learning sustainable development. No place for conflicting and competition. But surviving only. Here I do remember Prof. John Dewey 20th century education from USA, emphasized always 'to see, do and learn and help others.

In this decade we notice government developmental programs brought great changes in the economic development and growth of GDP. Great! Hats off to the Prime Ministers, Chief Ministers and Officers. Also in all nations there is development, development and development. But is there possibility of sustainable development? Is it possible to grow trees, plants, grass, flowers and fruits in the world? Is it possible to have all species back? Insects, animals? Oh no! We can have dams, roads, tracts, industries, factories at the cost of the nature. These all things are not helping for sustainable development. But humanity is discovering alternatives sources at the loss of different resources. Scientists are engaged in inventions of using nuclear power to dig the earth for water, mineral resources for sustainable development. We must cross question ourselves that motor is better or bullock cart is better. I prefer bullock cart. Slow and steady life.

Sustainable development is continuous, whereas, growth of population in India is with great speed. Application of family planning is a great task before various governments. The period from 1969 to 1977 (including emergency) was an epoch-making period in health and family planning department. During emergency some Congress leaders and ministers like Mr. Sanjay Gandhi, Siddharth Shankar Ray, Bansilal, V.C. Shukla and Ruksana Sultana sterilization camps were organized and sometime forcible sterilizations were operated in UP, MP and Bihar and Rajasthan. This period worked in increasing number of sterilizations and use of spacing methods like FL/Condom, Oral Pills/Mala D, Jelly, IUD/Loop/Copper T were popular and large number of couples used them.

In city of Mumbai, the department of family welfare made a huge progress by organizing sterilization camps on railway stations and crowded roads and streets. The organizations were

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Taken place under the able administration of gigantic personality of Dr. D. N. Pai who was HOD in PSM Department in KEM Medical College who was the Special Officer of Maternal Health and Family Planning, Municipal Corporation Greater Mumbai.

From 1979 till today family welfare is part of health department, as such no serious campaigns are organized. But people are greatly aware of drawbacks of more children in every family. In India all families are expecting birth of a male child. But unfortunately, in some couples have only female children are expecting male child. After 2-3 female children, the couples stop having children by tubectomy, a permanent method of not have children. Otherwise, all couples in rural as well as urban society are not going for more than 2 children. Then why there is high density of population?

The Reasons are Real and Fascinating.

Let us conclude the situation in China regarding population growth and control. Ever from 1949 when China became independent, she adopted one-child norm in each family. So, they established stability in population movement. A year back, China went for two-child norm. From 1979 till this date, government of India does not apply any compulsion in families to have a smaller number of children or people go for late marriage. Education and employment are the basic motivating and good ideas for people to go for late marriage. In cities men and women are aware of the importance of late marriage and having 1-2 children. First child is expected and invited by all family members, neighbors and the entire society. Modern couples are not interested to have not more than two children. Then why India is first and China is second. The reasons are real and fascinating.

1. The modern couples are interested in 1-2 children
2. Modern people are more interested in maintaining good health.
3. Modern Indian women are conscious about economic condition.
4. In urban society housing and accommodation problem insists to have smaller families.
5. It is difficult to provide health and education facilities to all children.
6. Other problems like self-protection and self-sustainability.

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The most important reason is that, in India eligible and qualified couples for marriage are increasing every year. Secondly all deliveries are successful and mortality rate is decreasing. Birth rate is balancing. We cannot give any particular reason for increase in population. Already the existing population is high and rural and urban population is imbalanced. Rural poverty pushing many youngsters to cities as there are many employment opportunities more. Agriculture is the most important occupation of rural people but agriculture is suffering due to lack of workers for agricultural jobs in villages. Tribals are also vanishing as they are also moving towards cities for livelihood. Urban population is increasing compared to rural and tribal. There is also imbalance in south and north Indian population. Some states are highly populated, such as, Uttar Pradesh, Bihar, Rajasthan and Maharashtra. South Indian states are balancing the growth of population.

In conclusion, family planning is urgently needed on warpath to control growing population. It may be effective after 20 to 25 years in future. Every minute 55 children are born with no death rates. So population is growing and growing causing all other social and economic problems.

FOOD QUALITY AND ITS IMPACT ON HUMAN HEALTH: UNDERSTANDING THE IMPORTANCE AND EXPLORING SOLUTIONS

Mr. Nitin K Patil¹ and Mr. Yuvraj Sahebrao Wagh²¹Hod, Physics and ²Assistant Professor, VPM's R Z Shah College, Mulund (E)**ABSTRACT**

This paper talks about how the quality of the food we eat affects our health, what causes poor food quality, and how we can make it better. Eating low-quality food can lead to malnutrition, growth problems, and some diseases like obesity, diabetes, and heart problems. The way we produce and make our food has changed a lot over time, and this has raised concerns about how safe and healthy it is. We use pesticides, chemicals, and other things that may not be good for us, and using too many antibiotics on animals can make bacteria resistant to them. That's why we need to study how food quality affects our health and how we can make it better.

To improve food quality, we need to look at everything, from how we grow and make it to how we eat it. Some things we can do include supporting organic farming, using fewer antibiotics on animals, having stronger rules and tests for food safety, and teaching people how to eat better and get healthy food in schools and neighbourhoods. Everyone has a role to play, including people who make the rules, people who grow and sell food, and all of us who eat it. By working together, we can make sure we have food that's safe, healthy, and good for us.

INTRODUCTION

World Food Safety Day is celebrated annually on 7 June every year to draw attention and mobilize action to prevent, detect and manage foodborne risks and improve human health. Last year WHO announces the theme for the year 2022 World Food Safety Day, "Safer food, better health" and launches the campaign organizing to inspire global participation. Dr. Yamamoto, Assistant Director-General of WHO. In the world one in ten people are dying because of food contamination. This is affecting each country. As per the discussion on food safety by WHO it was clearly mentioned that government of nations are not paying much attention on food safety.

This year 2023 WHO announces the World Food Safety Day theme as is "Food Standards Save Lives". This day aims to increase awareness about food safety to minimize health concerns and risks posed by food borne diseases.

Basically food is a crucial part of human life, providing us with energy and nutrients that are essential for our health and well-being. However, concerns have been raised about the quality of the food that we eat and how it affects our health. Some chronic diseases like heart disease, diabetes, cancer etc have been linked to poor diet and nutrition, which is why we need to study the connection between food quality and human health.

Food quality is about the characteristics of food that affect how safe, nutritious, and good it is to eat. Things like how and where food is produced, harvested, processed, and stored, this can affect its quality and how it impacts our health. Poor food quality can lead to food poisoning, exposure to harmful chemicals, and not getting the right nutrients we need.

To improve food quality, we can start by using farming and harvesting practices that are sustainable and ethical. This means taking care of the soil, protecting biodiversity, and treating animals well. This helps make sure that the food we eat is safe, nutritious, and good for the environment. We can also use proper methods for storing, processing, and transporting food to keep it fresh and healthy.

Another way to improve food quality is to educate people about how to make good choices when it comes to food. We can help people understand the nutritional value and safety of different kinds of food and give them tips on how to choose and prepare food in a way that's healthy and safe. This can all help us have better quality food that keeps us healthy and feeling good.

NEED FOR STUDY

The food we eat needs to be of good quality to give our bodies the nutrients required by the human body. Unfortunately, there are concerns that the way we produce food now is not safe or healthy. We use things like pesticides and chemicals that can harm our health, and giving too many antibiotics to animals can create bacteria that are resistant to medicine. Due to eating habits of human the mortality rate is increased. Because of today's lifestyle sometimes we need to eat food which is ultra-processed foods, which are typically high in added sugars, salt, and unhealthy fats. Consumption of such type of food makes impact on our health^[1].

That's why we need to study how food quality affects our health and find ways to make it better.

Eating unhealthy food that has too much sugar, salt, or bad fats is a big problem, and it can cause many health problems like heart disease, cancer, and obesity. We need to figure out what's making our food not so good and find ways to make it better.

To make food better, we can use farming and harvesting practices that are good for the environment and treat animals well. We can also use good methods for storing and moving food around, so it stays fresh and healthy. We can also teach people about the food they eat and what's good for them. By doing all these things, we can have better quality food that's safe, healthy, and delicious.

IMPACT ON HEALTH:

The food we eat has a major impact on our health. Poor quality food can lead to malnutrition, which causes various health problems, including stunted growth and impaired cognitive development. Consuming unhealthy foods high in sugar, salt, and saturated fats can also increase the risk of chronic diseases such as obesity, type 2 diabetes, cardiovascular diseases^[2], metabolic syndrome [6] etc.

Studies done by Edward Yu and his colleagues, analyzed 52 observational studies on dietary pattern and health outcomes, including cancer, cardiovascular disease, and type 2 diabetes. The study found that a healthy dietary pattern, characterized by a high intake of fruits, vegetables, whole grains, and fish, was associated with a reduced risk of chronic diseases. Conversely, an unhealthy dietary pattern, characterized by a high intake of processed foods, red and processed meat, and sugary drinks, was associated with an increased risk of chronic diseases.

A healthy diet rich in fruits, vegetables, whole grains and low-fat dairy can help to reduce your risk of heart disease by maintaining blood pressure and cholesterol levels. High blood pressure and cholesterol can be a symptom of too much salt and saturated fats in your diet. Eating a portion of oily fish - such as salmon and trout - each week can also help to lower your risk of developing heart disease. The high levels of omega-3 fatty acids in oily fish are good for heart health.

Additionally, exposure to harmful chemicals and contaminants in food can cause cancer, neurological disorders, and other health problems. On the other hand, consuming a balanced diet rich in fresh fruits, vegetables, whole grains, and lean proteins can reduce the risk of chronic diseases and improve overall health^[3].

As the current global food system is not sustainable and it is contributing to change in climate, degradation of land, loss of biodiversity etc. This is making impact on health of human being like nutrition problem, diseases, increase in weight^[4].

Numerous studies on milk products have shown negative associations with the risk of type 2 diabetes.⁸ This study examined the different facts that (a) milk products were suggested to have an insulinotropic effect in single meals, (b) fatty acids were found to improve insulin sensitivity, and (c) diets rich in protein, calcium, and other minerals were found to reduce blood pressure and body weight/fat and also found to have an effect on blood cholesterol^[7].

REMEDIES:

To make food better, we need to use sustainable and ethical farming practices that are good for the soil, animals, and the environment. This means using fewer harmful chemicals and antibiotics and promoting biodiversity. We can also support local food systems to reduce the carbon footprint of food transportation and help local businesses. Reducing food waste is also important for improving food quality. We can make sure that more nutritious food is available for people to eat while also helping the environment.

Technology can also help improve food quality. We can use better ways to process and preserve food to keep it fresh and healthy. We can also use genetic engineering and biotechnology to improve the nutrition of crops and reduce the use of harmful chemicals. Improving food quality needs everyone to work together. We need to use sustainable farming practices, follow food safety regulations, reduce food waste, eat healthier, and use technology to make better food. By doing this, we can make sure that we have food that is safe, healthy, and delicious.

Maintaining a healthy weight and eating a balanced diet that's low in saturated fat and high in fibre found in whole grains can help to reduce your risk of developing type 2 diabetes.

If we increase food like high intake of fruits, vegetables, whole grains, legumes, fish, and healthy fats, such as olive oil. This type of food reduces the risk of cardiovascular disease, as well as improved cholesterol levels, blood pressure, and blood sugar control ^[5].

CONCLUSION

The food we eat has a big impact on our health, and eating poor-quality food can cause many health problems like malnutrition, stunted growth, and chronic diseases like obesity and diabetes. This is why it's important to study how food quality affects our health and find ways to make it better.

To make food better, we need to do many things like using organic farming practices, reducing the use of harmful chemicals and antibiotics, making sure food is safe to eat, promoting healthy eating habits, and teaching people about balanced diets. By doing all these things, we can make sure that the food we eat is safe, nutritious, and of high quality.

Having good quality food is very important for our health and well-being, and we need to work together to make sure we have access to safe, nutritious

A well-balanced diet provides all of the:

- Energy you need to keep active throughout the day
- Nutrients you need for growth and repair, helping you to stay strong and healthy and help to prevent diet-related illness, such as some cancers

Keeping active and eating a healthy balanced diet can also help you to maintain a healthy weight. Deficiencies in some key nutrients - such as vitamin A, B, C and E, and zinc, iron and selenium - can weaken parts of your immune system.

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EDUCATION FOR GIRLS – RURAL AND URBAN AREAS AS A KEY ELEMENT IN DEVELOPMENT OF SOCIETY AND IMPROVING GLOBAL ENVIRONMENT AND HEALTH**Ms. Laxmi Shahapure**

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ABSTARCT

Female education has been a major focus of attention lately. There has been an enormous surge of interest in the possible injustice to women in the educational system of the world. It is being realised that the development of a society is determined to a great extent by the place which women occupy in it and the part they play in Nation's development.

An educated woman can help to uplift many lives. Therefore, Rural and Urban India both requires to empower women by building education and employment opportunities for them. Allowing women to show up their potential and contribute to the welfare of the nation.

Every day, girls in rural areas face major problems such as gender discrimination, household chores, unsafe environment, poverty, early marriages and lack of toilet facilities. Such problems affect girls' education badly and make their life pathetic.

Urban students typically gain greater overall access to education, receive a higher quality education, and outperform their rural counterparts. This "urban advantage" varies across countries, but is present in both the developed and developing world.

INTRODUCTION

It is rightly said that Educate girls in the family and the whole family will be educated but Girls in the poorest & rural areas face the greatest disadvantages because parents are less educated and therefore may value education less. Rural communities have fewer support systems, so they force girls to work or manage their household chores, which will help them after marriage. let's look at one common Indian proverb, 'raising girls is like watering someone else's lawn. From the start, girl children are seen as burdens rather than blessings, bearers of exorbitant dowries, who will eventually move into the homes of their husbands. Girls are marginalized and are out of school simply because they are girls and it is not the cultural norm. In India, the status of the girl child has been a subject of much discussion, controversy, and debate. There are some overwhelming cultural and economic reasons why female children are not receiving the same medical, emotional and educational attention as their male counterparts. Girls have the same right to education as boys. Educated girls can make informed choices – and from a far better range of options. Girls have the capacity to achieve their goals and create financial freedom for both themselves and their families. Educated Girls are assets to society as they are more innovative and can optimize resources in a better way.

So to break this old frame of mind, we are working for the progress of rural areas where the literacy rate is minimal among women and are actively targeted to improve the situation of women through education. which will impact their lives and bring them valuable members of society.

OBJECTIVES OF THE STUDY

- 1) To examine the status of Girl education in Rural and Urban Area
- 2) To examine the barriers in Girl's education in India
- 3) To study the measures taken by Government of India to improve Girl's education

METHODOLOGY

This research paper is based on a literature review of existing studies and data on the relationship between education for girls in rural and urban areas and its impact on the development of society and global level. The study is descriptive in nature. The literature and data are mainly based on secondary sources, which is collected from various publication, books, magazines, research paper, newspaper and various internet sources.

Limitations of study:

- 1) Research is based on the secondary data only.
- 2) Research is limited to the data collected from books and internet.
- 3) Due to time constraint data is collected from books and internet.

Barriers in Female Education in Rural and Urban India:

There is a gender bias within educational facilities in rural India. Access to education in India faces a lot of challenges. Households in rural India do not give priority and importance to girl children, though this sometimes happens in urban areas as well. They prefer a male child, as he would take the family name to the next generation.

Girls are treated merely as commodities of their in-laws' house. Girls face the challenge of being treated as a liability and a burden for their parents. In rural areas, people have the mindset that there is no point in teaching girls as they have to leave the house someday, and they will not be able to contribute to the economic needs of their house.

There is a restrictive environment for girls in a village. She is curbed from voicing her opinion, asked to avoid conversations with other men, behave well, and learn household work at an early age so that she can be a perfect wife after she is married off. The ideal character and behaviour of a girl in a rural area in India is set to be laid out by society as a whole. Society is so dominant that it can mark one girl godly and the other with a loose character. It is said that 'when you teach a girl, you teach a family', but India seems to be losing this opportunity and continues to focus on gender roles set by society.

Many parents to date are of the view, that educating son is an investment because they still think that sons will take care of them when they will be old. So, if a rural family has to choose between educating a son or a daughter, typically the son will be chosen.

Numerous studies show that illiterate women have high levels of fertility and mortality, poor nutritional status, low earning potential, and little autonomy within the household. A woman's lack of education also has a negative impact on the health and well-being of her children. For instance, a recent survey in India found out that infant mortality is inversely related to mother's educational level.

Education in Urban and Rural Areas

Several educational researchers across the globe have examined the contrast between rural and urban life scenarios. These studies also point out an academic edge that urban students have over their rural counterparts.

They have revealed that urban students often secure better grades than those students from rural regions. The factors that affect performance among rural students are lack of resources and limited opportunities available to them. On the other hand, the outstanding performance of urban students can be associated with better academic infrastructure and access to a wider range of information available across digital platforms.

Several challenges such as poor road connectivity, power shortage, poor internet connectivity, etc. in rural areas of India have amounted to students lagging behind, and are left with limited exposure from the world outside, hurting their knowledge on current affairs as well.

Government Measures in Female Education:

Considering the numerous obstacles that come in the way of a girl child, throughout her life, the government has many schemes in place to make sure that she is given the right opportunity and additional aid to help her progress and succeed in life. Some of the top schemes are given below;

- Beti Bachao Beti Padhao
- Sukanya Samridhi Yojana
- Balika Samridhi Yojana
- Mukhyamantri Rajshri Yojana
- Mukhyamantri Laadli Yojana
- CBSE Udaan Scheme
- National Scheme of Incentives to Girls for Secondary Education
- Mukhyamantri Kanya Suraksha Yojana
- Mazi Kanya Bhagyashree Scheme
- Nanda Devi Kanya Yojana

Beti Bachao Beti Padhao :

Beti Bachao Beti Padhao is a central government scheme that helps girls throughout the nation. The primary purpose of this scheme is to save the child from social problems such as gender-based abortions and advance child education around the country. This program was initially meant for districts considered to have a low sex ratio and successfully extended to other regions of the country. This is essentially an educational programme to help change societal attitudes and does not entail the immediate transfer of funds. The key aims of this child protection scheme include:

- Preventing selective gender abortion
- Ensure infant survival and wellbeing in childhood
- Ensure the child's education and inclusion
- Challenging gender stereotypes and supporting gender equality
- Giving a safe and stable atmosphere to girls
- To endorse the right of girls to inherit property.

Sukanya Samridhi Yojana :

Sukanya Samridhi Yojana Account is a Government of India backed savings scheme designed for parents of girl children. The scheme allows parents to set up a trust for their child's eventual schooling and marriage expenses. It encourages parents to systematically save for their daughter's higher education and marriage so that the perception of a girl child being a burden on her parents is abolished.

All parents and guardians of girl children under the age of 10 can open this account. Only one account per child is allowed. Parents can open up to two accounts for two of their children (exceptions allowed for twins and triplets). The account is portable anywhere in India and can be accessed at any branch of the post office or the bank.

Balika Samridhi Yojana :

The Balika Samridhi Yojana is a scheme similar to the Sukanya Samridhi Yojana. Under the scheme, limited saving opportunities are offered for the parents of the girl child.

- The scheme is available for new born infants only.
- Rs.500 is provided at the time of birth of each girl child.
- While attending school, an annual scholarship of Rs. 300 - Rs. 1000 is provided till the girl child completes her Grade X.
- Maximum age limit for enrolment is 10 years (of the child).
- A household is qualified to enter this scheme for two of their daughters only.
- The depositor should belong to a family that is 'Below Poverty Line'.
- Account can be opened at your nearest bank. Only certain banks are designated to carry out the application process under this programme.

Mukhyamantri Rajshri Yojana :

The Mukhyamantri Rajshri Yojana was launched in Rajasthan. It offers monetary benefits to parents of girl children, starting from their birth till their higher education;

- Rs.2500 is given to the mother at the birth of a girl child
- Once the child completes one year, with all vaccinations done, Rs 2500 is given through a cheque.
- At the time of admission in any public school into grade I, Rs.4000 is paid to the girl child.
- Rs.5000 is paid when the child enters Grade VI
- Rs. 11000 is paid once the girl enters Grade XI

Mukhyamantri Laadli Yojana :

The Mukhyamantri Laadli Yojana is a savings scheme specially designed for parents of a girl child. Under this scheme, an initial deposit of Rs.6000 has to be made into your post office savings account for a fixed tenure of five years. The girl child then receives the following monetary benefits in regular intervals –

- Rs. 2,000 once she enters Grade 6th
- Rs. 4000 once she enters Grade 9th
- Rs. 7,500 once she enters Grade 11th
- Also, a monthly stipend of Rs. 200
- Once she attains 21 years of age, the deposited amount will mature and can be used for her marriage expenses.

Eligibility Criteria

- The applicant must be a permanent resident of the Jharkhand State
- The applicant should belong to a 'Below Poverty Line' family

CBSE Udaan Scheme :

The CBSE Udaan scheme for girls is implemented by the Central Board of Secondary Education, under the Ministry of Human Resources Development, Government of India. The goal of this scheme is to increase the student enrolment of girls in prestigious engineering and technical colleges across India. Students should go to their CBSE school to participate in this programme.

- Offers free course materials/online services, such as video related literature for girl students in the 11th and 12th grades.
- Virtual interaction courses for girl students in the 11th and 12th grades.
- Peer learning and mentoring opportunities for all deserving girl students
- Study helpline resources to clear students' doubts.
- Continuous observation and recording of students' progress.

National Scheme of Incentive to Girls for Secondary Education :

The National Scheme of Incentive to Girls for Secondary Education is a pan India scheme operated by the Department of Education and Education, Ministry of Human Resources Development, Government of India. It is mainly for the benefit of girls in the disadvantaged classes of India. Once a qualifying student has been chosen, Rs. 3000 will be deposited as a fixed deposit on her behalf. This balance can be withdrawn with interest after the pupil has passed the class 10 exam and has reached the age of 18 years.

Mukhyamantri Kanya Suraksha Yojana :

Mukhyamantri Kanya Suraksha Yojana is yet another reward programme introduced by the Bihar state government to reward the parents of every girl child. Under this scheme, an amount of Rs.2000 is released after the birth of a girl child. You can avail this benefit by producing the birth certificate of the girl child.

Mazi Kanya Bhagyashree Scheme :

The Mazi Kanya Bhagyashree scheme was launched in the state of Maharashtra. This scheme provides the following monetary benefits to the mother of a girl child

- The mother will get Rs. 5,000 for the first five years after her daughter's birth
- Rs. 2,500 will be provided per year until she reaches Grade V
- Rs.3000 will be provided per year until she reaches Grade XII
- After the age of 18 years, she will be provided with Rs.1 lakh per year for her education

Nanda Devi Kanya Yojana :

This scheme is specific to the Uttarakhand state. Under the scheme, a fixed deposit of Rs. 1,500 is made in the name of a new born girl child. The principal amount, along with accrued interest is given to the girl child after she attains the age of 18 years and has completed her higher education.

Conclusion:

As far back as 1965, the Indian government agreed to rewrite textbooks so that men and women would not be portrayed in gender-stereotyped roles. However, a study of Indian textbooks done in the 1980s found that men were the main characters in the majority of lessons. In these lessons, men held high-prestige occupations and were portrayed as strong, adventurous and intelligent.

In contrast, when women were included, they were depicted as weak and helpless, often as the victims of abuse and beatings. These depictions are strong barriers for improving women's position in society.

In India, the status of the girl child has been a subject of much discussion, controversy and debate. There are some overwhelming cultural and economic reasons why female children are not receiving the same medical, emotional and educational attention as their male counterparts.

Considering the numerous obstacles that come in the way of a girl child, throughout her life, the government has many schemes in place to make sure that she is given the right opportunity and additional aid to help her progress and succeed in life.

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STUDY THE IMPACT OF E -FACILITIES IN THE MEDICAL FIELD ON INDIVIDUAL

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ABSTRACT

The above mentioned study is carried to analysis the impact of E- Facilities in the Medical Field on Individual. This study will cover limited part of Mumbai as there is a limitation of time. I selected this topic as I felt digitalisation in all sector is now covering medical and health sector which will be helpful in tough time when it's not possible for all individuals to go outside and obtain medical facilities and it also saves time and money. After pandemic and lockdown period, the world turned in to online / digital market to avoid infection from COVID virus. The common use of E – Facilities in the Medical Field includes searching medical knowledge various healthcare resources and services, monitoring quality patient care and improving clinical support. A Research Paper presents the impact of technology in healthcare along with the privacy and security concerns related to technology use in healthcare.

Keywords: Digitization, Healthcare and Medical field

INTRODUCTION

E-health grew out of a need for improved documentation and tracking of patients' health and procedures performed on patients, particularly for reimbursement purposes, such as by insurance companies. Traditionally, health care providers kept paper records on the history and status of their patients. However, rising health care costs and technological advances encouraged the development of electronic tracking systems. As e-health technologies continued to be developed, the field of telemedicine, in which telecommunication technologies are used to provide health care remotely, emerged.



The gap between healthcare delivery and digitization is narrowing daily. Global health systems have continued to evolve, especially in the area of information technology (IT) penetration. In a country like India where 1.6 million people died in 2016 due to poor quality health care, more stakeholders in the health sector are increasingly searching for solutions to address quality and cost issues. Hence the need to adopt digital technologies in health systems to drive enhanced clinical outcomes and improve multi-faceted access and delivery for patients.

The adoption of telemedicine by doctors in India at the peak of the pandemic across the three major regions of India, according to analysts, was 80 percent in North India, 50 percent in the South and West, and 35 percent in the East. Although the country is easing out of the COVID-19 phase, digitization has shown how seamless and convenient healthcare delivery can be. The recent launch of the Ayushman Bharat Digital Mission (ABDM) further gives impetus to the drive for healthcare digitization in India.

By creating a platform for different healthcare stakeholders, the ABDM strives to boost the 4 (four) key scales for measuring healthcare delivery, namely, quality, transparency, accessibility, and affordability. The complexities of medicine make it untenable for different players to work in silos. Hence, it is expected that these digital platforms will provide the needed push and catalyst for the wholesome digital revolution that India needs in its health sector.

Benefits of Digitizing Healthcare

Healthcare digitization brings about many benefits to both patients and healthcare professionals throughout different stages in the patient journey.

In general, a patient's treatment journey consists of the following stages: Diagnosis, making a treatment decision, receiving treatment and monitoring.

1. Improves Accuracy of Diagnosis

The use of digital health technologies has enabled industry professionals to diagnose patients' conditions remotely. Patient information such as their treatment history and list of medications can also be stored, accessed and shared between healthcare professionals in real-time.

This helps to present a clearer and more accurate profile of the patient, thus improving the accuracy of diagnoses and facilitating clinical decisions.

2. Improves Quality of Healthcare

The rise of digital health platforms has made it easier for patients to access medical data and healthcare services. It has also enabled them to monitor and track their conditions remotely, promoting a greater emphasis on self-care and giving them more control over their treatment.

Through digital health platforms, healthcare providers can also offer care in a wide range of applications including therapeutics and acute and chronic diseases. They can detect changes in patients' condition earlier, allowing for a quicker response in the case of an emergency.

3. Improves Access to Healthcare

In Asia, almost 80% of the population resides in rural areas with little to no access to healthcare services. For patients living in these areas, traveling to the city to receive medical care and treatment can be challenging and costly.

Additionally, elderly patients or those with mobility issues may face difficulties accessing healthcare services.

Patients who once faced challenges accessing medical services can now do so from their homes or communities. For example, diagnosis and patient monitoring can be carried out remotely or outside clinical settings.

4. Reduces Cost of Healthcare

According to the World Health Organization, approximately half of the world's population lack access to essential health services due to the costs involved. This includes medical treatment, rehabilitation and prevention.

With the help of digital health technologies such as telemedicine, patients can better understand and monitor their health conditions remotely. This reduces unnecessary and often costly visits to emergency rooms, and even helps them save on transportation costs.

As such, the cost of healthcare for patients and service providers can be reduced. This allows more patients, especially those in low- to middle-income countries, to receive both primary and specialty care services at more affordable prices.

5. Increases Efficiency

The World Health Organization estimates that the world will experience a shortage of 18 million skilled healthcare professionals by 2030. As such, the need for more efficient medical services is essential in easing the burden on existing healthcare providers.

By allowing these professionals full access to patients' medical data and history, they can improve medical outcomes and provide quicker treatment. Moreover, giving patients greater control over their health can reduce the strain on providers and increase treatment efficiency.

Healthcare Digitization around the World

Many countries around the world have begun adopting digital healthcare solutions and technologies to improve the quality of healthcare for patients. This includes Electronic Health Records (EHRs), telemedicine and wearable devices.

CHALLENGES IN DIGITIZING HEALTHCARE

Despite the many benefits of digital health technology, such products often face challenges with regard to their launch and adoption.

1. Regulations and Legislations

One of the key challenges faced by the Medical Technology (MedTech) industry is the complex and fragmented regulatory and legislative landscape.

Instead of a single legislation, many regions use multiple schemes and regulations to address digital health technologies. However, they're often insufficient to address the unique features of such solutions, impeding the creation, launch and adoption of many innovative products.

2. Reimbursement

Even after their launch, many digital health solutions face challenges due to unclear, complex and inconsistent reimbursement pathways. This is especially apparent in public healthcare systems around the world.

For patients, these difficulties with reimbursement can limit the adoption of such technology, reducing access to patients' data. In turn, this makes it challenging for innovators to prove the value of such technologies against the investment required.

3. Interoperability

Due to the lack of harmonized regulations and differences in storage and coding of data, data interoperability has been an ongoing challenge for many solution providers and healthcare professionals even after product adoption.

4. Digital literacy

Digital literacy refers to the ability to find, understand and share information via online platforms.

Due to low digital literacy among patients and healthcare professionals, the chances of product adoption may be reduced as many may experience inertia in learning how to use these new technologies.

5. Willingness to adopt technology

Willingness to adopt digital health technologies can be affected by various factors including ease of use, cost and privacy concerns. The perceived value of a digital health solution can also play a big role in the adoption of such technology.

RESEARCH METHODOLOGY**Objectives:**

1. To study impact of digitilisation in the field of Medical facilities
2. To analyse adoption of e facilities of medical field by individual.
3. To Study benefits and limitations of Digitalisation in the health care filed. .

Limitations of the Study

1. The data collection was strictly confined to secondary sources. Primary data was associated with only the survey through questionnaire in google form.
2. The project is unable to analyse each and every individual hence only limited respondents are selected for study.
3. Some respondents randomly fill up the form might be responses submitted by the individuals may not give accurate result.

Sample Size

The sample size of the study is limited to 16 individuals from various area of Mumbai suburban.

LITERATURE REVIEW

- 1) Digital transformation has reached out to every aspect of human lives, including personal and institutional provided healthcare. In order to inspect changes occurring in the healthcare domain due to digital transformation, a literature review is conducted Results revealed that the digital transformation of healthcare has just recently begun to induce more interest in the research community. Furthermore, a mixture of scholars' profiles investigates the topic, including engineering and information scientists, as well as medical and healthcare service researchers. Additionally, by using text mining, we have identified four discourses of topics that are addressed in the literature when considering the digital transformation of healthcare. The interdisciplinary nature of the topic calls for the inclusion of diverse experts from the medical, informatics and public administration areas in order to advise proper government actions and stimulate the research field.

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2) With agile changes in many sectors, technology comes to the focus of our lives and helps us to take more solid steps. Concepts such as e-commerce, e-health, and data mining have come to the fore. The effects of technological advances, which have begun to integrate into health services, such as increasing work efficiency, service quality, and creating a safe service environment have been determined. In this review study, various digitalization studies carried out in the field of health between 2012–2022 were examined and summarized.

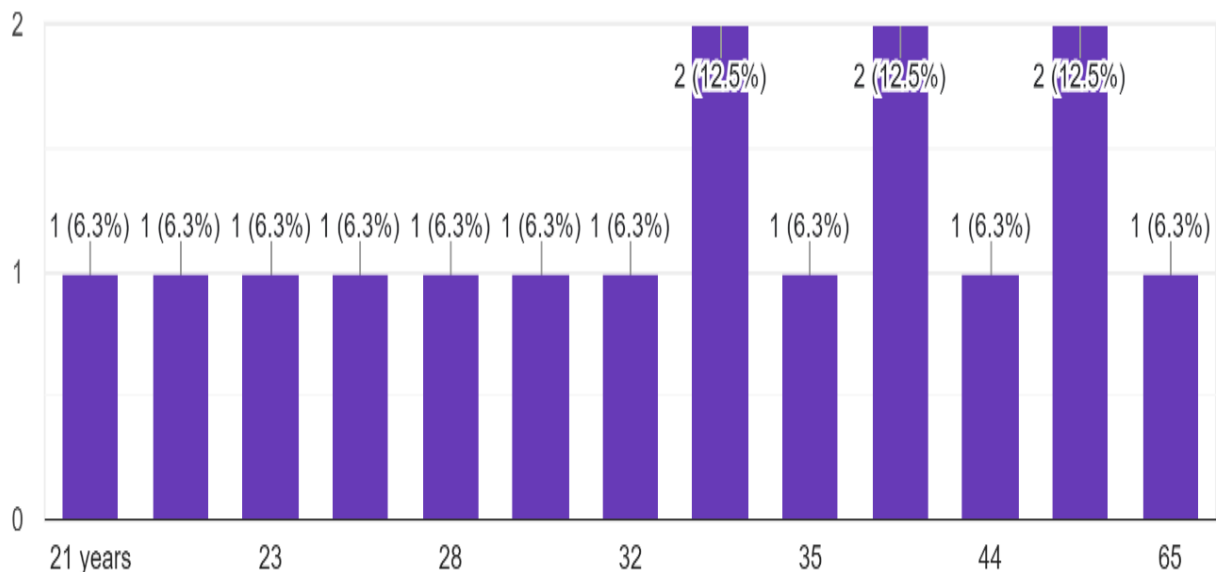
Department of Management Information Systems, School of Economics, Administrative and Social Sciences, Kazlıçe,sme Campus, Istanbul Topkapi University, 34087 Istanbul, Turkey 2 Department of Data Analytics, Graduate School of Education, Mahmutbey Campus, Altınba,s University, 34217 Istanbul, Turkey 3 Department of Electrical Engineering, The College of Engineering, Australian University, West Mishref 40005, Kuwait 4 Department of Industrial Engineering, Faculty of Engineering and Natural Sciences, Kavacak Campus, Istanbul Medipol University, 34810 Istanbul, Turkey 5 Department of Management, College of Business, Australian University, West Mishref 40005, Kuwait * Correspondence: elifdelice@topkapi.edu.tr † Presented at the Digital Transformation in Business: Challenges and New Opportunities, West Mishref, Kuwait, 17 November 2022

DATA ANALYSIS AND INTERPRETATION

Q.1 Age of Respondent

Age of Respondent

16 responses

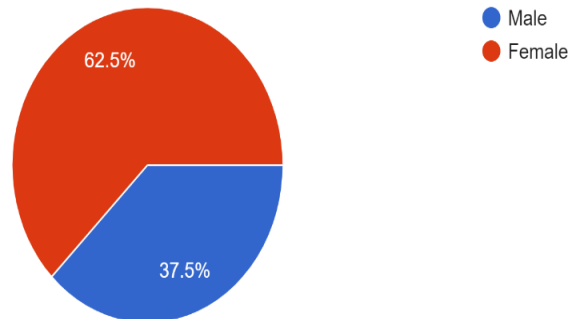


Responses were taken from different age groups to understand the behaviour of individuals from different age group towards e facilities in medical field

Q. 2 Gender of Respondents

Gender

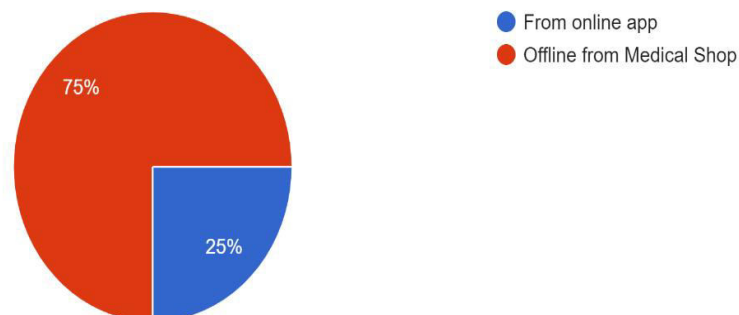
16 responses



Major Respondents are female individuals in study. But still Male members are also involved to understand behaviour of both.

Do you prefer to purchase the medicine by which method?

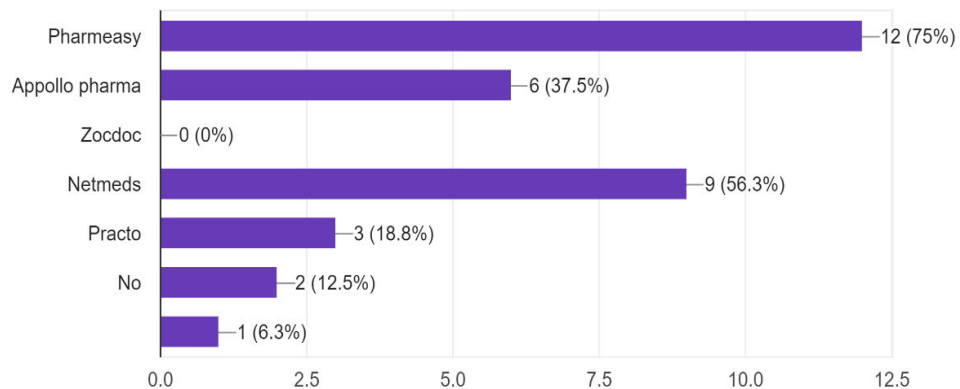
16 responses



Out of 16 almost 12 individuals believed to purchase medicine directly from medical shop as they feel that quick delivery and easy availability.

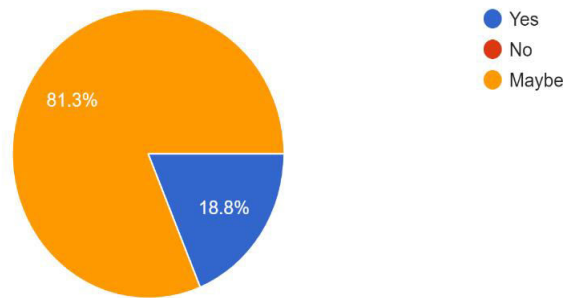
Do you aware about which of the following healthcare app?

16 responses



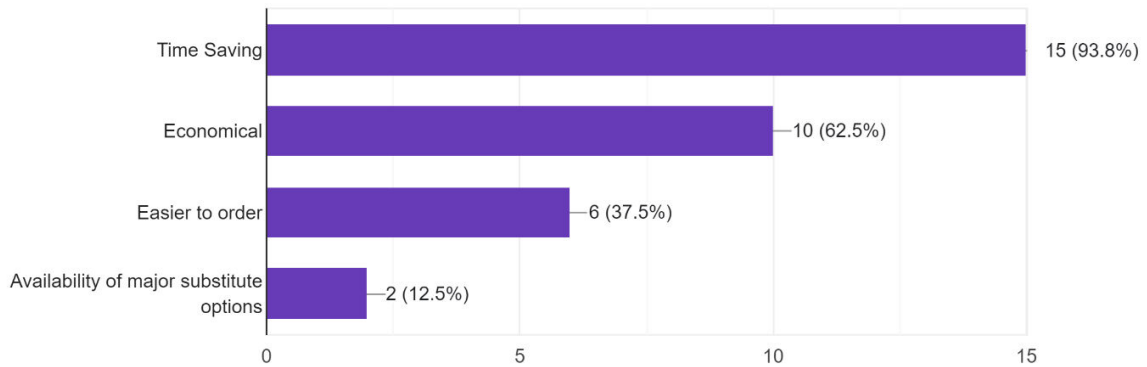
Overall observe if respondents want to avail e facilities then Pharmeasy app is mostly preferred compare to other apps.

Do you feel Whether application / uses of above app is safe?
 16 responses



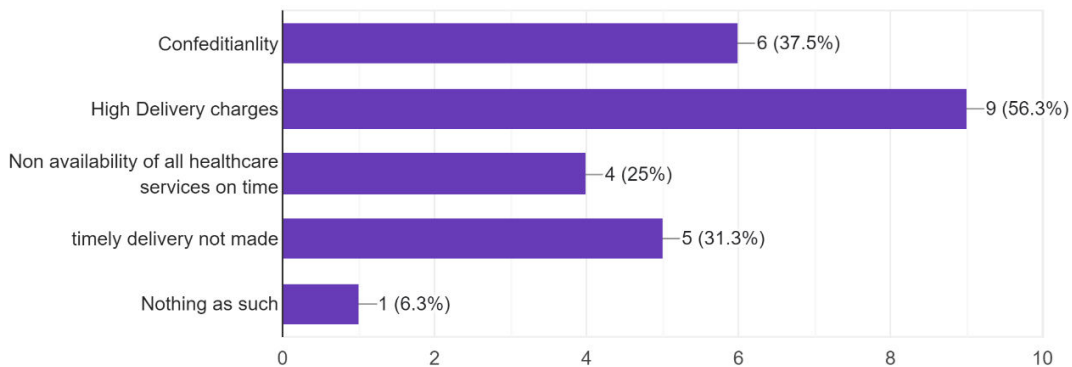
Still Major respondents having doubt on confidentiality of online app related to medical or health care facilities.

What are the benefits of Online healthcare services according to you?
 16 responses



Still Many Respondents feel that online healthcare apps are time saving, economical in nature as there is always additional discounts given on MRP and also easier to order products.

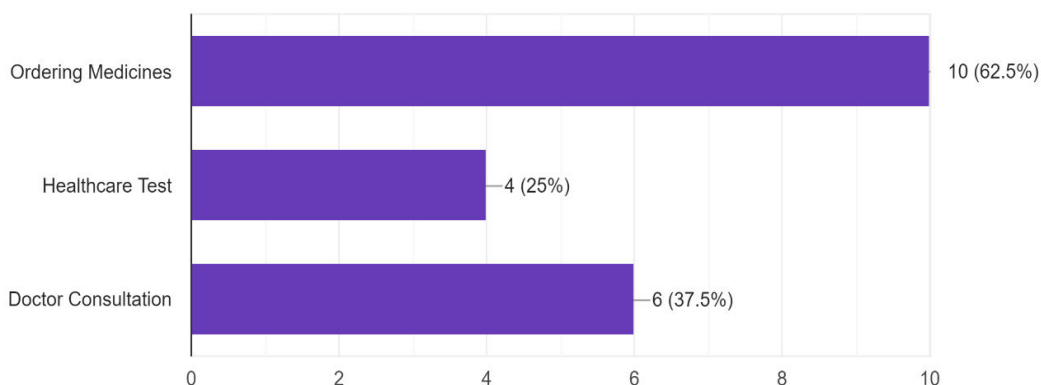
Any problem you faced to order health care services from online app?
 16 responses



But Many Respondents feels that delivery charges are very high and privacy related to medical history may get affected.

Digitalization in Health care services is an feasible for you in which part of service?

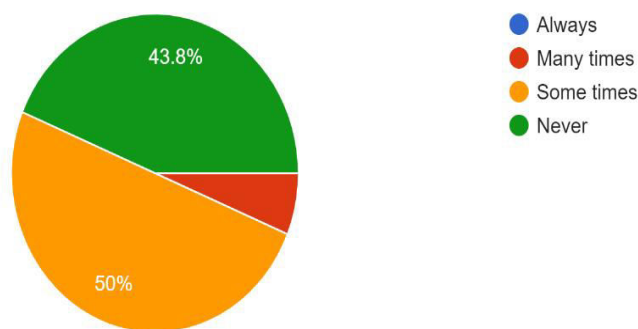
16 responses



Majorly e- facilities are obtained to order medicines where privacy issue is not majorly affect.

How often you preferred to obtain healthcare services from online app ?

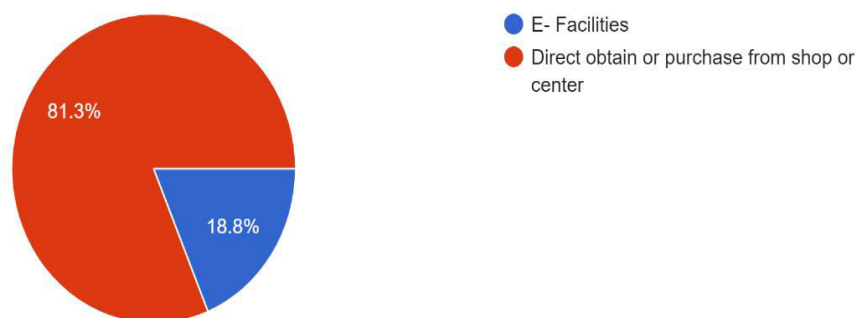
16 responses



Major respondents are not preferred to avail e facilities in health care due to non comfort level in online app due to several issues and they are habitual to traditional methods of medical facilities.

Which is better option in Medical Facilities according to you?

16 responses



Still Major respondents are believed on traditional offline uses of medical facilities. Some of them have shifting slowly there approach towards e-facilities .

CONCLUSION

- 1) It has been concluded from this research that many individual Respondents are still preferring traditional methods in medical products and services.
- 2) Individual respondents are slowly attracted towards e facilities in health care and medical field due to various discount scheme and easy to order from home.
- 3) But still respondents are not preferred to avail e- facilities in all medical services due to privacy issue and high delivery charges.
- 4) It was observed that Pharmeasy app is most popular app in individual respondents due to heavy advertisements and user friendly interface.
- 5) In the phase of digitalisation also still major individuals believed to obtain medical services from traditional method.

SUGGESTIONS

1. The world is rapidly becoming more digital, and any business not realising and incorporating this trend will fall behind. From above study it is suggested to make more awareness among public related to digitalised facilities in healthcare service.
2. India has the potential for digital growth, given its current technology penetration, advancing economy, growing population and accelerating healthcare industry. The rise of digital technology is pushing India to achieve Health for All, putting the country at the forefront for foreign investment. With these opportunities, India is emerging as the global leader in digital health.

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AUTOMATION OF VPMS R. Z. SHAH COLLEGE LIBRARY WITH THE HELP OF LIBMAN: A STUDY**Shilpa Bhushan Jadhav**

Librarian, VPMS R. Z. Shah College of Arts, Science and Commerce, Mulund, Mumbai-81

ABSTRACT

Library automation refers to the use of technology and software systems to streamline and improve various library functions and services. It typically involves automating tasks such as cataloguing, circulation (check-in/check-out), inventory management, and patron management. These technologies help libraries enhance efficiency, accessibility, and overall user experience. Library software is a type of computer program designed to manage and automate library operations and services. It helps libraries organize and track their collections, streamline circulation processes, manage patron information, and facilitate resource discovery. Libman software is a library management system designed to automate and streamline various library processes. It offers a range of features and functionalities to help libraries manage their collections, patrons, and services effectively. The main aim of this paper is to describe features of Libman Software and analyse its features and requirements for the technical processing of documents in VPMS R. Z Shah College Library.

Keywords: Library Automation, LIBMAN, Automation, Library Software,

1.1 INTRODUCTION

Library automation refers to the use of technology and software systems to streamline and improve various library processes and services. It involves the digitization and automation of tasks that were traditionally manual, such as cataloguing, circulation, acquisitions, and patron management. Library automation aims to enhance efficiency, accessibility, and user experience within a library setting.

The VPM's R Z Shah College Library is well stocked with carefully selected reference books, Textbooks, Encyclopaedias, CD/DVDs, Journals and Newspapers. It is fully equipped to meet the requirements of BSc, BCom, BA as well as all professional courses. Currently Library has total 15000 books, N-List database, periodicals. Library is using Libman Software since 2001. It is a part of Mastersoft ERP system.

1.2 Library Automation

Library automation refers to the use of technology to streamline and improve various library processes and services. It involves the implementation of computer systems, software, and other technological tools to manage library resources, cataloguing, circulation, and user services. Here are some key reasons for library automation.

Following are the features of Library Automation: -

1. **Circulation Management:** The software provides circulation management capabilities to handle checkouts, returns, and renewals. It tracks borrower information, due dates, and manages loan periods, fine calculations, and notifications for overdue items.
2. **Member Management:** Automation facilitates member registration and management. It allows librarians to create and maintain member profiles, including personal information, contact details, and borrowing history. It may also provide features for issuing library cards and managing member privileges.
3. **Search and Discovery:** The software offers robust search functionality, enabling users to find resources within the library's collection efficiently. Users can search by title, author, subject, keywords, or various other criteria. It may include advanced search options and filtering capabilities to refine search results.
4. **Reservations and Holds:** It support the reservation of library items that are currently checked out. Users can place holds on desired resources, and the software manages the queue and notifies users when the items become available.
5. **Interlibrary Loan (ILL):** Library management systems, provides integration with interlibrary loan services. This feature allows users to request resources from other participating libraries and manage the borrowing process.
6. **Reporting and Analytics:** It includes reporting and analytics features to generate various reports related to library operations, circulation statistics, inventory status, and member usage patterns. These insights can help librarians make informed decisions regarding collection development and resource allocation.

7. **Integration with External Systems:** The software may offer integration capabilities with other systems, such as financial management software, learning management systems (LMS), or digital content platforms. This integration streamlines workflows and enhances the overall user experience.
8. **Mobile Access:** In today's mobile-centric world, similar software provide mobile applications or responsive web interfaces to enable users to access the library's resources, place requests, renew items, and manage their accounts using smartphones or tablets.
9. **Administration and Customization:** The software allows administrators to configure and customize various settings to align with the library's specific requirements. This includes configuring loan rules, fine structures, user permissions, and system preferences.

1.3 Objectives of Library Automation

1. **Efficient Management:** Library automation helps libraries to efficiently manage their collections, including books, periodicals, multimedia materials, and digital resources. It provides automated cataloging and indexing capabilities, making it easier to organize and retrieve information.
2. **Enhanced Access to Information:** By automating library services, users can quickly search for and access information resources through online catalogs, databases, and digital libraries. Automation enables faster and more accurate retrieval of materials, saving time for both library staff and patrons.
3. **Improved User Experience:** Library automation enhances the overall user experience by offering self-service options for activities like check-in, check-out, and renewals. Patrons can conveniently access library services at any time, reducing waiting times and increasing user satisfaction.
4. **Resource Sharing:** Library automation facilitates resource sharing among libraries, allowing users to access materials from other libraries within a network. Interlibrary loan systems and digital delivery services enable users to borrow resources from different libraries, significantly expanding the range of available materials.
5. **Streamlined Circulation Management:** Automation simplifies the circulation process, enabling staff to efficiently manage borrowing and returning of library materials. Automated check-in and check-out systems reduce errors, eliminate manual paperwork, and provide accurate real-time information on item availability.
6. **Collection Development:** Library automation systems assist librarians in analyzing usage data, identifying popular items, and making informed decisions for collection development. They provide insights into the borrowing patterns, demand for specific resources, and help in managing acquisitions effectively.
7. **Preservation and Security:** Digital preservation tools and systems ensure the long-term preservation of valuable library resources, including rare books, manuscripts, photographs, and audiovisual materials. Automation also aids in security measures by tracking materials, preventing theft, and improving inventory control.
8. **Reporting and Analytics:** Library automation generates detailed reports and analytics, offering valuable insights into library operations, usage trends, and user behavior. These reports help libraries assess their performance, make data-driven decisions, and improve services based on user needs.

Overall, library automation optimizes workflows, enhances resource accessibility, and improves user experiences. It empowers libraries to adapt to the digital age, effectively manage their collections, and provide efficient services to their patrons.

1.4 LIBMAN Software

LIBMAN is a highly integrated, user-friendly and compatible system for complete computerization of all the in-house operations of any size or type of library. The library management software is intuitive, efficiently and compliant. LIBMAN is embedded with multilingual fonts, Barcode & QR Code fonts. Till today it is used by 691 libraries.

Following are the modules of LIBMAN Software.

- User Definitions
- General Masters
- Library Master Define
- Acquisition & Catalogue

- Circulation
- Circulation Reports
- MIS Reports
- Serial Control
- Newspapers
- Settings & Utility
- OPAC
- Reports
- NAAC Reports

1.5 VPMs R. Z. Shah College Library Automation

College library started automation in the year 2021 by using LIBMAN software. Data entry from the year 2013 (retrospective conversion) was done with the help of data sheet provided by mastersoft. Today more approx. 10000 entries are made in LIBMAN software. Since it is cloud based manual data entry is done at any point of time and from anywhere.

Following are modules which library is using for creating database of documents

- **User Definitions**

In this module library has created users of library with their login ID and password.

- **General Masters**

In Masters module library has database of basis tags for like City, District, Designation, Year, Department, branch etc. Masters are basically one time entry in a database for multiple usage.

- **Library Master Define**

Here we have created masters of author, belonging, Fund master, Accession series, Book/Document type. Publisher master, subject master, vendor master, dispose status etc,

After creating options in master fine, it helps to use it many times.

- **Acquisition and Catalogue Module**

It is a very important module. VPM College library is not using all sub-modules like Requisition, Vendor Quotation, Purchase order, Supply Order etc. Purchase procedure is done manually. Commonly used submodules are

For Accessioning

Book Title Master-for entering Book bibliographic data

Invoicing and Accessioning – for Bill details and giving accession Numbers

For Editing entries

Change Department or series Code

Modify title

Change Title or Delete Accession number

For Book Lost/withdraw

Lost Book Entry

Withdraw book Entry

Stock Verification and Dispose Books entry

It has some report generating submodules also like Books Included in Library, Invoice List etc. depends upon the data software generates list as per instructions.

- **Circulation Module**

This module helped to create holiday calendar, Borrowers Details, Book Issue-Return, Fine Collection, Reservation of books, Visitors management, Demand approval etc.

- **Circulation Reports Module**

This Module helped to generate reports depends on circulation transactions. It creates transaction reports, Issue-Book Report, Claim report, Borrower fine reports and Best user of Library.

- **MIS Reports Module**

It creates Reports like Quantity Report, Statistical Report, Investment Report, Books Issued Report, Title wise report, Withdrawal Report etc

- **Serial Control Module**

Library also uses Serial control module. It helps to make Journals or magazines entries; it helps to generate subject entries of serials, Journal Indexing, Issue Return of Journals etc.

- **Newspapers Module**

In this module library has made database of all newspapers in details. Daily newspapers received entries are made in database. It also helps to generate monthly voucher at the end of the month.

- **Online Public Access Catalogue (OPAC)**

LIBMAN Software is a cloud based. OPAC helps to find status of books in a library. It shows issue status, copies of books as well helps in reservation of book.

- **Reports Module**

It is an important module. It helps to generate various reports like Accession Register, title lists, payment register, catalogues Reports, New Arrivals, Binding book lists, Lost Books, Barcoding books, Borrower lists. Spine labels, OPAC search History etc.

- **NAAC Reports Module**

It is a new feature of LIBMAN. It helps to generate report on E-Book subscription Log report, Visitors Log Report etc.

- **M-OPAC** is allows user to search a book . it is an app for display consolidated library data at a glance. Students search books by different tags like : Title, Author, Publisher, Subject and Keywords. User can see information regarding the book like Author, Publishers, Publish year, Accession numbers with Series code, ISBN, Call No (Classification Number + Book Number), Quantity of Book.

CONCLUSION :-

Automation with the help of LIBMAN software was comparatively easy. Mastersoft Inc helps to migrate data with the help of their template. OPAC is self-explanatory. Library catalogue is online and can be accessed at any time. It is a cloud based system.

It is very easy to work on LIBMAN software. It played an important role while creating data for NAAC.

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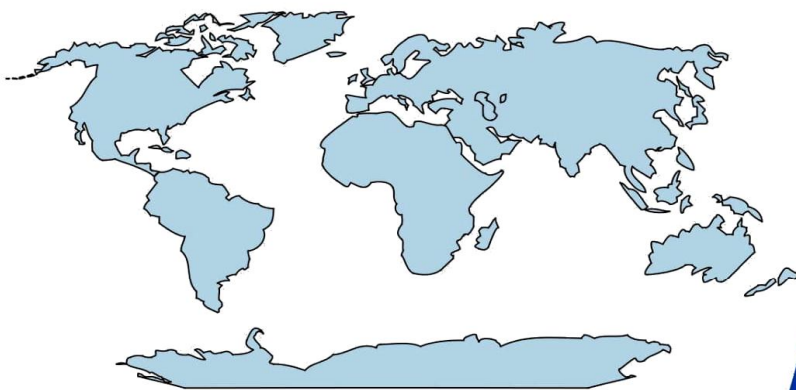
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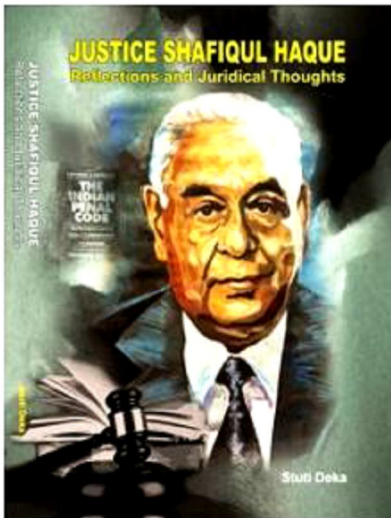


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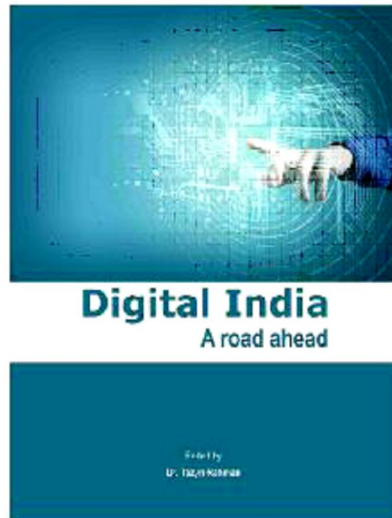
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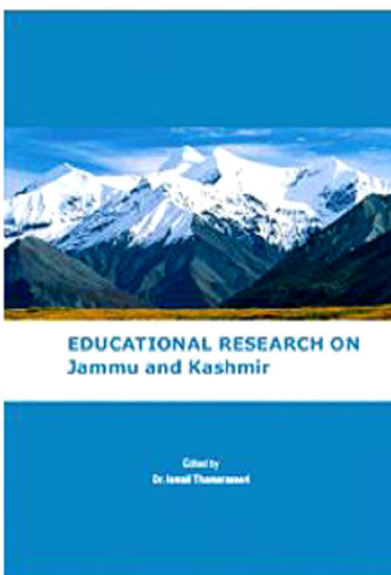
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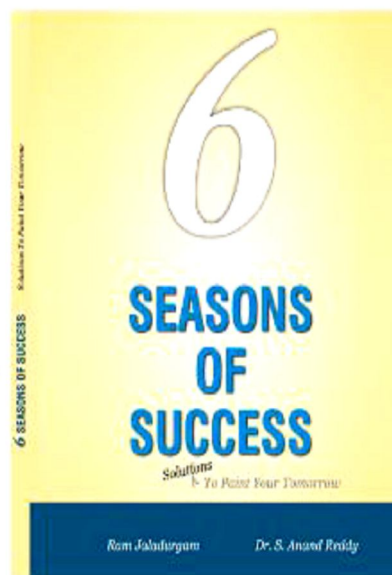
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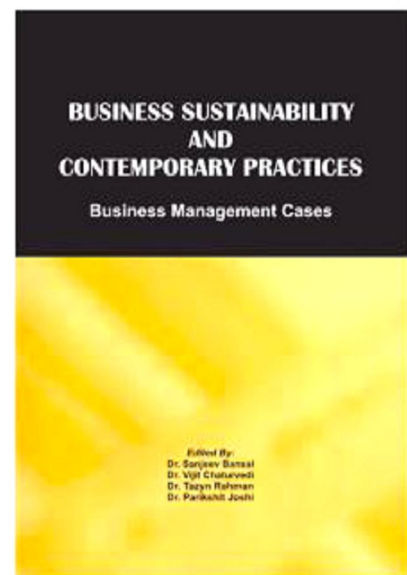
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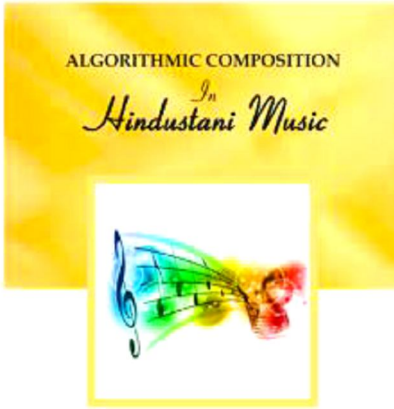
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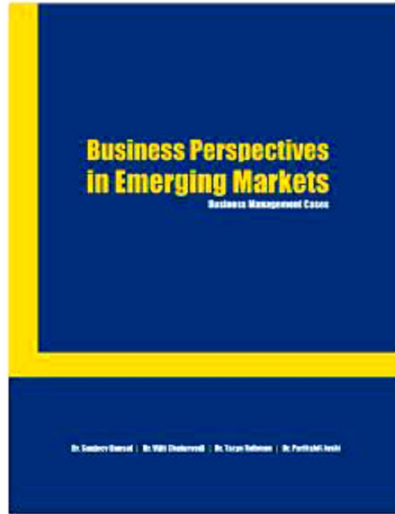
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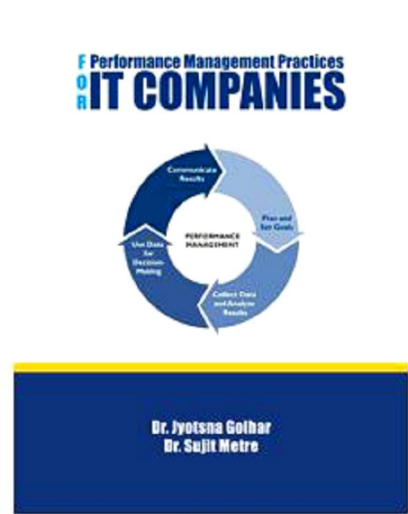
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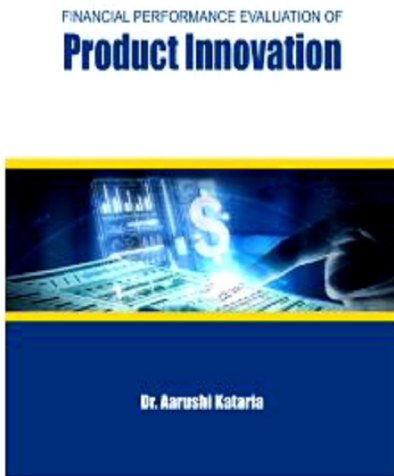
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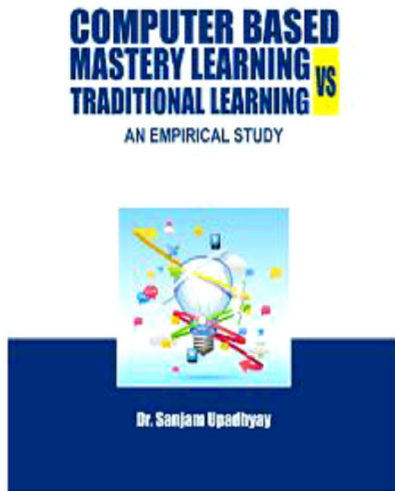
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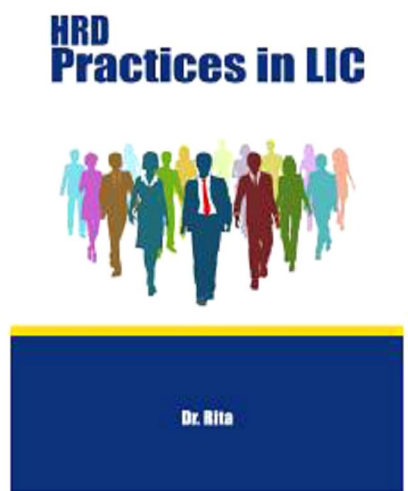
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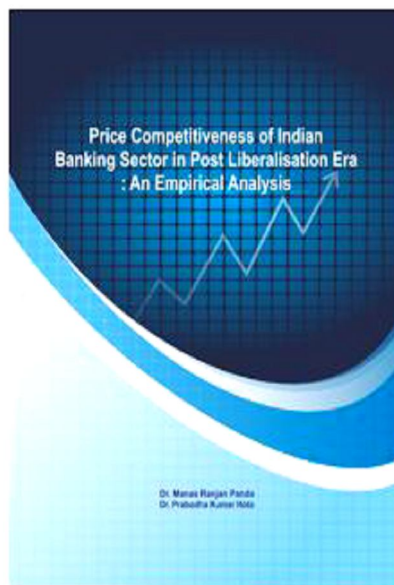
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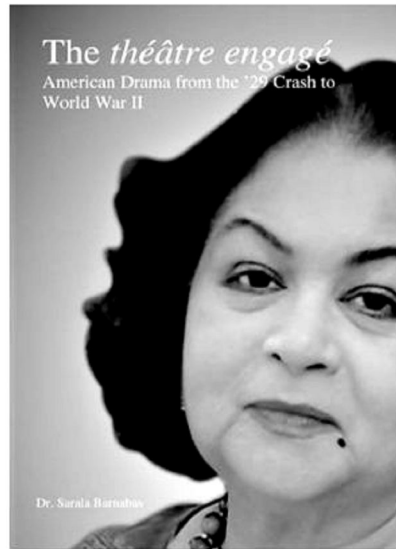
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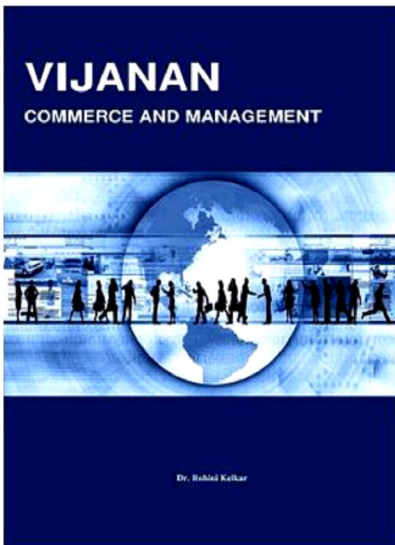


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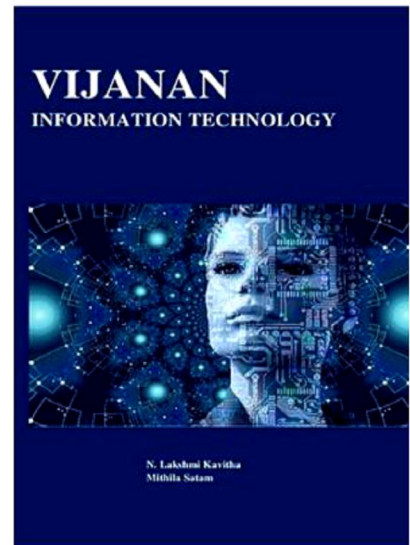
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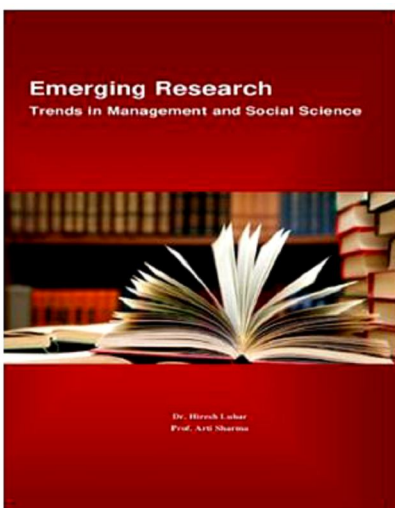
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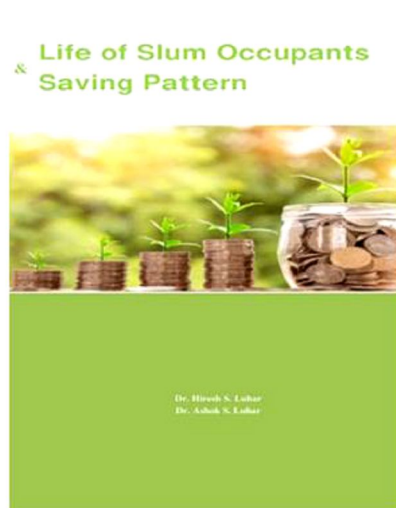
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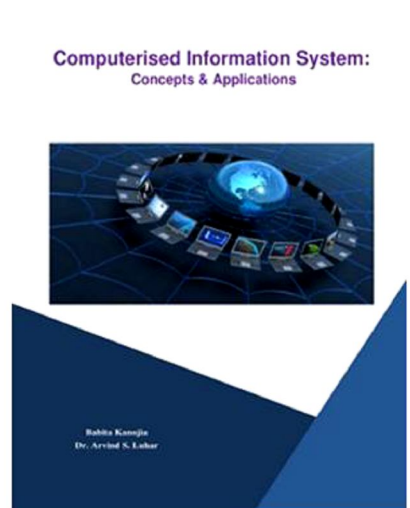
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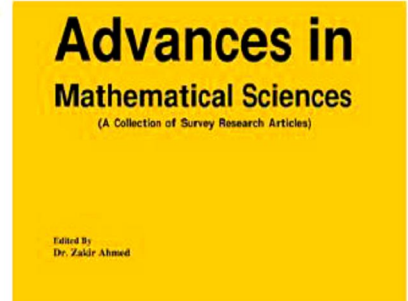
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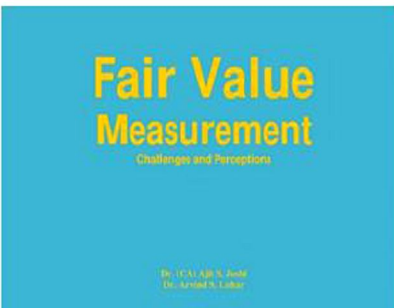
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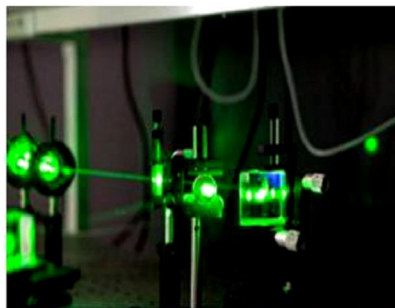
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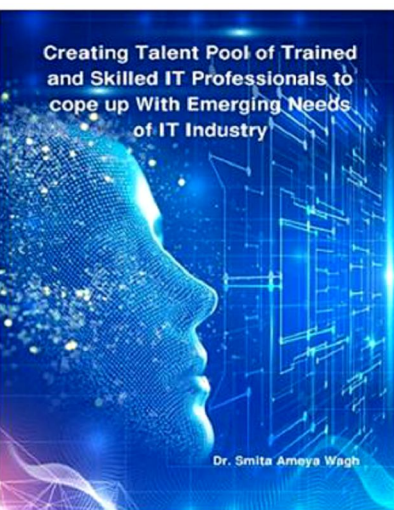


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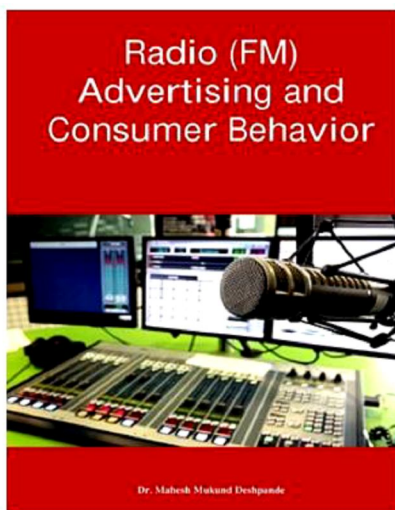
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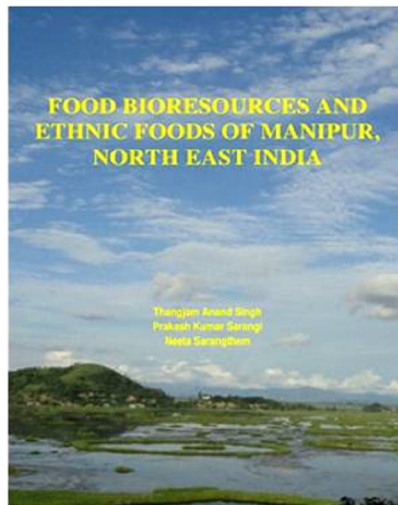
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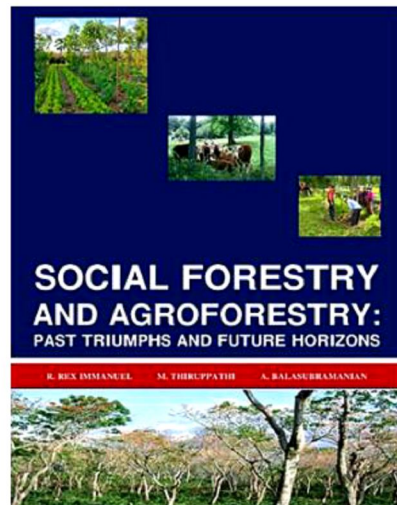
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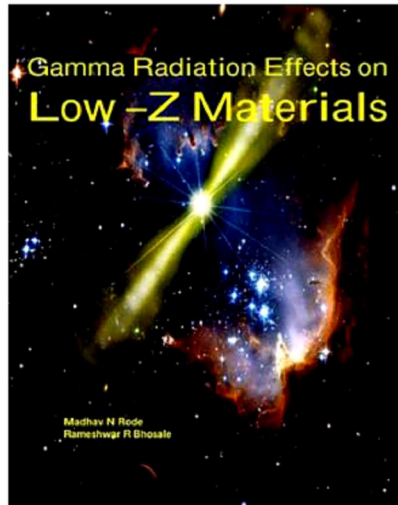
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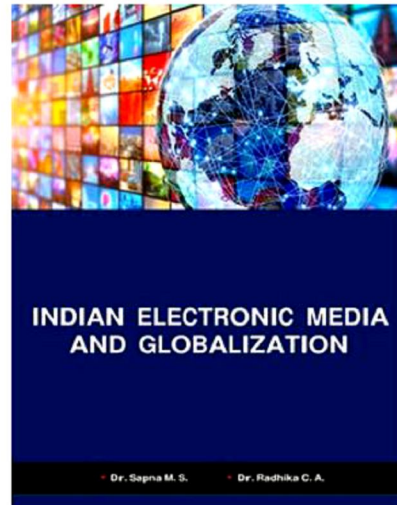
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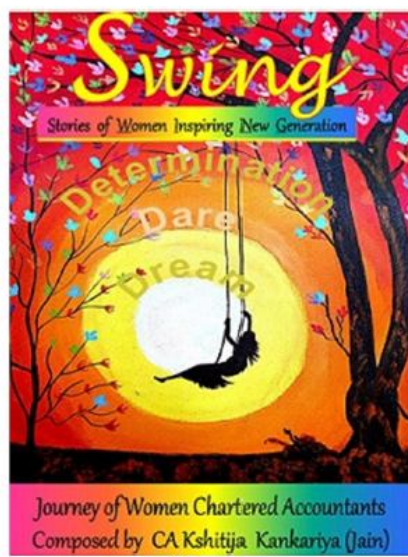
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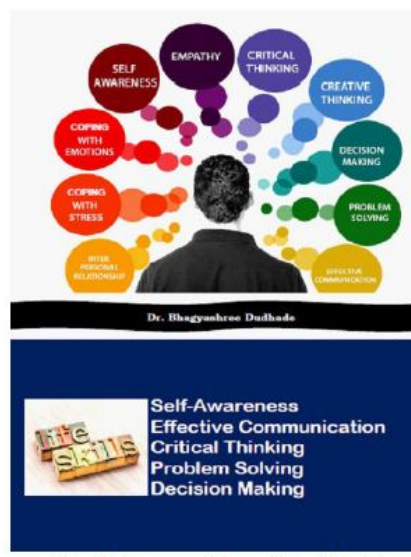
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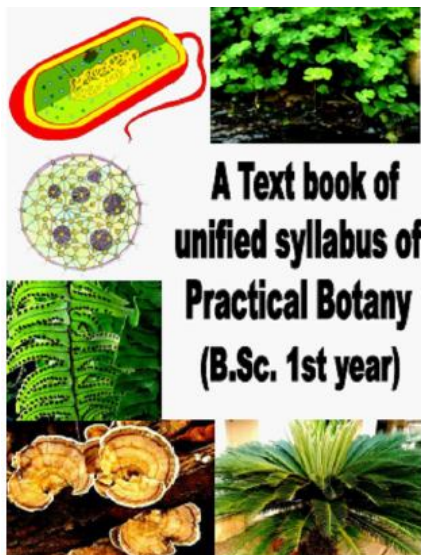
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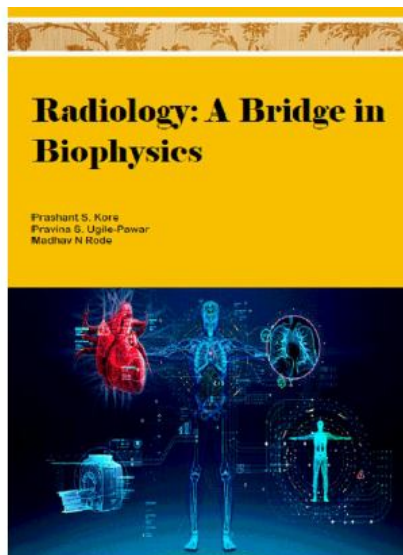


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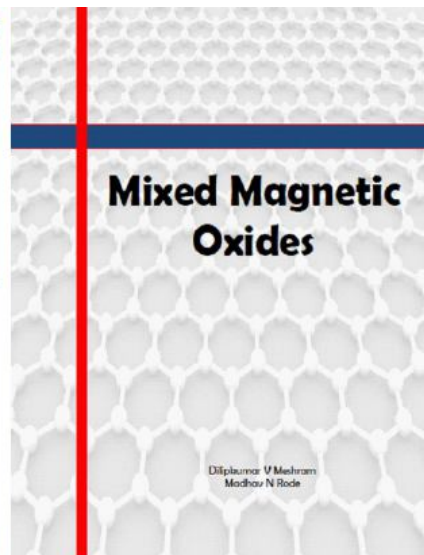
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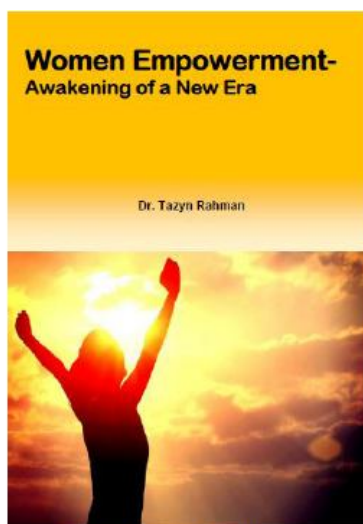
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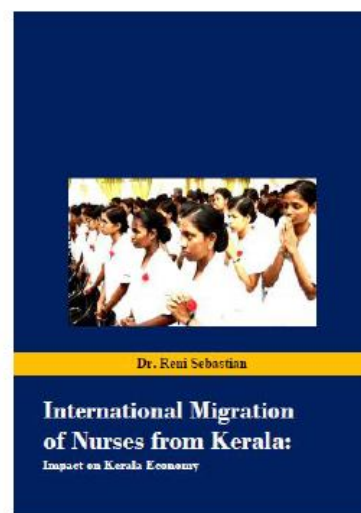
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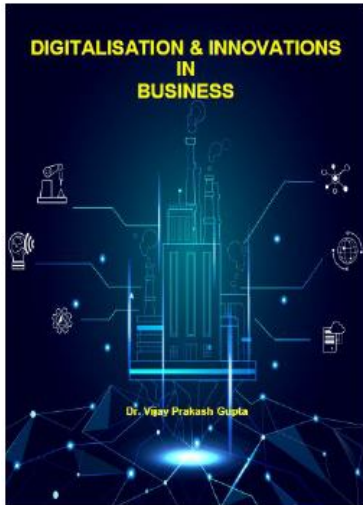
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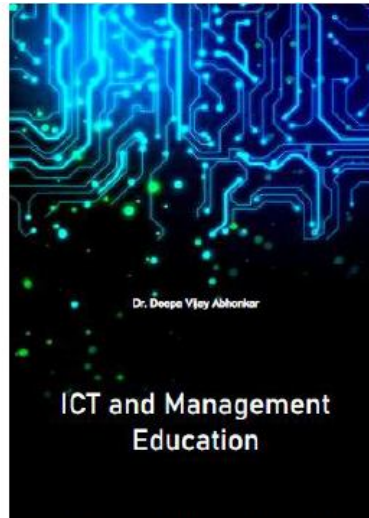
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