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FROM THE EDITOR'S DESK

Throughout history humans have both affected, and been affected by, the natural world. While a good deal has been lost due to human actions, much of what is valued about the environment has been preserved and protected through human action. While many uncertainties remain, there is a realization that environmental problems are becoming more and more complex, especially as issues arise on a more global level, such as that of atmospheric pollution or global warming.

Interactions between human society and the environment are constantly changing. The environment, while highly valued by most, is used and altered by a wide variety of people with many different interests and values. Difficulties remain on how best to ensure the protection of our environment and natural resources. There will always be trade-offs and, many times, unanticipated or unintended consequences. However, a well-managed environment can provide goods and services that are both essential for our well-being as well as for continued economic prosperity.

The environment has become one of the most important issues of our time and will continue to be well into the future. The challenge is to find approaches to environmental management that give people the quality of life they seek while protecting the environmental systems that are also the foundations of our well-being. In order to face these challenges, we need more than superficial knowledge or awareness of disconnected environmental issues. A multi-disciplinary approach to learning can build upon the strengths of a wide range of fields of study, providing a deeper understanding of the technological, political, and social options and strategies for both studying and managing the relationship between our society and the environment.

There are total 15 publications in this Journal 07 from Science faculty, 02 from Commerce and 06 from Arts. This National Conference and research publications aims to provide a platform to Academicians, Research Scholars and Teachers to address the issues on Environments and its effects on Humans and Society in India. This publication will also serve as a forum to discuss and to evolve strategies for the sustainability of our environment and growth and development. This conference aims to promote and involve the researchers, educators, practitioners and to exchange and share their experiences, new ideas and research results. This national conference has a multi-disciplinary approach, which seeks to explore and exchange knowledge from various disciplines with context to welfare and development.

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PHYTOCHEMICAL ANALYSIS OF AEGICERAS CORNICULATUM

Penbelli Ayesha Iqbal,
Bahaduri Manqabat Sajid.

Abstract:

Mangroves are salt tolerant trees (halophytes) adapted to live in harsh coastal conditions. They contain a complex salt filtration system and complex root system to cope with salt water immersion and wave action. They are adapted to the low oxygen (anoxic) conditions of waterlogged mud. There are many species of mangroves available along the west coast of India. They are beneficial to the environment and to the flora and fauna of coastline in various ways. One of the species of mangrove termed Black mangrove *Aegiceras corniculatum* is found in insufficient quantity in Mumbai. This chapter deals with the study on method of extraction and detection of phytochemicals from the plant material of *Aegiceras corniculatum*. The powdered material was dissolved in acetone to get respective extracts. Phytochemical analysis of extract was carried out. The results were positive for saponins, tannins, terpenoids and flavonoids. These secondary metabolites are the active constituents of *Aegiceras corniculatum* and may be responsible for its properties of antimicrobial, insecticidal, analgesic, etc.

Keywords: Mangroves, phytochemicals, insecticidal, antimicrobial.

INTRODUCTION:

Aegiceras corniculatum commonly known as black mangrove, river mangrove or Khalsi, is a species of shrub or tree mangrove in the Primulaceae with a distribution in coastal and estuarine areas ranging from India through South East Asia to Southern China, New Guinea and Australia. *Aegiceras corniculatum* grows as a shrub or small tree up to 7 m high, though often considerably less. Its leaves are alternate, obovate, 30–100 mm long and 15–50 mm wide, entire, leathery and minutely dotted. Its fragrant, small, white flowers are produced as umbellate clusters of 10–30, with a peduncle up to 10 mm long and with pedicels 10–18 mm long. The calyx is 2–4 mm long and corolla 4–6 mm long. The fruit is curved and cylindrical or horn-shaped, light green to pink in colour and 20–75 mm long. It grows in mud in estuaries and tidal creeks, often at the seaward edge of the mangrove zone. (Bandaranayake, 1998)

Classification

Phylum – Charophyta
Class – Equisetopsida
Sub-Class – Magnoliidae
Super-Order – Asteranae
Order – Ericales
Family – Primulaceae
Genus – *Aegiceras*
Species – *Corniculatum*

Phytochemical constituents are secondary metabolites of plant that serve as a defense mechanism against many microorganisms, insect and other herbivores. Presence of different phytochemical constituents of plant *Aegiceras corniculatum* was investigated in this paper. The phytochemical detection of *Aegiceras corniculatum* is carried out to test the presence of saponins, tannins, terpenoids and flavonoids using the plant extracts.

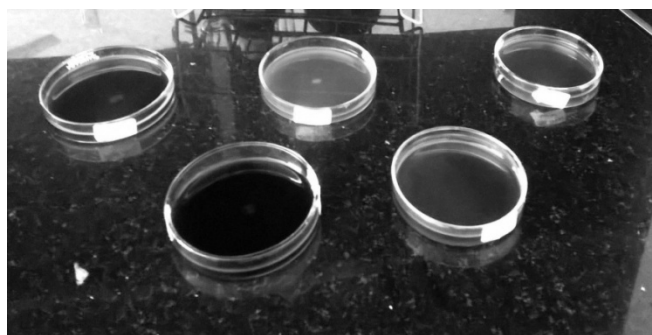


MATERIAL AND METHODS:**1. COLLECTION AND DRYING:**

Aegiceras corniculatum was collected from the Raigad. The plant leaf of *Aegiceras corniculatum* was collected in bulk and washed under running tap water to remove adhering dirt. Then leaves were shade dried. The dried material were made into fine coarse powder by grinding in mechanical grinder and stored in a closed air tight container for further use.

2. EXTRACTION OF POWDERED PLANT MATERIAL:

10 grams of shade dried powdered leaf was dissolved in 100% acetone and kept for 48 hours on shaker. The extract was collected by filtering the solvent, which was evaporated at R.T for 24hrs. The dried extract prepared after evaporation was used for the phytochemical detection and the percent yields of the extract were determined. The extract was then stored in a refrigerator at 4°C.

**RESULT AND CONCLUSION:**

| Test | Procedure | Observation 1 | Result 1 | Observation 2 | Result 2 |
|------------|---|-----------------------------|----------|---------------------------|----------|
| Flavonoids | Treated with 2% NaOH and dilute HCl. | Yellow color appeared | present | Yellow color appeared | Present |
| Tannins | Extract diluted with distilled water and boiled in boiling tube few drops of 0.1% Ferric chloride is added. | Yellow-brown color appeared | present | Blue-black color appeared | Present |
| Saponins | 1 ml extract diluted with distilled water and shake. | Foam appeared | present | Foam appeared | Present |
| Terpenoids | Small portion of extract was mixed with 2 ml of chloroform. Then 3 ml of conc. Sulphuric acid. | Reddish brown ring formed | present | Brown ring formed | present |

1= extract solution with acetone.

2= extract solution with distilled water.

Discussion:

The leaf of *Aegiceras corniculatum* when tested for different phytochemical such as saponins, tannins, flavonoids and terpenoids it was found that these phytochemical are present using acetone and distilled water as the reconstituting solvent. According to our study, both acetone and distilled water can be used as solvent for mangrove leaves extraction showing the best result which can further be used to detect the insecticidal property and can also be used to detect various other tests as per the significance of this mangrove. Today, environmental safety is considered to be of paramount importance and using synthetic chemicals have its hazardous effects. Phytochemicals from plants may serve the purpose as these are relatively safe, inexpensive and readily available.

3. QUALITATIVE TEST FOR PHYTOCHEMICALS;

Extract collected was reconstituted in acetone and D/W for further testing the phytochemicals.

- Detection of flavonoids: A small amount of extract was treated with aqueous NaOH and HCl and observed for the formation of yellow orange color.
- Test for Tannins: A small portion of the extract was diluted with 20 ml of distilled water and boiled in a boiling tube. Then few drops of 0.1 % ferric chloride was added. The appearance of brownish green / blue- black indicated the presence of tannins.
- Test for saponins: One ml of extract was diluted with 20 ml of distilled water and shake vigorously. The formation of stable foam indicates the presence of saponins.
- Test for Terpenoids: Small portion of extract was mixed with 2 ml of chloroform. Then 3 ml of concentrated sulphuric acid was carefully added. The appearance of reddish brown or pinkish brown ring / color indicates the presence of terpenoids.

AKNOWLEDGMENT:

Our team would be grateful to Zoology Department of Aqsa Women's Degree College affiliated to S.N.D.T. University, Mumbai for providing us laboratory to conduct our research works on phytochemical analysis of *Aegiceras corniculatum*. Special thanks to Mr. Ejaz Shaikh, Mr. Iliyas Penbelli for their kind support.

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2.

CALCULATION OF GWP (GLOBAL WARMING POTENTIAL) OF CO₂ FROM ELECTRICITY**Momin Nadera Mohammad Salim,**Department Of Chemistry,
Aqsa Women's Degree College,
Sndt University, Churchgate.**Abstract:**

The Greenhouse effect is a leading factor in keeping the Earth warm because it keeps some of the planet's heat that would otherwise escape from the atmosphere out to space. Greenhouse gases include water vapor, CO₂, methane, nitrous oxide (N₂O) and other gases. As a result of the burning of fossil fuels carbon dioxide builds up in the atmosphere. This gas is transparent to solar radiation, but opaque to thermal radiation. As a result, it lets energy from the sun, allowing it to heat the earth, but does not allow the heat generated to flow back into space. Carbon dioxide (CO₂) and other greenhouse gases turn like a blanket, gripping Infra-Red radiation and preventing it from escaping into outer space. This paper briefly reviews current expectations with regard to physical and biological effects, their GWP (Global Warming Potential). Without the greenhouse effect the Earth's average global temperature would be much colder and life on Earth as we know it would be impossible. These projections thus provide a compelling case that global climate will continue to undergo significant warming in response to ongoing emissions of CO₂ and other greenhouse gases to the atmosphere. We used Electricity bill and examine the mathematical quantifications of planetary energy consumed in a particular area during a year. In order to quantitatively compare the greenhouse effect of different greenhouse gases a global warming potential (GWP) index has been used which is based on the ratio of the radiative forcing of an equal emission of two different gases, during a year. The GWP index is analogous to the ozone depleting potential (ODP) index. This approximation is then used to calculate warming in response to increasing atmospheric greenhouse gases during the year 2018-2019, projecting a temperature increase.

Key words: Global warming, Greenhouse gases, CO₂, GWP value.

Introduction:

Global carbon dioxide emissions, according to the report, are on track to rise by more than 2 % in 2018 on the back of renewed use of coal and continued growth in oil and gas use. emissions growth from 2014 to 2016 was always a delicate balance, and 1.6% increase in 2017 and growth in excess of 2% in 2018. Approximately 12 Gt (40%) are emitted from electricity generation sector through the combustion of fossil fuels like coal, oil, and natural gas to generate the heat needed to power steam-driven turbines. Burning these fuels results in the production of carbon dioxide (CO₂)—the primary heat-trapping, “greenhouse gas” responsible for global warming.

Over the past two centuries, mankind has increased the concentration of CO₂ in the atmosphere from 280 to more than 380 parts per million by volume, and it is growing faster every day. As the concentration of CO₂ has risen, so has the average temperature of the planet. Over the past century, the average surface temperature of Earth has increased by about 0.74°C. If we continue to emit carbon without control, temperatures are expected to rise by an additional 3.4°C by the end of this century. Climate change of that magnitude would likely have serious consequences for life on Earth. Sea level rise, droughts, floods, intense storms, forest fires, water scarcity, and cardiorespiratory diseases would be some results. Agricultural systems would be stressed—possibly declined in some parts of the world. There is also the risk that continued warming will push the planet past critical thresholds or “tipping points” —like the large-scale melting of polar ice, the collapse of the Amazon rainforest, or the

warming and acidification of the oceans—that will make irreversible climate change. Despite mounting evidence of the dangers posed by climate change, efforts to limit carbon emissions remain insufficient, ineffective, and, in most countries, nonexistent. Given current trends and the best available scientific evidence, mankind probably needs to reduce total CO₂ emissions by at least 80% by 2050. Yet each day emissions continue to grow.

Electricity sector is the major source of the total global emissions responsible for approximately 40% worldwide, followed by transportation, industry, and other sectors. As a result, we will focus in this paper on emission of CO₂ from electricity quantitatively and calculation of GWP.

Core part:

Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere when it is absorbed by plants as part of the biological carbon cycle. It is the principal anthropogenic gas that is thought to affect the Earth's radiative balance (IPCC, 2007). For this reason, it is believed that there is a close correlation between CO₂ and the change of the Earth's temperature. The way this relation has been established is largely based on plotting the average temperature anomalies and the amount of CO₂ present in the atmosphere versus time.

Global Warming Potential Global warming potential (GWP) represents the impact of anthropogenic emissions that

enhance the radiative forcing of the atmosphere. As expected, GWP is seen to decrease dramatically in all studies as a result of CCS. Most studies find a reduction of 68 to 81 percent with CCS over the base case for PC. The majority of these emissions in the base case, PC without CCS, come from power production composing approximately 10 percent of GWP in the base case. About half of the contribution from coal mining and transportation is due to methane emissions. The total GWP contribution from coal mining and transportation increases for a coal plant with CCS due to increased coal consumption required to maintain 500-MWe power production.

Methodology:

This research paper is based on the secondary data sourced from journals on internet, internet,

articles, previous research paper. The design is based on the objectives of the study and the hypothesis of the study. Secondary data is collected through annual Electricity bill of several family, published national electricity plan, database for the Indian power sector and various websites on global warming.

While doing research I collected secondary data from electricity bill as an activity source and converted it into amount of CO₂ released / kWh

$$\text{Kg of CO}_2 / \text{kWh} = \text{electricity consumed in kWh} \times \text{emission factor} \quad (\text{emission factor} = 0.823)$$

$$\text{ton of CO}_2 = \text{kg of CO}_2 \times 10^{-3}$$

$$\text{GWP} = \text{ton of CO}_2 \times \text{GWP value} \quad (\text{GWP value of CO}_2 = 1)$$

Data analysis:

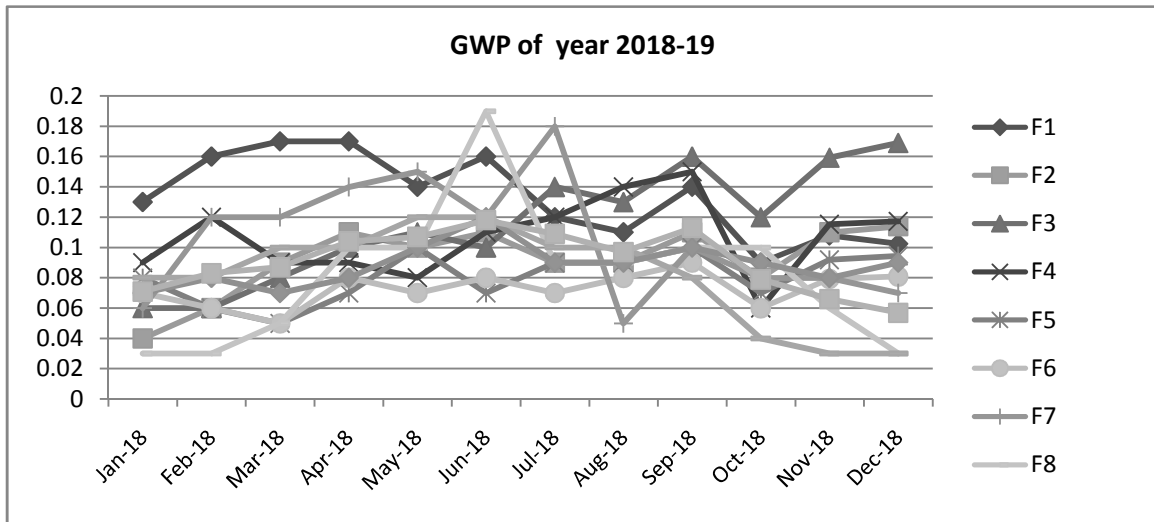
1) Emission of CO₂ and GWP

| | Jan-18 | Feb-18 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | |
|----------|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|---------|---------|---------|
| Family 1 | UNIT(kWh) | 160 | 198 | 210 | 201 | 168 | 189 | 148 | 134 | 171 | 107 | 126 | 97 | 67 |
| | Kg CO ₂ / kWh | 131.68 | 162.954 | 172.83 | 165.423 | 138.264 | 155.547 | 121.804 | 110.282 | 140.733 | 88.061 | 103.698 | 79.831 | 55.141 |
| | g CO ₂ / kWh | 131680 | 162954 | 172830 | 165423 | 138264 | 155547 | 121804 | 110282 | 140733 | 88061 | 103698 | 79831 | 55141 |
| | CO ₂ ton | 0.13168 | 0.162954 | 0.17283 | 0.165423 | 0.138264 | 0.155547 | 0.121804 | 0.11282 | 0.140733 | 0.08806 | 0.1037 | 0.07983 | 0.05514 |
| | GWP | 0.13 | 0.16 | 0.17 | 0.17 | 0.14 | 0.16 | 0.12 | 0.11 | 0.14 | 0.09 | 0.1 | 0.08 | 0.05 |
| Family 2 | UNIT(kWh) | 50 | 75 | 109 | 136 | 123 | 135 | 110 | 106 | 139 | 92 | 125 | 107 | 84 |
| | Kg CO ₂ / kWh | 41.15 | 61.725 | 89.707 | 111.928 | 101.229 | 111.105 | 90.53 | 87.238 | 114.397 | 75.716 | 102.875 | 88.061 | 69.132 |
| | g CO ₂ / kWh | 41150 | 61725 | 89707 | 111928 | 101229 | 111105 | 90530 | 87238 | 114397 | 75716 | 102875 | 88061 | 69132 |
| | CO ₂ ton | 0.04115 | 0.061725 | 0.089707 | 0.111928 | 0.101229 | 0.111105 | 0.09053 | 0.087238 | 0.1144 | 0.0757 | 0.10288 | 0.08806 | 0.06913 |
| | GWP | 0.04 | 0.06 | 0.09 | 0.11 | 0.1 | 0.11 | 0.09 | 0.09 | 0.11 | 0.08 | 0.1 | 0.09 | 0.07 |
| Family 3 | UNIT(kWh) | 72 | 69 | 99 | 120 | 135 | 116 | 171 | 157 | 192 | 148 | 92 | 55 | 94 |
| | Kg CO ₂ / kWh | 59.256 | 56.787 | 81.477 | 98.76 | 111.105 | 95.486 | 140.733 | 129.211 | 158.016 | 121.804 | 75.716 | 45.265 | 77.362 |
| | g CO ₂ / kWh | 59256 | 56787 | 81477 | 98760 | 111105 | 95486 | 140733 | 129211 | 158016 | 121804 | 75716 | 45265 | 77362 |
| | CO ₂ ton | 0.059256 | 0.056787 | 0.081477 | 0.09876 | 0.111105 | 0.095486 | 0.140733 | 0.129211 | 0.15802 | 0.1218 | 0.0757 | 0.04526 | 0.07736 |
| | GWP | 0.06 | 0.06 | 0.08 | 0.1 | 0.11 | 0.1 | 0.14 | 0.13 | 0.16 | 0.21 | 0.08 | 0.05 | 0.08 |
| Family 4 | UNIT(kWh) | 115 | 140 | 104 | 98 | 93 | 139 | 141 | 166 | 184 | 72 | 51 | 55 | 36 |
| | Kg CO ₂ / kWh | 94.645 | 115.22 | 85.592 | 80.654 | 76.593 | 114.397 | 116.043 | 136.618 | 151.432 | 59.256 | 41.973 | 45.265 | 29.628 |
| | g CO ₂ / kWh | 94645 | 115220 | 85592 | 80654 | 76593 | 114397 | 116043 | 136618 | 151432 | 59256 | 41973 | 45265 | 29628 |
| | CO ₂ ton | 0.094645 | 0.11522 | 0.085592 | 0.08654 | 0.076593 | 0.114397 | 0.116043 | 0.13662 | 0.15143 | 0.05986 | 0.04197 | 0.04526 | 0.02963 |
| | GWP | 0.09 | 0.12 | 0.09 | 0.09 | 0.08 | 0.11 | 0.12 | 0.14 | 0.15 | 0.06 | 0.04 | 0.05 | 0.03 |
| Family 5 | UNIT(kWh) | 95 | 73 | 63 | 90 | 121 | 88 | 105 | 113 | 124 | 80 | 99 | 98 | 101 |
| | Kg CO ₂ / kWh | 78.185 | 60.079 | 51.849 | 74.07 | 99.583 | 72.424 | 86.415 | 92.999 | 102.052 | 65.84 | 81.477 | 80.654 | 83.123 |
| | g CO ₂ / ton | 78185 | 60079 | 51849 | 7407 | 99583 | 72424 | 86415 | 92999 | 102052 | 65840 | 81477 | 80654 | 83123 |
| | CO ₂ ton | 0.078185 | 0.060079 | 0.051849 | 0.07407 | 0.099583 | 0.072424 | 0.0864 | 0.093 | 0.10205 | 0.06584 | 0.08148 | 0.08065 | 0.0831 |
| | GWP | 0.08 | 0.06 | 0.05 | 0.07 | 0.1 | 0.07 | 0.09 | 0.09 | 0.1 | 0.07 | 0.08 | 0.08 | 0.08 |

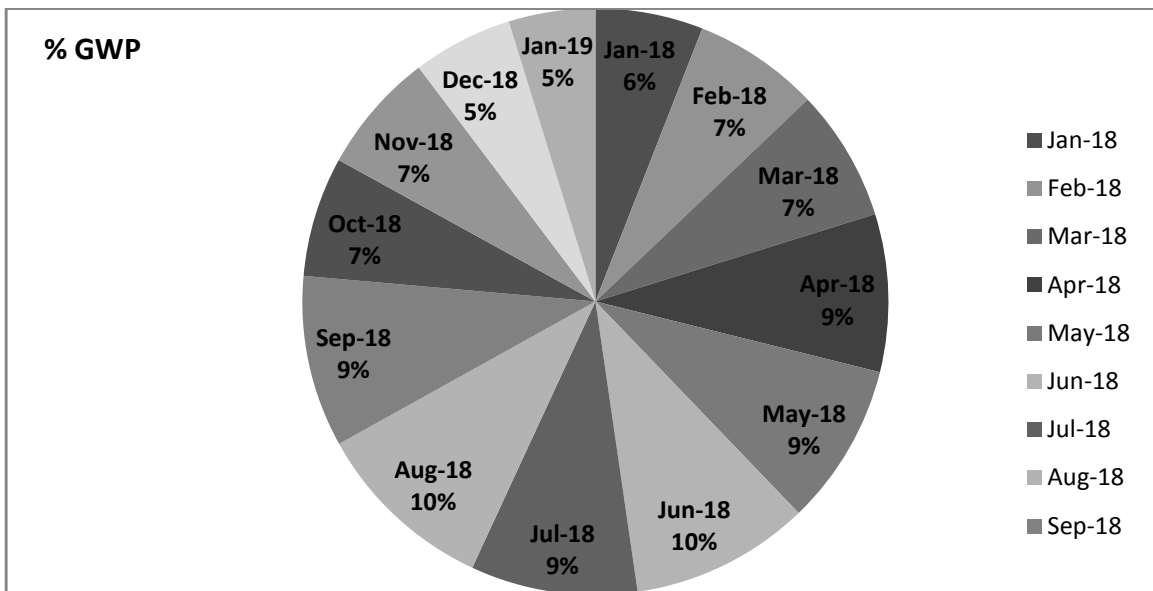
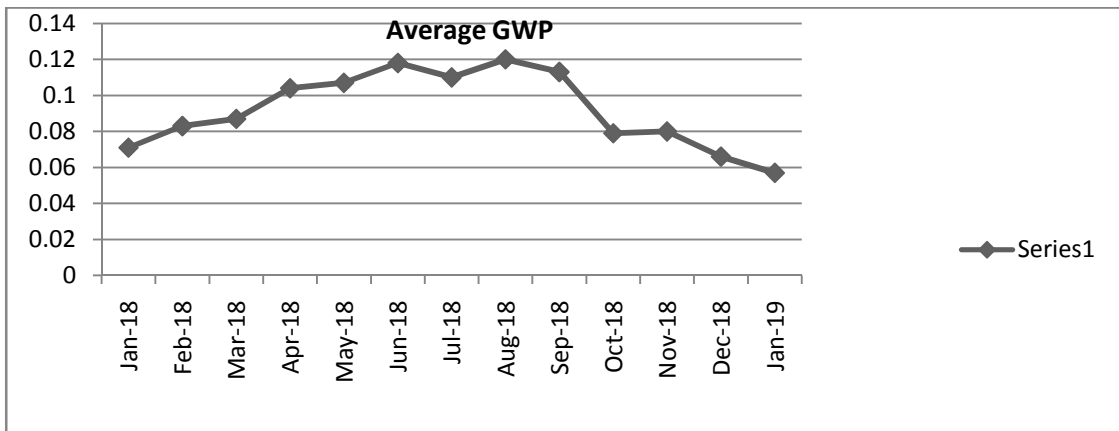
| | | | | | | | | | | | | | | |
|-----------|--------------|----------|----------|----------|----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|
| Family 6 | UNIT(kWh) | 80 | 72 | 63 | 92 | 84 | 92 | 84 | 101 | 106 | 77 | 89 | 75 | 51 |
| | Kg CO2 / kWh | 65.84 | 59.256 | 51.849 | 75.716 | 69.132 | 75.716 | 69.132 | 83.123 | 87.238 | 63.371 | 73.247 | 61.725 | 41.973 |
| | g CO2 / kWh | 65840 | 59256 | 51849 | 75716 | 69132 | 75716 | 69132 | 83123 | 87238 | 63371 | 73247 | 61725 | 41973 |
| | CO2ton | 0.06584 | 0.05925 | 0.051849 | 0.075716 | 0.069132 | 0.075716 | 0.06913 | 0.08312 | 0.08724 | 0.06337 | 0.07325 | 0.06173 | 0.04197 |
| | GWP | 0.07 | 0.06 | 0.05 | 0.08 | 0.07 | 0.08 | 0.07 | 0.08 | 0.09 | 0.06 | 0.07 | 0.06 | 0.04 |
| Family 7 | UNIT(kWh) | 64 | 150 | 149 | 165 | 182 | 150 | 224 | 64 | 130 | 100 | 107 | 96 | 86 |
| | Kg CO2 / kWh | 57.61 | 123.45 | 122.627 | 135.795 | 149.786 | 123.45 | 184.352 | 52.672 | 108.686 | 82.3 | 88.061 | 79.831 | 70.778 |
| | g CO2 / kWh | 57610 | 123450 | 122627 | 135795 | 149786 | 12345 | 184352 | 52672 | 108686 | 82300 | 88061 | 79831 | 70778 |
| | CO2ton | 0.05761 | 0.12345 | 0.122627 | 0.135795 | 0.149786 | 0.12345 | 0.18435 | 0.05267 | 0.10869 | 0.0823 | 0.08806 | 0.07983 | 0.07078 |
| | GWP | 0.06 | 0.12 | 0.12 | 0.14 | 0.15 | 0.12 | 0.18 | 0.05 | 0.1 | 0.08 | 0.09 | 0.08 | 0.07 |
| Family 8 | UNIT(kWh) | 40 | 36 | 60 | 97 | 125 | 130 | 113 | 114 | 126 | 101 | 117 | 78 | 42 |
| | Kg CO2 / kWh | 32.92 | 29.628 | 49.38 | 102.875 | 102.875 | 186.99 | 92.999 | 93.822 | 103.698 | 103.698 | 96.291 | 64.194 | 34.566 |
| | g CO2 / kWh | 32920 | 29628 | 49380 | 102875 | 102875 | 186990 | 92999 | 93822 | 103698 | 103698 | 96291 | 64194 | 34566 |
| | CO2ton | 0.03292 | 0.029628 | 0.04938 | 0.102873 | 0.102875 | 0.18699 | 0.093 | 0.09382 | 0.1037 | 0.1037 | 0.09629 | 0.06419 | 0.03457 |
| | GWP | 0.03 | 0.03 | 0.05 | 0.1 | 0.1 | 0.19 | 0.09 | 0.09 | 0.1 | 0.1 | 0.1 | 0.06 | 0.03 |
| Family 9 | UNIT(kWh) | 100 | 103 | 120 | 131 | 151 | 144 | 120 | 127 | 95 | 46 | 60 | 42 | 37 |
| | Kg CO2 / kWh | 82.3 | 84.769 | 98.76 | 107.813 | 124.273 | 118.512 | 98.76 | 104.521 | 78.185 | 37.858 | 49.38 | 34.566 | 30.451 |
| | g CO2 / kWh | 82300 | 84769 | 98760 | 107813 | 124273 | 118512 | 98760 | 104521 | 78185 | 37858 | 49380 | 34566 | 30451 |
| | CO2 ton | 0.023 | 0.084769 | 0.09876 | 0.107813 | 0.124273 | 0.118512 | 0.09876 | 0.10452 | 0.07819 | 0.03786 | 0.04938 | 0.03457 | 0.03045 |
| | GWP | 0.08 | 0.08 | 0.1 | 0.1 | 0.12 | 0.12 | 0.1 | 0.1 | 0.08 | 0.04 | 0.05 | 0.03 | 0.03 |
| Family 10 | UNIT(kWh) | 87 | 96 | 79 | 101 | 130 | 145 | 109 | 115 | 122 | 104 | 110 | 95 | 113 |
| | Kg CO2 / kWh | 71.601 | 79.008 | 65.017 | 83.123 | 106.99 | 119.335 | 89.707 | 94.645 | 100.406 | 85.592 | 95.53 | 78.185 | 92.999 |
| | g CO2 / kWh | 71601 | 79008 | 650017 | 83123 | 106990 | 119335 | 89707 | 94645 | 100406 | 85592 | 90530 | 78185 | 92999 |
| | CO2 ton | 0.071601 | 0.079008 | 0.065071 | 0.083123 | 0.10699 | 0.119335 | 0.08971 | 0.09465 | 0.10041 | 0.08559 | 0.09053 | 0.07819 | 0.093 |
| | GWP | 0.07 | 0.08 | 0.07 | 0.08 | 0.1 | 0.12 | 0.09 | 0.09 | 0.1 | 0.09 | 0.09 | 0.08 | 0.09 |

2) Average GWP

| | Jan-18 | Feb-18 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| F1 | 0.13 | 0.16 | 0.17 | 0.17 | 0.14 | 0.16 | 0.12 | 0.11 | 0.14 | 0.09 | 0.1 | 0.08 | 0.05 |
| F2 | 0.04 | 0.06 | 0.09 | 0.11 | 0.1 | 0.11 | 0.09 | 0.09 | 0.11 | 0.08 | 0.1 | 0.09 | 0.07 |
| F3 | 0.06 | 0.06 | 0.08 | 0.1 | 0.11 | 0.1 | 0.14 | 0.13 | 0.16 | 0.12 | 0.08 | 0.05 | 0.08 |
| F4 | 0.09 | 0.12 | 0.09 | 0.09 | 0.08 | 0.11 | 0.12 | 0.14 | 0.15 | 0.06 | 0.04 | 0.05 | 0.03 |
| F5 | 0.08 | 0.06 | 0.05 | 0.07 | 0.1 | 0.07 | 0.09 | 0.09 | 0.1 | 0.07 | 0.08 | 0.08 | 0.08 |
| F6 | 0.07 | 0.06 | 0.05 | 0.08 | 0.07 | 0.08 | 0.07 | 0.08 | 0.09 | 0.06 | 0.07 | 0.06 | 0.04 |
| F7 | 0.06 | 0.12 | 0.12 | 0.14 | 0.15 | 0.12 | 0.18 | 0.05 | 0.1 | 0.08 | 0.09 | 0.08 | 0.07 |
| F8 | 0.03 | 0.03 | 0.05 | 0.1 | 0.1 | 0.19 | 0.09 | 0.09 | 0.1 | 0.1 | 0.1 | 0.06 | 0.03 |
| F9 | 0.08 | 0.08 | 0.1 | 0.1 | 0.12 | 0.12 | 0.1 | 0.1 | 0.08 | 0.04 | 0.05 | 0.03 | 0.03 |
| F10 | 0.07 | 0.08 | 0.07 | 0.08 | 0.1 | 0.12 | 0.09 | 0.09 | 0.1 | 0.09 | 0.09 | 0.08 | 0.09 |
| AvgGWP | 0.071 | 0.083 | 0.087 | 0.104 | 0.107 | 0.118 | 0.109 | 0.097 | 0.113 | 0.079 | 0.08 | 0.066 | 0.057 |



| Average GWP | | | | | | | | | | | | |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Jan-18 | Feb-18 | Mar-18 | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 |
| 0.071 | 0.083 | 0.087 | 0.104 | 0.107 | 0.118 | 0.11 | 0.12 | 0.113 | 0.079 | 0.08 | 0.066 | 0.057 |



Conclusion:

This paper develops a feasible methodology for constructing territorial CO₂emissions inventories for Indian city. By applying this methodology to city, researchers can calculate the CO₂ emissions of any Indian cities. This knowledge will be helpful for understanding energy utilization and identify key emission contributors and drivers given different socioeconomic settings and industrialization phrase for different cities.

We applied this methodology to an area and compiled the 2018CO₂emissions inventories for the area. The results show that, in 2018, the month April to September produced the most CO₂ emissions due to high consumption of electricity and electric appliances like air condition, refrigerator, water heater, washing machine drier, oven etc., in summer and rainy season.

Suggestion:

As discussed above, coal and heavy emission intensity power production industries are the primary emission sources within city. Therefore, in order to reduce the CO₂ emissions, we could take policy from two aspects. The first path is reducing the coal share in the energy mix and develop clean coal utilization strategy. The second one is reforming the industrial structure.

Reducing the coal share in the energy mix could decrease the emission intensity of one city. This is an effective way to reduce the CO₂ emissions while keep economic growing continually. Coal combustion emits more CO₂ to produce the same unit of heat compared with other energy types. Replacing coal by clearer energy types, such as nature gas, will help emission control in both Chinese cities and the whole world. Efforts has been taken according to the government document these years and achieved initial success. Efforts should be planned and undertaken at the city level in the future. For example, we

should replace coal gas with natural gas for residential use.

Firstly, we should close all the non-permission coal mining and consuming enterprises. All the private and unregulated energy enterprises should be integrated into the corporations with the most developed and clean energy technologies. Secondly, the city government should also replace heavy emission intensity manufacturing industries with services sectors.

Reduce consumption of electricity:

1. Make your refrigerator more efficient.
2. Install compact fluorescent light bulbs.
3. Install automatic light sensors or timed sensors on outdoor lighting.
4. Install solar-powered landscape lighting.
5. Buy EnergyStar-rated appliances.
6. Add insulation to hot water lines.
7. Turn off lights when not in use.

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3.

COMPARATIVE STUDY OF BOTTLED WATER, UNDER GROUND AND RO-FILTER WATER WITH REFERENCE TO BHIWANDI DISTRICT THANE

Saiyada Shaikh and Nisar Shaikh

ABSTRACT: Water is the most important element on planet earth. Water saves lives. Access to clean and safe water is crucial to child and community development. We often take water for granted. A shower and a glass of water is usually just a turn of a tap way. But that is not true in many developing countries. The main component of human body is water and without water human body doesn't work. Consumption of bad quality water can have dramatic impact on human health. The present study is a comparison between bottled water, ground water, and RO filter water in Bhiwandi. None of RO water purifier brands deliver 100% safe drinking water against the latest BIS standards IS:16240:2015. (www.consumer_voice.org/landing_RO.aspx). The comparative study is done to enlighten the knowledge of safe drinking water.

Key words: Bottled water, ground water, RO Filter water, consumption.

INTRODUCTION: On this planet earth the safe drinking water is essential for the human existence. The main component of human body is water and without water human body doesn't work. Consumption of bad quality water can have dramatic impact on human health. The present study is a comparison between bottled water, ground water, and RO filter water in Bhiwandi. Bhiwandi is a city, in the district of Thane in the western state of Maharashtra, in India, located 20 km to the northeast of Mumbai and 15 km to the northeast of Thane city. The latitude of Bhiwandi is 19.296664°N 73.063121°E. The area experiences a tropical climate. The average elevation is 24 m from MSL (Mean Sea Level). The average rain fall is 3224mm. The consumption of bottled water has been increasing consistently over the last decade, even in countries where ground water quality is considered excellent. Water is used for variety of purposes like drinking, washing, bathing, and recreations. This paper discusses some of the reasons why people decide for an option that is often more expensive and less comfortable. Consumer surveys usually stress two main factors: dissatisfaction with ground water organoleptic (especially taste) and health/risk concerns. However, many other factors are involved, including demographic variables and the perceived quality of the water source. There is no doubt that pollution is one of the biggest problems facing the environment today, and water bottles that are thrown out after each one-time use contribute greatly to its ever-increasing buildup. The recycling movement continues to gain traction (though certainly not fast enough in comparison to the amount of pollution), but when it comes to water bottles recycling is not a great option.

In Bhiwandi locally rural people depend on groundwater as a source for drinking water and also for other domestic chores. Groundwater is water located beneath the ground surface in the soil pore spaces and in the fractures of lithological formation (Anonymous, 2009a). Groundwater is not as susceptible to pollution as surface water, but once polluted, restoration is difficult and long term (Henry and Heinke, 2005). Municipal waste, industrial wastes, chemical fertilizers, and landfill leachates have entered the soil, infiltrated to some aquifers, and degraded

groundwater quality (Vasanthy et al, 2009; Anonymou, 2009b; Sirkar et al 1995). The quality of groundwater may also vary with depth of water table and seasonal changes and is governed by the extent and composition of the dissolved salts depending upon the source of the salt and subsurface environment (Maruthi and Madhuri, 2011; Burston et al, 1993; Rajmohan 2003). Reverse osmosis (RO) is a water purification technology that uses a semipermeable membrane to remove ions, molecules, and larger particles from drinking water. None of RO water purifier brands deliver 100% safe drinking water. Consumers voice recently tested and compared leading brands of RO water purifiers (filters) against the latest BIS standards IS:16240:2015. (www.consumer_voice.org/landing_RO.aspx). RO water is best suitable to treat hard water. RO water purifier removes dissolved materials contaminants but RO water purifier not much effective over microorganisms.

MATERIALS AND METHODS: Branded bottled water was purchased from grocery shops from Bhiwandi city. Volume of the bottle is 1 liter for ground water; water sample is taken from bore well and also collected water sample from RO Water Filter. All these samples were stored at ambient conditions (20-25° C) prior to complete the concern analysis.

The physico-chemical parameters of the water samples were analyzed immediately after the collection. The conducted analysis included parameters pH, Electrical conductivity (EC), were measured using the portable meter for pH and EC. The other parameters include O₂, CO₂, NO₃, PO₄, and SO₄ were determined by using the Laboratory Standard Method. The different physical parameters were also determined in the laboratory. It is noteworthy to mention that all the analytical tests were performed in accordance to the standard methods for the examination of the water and wastewater (APHA et.al., 2005).

RESULTS AND DISCUSSION: The physico-chemical parameters of the analyzed Indian drinking waters are summarized in table for bottled water, ground water, and RO Filter water, together with corresponding guidelines by Indian Standards IS:10500 (BIS) and World Health organization for drinking water.

| WATER SAMPLE | PH | EC | CO ₂ mg/l | O ₂ mg/l | NO ₃ -N µg atom/l | PO ₄ -P µg atom/l | SO ₄ -S mg/l |
|-----------------|---------|------|----------------------|---------------------|------------------------------|------------------------------|-------------------------|
| Bottled Water | 6.5 | 0.10 | 3 | 7.47 | 0.42 | 3.44 | 5.32 |
| Ground Water | 7.5 | 3.84 | 2 | 6.56 | 0.43 | 0.22 | 5.2 |
| RO Filter Water | 8.8 | - | 1 | 8.32 | - | - | - |
| BIS | 6.5-8.5 | - | - | - | 45 | 5.0 | 150 |
| WHO | 6.5-8.0 | - | - | - | 50 | - | 250 |

As the result comes within the acceptable range except PH of RO filter water which is slightly increased, the table shows different chemical parameters in the investigated bottled drinking water brand, ground water, and RO filter water. The variation in different bottled water depends on various factors like – natural environment from which the water is taken, the source of water, the types of treatments and the purification techniques used during their production. Additional changes may also occur due to transportation and storage, or direct exposure to sunlight. Ground water is good for consumption all the tests come under the acceptable range according to BIS and WHO. The RO filter water is showing little alkaline nature which is not good for health as if it is consuming for long time. There are certain advantages of using RO water like it purifies and treat hard water into soft and sweet, it remove toxins such as lead, mercury, fluoride, arsenic, chlorine which causes human body to be ill. Lead metal can be brain damage and anemia. But form other coin side it has disadvantages too, it remove essential minerals without discrimination of good and bad stuff. They do not kill bacteria, viruses. They may altered the taste of water as natural minerals are remove water get demineralized as a result water taste affected , it become tasteless. Another thing is it takes more time to purify, and most important it wastes the water, and is expensive too. Household reverse osmosis units use a lot of water because they have low back pressure. As a result, they recover only 5 to 15% of the water entering the system. The remainder is discharged as waste water. Because waste water carries with it the rejected contaminants, methods to recover this water are not practical for household systems. Wastewater is typically connected to the house drains and will add to the load on the household septic system. A reverse osmosis unit delivering five gallons (19 L) of treated water per day may discharge between 20 and 90 gallons (75–340 L) of waste water per day.

Due to its fine membrane construction, reverse osmosis not only removes harmful contaminants present in the water, but it also may remove many of the desirable minerals from the water. A number of peer-reviewed studies have looked at the long-term health effects of drinking demineralized water. While there are plenty of reusable water bottles on the market, non-reusable water bottles are still in high demand and pose a greater problem: their dangerous plastic. Plastic from non-reusable water bottles has been known to contaminate water with chemicals such as Bisphenol A (BPA) and phthalates, and the likelihood of such contaminants leaking increases each time the plastic is reused, heated, or goes anywhere room temperature or above. The present study of the physico-chemical quality of water samples showed that most of the parameters were within the permissible limits of BIS and WHO.

RECOMMENDATION: ON the basis of above study it is recommended that we should promote the ground water conservation and avoid using bottled and RO filter water or

use occasionally. It is advisable that filtering and boiling of water can be used for treatment of water before consumption. Appropriate technologies for home use of ground water: In isolated rural communities in developing countries and during emergencies, there should be access to rapid but reliable methods of purification that supply small volumes of water (10 to 1,000 litres). The systems should rely as much as possible on local labour and material. Use of alum, permanganate and chlorine tablets for quick purification is easy and practicable at the domestic level. A well-known and safe method practised at homes in South Asia involves a mud-pot filtering system. This method needs no electric power, filters or chemicals. As a result, maintenance costs are minimal, requiring only funds for the charcoal, gravel and sand that must be replaced every few days.

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4.

DOMESTIC VIOLENCE IN VIJAY TENDULKAR'S KANYADAAN**Sayed Zainab Sadaf**

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ABSTRACT:

Domestic violence is defined as constantly abusive behavior by one person against another involved in an intimate relationship, such as marriage. Domestic violence is not limited to physical abuse alone and includes sexual, emotional, economic and mental abuse as well. The purpose of this paper is to highlight the issue of Domestic violence from a literary point of view.

*Vijay Tendulkar has been in the forefront of not just Marathi but Indian theater for almost forty years and he has been reckoned as a major and leading play writer in modern Indian literature. His plays portray the women not only as a commodity of male gaze and as a victim subjected to violence whether physically or emotionally. He is the author of thirty full length plays, several of which have become classics of modern Indian theatre. Over the last few decades, he has scanned the life, life-world of contemporary Indian in order to discover the sources and nature of the violence that had to pattern it. Even when violence is not allegedly his theme, it casts a shadow on his characters. His main themes are the intricacy of human-mind, man-woman relationship, the plight of woman in a male dominated society and violence. The plays, *The Vultures*, *Sakharam Binder*, *Ghashiram Katwal*, *Silence! The court is in Session*, *Kanyadaan* are a vehicle to prove the playwrights ideas about the flaming concern of Domestic violence. This paper attempts to analyze the issue of domestic violence as observed in the play *Kanyadaan*.*

Keywords: *Domestic violence, women, exploitation, humiliation, puissance*

Domestic violence (also named domestic abuse or family violence) is a pattern of behavior which incorporates violence or other abuse by one person against another in a domestic setting, such as in marriage or cohabitation. It may be termed close partner violence when committed by a spouse or partner in an intimate relationship against the other spouse or partner, and can take place in heterosexual relationships, or between former spouses or partners. Domestic violence can also include violence against children, parents, or the elderly, and may be done for self-defense. It takes a number of forms, including physical, verbal, emotional, economic, religious, reproductive, and sexual abuse, which can range from subtle, forcible forms to marital rape and to violent physical abuse such as choking, beating, female genital mutilation and acid throwing that results in death. Domestic murders involve stoning, bride burning, honor killings, and dowry deaths.

Globally, the victims of domestic violence are tremendously women, and women tend to experience more severe forms of violence. Indian Women—at one point of time, during the Vedic ages, were treated at par with men and were given all the rights that men enjoyed in those days; then and now—practically no difference between men and women but in real life, the feeble condition of majority of women in our country is not hidden from any one. Domestic violence, exploitation, harassment, physical and mental torture are a daily thing in the life of most of the women in India. Though one sector boasts about advancement and improved life style of Indian women, there is the other section that is even denied fundamental rights and is leading a dilapidated life. Women have been treated as an object of luxury and lust. In our patriarchal society, male domination has reduced them to nullity and have been bartered, sold and used as stepping stones for the so-called success that male race enjoys. Such

a tainted world of male domination is portrayed by Tendulkar where discrimination, sex and Domestic violence are in full swing and this paper tends to show us how women have been subjugated in all aspects of their lives with the help of Tendulkar's play, *Kanyadaan*.

The play, *Kanyadaan* of Tendulkar shows the theme of Domestic violence and exploitation well. Jyoti, a young Brahman woman comes from a politically and socially active family. Nath Devalikar, her father, is an MLA. Her mother, Seva is a social worker. Nath is a busy man who is out of home almost always on tour delivering public speeches. Seva is also busy arranging women's rallies and camps. Jyoti has fallen in love with Arun Athavale, a dalit youth from a village, whom she has known only for two months. Arun is poor, but endowed and he is a B.A student. One day she confesses her wish to the parents and brother. Her mother is surprised to hear this. But Nath is eager and dismisses his wife's questions concerning the boy's background and occupation as irrelevant. Seva warns Jyoti of the consequences of her impetuous decision saying that Jyoti has been brought up in a specific culture and she may not be able to handle it. But Jyoti tells her mother that she will manage the consequences. Jyoti brings Arun on one day to introduce him to her parents. Arun is dark-complexioned and has a harsh face, but good looking. During the conversation, Arun grows more on the subject of untouchability. His words spit malice. They express his antipathy for Brahmins. Jyoti tells him that she is not a touch-me-not girl, Arun abruptly seizes her arm and twists it violently. She is devastatingly hurt. Seva enters witnessing this sight. After some time Arun leaves the house without having the tea that is brought by Jyoti. Though Nath speaks

in favor of Arun, he advises his daughter to think over the matter. But Jyoti says that she does not change her mind and her decision is ultimate. Jyoti and Arun get married.

Arun proves to be a violent husband who treats his wife as an object of retribution against all the persons of higher caste and class. Though Arun loves Jyoti very much but the dalit part of his mind lives in his painful past and unleashes torment on his high caste wife. His past returns to haunt him every night and he turn into capricious savage beast, which has strange hatred and a sadistic desire to punish his wife. Not only the daughter is punished but Arun acquires sadistic pleasure in abusing her parents too. Arun even accuses that Jyoti's real father is not Mr. Nath but Guruji, the guide and philosopher of Seva.

Tendulkar has represented the women subordination and male chauvinism in a male-dominated society. Women are not consulted in decision making and are often forced to remain indoors and are subjected to domestic violence and abuse, physical and psychological oppression. Steadily the artificial and polished behavior vanishes and Arun in a very straight forward manner starts revealing to Jyoti the harshness and ugliness of his life in the most revolting manner. The real man in him comes out and feels challenged when Jyoti discounts his statement that he will beat his wife, he twists her arm and she feels more stunned than hurt. Circumstances have made Jyoti totally trodden and tired within a few months of her married life. When she cannot bear it any longer, she comes home with a will never to return to him. Nath attributes Arun's cruelty to his desolation due to their lack of residence. So he offers a room in his house for Arun and Jyoti. But Jyoti was fed up with her husband. When her father proposed to call Arun to stay with them she says:

He . . . he will not enter this house. Because . . . I have left him . . . I am not going back to him again . . . never. (39)

Jyoti now cognizes that she was wrong with her decision to marry Arun. She now confronts the reality. But Nath does not give up his ideal:

Seva let not this wonderful experiment fail! This dream which is struggling to turn real, let it not crumble into dust before our eyes! We will have to do something. We must save this marriage. Not necessarily for our Jyoti's sake . . . This is not just a question of our daughter's life, Seva, this has . . . a far wider significance . . . this experiment is a very precious experiment. (41)

When Seva asks Arun the reason of the clash he shocks them saying that he has beaten Jyoti for which he does not feel shy but defense himself saying that abuse and beating are knitted in the webs of their lives. It is part and parcel of their lives. Arun's atrocity has been exposed in his non hypocritical behavior, when he defends himself by saying:

What am I but the son of scavenger. We don't know the non-violent ways of Brahmins like you. We drink and beat our wives.... we make love to them..... but the beating is what gets publicized . (540)

For him beating of the wife does not mean that he dislike her. He loves her too, but according to him it is never appreciated but they are evaluated by their pessimistic sides only. So he says:

I am a barbarian, a barbarian by birth when have I claimed any white collar culture. (539)

Jyoti, who has been watching all this, leaves the house with Arun to avoid further humiliation to her parents and brother. Seva tells him that Jyoti has become pregnant and she is apprised rest by the doctor. But she has unsuccessful to bring her daughter to home. Nath feels praise for Arun who has shown the world that he is a influential creative writer through his autobiography. Seva tells Nath that such wonderful writer (Arun) wants to remain a loafer. He wants his wife to be productive. On the top of that he wants to kick his wife in the belly because of her high caste. Nath is asked to chair a discussion on his son-in-law's book. But he declines to this as he has discovered that Arun is hypocrite and an avenger. Seva tells Nath that Arun, in his book, has said about inequality and exploitation is hypocrisy of the first order. She adds that Arun is like a barefaced parasite, lives on her daughter's blood and on top to that he drinks and beats and taunts Jyoti about her caste and about her parents, heaping foul abuse on them for being high born.

The violence devised in the play has three dimensions: physical, psychological and verbal. Psychological and physical violence are perceived in Arun's cruel inhuman treatment to Jyoti, which is also his way of overcoming his inferiority complex. Verbal violence can be seen in Arun's foul and obscene language. Arun comes along with his two friends and requests Nath to talk about his book in the conference When Nath affably refuses, he blackmails him by saying:

Due to unavoidable circumstances, Nath saheb could not, etc., etc. But nowadays people have become very smart. They read too much into such situations. They make one plus one add up to eleven. They will say that father-in-law and son-in-law don't see eye to eye; that I regularly torture your daughter, and more nonsense along those lines... Vamanseth, don't you think so? What's to stop people from saying that I got your daughter thrown out of her house? Other gossip will have it that the rise of the son-in-law could not be endured by the father-in-law. The rise of the Dalit son-in-law to literary heights caused heartburn in the upper caste, socialist father-in-law. (55)

Seva advises him to grant Arun's request so she pleads Nath by stating:

First listen to me, than do what you like. Look, we are badly trapped. If we go against his wishes, it will mean more suffering to Jyoti. He will take it out on Jyoti. Wait, let me finish. Jyoti's condition frightens me. It is a question of her life and death. And Jyoti is our daughter. Your refusal will make him find new ways to torment her. If you don't go to the meeting, God knows what he . . . in his madness . . . will do to Jyoti . . . Therefore, you will have to go. You will have to preside over the function. You will have to praise the book, because that is the only opinion left to us. (57-58)

Tendulkar presents the real situation where Nath is as much guiltier for Jyoti's misery as Arun. Their mental disharmony is due to gender and social inequalities that have survived several reformist movements owing to their invisible pliability. Lastly Jyoti accuses her father of making her mentally crippled:

You think about it, I have to stop thinking and learn to live. I think a lot. Suffer a lot. Not from the blows, but from my thoughts, I can't bear them much longer . . . forgive me, Bhai; I said things I shouldn't have. But I couldn't help it. I was deeply offended by your hypocrisy. I thought: why did this man have to inject and drug us every day with truth and goodness? And if he can get away from it at will, what right had he to close all our opinions? I haven't been able to forget an image I saw years ago on my way to school. A man opened the lids of two baskets slung upon the pole he carried on his shoulder. And from them, two shaking, swaying, staggering creatures slipped out, human in appearance, their wrinkled skin covering twisted bodies. Someone said these people kidnap little children, break their limbs and make them cripples. Bhai, forgive me for my words, but you have made us . . . (69-70)

The play *Kanyadaan* exposes both the physical and mental exploitation done to Jyoti, the main character. It is not only with the case of Jyoti but of the whole female race from the time immemorial, women are treated as swine and slaves.

To conclude and pictures the position of women in the society, a quotation from Virginia Woolf is worth mentioning where she traces the same picture of women in society:

"Imaginatively she is of the highest importance; practically she is completely insignificant. She pervades poetry from cover to cover; she is all but absent from history. She dominates lives of kings and conquerors in fiction; in fact she was the slave of any boy whose parents forced a ring upon her finger... (and) in real life she could hardly read, could scarcely spell, and was the property of her husband"

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5.

DOMESTIC VIOLENCE**Dr. Shilpa Shah**

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INTRODUCTION:- Violence against women in India is not new. Indian Women from centuries are subjected to sexual harassment, sexual violence, physical heating from centuries.

From last 35 Years, many women's movements were silent on these issue which it are openly challenged. This is given Social Sanction today free family life is the right of every household which is given to us by 2005 Civil Law against Domestic Violence.

WHAT IS DOMESTIC VIOLENCE ?

"Domestic Violence comprises of pattern of behavior which involves violence or other abuse by one person against another in Domestic setting such as in Marriage." It takes number of forms, including physical, verbal violence such as stoning, bride – burning, honor killings and dowry death..

WHAT IS FAMILY RELATIONS :-

Family Relation is Inter – Personal Relationship between family members like Mother, Sister, Wife and the Relation which were made because of Marriage and Joint Family.

TYPES OF VIOLENCE :-**1. PHYSICAL BEATING :-**

Physical abuse involves beating, use of force, shoving and endangering the safety of other person.

2. SEXUAL VIOLENCE :-

Sexual Violence includes maintaining Sexual Relation by use of force, showing Porn Films, Molestation, etc.

3. EMOTIONAL ABUSE :-

It includes public humiliation criticism, stalking, repeated stonewalling, mostly those women who do have not children suffer from emotion abuse.

4. ECONOMIC ABUSE :-

Economic Abuse is a form of abuse when one partner has control over the other like partners economic resources. A victim may not get adequate money to fulfill economic needs of that person.

Marital Violence after marriage is a part of every household. No country in the world is escaped from the reality of Marital Violence. It is present in each and every society.

REASONS FOR DOMESTIC VIOLENCE :-**1. PATRIACHAL SOCIETY :-**

Indian Society is Patriachal where Male always plays an important role in the decisions of the family. Women of the Family are not free to express their views.

2. CUSTOMS LIKE DOWRY :-

Disputes related to dowry sometimes result in violence against women, including Acid Attack and Killings. In India, Dowry is known as Dahej. The Practice of Dowry inevitably leads to discrimination and makes them vulnerable to various forms of violence. About 4.6% total crimes against women in India were dowry death related. The Ratio of Dowry death in India is 0.7 women per 1 Lakh women every year.

3. SEXUAL VIOLENCE :-

Rape is one of the most common crimes in India. In India a women is raped in every 29 Minutes. In 2012, there were 24,923 Rape Cases reported in India. Marital Rape is also another form of Sexual Violence. 20% of Indian Men admit forcing their wives to have sex.

4. ADDICTION :-

Addiction or substance abuse results in Domestic Violence against wome, in lower or higher income families. It is common to find drunkard and drug addict husbands routinely beating their wives.

5. ECONOMIC DEPENDENCE :-

Due to Greater economic dependence of women on men, the severity of abuse also increases. For small benefits given to her, husband demands greater obedience from her. Inlaws always taunt her for her economic dependence and if the women is not highly educated then she suffers from lot of abuse.

6. FAMILY DISPUTES :-

Family Disputes is the result of clash of values of both old and new traditions. Women are not allowed to assert their own identity. They are not allowed to choose their own life partner. they do not have the property rights and if they tried to raise their voice against such injustices they are silenced by the use of force by their families.

7. INEQUALITY :-

Indian society has always treated women as unequal in society. The Rights which were liberally granted to men are totally absent in case of women. For small matters also they have to take permission of their family and if they decide to follow their minds it results in violence against them.

8. LACK OF EDUCATION :-

Lack of Education makes them unaware of their rights. Govt. of India has made lot of change in the laws, which gives equal rights to women but being uneducated person, she can not exercise the option of those laws.

EFFECTS OF DOMESTIC VIOLENCE :**HEALTH :-**

Those women who suffer from domestic violence tend to have long-term mental disorders and drug dependency. Serious Health Problems result because of Domestic

Violence, physical health problems such as injury to internal organs is very common, other forms of physical health problems like blood pressure, migraine, lack of sleep results because of Domestic Violence.

Mental disorders like anxiety, depression, fear, low self-esteem, depressive compulsive disorder and fatal effects include suicide, homicide etc.

SOCIAL EFFECTS :-

Social effects include Divorce, suicide and homicide. Those women who suffer constant abuse at the hands of their family, commit suicide or are murdered by their families.

IN INDIA RATIO OF VIOLENCE AGAINST WOMEN IN VARIOUS STATES ARE AS UNDER :-

| Sr. No. | State | Violence Ratio |
|---------|--------------------|----------------|
| * | India | 18.9 |
| 1 | Tripura | 37.0 |
| 2 | Assam | 36.9 |
| 3 | Kerala | 33.8 |
| 4 | Andhra Pradesh | 33.4 |
| 5 | West Bengal | 31.9 |
| 6 | Delhi | 31.2 |
| 7 | Rajasthan | 29.0 |
| 8 | Jammu & Kashmir | 25.1 |
| 9 | Madhya Pradesh | 22.9 |
| 10 | Odisha | 22.5 |
| 11 | Haryana | 21.7 |
| 12 | Chhatisgarh | 16.5 |
| 13 | Karnataka | 15.7 |
| 14 | Mizoram | 15.3 |
| 15 | Chandigarh | 14.8 |
| 16 | Gujarat | 14.6 |
| 17 | Himachal Pradesh | 14.5 |
| 18 | Maharashtra | 14.0 |
| 19 | Andaman Nicobar | 13.4 |
| 20 | Arunachal Pradesh | 12.4 |
| 21 | Uttar Pradesh | 11.3 |
| 22 | Bihar | 9.9 |
| 23 | Uttarakhand | 9.8 |
| 24 | Tamil Nadu | 9.6 |
| 25 | Jharkhand | 9.5 |
| 26 | Punjab | 9.5 |
| 27 | Nagaland | 9.1 |
| 28 | Manipur | 9.1 |
| 29 | Meghalaya | 9.1 |
| 30 | Sikkim | 9.0 |
| 31 | Goa | 8.7 |
| 32 | Pondicherry | 7.2 |
| 33 | Dadra Nagar Haveli | 5.2 |
| 34 | Diu Daman | 4.5 |
| 35 | Lakshdweep | 0.0 |

(SOURCE : REPORT OF VIOLENCE AGAINST WOMEN 2011.)

REMEDIES FOR DOMESTIC VIOLENCE :- 1. FIGHTING THE DOMESTIC VIOLENCE :-

The response of Domestic Violence is a typical combination of effort between law enforcement agencies, social service agencies, the courts and probation agencies. Domestic violence is now

being viewed as a public health problem and many private and governmental agencies are seen making huge efforts to control it in India. Govt. and Non-Governmental organization are actively fighting to control the problems created by Domestic Violence.

1. NEED FOR STRINGENT LAWS :-

Govt. of India has passed a new law in the year 2005 to curb Domestic violence. This Act ensures the reporting of cases of domestic violence against women to a "protection officer" who then prepares a Domestic Incident Report for the Magistrate and forward copies thereof to the police officer in charge of the police station with in local limits of jurisdiction.

ROLE OF NON-GOVERNMENTAL ORGANIZATION :-

The role of non-Governmental organization in controlling the domestic violence is crucial. In Mumbai bodies like "Mojlis" and "swaadhar, Sneha, Akshara" are doing meaningful work. In Delhi women violence Intervention Agency "Sakshi" "Azad Foundation" works on Domestic and Sexual Abuse against women "Sneha" in Chennai and "Vimochana" in Bengaluru are working on women's issues. Services ranging from counseling, education and outreach is essential for giving self-confidence to women for ex. ICRW – INTERNATIONAL CENTRE FOR RESEARCH ON WOMEN, New Delhi & Mumbai. They are encouraging more and more people to report any case of domestic violence so that proper action can be taken.

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6.

EARLY MARRIAGE AND ITS RELATION TO WOMEN HEALTH**Ms Don Sana Irfan**

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Abstract

Child marriage is still a massive problem in many developing countries. The issue is more concentrated in countries of Sub Saharan Africa and South Asia. This paper, through literature review attempts to assess the situation, the consequences, various programmes and recommendations on the reduction of child marriage. In this article it is reinforced that, consequences of child marriage put the girls at risk of early pregnancies with life-threatening conditions. This paper suggests that each country should set up its own mid-term and long-term goals to bring about significant reduction in child marriages.

Key Words: child marriage, consequences, traditions, education, security, poverty .

BACKGROUND: Child Marriage defined as marriage before the age of 18 - applies to both boys and girls, but it is more common among young girls. The issue of Child marriage is such a reality in many countries that it was not questioned for years together and was accepted as the norm. With the advent of development the adverse effects of child marriage was recognized and comparisons were made with advanced countries where age of marriage below 18 was a thing of the past and men and women have equal access to education, employment and their own personal growth and advancement. According to Article 1 of the CRC "any human being below the age of 18 is a child," the CRC has been ratified by 194 countries. Those countries still having early marriage i.e. below 18 years also exhibit poor indicators relating to the MDGs. They usually have high maternal mortality and morbidity rates, low education levels for girls, especially secondary education, and overall high poverty levels.

PRESENT SITUATION: Though 158 countries have set the legal age for marriage at 18 years, laws are not enforced. The practice of marrying young children is upheld by tradition and social norms. Many countries of Asia and Sub Saharan Africa still have a high percentage of Child marriages (Table 1) thereby making their struggle

for development particularly difficult. One third of girls in the developing world are married before the age of 18 and 1 in 9 are married before the age of fifteen. In 2012, 70 million women 20-24 around the world had been married before the age of 18. South Asia has the largest number of child brides with almost half of girls married by 18 while in sub-Saharan Africa it is more than one third.

CONSEQUENCES OF CHILD MARRIAGE: It is evident that even in this era, child marriages are quite prevalent in many countries. Often new brides are expected to demonstrate their fertility after marriage specially by producing a male heir. According to UN 16 million adolescent girls give birth every year and the major cause of death for girls aged 15-19 years in these countries is due to complications during pregnancy and childbirth. According to UNICEF around 50,000 girls die during pregnancy, mostly in low and middle-income countries. The prevalence of stillbirths and new born deaths are 50 per cent higher in mothers who are below 20 years of age "These children,

because that's what they are, are discouraged from using contraceptives or might have to ask their husbands permission, or they have no knowledge of or access to what they need," says Carol Presern, PhD, Executive Director of The Partnership for Maternal, Newborn & Child Health. "Even though some parents believe early marriage will protect their daughters from sexual violence, the reverse is often true," according to a Joint press release by UNFPA, UNICEF, WHO, UN Women, the United Nations Foundation, World Vision, Girls Not Brides, Every Woman Every Child, World YWCA and The Partnership for Maternal, Newborn and Child Health, dated 07 March 2013. The Press release states that "young girls who marry before the age of 18 have a greater risk of becoming victims of violence. This is especially true when the age gap between the child bride and spouse is large" A study conducted by in two states in India (and Jharkand) found that girls who were married before 18 were twice as likely to report domestic violence. Child brides also showed signs of severe depression. Child marriage often leads to deterioration of the health of girls. Due to complications during pregnancy and childbirth many girls in developing countries die or severely be malnourished.

* Source: UNICEF State of the World's Children, 2013 - data from UNICEF Multiple Indicator Cluster Surveys (MICS), Demographic and Health Surveys (DHS) and other national surveys, and refers to the most recent year available during the period 2002-2011. Source: United Nations carry the scars of a difficult pregnancy and labour. Pregnant girls aged 15 to 19 are twice as likely to die in childbirth as women in their 20s, and girls under the age of 15 are five to seven times more likely to die during childbirth.

These are due to physical immaturity where the pelvis and birth canal are not fully developed. Due to prolonged/obstructed labour many girls become victims of morbidities like obstetric Fistula. Girls who give birth before the age of 15 have an 88% risk of developing fistula. Fistula patients are usually young girls who come from a socially disadvantaged group with little access to Emergency Obstetric Care. They suffer from incontinence or faecal discharge emitting foul odour making the girls social outcasts.

CHALLENGE TO THE ETHICAL RIGHTS OF GIRLS: "Child marriage is a huge problem in poor communities,"

says Nyaradzayi Gumbonzvanda, General Secretary of the World YWCA. "Early marriage and child marriage robs their future. Girls lose the opportunity for education. They lose the opportunity to choose their partner and must live with that pain for the rest of their lives. Once a girl is married at an early age she is deprived of her education and the opportunity to equip herself with life skills. She becomes a child mother before her body and mind are ready for this experience. The ill effects child marriage is reflected in the statements of Anthony Lake, Executive Director of UNICEF: "Child marriage is not only wrong, it is dangerous. It exposes a young girl to profound health risks from early pregnancy and difficult childbirth and it exposes her baby to complications of premature birth"

UNDERLYING CAUSES: Child marriage has existed for centuries, mainly because of tradition but also due to poverty. In early days parents used to arrange the betrothal of their infant children as a means of uniting two families. In present days the practice of early marriage is common in rural areas or where prospects for girls are few. The would-be brides have no say in the matter as guardians or other family members agree on the marriages and girls have no decision making options.

Often girls are married early to provide protection, security and the support of a male guardian. The question of honour" is considered by parents and relatives, who may want to make certain the girls are married early to grooms approved by the families. According to a report by Girls Not Brides, "poverty is one of the most powerful drivers of the harmful practice in the country. Girls are thought of as an economic burden by parents who believe they will be more financially secure once their daughters are married off and out of their responsibility. Families want to reduce the number of children to feed, clothes and education. Families may agree to child marriage because of community pressures and norms. In recognition of the dreadful consequences of child marriage, many organizations are taking up global and country level programmes

Some of these organizations are:

1. The Elders: The Elders are a group of independent global leaders launched by Nelson Mandela in Johannesburg in July 2007. The group offer their collective influence and experience to support peace building, help address major causes of human suffering and promote the shared interests of humanity. The principle is based on traditional village practices where communities take guidance on different issues from elders. Similarly if the earth is thought of as a „global village" then a group of experienced and dedicated elders could use their valuable experience and influence to focus on serious problems facing the world today. The Elders brought together local, national and international organisations in a global partnership to end the harmful practice of child marriage. This alliance is called Girls Not Brides: The Global Partnership to End Child Marriage.

2. Girls not Brides: As mentioned in the earlier paragraph, Girls Not Brides is an alliance of more than 500 civil society organisations from over 70 countries. These organizations have the aim to end child marriage to help girls to fulfil their potential. Member organizations are from Africa, Asia, the Middle East, Europe and the Americas. The common vision

is that every girl has the right to lead her life according to her choice. If the girl is not married early she can lead a safer, healthier life leading to a more prosperous future for herself, her family and her community. Girls Not Brides members bring child marriage to the forefront and advocate for the laws, policies and programmes that will make a difference in the life of millions of girls.

3. Plan International: Plan works with children in communities in 51 developing countries to advance the achievement of gender equality and girls' rights.

Through the „Because I am a Girl „campaign, Plan,s projects address the barriers to girls completing a quality education of at least 9 years, as well as equip them with the assets they need to safe guard their future, promote gender equality and improve their lives.

4. CARE – Global: CARE is an international humanitarian organisation, which focuses on working for impoverished women. Their mandate includes directly addressing child marriage through targeting education for girls. CARE works with families, communities and local organisations to reduce the prevalence and mitigate the harmful impacts of child marriage through educational and behavioural- change programmes.

5. Girls UP – USA: Girls UP has dedicated advocacy and organisational efforts to ensure child marriage legislation is a priority in the US Foreign Policy Engagements. In March of 2013, their efforts were rewarded as the US House of Representatives passed the child marriage legislation as part of a broader Violence Against Women Act.

6. ICRW – USA: International Center for Research on Women (ICRW) is advocating for the United States to become more involved in curbing child marriage. ICRW works with the United States Congress and the administration to bring more national and international support to end this harmful practice.

7. Save the Children – Global: Save the Children works around the world to develop programmes to protect children and prevent child marriage along with other forms of child abuse, trafficking, and exploitation.

8. World Vision – Marriage Later/Studies First Programme – Bangladesh: World Vision works towards the provision of global education for children who are at risk for exploitation, early marriage, and lower income-earning potential. In Bangladesh, they address barriers to education and work with communities and local governments to improve the quality of education children receive. The marriage later/studies first programme works with families to educate them on the impact of child marriage. programmes designed to end child marriage. UNFPA also supports investments that empower girls with the information, skills and services they need to be healthy, educated and safe. UNFPA also works to support the needs of married girls particularly in family planning and maternal health.

. UNICEF is working with partners in joint efforts to end child marriage. Together with governments, civil society and other agencies UNICEF is working to end child marriage globally. In 2011, 34 country offices addressed child marriage through social and economic change efforts and legal reform.

In India UNICEF supported the passage of the Child Marriage Prohibition Act of 2006, and the development and implementation of a national strategy on child marriage. UNICEF participated in the development of state action plans and supported work with the community on ending child marriage so girls will develop in a safe and productive environment. UNICEF estimates globally, almost 400 million women aged 20-49, (more than 40 per cent), were married in their childhood.

Child marriage puts girls at risk of early and unwanted pregnancies. Maternal deaths related to pregnancy and childbirth for girls aged 15-19 worldwide, account for some 50,000 deaths each year. Girls between 10 and 14 years of age are five times more likely than women aged 20 to 24 die in pregnancy and childbirth.

POLICIES AND PROGRAMMES: Though many countries have legislation on age at marriage yet implementation becomes difficult. In Bangladesh, the Child Marriage Restraint Act of 1929 passed during British rule is still applicable in Bangladesh, where the legal age for a girl to marry is 18. Unfortunately, enforcement efforts are weak, as is indicated by the high rates of child marriage in the country. According to UNFPA, "In 2010, 158 countries reported that 18 years was the minimum legal age for marriage for women without parental consent or approval by a pertinent authority. However, in 146 countries, state or customary law allows girls younger than 18 to marry with the consent of parents or other authorities; in 52 countries, girls under age 15 can marry with parental consent. In contrast, 18 is the legal age for marriage without consent among males in 180 countries. Additionally, in 105 countries, boys can marry with the consent of a parent or a pertinent authority, and in 23 countries, boys under age 15 can marry with parental consent".

WAY FORWARD: A policy brief by ICRW highlights five evidence-based strategies identified to delay or prevent child marriage before 18 years.

1. Empower girls with information, skills and support networks: If young girls know better their options this will strengthen them to act and advocate for themselves. These girls will gain the confidence to look for jobs and alternatives to marriage and guardians will re-consider marrying them off early, which will ultimately impact on changing of traditions and values on child marriage.

Essential training on Life skills, Vocational and livelihoods skills as well as Reproductive Health information will help to teach girls about health, nutrition, money, finance, legal awareness, communication, negotiation, decision-making and other relevant topics Bangladesh Journal of Bioethics 2015; 6(2):8-14

Educate and rally parents and community members: With parental and community support and involvement a more enabling environment will be created. As it is the parents and guardians who take the decision regarding when or whom the girls will marry, with parental education and community mobilization a more supportive environment for girls can be attained. This will lead to families willing to change the custom of early marriage. Economic support and incentives to girls and their families: Poverty is a strong reason for early marriage.

The value and contribution of the daughter would increase if the families would perceive her accessibility to education. Despite the law against child marriage, the practice is widespread. According to two 2013 reports, over 50% of all marriages in Pakistan involve girls less than 18 years old. Another UNICEF report claims 70 per cent of girls in Pakistan are married before the age of 16. Another custom in Pakistan, called swara or vani, involves village elders solving family disputes or settling unpaid debts by marrying off girls. The average marriage age of swara girls is between 5 and 9. Other economic opportunities as an alternative to marriage. Thus if scholarships and stipends are tied to the condition that girls cannot marry until 18, parents will try to keep their daughters in school.

Enhance girls' access to a quality education: When girls are in a formal school they are usually looked upon as a child. Again the school provides a safe haven for the girls and it also improves their quality of life. If this is tied with stipend then parents will try to keep their daughter in school.

Encourage supportive laws and policies: Though many countries have laws and policies prohibiting child marriage yet enforcement has been difficult. In order to bring about acceptance and implementation of these laws ICRW suggests a multi-strategy approach, combining legal advocacy with other community or girl-focused approaches. Raising awareness among the community on the consequences of child marriage together with information on the existence of the law would help in bringing about a reduction in child marriage. The ICRW recommend that "In order for the next generation of development programs to make ending child marriage a priority, policymakers must pay attention to these strategies while continuing to test innovative approaches and evaluation techniques."

CONCLUSION: Though there is substantive work initiated to reduce the incidence of child marriages, yet a lot remains to be done to attain Zero Child Marriage. Each country has to set up its own mid-term and long term

goals to bring about significant reduction in child marriages. The issue is not an isolated one rather it is inter-twined with social norms, cultural taboos and traditions and economic conditions of the families. Partnerships with related Government agencies, NGOs, Media, Women's groups and the private sector will lead to a faster attainment of goals. The problem when addressed through a holistic approach with clearly defined indicators, milestones and responsibilities will help families, communities, nations and regions achieve Zero Child Marriages in a defined time period.

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7.

EFFECT OF TEMPERATURE ON STABILITY CONSTANTS OF TRANSITION METAL COMPLEXES

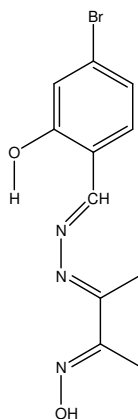
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ABSTRACT:

The metal–ligand stability constant of (2E,3E,3E)-3-(2-(4-bromo-2-hydroxybenzylidene)hydrazono)butan-2-one oxime (figure 1) ligand complexes with metal ions (Co^{2+} , Ni^{2+} and Cu^{2+}) have been determined pH-metrically at three different temperatures i. e. 305K, 313K and 323K. The effect of temperature on stability constant was studied. From the entire study it was found that value of stability constant increases with increase in temperature.

Figure 01



(2E,3E,3E)-3-(2-(4-bromo-2-hydroxybenzylidene)hydrazono)butan-2-one oxime

Introduction:

A Schiff base behaves as a Flexi-dentate ligand and commonly co-ordinates through the O atom of the deprotonated phenolic group and the N atom of azomethine group. In Schiff base azomethane nitrogen and other donor atoms like oxygen play a vital role in co-ordination chemistry. Hence an attempt is made to study the interaction of reduced Schiff base with transition of metals. Schiff bases are generally bi, tri, or tetra-dentate chelate ligands and form very stable complexes with metal ions. Their chemical and physical properties in various fields such as preparative uses, identification, or protection and determination of aldehyde or ketones, purification of carbonyl and amino compounds or production of these compounds in complex.

Schiff base ligands have significant importance in chemistry, especially in the development of Schiff base complexes, because Schiff base complexes are potentially capable of forming stable complexes with metal ions. Many Schiff base complexes show excellent catalytic activity in various reactions at high temperature and in the presence of moisture. Metal complexes [Co(II), Ni(II) and Cu(II) ions] of Schiff base having played a central role in the development of co-ordination chemistry^[2].

We report here the stability constants of transition metal complexes of Co(II), Ni(II) and Cu(II) metals with

(2E,3E,3E)-3-(2-(4-bromo-2-hydroxybenzylidene)hydrazono)butan-2-one oxime (figure 1) ligand at different temperatures.

Experimental:**REQUIREMENT:**

The stock solution of the ligand (0.05M) was prepared by dissolving the requisite quantity of the ligand in minimum volume of dioxane subsequently diluted to final volume with dioxane. All chemicals used were A. R. grade KCl, HCl and KOH. Chlorides of metal ions were used to metal ion solution (0.01M) standardized by standard EDTA solution, volumetrically. The ionic strength 0.05 mol dm^{-3} was maintained by using 1M KCl solution. The carbonate free potassium hydroxide solution (0.1M) was prepared in double distilled water and standardized against standard succinic acid solution.

Apparatus and Procedure:

The pH meter (model EQ-610) equipped with combined glass electrodes and magnetic stirrer (accuracy ± 0.01). The pH meter was standardized before each titration with buffer solution of pH 4.00, 7.00 and 9.20 prepared from a Qualigens buffer tablets. The pH-metric titrations of following solutions were performed against standard 0.1M KOH solution:-

- a) Acid titration: 5 cm^3 of $0.100 \text{ mol dm}^{-3}$ HCl + 30 ml dioxane + 2 cm^3 of 1M KCl + 13 cm^3 distilled water.
- b) Ligand titration: 5 cm^3 of $0.100 \text{ mole dm}^{-3}$ HCl + 5 cm^3 of 0.05 mol dm^{-3} ligand + 25 cm^3 dioxane + 2 cm^3 of 1M KCl + 13 ml distilled water.
- c) Metal titration: 5 ml of $0.100 \text{ mole dm}^{-3}$ HCl + 5 ml of $0.05 \text{ mole dm}^{-3}$ ligand + 5 ml of $0.010 \text{ mole dm}^{-3}$ metal salt + 25 cm^3 dioxane + 1.95 ml of KCl + 8.05 cm^3 distilled water.

For preparing above solution of metal titration the different metal salts such as Co, Cu, and Ni.

Same procedure was repeated at 305K, 313K & 323K. The temperature was maintained by heating the solution in oil bath using magnetic stirrer. The results obtained from the above pH-metric titrations are plotted with respect to volume. In order to determine n_A and pL the graph of n_A vs pH and pL vs n_A are plotted.

Results and Discussion:

The proton-ligand stability constant and metal-ligand stability constants of (2E,3E,3E)-3-(2-(4-bromo-2-hydroxybenzylidene)hydrazono)butan-2-one oxime and its complexes with Co (II), Ni (II) and Cu (II) metal ions have been determined in aqueous medium at constant ionic strength (0.05 mol-dm⁻³) at different temperatures of 305K, 313K and 323K. The proton-ligand formation number n_A was calculated by the Irving-Rossotti expression^[3]. The pK values of the ligands and formation constants of the complexes were calculated by the half integral method.

The stability constants of all complexes at different temperatures are summarized in Table 1.

The formation functions n_A , n and pL can be computed from the following equations:

$$\bar{n}_A = Y + \frac{(V_1 - V_2)(N^0 + E^0)}{(V_0 + V_1)TC_{L0}}$$

$$\bar{n} = \frac{(V_3 - V_2)(N^0 + E^0)}{(V_0 + V_2)\bar{n}_A TC_{M0}}$$

$$pL = \log_{10} \frac{\sum_{i=0}^{i=1} \beta \left[\frac{1}{\text{antilog } pH} \right]^n}{TC_{L0} - \bar{n}TC_{M0}} \cdot \frac{V_0 + V_3}{V_0}$$

Where,

Y = No. of dissociable protons

V₁, V₂ and V₃ = volume of alkali employed bring the solution 1, 2 and 3 to same pH value

V₀ = Total Volume

T_{CL0} = total concentration of the ligand

T_{CM0} = total concentration of metal ion

N⁰ = Normality of Potassium hydroxide

E⁰ = Initial concentration of free acid

In our present work we are using Irving – Rossotti method^[4] and half integral method.

CONCLUSION:

In transition metal complexes the value of stability constant increases as we increase the temperature and it

also changes by changing metal ion at constant temperature. Stability constant was found to be increasing in the order of Co < Ni < Cu.

Table No. 1

| M ⁿ⁺ | 305K | | 313K | | 323K | |
|-----------------|--------|--------|--------|--------|--------|--------|
| | log K1 | log K2 | log K1 | log K2 | log K1 | log K2 |
| Co(II) | 7.2 | 6.63 | 7.26 | 6.78 | 7.36 | 6.88 |
| Ni(II) | 8.42 | 6.83 | 8.5 | 7.08 | 8.6 | 7.1 |
| Cu(II) | 9.5 | 8.195 | 9.9 | 8.2 | 10.06 | 8.28 |

From the above results following remarks can be pointed out:

- 1) Maximum value of n was ~ 2 indicating formation of 1:1 & 1:2 ligand metal complexes only
- 2) Dilute solutions were used hence there was less probability of formation of polynuclear complexes.
- 3) m- titration curve were displaced to the right side of ligand titration curve proton release upon complex formation of the metal ion with the ligand.
- 4) The decrease in pH for metal titration curve than ligand titration curve shows formation of strong metal complexes.
- 5) For same ligand at constant temperature the stability increases from Co (II) to Cu (II) this shows that stability of Cu (II) complexes is larger than Ni (II).

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8.

HERBAL SOAP**Momin Fareha Mohd Sabir & Shaikh Ayesha Ejaz**

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Abstract: The process of saponification and producing a soap using different forms of fat involves combining a form of fat with an alkali material. Triglycerides are converted into fatty acid salts and glycerol, and an alkali material, in this case NaOH, is added to coagulate the soap. This soap was then compared with commercial soap. All of the oils used produced soap with a higher pH than commercial soap. From this we can conclude that castor oil is the most effective oil for use in saponification in case of the herbal saponification here neem seeds extract are used.

Azadirachta indica, commonly known as neem, have attracted worldwide prominence in recent years, due to its wide range of medicinal properties. Neem has been extensively used in Ayurveda, Unani and Homoeopathic medicine and it has become a cynosure of modern medicine. Neem elaborates a vast array of biologically active compounds that are chemically diverse and structurally complex. More than 140 compounds have been isolated from different parts of neem. All parts of the neem tree- leaves, flowers, seeds, fruits, roots and bark have been used traditionally for the treatment of inflammation, infections, fever, skin diseases and dental disorders. The medicinal utilities have been described especially for neem leaf. Neem leaf and its constituents have been demonstrated to exhibit immunomodulatory, anti-inflammatory, anti hyperglycemic, antiulcer, ant malarial, antifungal, antibacterial, antiviral, antioxidant, ant mutagenic and anti carcinogenic properties. This review summarizes the wide range of pharmacological activities of neem leaf and seeds.

Keywords: natural herbal soap; fatty acid composition, castor oil, commercial value, sensory perception

Introduction

Current trends in consumer preference have shown an increase in demand for the use of natural ingredients in personal skincare and cosmetics products. This has resulted in a steady increase in small- and medium-sized artisan hand-made or homemade soap businesses offering a variety of products with a range of natural ingredients to supply this in the market. Formulation of specially hand-made natural soap bars by artisan soap makers involves a skillful combination of the ingredients, thoughts, and artistic creativity to produce high-quality soap bars with superior sensory characteristics that resonates with consumers. These sensory characteristics include fragrance, color, lather ability, moisturizing capabilities, hardness, skin compatibility, and chemical stability during storage and use of these soap in daily use. Aroma (fragrance) and moisturizing capabilities are considered the most influential determinants of consumer preference for natural soap products.

Natural soaps are generally defined as alkali salts of fatty acids derived primarily from vegetable or plant oils used as soap feedstock, and contained natural fragrances and/or organic ingredients included as additives. Commercially, natural soaps are manufactured via either a cold or hot saponification process, where triglycerides in fats, oils, and or free fatty acids used as feedstock are converted in the presence of a base (typically sodium or potassium hydroxide) to form fatty acid salts (soaps), glycerol, and free fatty acids. Many artisanal soap makers prefer the cold saponification process due to the enhanced aesthetics of the finished product, potential superiority in retaining antioxidants, or the fragrance from essential oils, and creative flexibilities to customize each ingredient including the addition of fresh ingredients, such as fruits and vegetable purees, to obtain a desired end product.

Natural antioxidants in the form of plant extracts are typically added as additives to suppress the oxidation of polyunsaturated fatty acids in natural herbal soaps.. Many

of these businesses are home-based and use an array of additives and essential oils to manufacture their product

6: Benefits of neem seeds soap:

- 1) it is anti-viral, neem seed and leaf soaps are used for bathing especially for those who are suffering from skin ailments. such as eczema, cold sores. It soothes inflammation by soothing itching and irritation
- 2) Fungal disease:Neem seed soap is also effective against fungal diseases. Neem is also effective against fungus that infects hair, skin and nails that includes ringworm that occurs in hands and feet.

3) Moisturizes Skin:

The neem seed soap moisturizes the skin keeping it soft and supple. And reduce pimples.

4) Cures Acne:

Neem seed soap is very much effective to get rid of acne, infection and body odor.

5) Skin Toning:

Neem leaves for skin can also be used as a toner. it clear acne, scars, pigmentation and black heads.

6) Neem leaves for Hair – Scalp and hair issues:

The anti-bacterial property of neem helps to treat dry scalp, dandruff and hair fall issues.

7) for injuries:

A burn injury can be healed faster with the usage of herbal neem soap, and also protects against allergy and infection on the infected area.

8) Chicken pox:

Post chicken pox treatment, a patient is always advised to take a bath with neem seed soap.

3. Material and Methods

3.1. Soap Oils

The natural herbal soaps designated base were manufactured using cold saponification.

. The base bar was designated the control bar, and contained the castor oil.

Neem seeds extract: 50gms of neem seeds kernels taken and grind in to the fine powder, soaked it into distilled water for overnighter .it becomes milky white in the morning then filtered it by double layer of muslin cloth.

3.2: Soap base: coconut 20 gms, sugar 20 gms, castic soda 50 gm, castor oil ,methylated spirit 60 gms glycerine 20 gms, water 18 gms.

Making process: mix the castor oil, coconut oil and steric acid ,keep it in to the oven at about 70 degree, stir it well and then keep it for cooling for three days. after three days add methylated spirit and adjust the temperature at 150 degree in order to dissolve it completely. Then add sugar and glycerin and water. crush it ,it will be in the form of paste . After an hour it will be ready for use

.3.3: Cold Saponification

Neem seed Soap Production

In an unfilled container grease it with petroleum jelly cut the soap base in to cubes and melt it in oven or gas stove by double boiler method. Strictly avoid the direct heat. Then add 10 ml of neem seed extract, aloe vera gel and one capsule of vitamin E, it may dry at room temperature. pour the mixture in to greased container ,keep it in to the freezer for an hour ,now it is ready to use. For better effects and make it long lasting ,it may dry at room temperature.

3.4. Sample Extraction

Extraction was carried out according to the regular methods of extraction

The samples were extracted and then store in the controlled temperature. The filtrate was used without further dilution to determine the lipophilic antioxidant activity and the organic phenolic content of the soaps Soaps from each treatment were distributed amongst the participants in a random order. Participants were asked to use it With multiple uses of the soap, and ranked the soaps based on color, appealing shape, fragrance, lather, moisturizing effects, estimated price (were asked to give a price for each product), and overall preference. Acceptance and preference for each product was scored assigned using the sensory analysis The ratings obtained from the participants were recorded as a sensory perception of the natural herbal soaps.

2. Results and Discussion

2.1. Effects of Feedstock Sources on the Unsaponified Fatty Acid Composition of Natural Herbal Soaps. Two natural soaps were manufactured in this study, by neem seeds and neem leaf. Vegetable oils are associated with the manufacturing of high quality natural soaps. The natural soaps manufactured. Following cold saponification, we observed the presence of fatty acids in both natural soaps as anticipated. in accordance with findings reported previously in the literature.

Collectively, these findings show that the source of vegetable oil used as feedstock

can modulate the unsaponified fatty acid composition and levels in natural herbal soaps following cold saponification. Rice bran oil appears to reduce the content of unsaponified mono-unsaturated

4. Conclusions

Saponification of fatty acids in natural herbal soaps manufactured using cold saponification influences the sensory perception and consumer's preference or acceptance of natural soap products. We observed commercial natural soaps manufactured from plant oils and additives as feedstock by cold saponification. Addition of additives in the soap formulation had a significant effect on the percent change fatty acids in the finished products..Appealing smell was the greatest influence of consumer preference, while color and appealing smell were the best indicators of natural soaps' estimated pricing and consumers' perceived quality, and consequently acceptability. Artisan natural soap makers should give careful considerations to their use during the manufacturing of hand-made natural soaps. This work provides some baseline information regarding natural hand-made soaps manufacturing, which is very sparse in the scientific literature. The hope is that the information presented will stimulate additional studies by other researchers in the scientific community, to further improve the knowledge that may be of value to the growing specialty hand-made soap industry.

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9.

IMPACT OF DEMONETISATION: A SECTORAL ANALYSIS

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Abstract: On the eve of 8th November 2016, Narendra Modi, the Prime Minister of India made headlines by announcing 'note ban decision'. The Government of India demonetized high value currency notes in order to counter the menace of black money, counterfeit currency and terror funding. This led to people queuing outside the banks for days to replace the old currency notes with new currency notes. The implication of demonetisation had far reaching consequences; receiving mixed and tepid response from various strata of the society. Demonetisation not only impacted the economy but also changed social and political background of the country. The author seeks to make a sectoral analysis of the impact of demonetisation and further evaluate the overall positive or negative impact of demonetisation.

Keywords: Demonetisation, currency, economy, sector and impact.

1. INTRODUCTION

On the eve of 8th November 2016, the Prime Minister of India Narendra Modi made headlines by announcing ban on Rs 500 and Rs 1000 denominations, valued at 15.4 trillion, constituting 86.9 per cent of the value of total currency in circulation. The government gave window for replacing the currency notes till 30th December 2016.

Demonetisation has been regarded as the boldest move to be taken by government in recent time. The decision of demonetisation was in continuation of a series of measures taken by the government during the last few years to eliminate corruption, black money, counterfeit currency and terror funding. With much *hue* and *cry* about the cumbersome transition process which aimed to bring in transparency in economy by unearthing black money from the economy. There remained many ills which had to be battled.

There are several contrasting opinions of different experts on the impact of demonetisation on Indian economy. Since, India traditionally has been cash dependent and driven economy. Ergo, it is obvious, that cash squeeze would result in adverse impact on the economy in the short term albeit it was supposed to be transient. There has been several social, economical and political impact of demonetisation of high currency denominations which *inter alia* has led to the death of at least 33 people in different parts of the country. Apart from this drastic impact, the economy has gone topsy turvy. Many experts believe that the cost of replacing the demonetized currency with the new ones and the consequential spillover effect on the economy is actually more than the benefits derived.

In this paper, the author attempts to analyze the impact of demonetization on different sectors of the economy.

2. OBJECTIVES OF THE STUDY

The study is conducted to understand the impact of demonetization on various sectors of the economy. At the end of the study, the author seeks to achieve the following objectives;

- a. To understand what is demonetization and what motivated the BJP led government to take such a measure.

- b. To elucidate the previous incidents of demonetization and the implication of the present demonetization on various sectors.
- c. To analyze and evaluate the overall impact of demonetization on the economy by understanding the overall positive or negative effect of demonetization.

3. SCOPE OF THE STUDY

The author aims to provide a true and unbiased picture of the overall impact of demonetization on the economy by evaluating sectoral performances through various indexes. The study is expected to be useful for students, academicians, public sector and the people in general.

4. DATA COLLECTION

The author has used secondary data through various sources such as internet, RBI Reports & Bulletin, Newspapers, journals and articles.

5. DEMONETISATION IN PAST

In common parlance, the unaccounted money is referred to as "black" money and accounted money is called "white" money. There are various ills of black money such as *hawala* system, counterfeit currency, terror funding etc which needs to be uprooted from the civilized society. In order to keep a check on these evils, demonetization is used by government across the world. One of the latest examples of demonetization is the adoption of Euro among various nations of European Union.

Demonetisation is defined as stripping of old currency of its status a legal tender. The old currency must be retired and replaced with new unit of currency. The 'note ban decision' or demonetisation has been done in India by previous governments. But, there has not much hue and cry about demonetisation in the past. Earlier, India has witnessed demonetisation twice. For the first time demonetisation took place in pre-independence period. First time demonetisation took place in January 1946, during this demonetisation currency notes of 1000 and 10000 rupees were withdrawn from the circulation and new currency notes of 1000, 5000 and 10000 denomination rupees were introduced in the year 1954. The second time demonetisation took place on 16th January 1978 when Government of India demonetized the

currency notes of 1000, 500 and 10000 rupee notes as a means to counterfeit money and black money. The present demonetisation is the third occurrence in Indian Economy

and it is the second Demonetisation in the post-independence period.

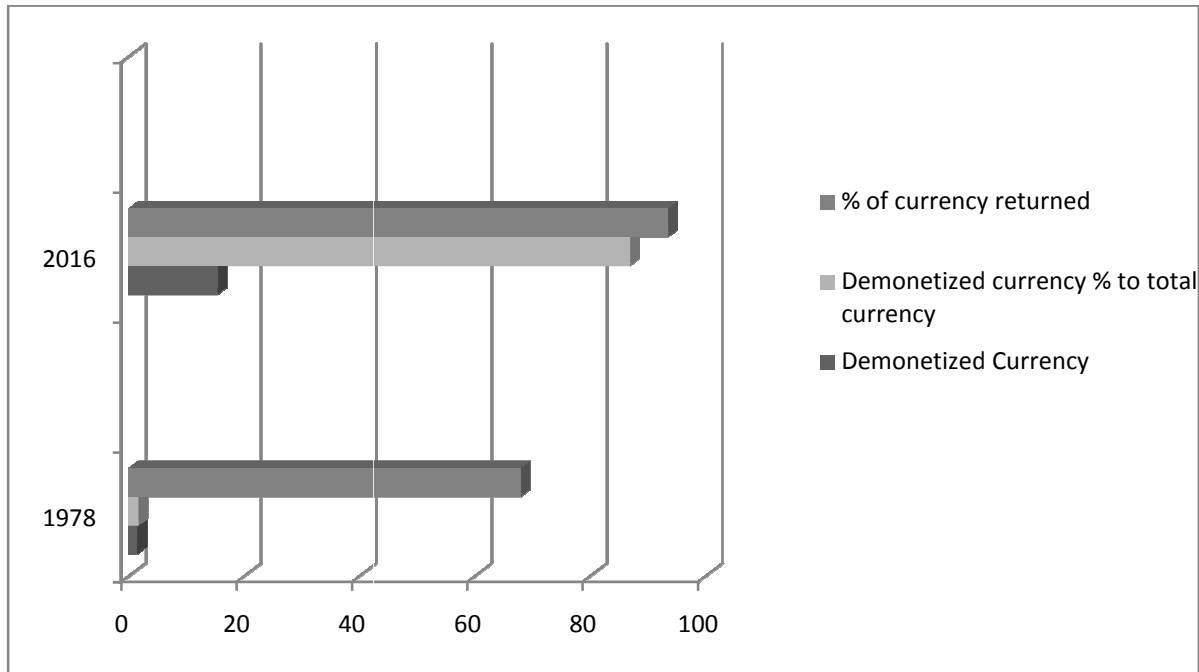


FIGURE 1: 1978 DEMONETISATION COMPARISON TO 2016 DEMONETISATION

During the second demonetisation period (January 1978), currency notes worth Rs 1.46 bn (1.7% of total notes in circulation) was demonetized. Of this RS 1.0 bn (or 68%) was tendered back. But, during the third demonetisation period (November 2016) currency notes worth Rs 15.4 trillion (86.9 % of total notes in circulation) was demonetized. Since, the demonetized currency constituted such a huge amount of total currency in circulation it led to a cash starved economy which is heavily dependent on cash for nearly 73% of the transactions.

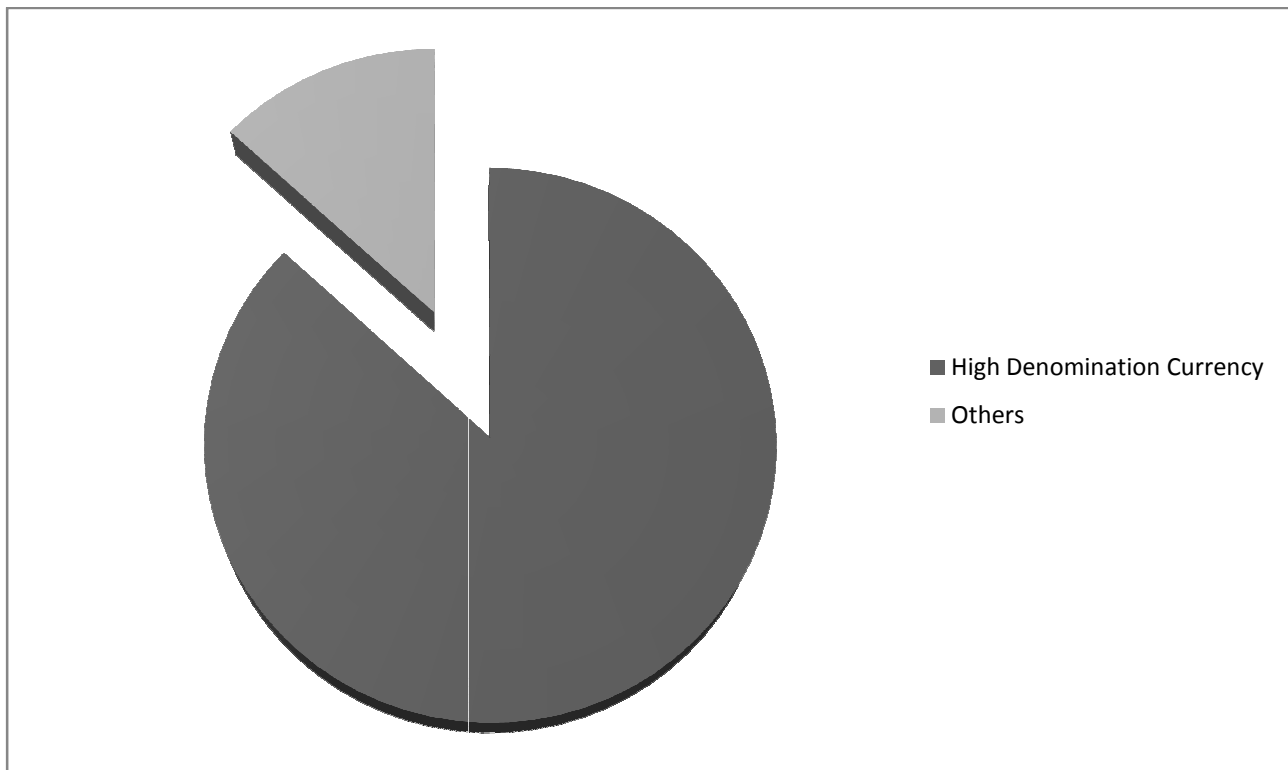


FIGURE 2: VALUE OF HIGH DENOMINATION CURRENCY IN TOTAL CURRENCY CIRCULATION.

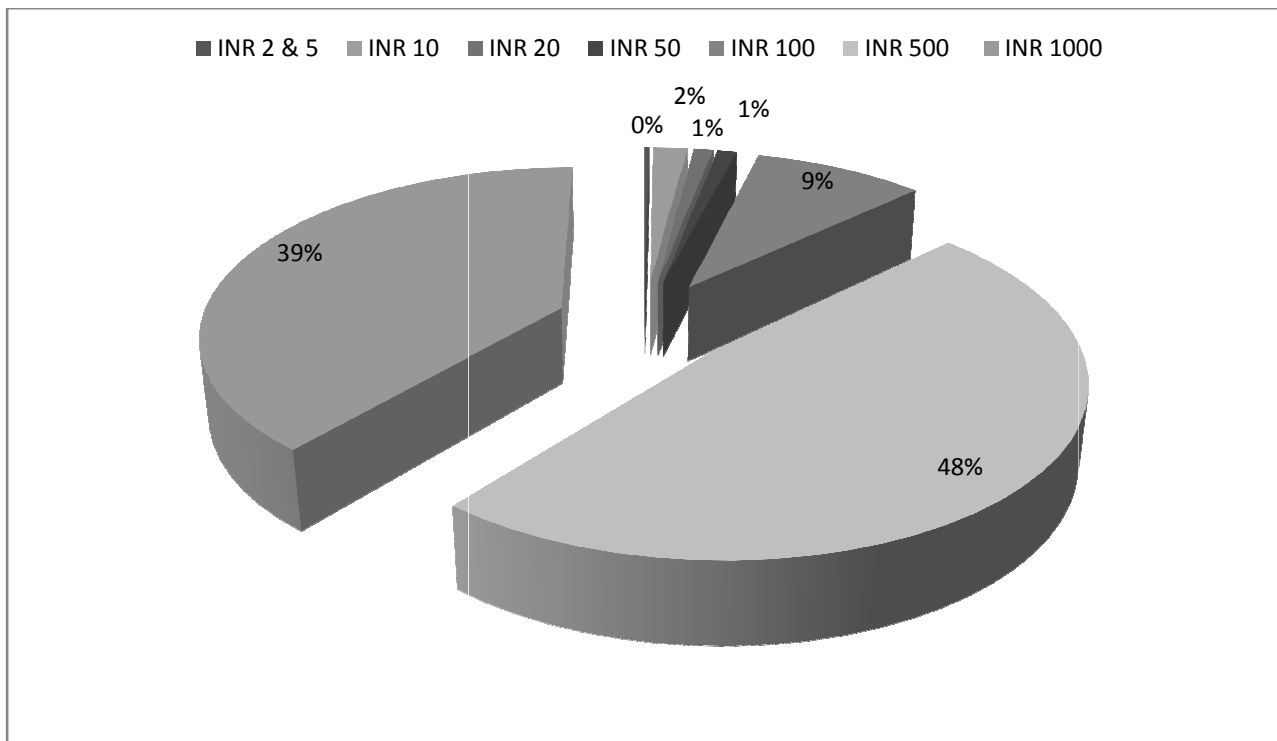


FIGURE 3: PERCENTAGE SHARE OF DENOMINATION IN CIRCULATION BY VALUE IN FY 2015-16.

The Reserve Bank of India laid down a detailed procedure for the exchange of demonetized banknotes with new Rs.500 and Rs.2000 banknotes of the Mahatma Gandhi New Series and Rs.100 banknotes of the preceding Mahatma Gandhi Series. Following are the key points:

- Exchange window was open until 30 December 2016 to tender their old banknotes at any office of the RBI or any bank branch and credit the value into their respective bank accounts.
- Cash withdrawals from bank accounts will be restricted to Rs.10, 000 per day and Rs.20,000 per week from 9 November 2016 till 24 November 2016.
- For immediate cash needs, the old banknotes of value up to Rs.4000 per person can be exchanged for the new Rs.500 and Rs.2000 banknotes as well as Rs.100 banknotes over the counter of bank branches from 10 November 2016 by filling up a requisition form along with a valid ID proof.
- All ATMs will dispense bank notes of only 50 and 100 rupee denominations.

6. OVERVIEW OF THE ECONOMY

In order to facilitate proper assessment of the impact of demonetisation on different sectors of economy, it is pertinent to divide the economy into three broad segments namely, Agriculture sector, Industrial sector and Service sector. It is pertinent to analyze the contribution of these sectors in the economy pre and post demonetisation.

6.1. Agriculture sector

Agriculture sector is regarded as backbone of the economy. Indian economy relies heavily on agriculture sector for its input. Majority of population is dependent on agriculture sector for their livelihood. Agriculture sector is characterized heavily by cash transactions and therefore short term impact of demonetisation was severe which led to contraction in

agriculture growth by 0.2%. As per CRISIL Report, agriculture sector was expected to grow at 4% in the FY 2016-17 but due to demonetisation, the sector has experienced slow growth rate. Farmers have been badly hit by demonetisation as it was sowing season for Rabi crop in some parts of the country and the harvesting season for Kharif crop. Due to liquidity crunch, farmers did not have money to buy seeds, fertilizers, equipments, and wages payment to workers and commission to Agents etc which also resulted in contraction in supply transport system leading to 25 to 50% reduction sales.

6.2. Industrial sector

Industrial sector has suffered heavily due to demonetisation. To analyze the impact of demonetisation on industrial sector consideration has to be given to the major sector such as textile, real estate and FMCG products.

6.2.1. Textile

Textile and clothing industry is decentralized and nearly 80% operates at the SME sector which has faced the brunt of liquidity crunch. Nearly 70-75% of the power looms have stopped functioning as most of the transactions happen in cash. Most of the Brands and Retailers Report 40 to 60 % drop in sales after Demonetisation in first few weeks but from December onwards this drop has slightly decreased, but still the overall impact of demonetisation in textile sector has been severe.

6.2.2. Real Estate

Real estate sector is often associated with unaccounted money. Immediately after demonetisation, there was an increase in growth of real estate sector which was driven by sales of inventory unit which has been piling up. Most of the black money after demonetisation has been legalized through real estate but due to liquidity crunch in the subsequent months led to postponement of new project and inventory stocking. According to various reports, demonetisation has led to contraction of 50% in the sector. During November-December 2016, the monthly average

housing sales fell about 40% in the top nine cities like Gurgaon, Ahmadabad, Kolkata, Chennai, Hyderabad, Bangalore, Pune, Mumbai and Noida. Before demonetisation the monthly average house sales was 19000 units in July month and 18000 units in October month. While the short term impact is negative, experts hope that rate cuts in the coming months would boost home sales.

6.2.3 FMCG Products

FMCG Industry had gone down by 1-1.5% or Rs 3,840 crore in November, compared to October. The purchase in

November had gone down by 6.4% compared to October. Purchase of personal care items such as toilet soaps, toothpaste and shampoo had seen the greatest fall by retailers. According to consumer point of view, one out of five housewives had reduced spending by 50% or more. They had cut spends across categories for impulse categories such as biscuits, salty snacks compared to everyday essentials like flour, rice, pulse, sugar.

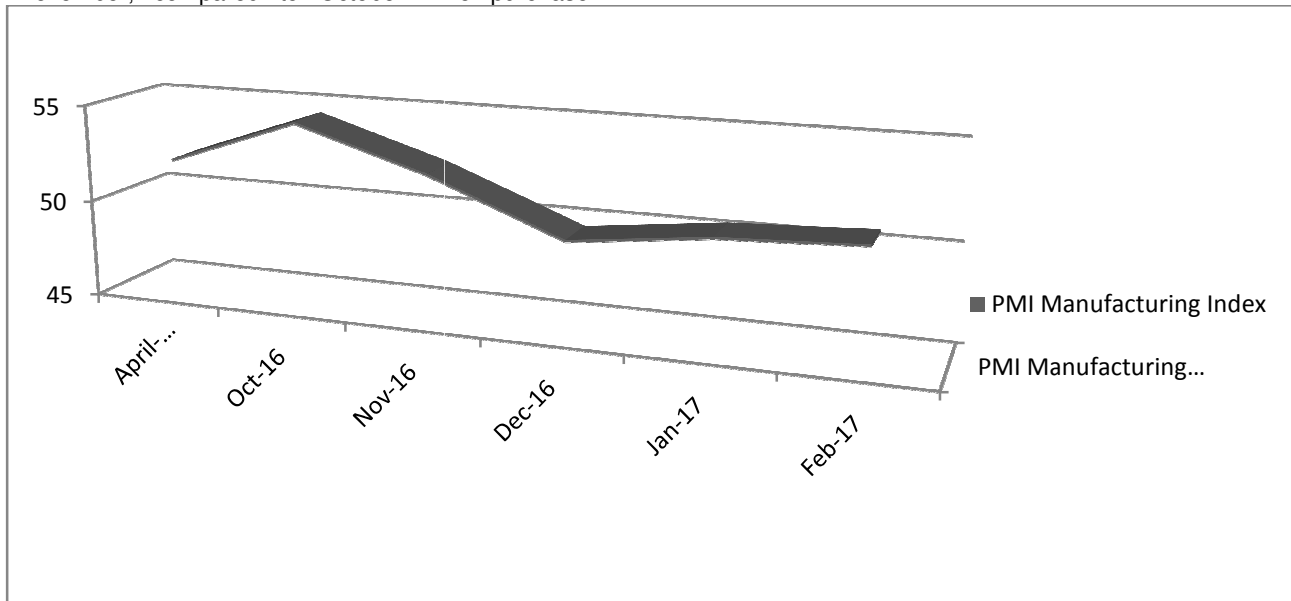


Figure 4: PMI Manufacturing Index

6.3. Service sector

Service sector contributes nearly 53% to GDP and is the largest sector in economy. The sector has been hit very hard by demonetisation leading to worst slump in nearly three years. Purchasing Managers' Index (PMI), which tracks services sector companies on a monthly basis, stood at 46.7 in November, down from 54.5 in October. The Index slipped into contraction for the first time since June 2015 and pointed to the sharpest reduction in output for almost three years.

On other hand, Banking Sector is the only sector which is benefited by demonetisation in the long term. In many aspects, demonetisation will pull a large chunk of first time users to banks, who will have to use the system at least once to exchange their old notes for new ones. Several indicators of service sector such as production of cement and transportation activity contracted by 8.7% and 11.6% respectively.

7. POSITIVE IMPACT OF DEMONETISATION

Demonetisation has received tepid response from the public and administration had been criticized for under preparation to deal it. Nevertheless, demonetisation has some positive impact which can be summarized as follows:

- The primary aim of demonetisation was to unearth black money which resulted in various evils such as inequality in distribution of income between the rich and the poor, *hawala* system of money and parallel economy. With demonetisation, the government has been successful in achieving this objective to some extent. As of December 28, official sources said that the Income Tax department detected over 4,172 crore of un-disclosed income and seized new notes worth 105 crore as part of its country-wide operations. The department carried out a total of

983 search, survey and enquiry operations under the provisions of the Income Tax Act and has issued 5,027 notices to various entities on charges of tax evasion and *hawala* dealings. The department also seized cash and jewellery worth over 549 crore out of which the new currency seized (majority of them 2000 notes) is valued at about 105 crore. The department also referred a total of 477 cases to other agencies like the CBI and the Enforcement Directorate (ED) to probe other financial crimes like money laundering, disproportionate assets and corruption.

- The secondary reason was to check counterfeit currency notes which were in circulation. RBI data showed that as of March 2016, 632,926 currency notes were counterfeit—known as an FICN (Fake Indian Currency Note). As a proportion of NIC (Notes in Circulation), the 1,000 rupee and 500 rupee notes were the highest. Obliterating these FICNs was also part of the demonetisation move.
- Note ban led to increase in deposits with banks and greater financial inclusion. Several schemes had been launched such as Pradhan Mantri Jan Dhan Yojana for financial inclusion of the rural population.
- Due to demonetisation the cash transactions are facing a reduction, which increases the other alternative modes of transactions like use of credit cards, debit cards online payments and transactions etc.

8. NEGATIVE IMPACT OF DEMONETISATION

- Money supply will be reduced in the market due to withdrawal of currency notes from circulation. This effect

will be the short run impact of demonetisation leading to liquidity problem in the economy. The problem of money supply will be solved when the new currency notes are widely circulated in the market. The under preparedness of administration especially the RBI in supply of new currency notes caused mayhem and chaotic situations in the country due to which people queued outside the banks for days to get new currency notes which even claimed the lives of at least 33 people as per some reports.

1. Decrease in money supply as a result of demonetisation is also having an impact on production and consumption. Due to decrease in money supply production decreases and it affect the consumption negatively.
2. According to some experts, decrease in GDP due to demonetisation may be 1-2% in short term.

9. CONCLUSION

Demonetisation has huge potential of unleashing growth in the economy. As Indian economy is characterized by cash transaction, the cash squeeze is bound to have some adverse impact. The watchfulness and preparedness of the administration in such a situation is quintessential but what has been witnessed from the overall experience is that the administration had been ill equipped to facilitate a smooth transition of money supply. Demonetisation had some adverse impact in the short term leading to contraction in production as well as consumption of various goods and services. This resulted in lower GDP as well as lower tax revenue to the government in the form of indirect taxes. Although, demonetisation marked manifold increase in

banking activity as well as alternate mode of transactions which otherwise would not have been possible. It is safe to deduce from the analysis above the impact of demonetisation has been adverse while the benefits derived from it do not correspond to the economical suffering of the populace at large.

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10.

Effects of GST on society**Shaikh Eram Aslam**

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Abstract: There are endless taxes in present system few levied by Centre and rest levied by state, to remove this multiplicity of taxes and reducing the burden of the tax payer a simple tax is required and that is Goods and Service Tax (GST). This paper throws an insight into the Goods and Service Tax concept and its impact on Indian economy. GST also known as the Goods and Services Tax is defined as the giant indirect tax structure designed to support and enhance the economic growth of a country. More than 150 countries have implemented GST so far. The paper is based on secondary data. The paper is based on sources have been used. The various articles, researches, government reports, newspapers, magazines, various websites and the information on internet have been studied. The core part studied in this research paper is about the effects of GST on social and economic structure of the Indian economy. On bringing GST into practice, there would be **amalgamation** of Central and State taxes into a single tax payment. It would also enhance the position of India in both, domestic as well as **international market**. At the consumer level, GST would reduce the overall tax burden, which is currently estimated at 25-30%. Some of the effects (impact) of GST are :- A Simpler Way of Tax Payment, Healthier Environment for Businesses, Keeping Up with the Global Race, More Taxpayers, Removal of the Cascading Tax Effect. In developing open economy with growing service sector, a change in the tax mix from income to consumption-based taxes is likely to provide a fruitful source of revenue. The proposed structure will simplify the procedure which will end up with equal opportunity for all the market and in other hand will leads to reduced tax evasion.

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Introduction:

The Goods and Services Tax (GST) is a vast concept that simplifies the giant tax structure by supporting and enhancing the **economic growth** of a country. GST is a comprehensive tax levy on manufacturing, sale and consumption of goods and services at a national level. The Goods and Services Tax Bill or GST Bill, also referred to as The Constitution (One Hundred and Twenty-Second Amendment) Bill, 2014, GST will be an indirect tax at all the stages of production to bring about uniformity in the system.

Under this system, the consumer pays the final tax but an efficient input tax credit system ensures that there is no cascading of taxes- tax on tax paid on inputs that go into manufacture of goods.

In order to avoid the payment of multiple taxes such as excise duty and service tax at Central level and VAT at the State level, GST would unify these taxes and create a uniform market throughout the country. Integration of various taxes into a GST system will bring about an effective cross-utilization of **credits**.

There are around 160 countries in the world that have GST in place. GST is a destination based tax where the tax is collected by the State where goods are consumed. India has adopted the Dual GST model in which both States and Central levies tax on Goods or Services or both.

SGST – State GST, collected by the State Govt.

CGST – Central GST, collected by the Central Govt.

IGST – Integrated GST, collected by the Central Govt.

Research methodology:

This research paper is based on the secondary data sourced from journals on internet, internet, articles, previous research paper. The design is based on the objectives of the study and the hypothesis of the study. Secondary data is collected through existing legislations, proposed legislations on GST

floated in public domain, published reports on the GST impact in India and globally, various websites on GST and financial services.

GST Slab rates: On Introduction:

- **Zero rated items:** Foodgrains used by common people.
- **5% Rate:** While most fresh foods tend to be tax exempt, many packaged and processed foods such as frozen vegetables, powdered milk, and coffee fall into the 5% tax slab. Cashew nuts, prayer beads, fibre products, coal, and a variety of other goods also fall into this slab.
- **12% Rate:** Goods in the 12% slab include spoons, fish knives, bells, gongs, and a wide variety of other popular products. It's important to note that in some cases, goods fall into more than one tax slab depending on their value.
- **18 %Rate:** Many sweet goods such as flavoured refined sugar, ice cream, pastries, jams, and cakes are in this tax slab, but it's not just sweets. This slab also contains a motley collection of diverse items such as printers, optical fiber, tractor parts, mayonnaise, and corn flakes.
- **28% Rate :** Designed to only apply to luxury goods, this slab features a melange of goods such as dishwashers, vacuums, and personal aircraft. It also includes luxury services such as race club betting, cinema, and five-star hotels.

Services that were earlier taxed at 15% shall be taxed **at a higher rate of GST @ 18%**. Various goods have been classified to fit into the above categories.

When was GST Launched in India?

On 1st July 2017 at midnight, the President of India, Sir Pranab Mukherjee and Prime Minister Sir Narendra Modi launched GST all over India including Jammu & Kashmir. However, there have been many changes made to the rates of GST, the latest being on 18th January 2018.

The idea of introducing GST was first proposed by the then Union Finance Minister, P. Chidambaram in his Budget for 2006-07. The discussion on GST took specific decision with

the introduction of the Constitutional Bill (122nd Amendment), 2014. The Bill was passed by the Parliament on 8 August 2016. This was followed by the approval of the Bill by more than 15 states. On 12 April 2017, the Central Government enacted four GST bills:

- Central GST (CGST) Bill
- Integrated GST (IGST) Bill
- Union Territory GST (UTGST) Bill
- The GST (Compensation to States) Bill

Impact of GST on Different Sectors:

1. **Consumer Goods & Services**
The GST rates for the FMCG industry is set at 18-20%. While most are happy with the introduction of GST, the ones who are heavily affected are opposed.
2. **Manufacturing Industry**
GST, demands businesses to set-up mechanism for meeting the requirements of GST. Therefore, once the companies adapt the requirements, the compliance costs will go down drastically.
3. **Automobile Industry**
GST absorbed indirect tax regime, which attracted several duties and taxes on the sale of vehicles and spares and accessories.
4. **Chemical Industry**
Implementation of GST is believed to be positive to the chemical industry, especially in the long term.
5. **Textile Industry**
Despite some changes under the GST regime, the textile sector benefitted with the implementation of the regime.
6. **Coal Sector**
After the GST implementation, the coal transportation rates have done down to 5% through trains, and thus the logistics costs has been decreased.
7. **Power Sector**
Overall impact of GST on power sector is positive. Domestic coal, is in the 5% tax slab. The impact of GST will be positive for the electrical and the lighting sectors as the rate is now 18%.
8. **Aviation Sector**
The industry has mixed feelings about the introduction of GST, especially the GST rates for airline fuel.
9. **Pharmaceutical Industry**
This industry will see an increase in costs after GST implementation as the cost of medicines will rise by 2.3% in the 12% bracket and medicines with 5% will see no increase in MRP.
10. **Cement Industry**
GST will not affect this industry drastically, the tax rates imposed will get absorbed in the cost of cement production.
11. **Digital Advertising Industry**
This industry which is fast growing, is a cheaper method for companies as GST will have less effect in this sector, as compared to traditional marketing.
12. **Handicraft Sector**
One of the largest sector of the country, which is most affected by GST. Therefore, GST is not welcomed by the artisans.
13. **Alcohol Industry**
There is no GST on alcohol, instead there is an increase in the price of alcohol. Price of a beer is going to raise by 15% and wine and other hard drinks will be increasing by 4%.

Social effect of GST:

Positive effect of GST on Common man:

- GST was launched as a unified tax system **removing a bundle of indirect taxes** like VAT, CST, Service tax, CAD, SAD, Excise etc.
- **A simplified tax policy** as compared to earlier tax structure. However, its not as simple as it seems to be,
- GST or Goods & Services tax removes cascading effect of taxes i.e. **removes tax on tax**.
- Due to lower burden of taxes on the manufacturing sector, the **manufacturing costs will be reduced**. Hence, prices of consumer goods likely to come down.
- Due to reduced costs **some products** like cars, FMCG etc. will **become cheaper**.
- This will help in **lowering the burden on the common man**. You will have to shed less money to buy the same products which were earlier costly.
- The low prices will further lead to an **increase in the demand/consumption** of goods.
- Increased demand will lead to increase supply. Hence, this will ultimately lead to **rise in the production of goods**.
- The increased production will **lead to more job opportunities** in the long run. But, this can happen only if consumers actually get cheaper goods.
- **It will curb circulation of black money**. This can happen only if the "kacha bill" system, normally followed by traders and shopkeepers is put to check.

Negative effect of GST on Common man:

Compliance burden: You need to deposit GST and file returns on time. GST returns filing is not as easy as it seems to be. You need to hire a tax professional to manage it. Although, Government is taking steps to simplify the returns filing and keep it simple. But, still it will take time to actually smoothen the entire process.

- Service tax rate @ 15% is presently charged on the services. So,if GST is introduced at a higher rate which is likely to be seen in the near future,the cost of services will rise. GSTshall be charged @18% on maximum services and shall reach upto 28% for few services. In simple words,all the **services** like telecom, banking, airline etc. **will become more expensive**.
- Increased cost of services means, an **add on to your monthly expenses**.
- Being a new tax, it will **take some time for the people to understand it** completely.Its actual implications can be seen after a certain period of time.
- Proper invoicing and accounting needs to be done to ensure better compliance. However, **GST Accounting Software** are being developed in this regard by various companies.
- If actual benefit is not passed to the consumer and the **seller increases his profit margin**, the prices of goods can also see a rising trend.
- A **strict check on profiteering activities** will have to be done, so that the final consumer can enjoy the real benefits of GST.
- **It will take some time for the people** including the manufacturers, the wholesalers, the retailers or the final consumers **to understand the whole process and apply it correctly**.

Effects of GST on Indian economy:

GST is a game-changing reform for the Indian Economy, as it will bring the net appropriate price of the goods and services. The various factors that have impacted Indian economy are:

1. Increases competitiveness

The retail price of the manufactured goods and services in India reveals that the total tax component is around 25-30% of the cost of the product. After implementation of GST, the prices have gone down, as the burden of paying taxes has been reduced to the final consumer of such goods and services. There is a scope to increase production, hence, competition increases.

2. Simple Tax Structure

Calculation of taxes under GST is simpler. Instead of multiple taxation under different stages of supply chain, GST is a one single tax. This saves money and time.

3. Economic Union of India

There is freedom of transportation of goods and services from one state to another after GST. Goods can be easily transported all over the country, which is a benefit to all businesses. This encourages increase in production and for businesses to focus on PAN-India operations.

4. Uniform Tax Regime

GST being a single tax, it has made it easier for the taxpayer to pay taxes uniformly. Previously, there used to be multiple taxes at every stage of supply chain, where the taxpayer would get confused, which a disadvantage.

5. Greater Tax Revenues

A simpler tax structure can bring about greater compliance, this increases the number of tax payers and in turn the tax revenues collected for the government. By simplifying structures, GST would encourage compliance, which is also expected to widen the tax base.

6. Increase in Exports

There has been a fall in the cost of production in the domestic market after the introduction of GST, which is a positive influence to increase the competitiveness towards the international market.

Negative side of GST :

GST may lead to following negative impact on the stake holders:

Negatively affect the price level of essential goods and services: The proposed GST may lead to increase the price of essential products and services which are presently exempted from the taxation.

Negative effect on the real estate industry: As per the study undertaken by the Curtin University of Technology, Perth in 2000, GST would negatively impact the real estate market as it would add up to 8% to the cost of new homes and reduce demand by about 12%.

Negative effect on working capital: As the firms are supposed to make the payment of the tax on every

transfer the companies working capital requirement will shoots up by proportional to the purchase of inputs for the value addition.

Emergence of transfer pricing issues: As the GST considers all the transaction for taxation purpose, this procedure will increase the price of the transfer from one department to another for further process.

Suggestions:

Tax rates should not increase in future because it will ultimately effect the purchasing power of the consumer.

Processes must be reduced so that business can operate efficiently in the best interest of the people and for economic growth. **Filing of 37 returns** per GSTIN could be a very time consuming exercise, wherein everyone would not even have the bandwidth to comply with.

Relief must be given to small scale operators and particularly reduced processes should be applicable to them. They do not have finance or resource to comply. Much of India's business is one or two man show. The **facility to file quarterly returns** should be extended to assesseees with up to 10 crore turnover.

Rates should be rationalized and reduced to make India competitive and in interest of compliance and economic growth. The highest rate should be kept at 18% and there should be only few items that fall in 28% slab. Daily use items such as soaps, cremes, movie tickets, electrical goods should not be taxed at 28%.

Technological glitches of the GST network should be sorted out on a war footing basis

Limitations:

Limitation of this research paper is that "GST" itself is a very vast topic ,and its next to impossible to cover the this topic with so many restrictions .however ,some of the effects of GST on society has been tried to cover .

Conclusion:

The proposed GST regime is a half-hearted attempt to rationalize indirect tax structure. More than 150 countries have implemented GST. the government should make an attempt to insulate the vast poor population of India against the likely inflation due to implementation of GST. No doubt, GST will simplify existing indirect tax system and will help to remove inefficiencies created by the existing current heterogeneous taxation system only if there is a clear consensus over issues of threshold limit, revenue rate, and inclusion of petroleum products, electricity, liquor and real estate. Until the consensus is reached, the government should resist from implementing such regime.

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11.

ROLE OF SOCIAL AND TRADITIONAL DETERMINANTS IN MATERNAL MORTALITY

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Abstract: India is a highly populated country with the highest numbers of maternal deaths globally. In many societies, girls and women suffer systematic discrimination in access to power, prestige and resources. Health effects of discrimination can be immediate and brutal. Gender divisions within society also affect health through less visible biosocial processes, whereby girls' and women's lower social status and lack of control over resources exposes them to health risks. (WHO, 2010). Women's lack of decision making, a lesser value placed on their lives, and the health system's neglect of issues affecting women. Son preference, social stigma and lack of care is also overarching determinant of maternal death. The burden of costs for maternal health care among the population living in slums is often significant. This paper analyses the implications in maternal mortality in India, the maternal healthcare-delivery system at different levels, and the role of social-economic and traditional determinants. It identifies the causes for limited success in improving maternal health indicators and suggests future actions to improve the situation.

Introduction: "The maternal mortality has been defined by WHO as death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death (and) is intended for countries that wish to identify deaths occurring in pregnancy, child birth up to 6 weeks after the end of pregnancy but where the cause of death cannot be identified precisely" (WHO cited in Royston, Mauldin, 1994). Though India has made a considerable progress in improving the overall health status of its population but it is far from satisfaction. The pace of decline of maternal mortality has been quite low. The neonatal mortality is primarily consequences of endogenous factors, which are largely governed by the maternal causes and thereby call for the monitoring of maternal mortality ratio in the population. "The results of large-scale survey have however shown that there was no decline in MMR over time indicating an urgent public health concern. The complications of pregnancies and the births are found to be the leading causes of deaths and disability among women of reproductive age. The health problems of mothers and new-borns arise as a result of synergistic effects of malnutrition, poverty, illiteracy, unhygienic living conditions, infections and unregulated fertility. At the same time, poor infrastructure and ineffective public health services is also responsible for low inadequate obstetric care. The exact ascertainment of the situation could be monitored with the availability of MMR estimate and causes of maternal deaths" (Pandey, 2003; pg.1).

It is gradually being recognized that health consequences are a result not only of biological and individual risk factors but also of social factors like wealth, ethnic background, gender, education and so on. Disparities in women's access to information, decision making and life opportunities contribute to their ill health and levels of well-being. Governmental choices and social organization that distribute power and resources unequally across populations reproduce unequal health outcomes. Together, the structural factors and circumstances of daily life constitute the social determinants of health and are responsible for a major part of health discriminations. These social determining factor shape unequal health outcomes and produce health inequalities, it is being acknowledged that it is possible to improve health outcomes by considering and acting upon noticeable social determining factor This then is the core of the social determinants approach that we use to analyse Maternal Health. Additionally, we recognize that health

inequities because of structural factors like unequal opportunities, unequal access to resources and power inequalities are an issue of social justice and therefore of human rights. (Nimbiar, Muralidharan, 2017)

Maternal mortality rates reflect disparities between wealthy and poor countries more than any other measure of health. A woman's chance of dying or becoming disabled during pregnancy and childbirth is closely connected to her social and economic status, the norms and values of her culture, and the geographic remoteness of her home. By and large, the poorer and more marginalized a woman is, the greater her risk of death. The number of maternal deaths is highest in rural India where women are least likely to have skilled attendance at delivery, such as a midwife, doctor or other trained health professional. Likewise, within India, it is the poorest and least educated women who are most vulnerable to maternal death and disability (UNFPA, 2012). "The World Health Organization (WHO) estimates that, of 358,000 maternal deaths occurring globally each year, 63,000 occur in India - this represents approximately 18% of all maternal deaths worldwide. Estimates of the global burden of disease show that India alone contributed 25% to disability-adjusted life-years lost due to maternal conditions. India is making determined efforts to reduce maternal mortality and achieve the fifth Millennium Development Goal (MDG) of bringing down the maternal mortality ratio from 178 in 2012 to 100 maternal deaths per 100,000 live births by 2015" (Vora et al, 2015: pg. 1).

The traditional Indian systems of medicine are male oriented and male dominated. They largely ignore the women's diseases. The only traditional medicine available to women was in the hands of dais who dealt mainly with pregnancy and delivery. Factors tending to upsurge in maternal death include obstructed labor, malnutrition, poverty, overburden, lack of primary health care, parasitic disease. Cultural factors also promote maternal deaths in many areas, such as low status and neglect to girls and women, polygamy, early marriages and childbearing, underfeeding and dietary practices during pregnancy, and double standards of sexual ethics resulting in clandestine abortion or pre-pubertal marriage. Some approaches to reverse this tragedy include antenatal care with risk referral, small family norm, family planning, adult education, training and supervision of traditional birth attendants, maternity waiting homes, decentralized maternal-child health care, provision of legal,

medical abortion, preferably contra-gestational agents and prostaglandins, blood banks at delivery units, standardized obstetric care, and compulsory education of girls and later marriage.

SOCIO-ECONOMIC CAUSES AND DETERMINANTS: **The structural and social determinants of maternal health.**

- **Individual characteristics** of women like age, parity, knowledge of services, previous obstetric history and so on;
- **Family characteristics** – economic status, access to resources, support from natal and marital family, marital relationship;
- **Community context** – rural-urban-tribal, social position (class, caste, ethnicity), social capital, distance to facilities;
- **Culture and social values** – women's status, gender norms, religion, health beliefs, social cohesion.
- **Social Causes:** Social pressure on women to bear male children; boy preference, an ingrained socio-economic factor and forcing women to conceive again and again to try to bear a male baby may be a social requirement. But how about the woman's nutrition and health status. Not merely she is affected psychologically and emotionally, she has no value in the family until such time she bears a male child. Not merely this results in risk of survival to the mother but it leads to maternal mortality. Also the women whom we have met and spoken to also preferred male children to girl child.

Gender issues:

In many cultures, girls and women suffer methodical discrimination in access to power, prestige and resources. Health effects of discrimination can be instantaneous and ruthless. Gender divisions within society also affect health through less visible biosocial processes, whereby girls' and women's lower social status and lack of control over resources exposes them to health risks. Women's lack of decision making, a lesser value placed on their lives, and the health system's neglect of issues affecting women. Son preference, social stigma and lack of care is also predominant determinant of maternal death. The burden of costs for maternal health care among the population living in slums is often significant. "Data from the NFHS 3 conducted in 2005–2006 indicated that a majority of men think that husband and wife should make decisions jointly but that the husband should have the final word. This has implications for the health-seeking behaviour of women, who may be dependent on their husband's permission to access health services" (Linda et al, 2013; pg.1).

Cultural practices surrounding pregnancy

One main system in which socio-cultural norms and practices threaten the health of pregnant women is their replacement for modern medical practices. This is predominantly true of poor backgrounds where there is a greater reliance on traditional values and beliefs - **perhaps a direct result of a lack of education.**

Eventually, there is no simple solution to the deep-rooted socio-cultural factors that play such an important role in the well-being of pregnant women. These issues, whether they be gender norms that mean women must continue to take on greater domestic workloads than men well into their pregnancies, or traditional practices that lead to pregnant

The perception that girl children are liable has been the root cause of infanticides

Economic issues: The prohibitive cost to emergency intervention in labour, women may even have no cash available in terms of seeking medicare in such emergency; this may be one of the causes for delay in seeking medicare and services. If community help is sought to reach the PHCs or Hospital, there were occasions, the women deposed before us, that community leaders might override even husband's wishes to save the woman from maternal mortality

Health services – availability of services (emergency obstetric care, blood availability), skilled staff, acceptability of services, fees and charges for services;

Structural determinants – laws, policies, budgets, education, social protection, and so on. In the framework proposed by WHO, although cultural and social norms are presented under structural factors, we believe that they also stem from the community context and can also be considered as intermediary factors.

The urban population in India is one of the largest in the world, with many living in urban slums. A study on women's reproductive health showed that a significant lower proportion of women living in slum areas compared with women living in non-slum areas had ever used contraceptives, were less likely to use skilled attendants at delivery, and less likely to receive postpartum check-

women receiving insufficient medical care, are ingrained into the lifestyle of a population. The belief that pregnant women should be discouraged from eating particular foods, including fruit, vegetables and certain high-caloric foods; these are foods that tend to be nutritionally important during pregnancy.

Caste and Religion

In societies marked by racial discrimination and exclusion, people's belonging to a marginalized racial/ethnic group affects every aspect of their status, opportunities and trajectory throughout the life-course. Health status and consequences among oppressed racial/traditional groups are often significantly poorer than those listed in more privileged groups or than population averages.

Almost 45 percent of the women who died were from scheduled tribes and a further 17 percent were from scheduled castes

culture and other issues: Maternal death is often not only a result of technical incompetence or medical negligence, but is also caused by superstitions and cultural practices and deliveries attended by traditional birth attendants; also lack of easy access due to lack of transportation facilities has also been quoted as one of the contributing cause. Actions people take or do not take for their health e.g. attending or refusing to antenatal care by pregnant women or seeking help only when complications arise. Example Mother-in-law stopped her from attending to antenatal check-ups and that she could not disobey her. Young women below the age of 18 years getting married, forced into conception within a year, face obstructed labour, because their body is not mature for motherhood and even child care. Death due to a number of biological factors occur. First child birth is risky for

the adolescent mother and many cases of young mother dying in maternity.

Geographical location

Women from remote villages were especially vulnerable and were excluded from care were those in remote hamlets, a typical feature of most tribal villages as well as most of rural India. Families revealed that these villages did not receive any services at all.

Other issues: unwanted pregnancies and resorting to abortions through dais and quacks lead to complications and maternal death.

Health system factors

Lack of availability of emergency obstetric care and its poor quality emerged as a significant issue from our analysis of maternal deaths. Blood seemed to be unavailable in emergencies. In situations of emergency, blood transfusion was either delayed or inadequate. Another probable causes of death such as post-partum haemorrhage, anaemia and ante-partum haemorrhage. However, post-partum care was found to be highly inadequate both within the facility and in the community. Post-partum care largely seemed to be absent in facilities and women were discharged soon after delivery and families left to fend for them in the case of any complication. Once the woman was discharged from a ty over the other is hard to say. Poverty and lack of economic ability to buy food or access food leads to a variety of results unfavourably impacting on the health of people particularly women and the girl child.

All these factors work simultaneously and thus the unbroken chain of reasons originating from the socio-economic determinants cannot be over ruled.

Structural Factors

Several system-induced susceptibilities could be seen in the narratives. Policies and programmes of the government meant to improve health outcomes, actually affect the most vulnerable most adversely. The impact of the family planning programme and the two child norm on front-line workers affects maternal health.

Education and Awareness:

Eliminating gender difference in mortality rates would help reduce child and infant mortality rates.

Encourage women to avail all health services for safe pregnancy, delivery and child survival and curbing infanticide practices. Prominence should be given to government benefit schemes for women and girl child. Connecting adolescent girls groups and PRI groups for health issues related to body mapping, reproductive health, family welfare, girl child protection, institutional delivery, to eliminate sex determination tests and work for gender equality. To start operation theatres in PHCs to facilitate family planning services and medical termination of pregnancies.

To educate the mother of the merits of antenatal care, institutional delivery, importance of exclusive breast feeding, immunization, home care for diarrhoea; all these are meant to create awareness among family members to provide support to women during pregnancies and deliveries

facility, there seemed to be no system of following her up at home and providing any care to her. Further, due to refusal by the admitting hospital due to lack of funds and other reasons of the women who dies visited three or more facilities seeking care when they were faced with an obstetric emergency. Also difficulty in getting vehicles to transport women from one place to another, families often also narrated that they faced difficulties in getting designated ambulances or vehicles to come to their homes to pick up women during an emergency.

SOCIO ECONOMIC STATUS OF WOMEN AND HEALTH.

1. Government allocated funds for BPL families, do not reach the beneficiaries for whom it is intended for. In spite of many possessing a BPL Card, So many 2. Poverty being the main issue, it obfuscates and compromises the health of the people, especially women and children. Women are caught up in the vicious cycle of lack of food, nutrition leading to anaemia. Poor women crying for jobs that can supplement their family income so that a little more can be put for child care and for their own wellbeing.

3. Pregnancy and malnutrition being a deadly combination makes susceptible many lives and causing maternal deaths.

4. Economic causes masked in social ethos and cultural practices and vice versa. Which one takes priori

Conclusion:

In India, economic status, gender, and social status are all diligently interconnected when influencing use of and access to maternal and reproductive health care. Appropriate care and attention should be given to how these societal factors interplay in making and sustaining injustice when designing policies and programs to reach justifiable progress toward improved maternal and reproductive health. In the primary care setting, even though time may be a scarce resource, it is important to be mindful of social and cultural factors that can negatively impact on patient well-being.

There is a usual difference between discrimination and inequality in the study of health outcomes. Discrimination mirrors the totality of differences between persons, regardless of the source of these differences and, in particular, regardless of whether or not these sources stem from actions within a person's control. Unfairness reflects that part of inequality that is produced by factors outside a person's control. Hence, while inequality may not be seen as "biased", unfairness is properly regarded as being discriminating.

A Countrywide provision for modus operandi and updated technology is a must. A storehouse of awareness and knowledge, is out there awaiting the attention of our people. Let new science, new technology and new management be henceforth our escort. Ones this transition takes place India to get rid of Maternal Mortality.

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12.

Traumatic Experience of Child Abuse in Toni Morrison's *The Bluest Eye* and *God Help the Child*

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ABSTRACT: Child abuse is an act by a parent or caregiver which results in potential harm to child causing injury, death, emotional harm or risk of serious harm and can occur in a child's home, or in the organizations, schools or communities the child interacts with. The terms *child abuse* and *child maltreatment* are often used interchangeably, although some researchers make a distinction between them, treating *child maltreatment* as an umbrella term to cover neglect, exploitation, and trafficking. There are many forms of child maltreatment, including neglect, physical abuse, sexual abuse, exploitation and emotional abuse. Child abuse can be a single incident, or can be a number of different incidents that take place over time.

The current paper is going to focus on the traumatic experience of child abuse in Noble Laureate African American novelist Toni Morrison with respect to her two novels *The Bluest Eye* and *God Help the Child*. Further both the novels will explore how children in both the novels suffers from physical, emotional, sexual abuse and the way they are neglected by their own family members as well as in society which affects their psyche.

Key words: Child abuse, sexual, emotional, parental disorder, trauma

Child abuse is an act by a parent or caregiver which results in potential harm to child causing injury, death, emotional harm or risk of serious harm and can occur in a child's home, or in the organizations, schools or communities the child interacts with. The terms *child abuse* and *child maltreatment* are often used interchangeably, although some researchers make a distinction between them, treating *child maltreatment* as an umbrella term to cover neglect, exploitation, and trafficking. There are many forms of child maltreatment, including neglect, physical abuse, sexual abuse, exploitation and emotional abuse. Child abuse can be a single incident, or can be a number of different incidents that take place over time.

When a child experiences physical or emotional abuse, the wounds run skin deep. Kids who suffer repeated trauma feel lonely, scared, worthless and unloved, which is exactly the opposite of how children should feel. Abused children often become broken, hollow and bitter, with mental consequences that last long after the physical wounds have healed. Immaturity, unrealistic expectations, emotional problems, economic crisis, lack of parenting knowledge, difficulty in relationships, depression and other mental health problems by parents leads child abuse.

In African-American context and literature, the theme of childhood trauma has struck the attention of great deal of feminist writers who make this subject a serious focus of their works. Indeed, the concern with the topic can be accounted for by the writers' firsthand experience of trauma or their professional activist commitment to the social ills of their society and community.

Toni Morrison, deals with black political, social and historical issues take the lion part in her texts, is hampered by the theme of childhood and child abuse. She deals with this question profoundly that she makes it her mission to show the world how destructive this act of childhood abuse is to

the victims' psyche as well as to the community's stability, steadiness, and progress. Indeed, from *The Bluest Eye* (1970) to *God Help the Child* (2015), Morrison endeavors to communicate the suffering of a hundred if not thousands of children under abuse and molestation. She strongly insists on the emergency of recognizing the devastating effects of this phenomenon at the same time requests protection to these children.

Her first novel *The Bluest Eye* (1970) revolves around an abusive story of an eleven years old black Pecola who was neglected by her mother and raped by her father. Morrison's literary path continued with *Sula*, *Song of Solomon* and many other novels to reach to *God Help the Child* which is full of Pecolas. As black American experience is a ready storehouse for substance and material, Morrison relates the theme of child abuse to black history of slavery and racism in many of her novels.

Morrison's *The Bluest Eye* brings into light the plight of inter- and intra racism and highlights black children's subjection to neglect, abandonment and their attempts to grapple with past experiences of colorism. The novel revolves around the story life of the child girl, Pecola, who received capital intimidation, rejection and bitterness from the black and white culture. The girl has been a subject of oppression in the family, at the hands of her mother who neglected her and her father who raped her. She has also suffered at the hands of the white because of her black epidermal signs and becomes insane at the end imagining herself with white standards.

In *God Help the Child*, Sweetness stands for the trauma the blacks endured during the racial segregation era of the separatist Jim Crow laws of 1877 to 1960s, while Bride symbolizes the definition of contemporary black beauty as "the hottest commodity in the civilized world (67).

[U]nder conditions of chronic childhood abuse, fragmentation becomes the central principle of personality organization. Fragmentation in consciousness prevents the ordinary integration of knowledge, memory, emotional states, and bodily experience. Fragmentation in the inner representations of the self prevents the integration of identity. Fragmentation in the inner representations of others prevents the development of a reliable sense of independence within connection. (78)

Sexual abuse occurs when an adult uses a child for sexual purposes or involves a child in sexual acts. In *The Bluest Eye*, father of Pecola, Cholly is often drunk and beats his wife and children. He rapes his own daughter, Pecola, and as a result, she becomes pregnant with his child. Cholly is notorious for his indiscipline and awkwardness. In one of his drunken stupors, he lights his own house on fire and burns it down. He is a dreadful father to both his kids. Pecola is an easy prey to Cholly because she is a child and has no power or control over adults. She is a female and no knowledge has been imparted to her to oppose any form of oppression. Eventually, Pecola has to face sexual abuse at the hands of her father Cholly. He rapes her twice. She is forced to participate in a horrendous sexual act, which is just intended towards the physical gratification of her father. He rapes her regardless of the outcome. He is more powerful than Pecola, so makes her the victim. This is a form of incest, which leaves Pecola in a psychological trauma. Cholly's rape results in impregnating Pecola. The whole community, both the blacks and whites starts to hate her for carrying her father's baby. Social stigma of Pecola's sexual abuse compounds her psychological harm. By raping Pecola, her father has killed her infinite number of times. Her mother Pauline neglected Pecola's complains to her and beat her. By neglecting her and not consoling her, Pauline indirectly made Pecola die an infinite number of times.

Rain in the novel *God Help the Child* also experiences sexual abuse and molestation through her mother. Rain even before the age six had to endure atrocious life because of her mother, who is a prostitute. Hannah is another character in the same novel and is abused by her father. She is the daughter of Queen, Booker's aunt. Hannah is molested by her own father, which Queen was not ready to accept. Later, she understood the issue and forever was sorry for her negligence and repented until her death. However, she failed like Pauline to act in the appropriate time. Queen had many husbands and was blind to see her daughter suffer.

Many of Morrison's mothers readily neglect their own children. Around twenty mothers in her eleven novels do not bother much in rearing their own children. Either they leave them stranded soon after birth, or they may abandon them when they are toddlers. There are mothers who neglect their children when they are adolescents. Cholly's mother in *The Bluest Eye* abandons him soon after birth. His life is negatively impacted by his inability to identify with his ancestral past. Cholly is abandoned by his father before his birth and abandoned by his mother nine days after birth. In Morrison's last novel, many mothers are seen to be neglecting their children. Child abuse grazes a sharp scar through Toni Morrison's *God Help the Child*. The novel is a brisk modern day tale with shades of the imaginative cruelties visited on children. The protagonist of the novel is a young black girl, Bride. Bride had a difficult childhood as both her parents neglected her. Bride is portrayed as a

young, beautiful girl, with deep blue-black skin and she has a job in the cosmetics industry. Her light-skinned mother, Sweetness, rejected her as a child. Sweetness has been poisoned by the strain of color and class anxiety still present in black communities [8]. The protagonist of the novel, Bride, is rejected by her mother because of her skin tone. Rain, is an almost feral child who is prostituted by her mother. Rain was abused and molested as a child. When she was six years old, she was thrown out of her home. Her mother was a prostitute herself who did not care for her daughter. When Rain opposed, she threw her out of home. Her biological mother allowed men to use and abuse her sexually for money.

Emotional abuse refers to the psychological and social aspects of child abuse. It is the most common form of child abuse. Some parents who are emotionally abusive parents practice forms of child raising that are focused towards gratifying their own desires and goals, rather than those of their children. Their nurturing style may be characterized by blatant hostility towards their children, including shouting, yelling, bullying and intimidation, or they may manipulate their children using more subtle means, such as emotional blackmail. Pauline of *The Bluest Eye* is one example of this type. Pecola has never been taught anything about her body by her mother. She does not have any liberty and right to ask any personal questions to her. Thus, her transition to adulthood becomes difficult and traumatic. In fact, Pecola's mother has never treated her as a human being and loved her to teach her womanhood. Pecola on the other hand, being younger than Sammy and also a girl, tries different methods of survival. Pecola tried to be with the family, which later proved fatal for her

In *God Help the Child*, Morrison revisits a critical aspect of motherhood: how mothering is highly impacted by a racially-prejudiced society and the dramatic ensuing effects upon children, as in her first novel, *The Bluest Eye*. In Sweetness, Morrison personifies self-destructive and destructive/toxic modes of motherhood, which contrast with a positive mothering that includes raising children in accordance with the values, beliefs, and customs of traditional African American culture and in particular the values of the funk and ancient proprieties. In each of these [maternal] tasks—preservation, nurturance, cultural bearing—Morrison is concerned with protecting children from the hurts of a racist and, for daughters, sexist culture, and with teaching children how to protect themselves so they may be empowered to survive and resist the racist and patriarchal culture in which they live and develop a strong and authentic identity as a black person. (O'Reilly, *Toni Morrison* 29)

Morrison does not shrink from exposing the harsh realities children face, and how the traumatic past is constantly shaping their lives. She returns to questions of race and manages to lay bare how much slavery and its legacy still today impact blacks' lives, uncovering the emotional and psychological chokehold their histories have on them. Toni Morrison's literary career reads as a commitment to the burden of African Americans as her major works revisits traumatic moments in the black history and culture. She has voiced African-American experiences of racism, segregation and forms of deprivation in white America, and has particularly concentrated on the oppression inflicted upon children. Indeed, the theme of childhood abuse and trauma has been recurrent in her major works including *Beloved*, *The Bluest Eye*, *Tar Baby* among others.

God Help the Child is filled with references to the theme of childhood abuse as it unveils the traumatic experiences children endure at the hands of society and caretakers. The characters in *God Help the Child* are deprived of parental love and compassion and left alone fighting to overstep the ghost of childhood horrific experiences to build up their future. Bride and Booker were the example of survival; they firmly battled the nightmare of the past to offer themselves a happy living in the present. And yet, Morrison's "fundamental message is as clear and deliberate in *God Help the Child* as it has ever been. Ms. Morrison's 'project'—the word is her own—is to empower her readers by exposing the psychic toll of cultural oppression and to chart a path from self-hatred to self-acceptance" (Sacks, 2015). She urges her characters to deal with their trauma and "move along. Morrison focuses on the need to put down the traumatic past, and the need of self-forgiveness and self-acceptance. She seems to hope that, despite the deep-rooted damage inflicted by child abuse, black individuals can overcome it and live the present fully and intensely.

Child abuse is equal to extinguishing life and peace on earth. According to Morrison, child abuse is the greatest evil in the world. The worry is the magnitude of the problem which is on the rise.

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13.

QUALITATIVE ANALYSIS OF SOFT DRINKS**Momin Fareha Mohammad Sabir**

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ABSTRACT: In recent years, Soft drinks brands were put into various questions regarding their purity. The people come to know that they contain harmful substances, which arouse many interest in knowing its contents because I have been drinking for so long and was always astounded by the tasty drink. I want now to confirm that whether the Charge imposes on these brands are true or false. And if it is true then is there anything else which would become refreshing yet nonlethal. Probiotics are live bacteria and yeasts that are good for your health, especially your digestive system. We usually think of these as germs that cause diseases. But your body is full of bacteria; both good and bad. Probiotics are often called "good" or "helpful" bacteria because they help keep your gut healthy.

KEYWORDS: soft drinks, digestive system, health.pH,

I INTRODUCTION

Stomach produces hydrochloric acid which helps in digestion of food. Sometimes the stomach produces too much hydrochloric acid. Excess acid in the stomach causes pain and irritation. It can also cause ulcers in the digestive system. The condition of excess acid in the stomach is referred to as hyperacidity. In order to treat hyperacidity, a patient is advised to take antacid tablets or antacid suspensions. The antacid preparations contain some mild base such as magnesium hydroxide as the active component which neutralizes the excess acid in the stomach and thus controls the pH in the stomach.

Tooth enamel is the hardest substance in our body. It is made up of calcium tetraoxophosphate. It does not dissolve in water and mildly acidic solutions. However, it gets corroded slowly when pH in the mouth is below 5.5. In order to prevent tooth decay avoid eating sugary foods. Toothpastes are generally basic, therefore, they neutralize the excess acid in the mouth and thus prevent tooth decay.

The era of cold drinks began in 1952 but the industrialisation of the industry marked its beginning with launching of limca and gold spot by parley group of companies. Since, the beginning of cold drinks was highly cost-effective and luring, many multinational companies launched their brands in India like Pepsi and Coke. Nowadays, it is observed in general that majority of people viewed big cola in all flavors and euro zip sip newly introduced in the market to give feeling of lightness, while Pepsi and Thumbs Up to activate pulse and brain.

II THEORY

Cold drinks of different brands are composed of alcohol, carbohydrates, carbon dioxide, phosphate ions etc. These soft drinks give feeling of tenderness, nimbleness and have a piquant taste which is liked by everyone. Carbon dioxide is responsible for the formation of fizz on shaking the bottle. The carbon dioxide gas is dissolved in water to form carbonic acid which is also responsible for the tangy taste. Carbohydrates are the naturally occurring organic compounds and are major source of energy to our body. General formula of carbohydrates is $C_x (H_2O)_y$. On the basis of their molecule size carbohydrates are classified as:

-Monosaccharide, Disaccharides and Polysaccharides. Glucose is a monosaccharide with formula $C_6H_{12}O_6$. It is widely spread in nature in juices, seeds and also in flowers

of many plants. The main source of sucrose is sugar cane juice which contains 15-20 % sucrose and sugar beet which has about 10-17 % sucrose. The molecular formula of sucrose is $C_{12}H_{22}O_{11}$. It is produced by a mixture of glucose and fructose. It is non-reducing in nature whereas glucose is reducing. Cold drinks are a bit acidic in nature and their acidity can be measured by finding their pH value. The pH values also depend upon the acidic contents such as citric acid and phosphoric acid.

Disadvantages of Cold Drinks

1. Soft drinks are little more harmful than sugar solution. As they contain sugar in large amount which cause "diabetes".
2. Soft drinks can cause weight gain as they interfere with the body's natural ability to suppress hunger feeling.
3. Soft drinks have ability to dissolve the calcium so they are also harmful for our bones. Soft drinks contain "phosphoric acid" which has a pH of 2.8. So they can dissolve a nail in about 4 days.
4. For transportation of soft drinks syrup the commercial truck must use the hazardous material placards reserved for highly corrosive material.
5. Soft drinks have also ability to remove blood so they are very harmful to our body.

Advantages of Cold drinks:

Cold drinks can be used as toilet cleaners. They can remove rust spots from chrome car bumpers. They clean corrosion from car battery terminals. Soft drinks are used as an excellent "detergent" to remove grease from clothes. They can loose rusted bolt.

Advantages of Pro-biotic Drinks:

Anything if consumed in excess will be harmful to our body. We cannot completely rely on probiotics but in contrast with soft drinks, probiotics are better.

Probiotics helps to grow our immune system stronger and does not affect our body with any other sort of changes like stoutness. So after doing many experiments and finding out the results I can surely say that probiotics are better than soft drinks and are also good refreshments.

DISADVANTAGES OF COLD DRINKS

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- Soft drinks can cause weight gain as they interfere with the body's natural ability to suppress hunger feeling.
- Soft drinks have ability to dissolve the calcium so they are also harmful for our bones.
- Soft drinks contain "phosphoric acid" which has a pH of 2.8. So they can dissolve a nail in about 4 days.

USES OF COLD DRINKS

- Cold drinks can be used as toilet cleaners.
- They can remove rust spots from chrome car humpers.
- They clean corrosion from car battery terminals.
- Soft drinks are used as an excellent 'detergent' to remove grease from clothes.
- They can lose a rusted bolt.

MATERIALS AND METHODS: Four different types of cold drink collected from the market namely big cola (3 different flavor) and euro zipsip. The particular sample is then treated with particular chemicals to know the contents of cold drinks. Test for CO₂, phosphates, alcohols and glucose and sucrose (Benedict test and Fehling's solution test) has been performed. And basically pH which is the important factor is noted in the form of table given below.

| No. | Cold drinks name | PH(by pH meter) |
|-----|------------------|-----------------|
| 1. | Big cola | 2.28 |
| 2. | Big kids (apple) | 2.47 |

| | | |
|----|-------------------|------|
| 3. | Big kids (orange) | 2.72 |
| 4. | Euro zip sip | 2.64 |

CONCLUSION• After conducting several tests, it was concluded that the different brands of cold drinks namely 1big cola 2. Big kids apple 3. Big kids orange 4. Euro zip sip All contains glucose, alcohol, sucrose, phosphate, ions and carbon dioxide. All are acidic in nature.

On comparing the pH value of different brands big cola is most acidic and big kids orange are least acidic of all the four brands taken. pH value of big cola is nearly equal to disinfectant which is harmful for body.

carbon dioxide Among the four samples of cold drinks taken –euro zip sip has maximum amount of dissolved carbon dioxide and big kids apple has minimum amount of dissolved carbon dioxide.

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www.cseindia.org
Read more at: <http://projects.icbse.com/chemistry-268>



14.

ENVIRONMENT AND ITS EFFECT ON SOCIETY**Moallim Shaima Mohsin**Sociology Department
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Abstract: *India is a highly populated country with the highest numbers of maternal deaths globally. In many societies, girls and women suffer systematic discrimination in access to power, prestige and resources. Health effects of discrimination can be immediate and brutal. Gender divisions within society also affect health through less visible biosocial processes, whereby girls' and women's lower social status and lack of control over resources exposes them to health risks. (WHO, 2010). Women's lack of decision making, a lesser value placed on their lives, and the health system's neglect of issues affecting women. Son preference, social stigma and lack of care is also overarching determinant of maternal death. The burden of costs for maternal health care among the population living in slums is often significant. This paper analyses the implications in maternal mortality in India, the maternal healthcare-delivery system at different levels, and the role of social-economic and traditional determinants. It identifies the causes for limited success in improving maternal health indicators and suggests future actions to improve the situation.*

Introduction: "The maternal mortality has been defined by WHO as death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death (and) is intended for countries that wish to identify deaths occurring in pregnancy, child birth up to 6 weeks after the end of pregnancy but where the cause of death cannot be identified precisely" (WHO cited in Royston, Mauldin, 1994). Though India has made a considerable progress in improving the overall health status of its population but it is far from satisfaction. The pace of decline of maternal mortality has been quite low. The neonatal mortality is primarily consequences of endogenous factors, which are largely governed by the maternal causes and thereby call for the monitoring of maternal mortality ratio in the population. "The results of large-scale survey have however shown that there was no decline in MMR over time indicating an urgent public health concern. The complications of pregnancies and the births are found to be the leading causes of deaths and disability among women of reproductive age. The health problems of mothers and newborns arise as a result of synergistic effects of malnutrition, poverty, illiteracy, unhygienic living conditions, infections and unregulated fertility. At the same time, poor infrastructure and ineffective public health services is also responsible for low inadequate obstetric care. The exact ascertainment of the situation could be monitored with the availability of MMR estimate and causes of maternal deaths" (Pandey, 2003; pg.1).

It is gradually being recognized that health consequences are a result not only of biological and individual risk factors but also of social factors like wealth, ethnic background, gender, education and so on. Disparities in women's access to information, decision making and life opportunities contribute to their ill health and levels of well-being. Governmental choices and social organization that distribute power and resources unequally across populations reproduce unequal health outcomes. Together, the structural factors and circumstances of daily life constitute the social determinants of health and are responsible for a major part of health discriminations. These social determining factor shape unequal health outcomes and produce health inequalities, it is being acknowledged that it

is possible to improve health outcomes by considering and acting upon noticeable social determining factor. This then is the core of the social determinants approach that we use to analyse Maternal Health. Additionally, we recognize that health inequities because of structural factors like unequal opportunities, unequal access to resources and power inequalities are an issue of social justice and therefore of human rights. (Nimbiar, Muralidharan, 2017)

Maternal mortality rates reflect disparities between wealthy and poor countries more than any other measure of health. A woman's chance of dying or becoming disabled during pregnancy and childbirth is closely connected to her social and economic status, the norms and values of her culture, and the geographic remoteness of her home. By and large, the poorer and more marginalized a woman is, the greater her risk of death. The number of maternal deaths is highest in rural India where women are least likely to have skilled attendance at delivery, such as a midwife, doctor or other trained health professional. Likewise, within India, it is the poorest and least educated women who are most vulnerable to maternal death and disability (UNFPA, 2012). "The World Health Organization (WHO) estimates that, of 358,000 maternal deaths occurring globally each year, 63,000 occur in India - this represents approximately 18% of all maternal deaths worldwide. Estimates of the global burden of disease show that India alone contributed 25% to disability-adjusted life-years lost due to maternal conditions. India is making determined efforts to reduce maternal mortality and achieve the fifth Millennium Development Goal (MDG) of bringing down the maternal mortality ratio from 178 in 2012 to 100 maternal deaths per 100,000 live births by 2015" (Vora et al, 2015: pg. 1).

The traditional Indian systems of medicine are male oriented and male dominated. They largely ignore the women's diseases. The only traditional medicine available to women was in the hands of dais who dealt mainly with pregnancy and delivery. Factors tending to upsurge in maternal death include obstructed labor, malnutrition, poverty, overburden, lack of primary health care, parasitic disease. Cultural factors also promote maternal deaths in many areas, such as low status and

neglect to girls and women, polygamy, early marriages and childbearing, underfeeding and dietary practices during pregnancy, and double standards of sexual ethics resulting in clandestine abortion or pre-pubertal marriage. Some approaches to reverse this tragedy include antenatal care with risk referral, small family norm, family planning, adult education, training and supervision of traditional birth attendants, maternity waiting homes, decentralized maternal-child health care, provision of legal, medical abortion, preferably contra-gestational agents and prostaglandins, blood banks at delivery units, standardized obstetric care, and compulsory education of girls and later marriage.

SOCIO-ECONOMIC CAUSES AND DETERMINANTS: **The structural and social determinants of maternal health.**

- **Individual characteristics** of women like age, parity, knowledge of services, previous obstetric history and so on;
- **Family characteristics** – economic status, access to resources, support from natal and marital family, marital relationship;
- **Community context** – rural-urban-tribal, social position (class, caste, ethnicity), social capital, distance to facilities;
- **Culture and social values** – women's status, gender norms, religion, health beliefs, social cohesion.
- **Social Causes:** Social pressure on women to bear male children; boy preference, an ingrained socio-economic factor and forcing women to conceive again and again to try to bear a male baby may be a social requirement. But how about the woman's nutrition and health status. Not merely she is affected psychologically and emotionally, she has no value in the family until such time she bears a male child. Not merely this results in risk of survival to the mother but it leads to maternal mortality. Also the women whom we have met and spoken to also preferred male children to girl child. The perception that girl children are liable has been the root cause of infanticides
- **Economic issues:** The prohibitive cost to emergency intervention in labour, women may even have no cash available in terms of seeking medicare in such emergency; this may be one of the causes for delay in seeking medicare and services. If community help is sought to reach the PHCs or Hospital, there were occasions, the women deposed before us, that community leaders might override even husband's wishes to save the woman from maternal mortality
- **Health services** – availability of services (emergency obstetric care, blood availability), skilled staff, acceptability of services, fees and charges for services;
- **Structural determinants** – laws, policies, budgets, education, social protection, and so on. In the framework proposed by WHO, although cultural and social norms are presented under structural factors, we believe that they also stem from the community context and can also be considered as intermediary factors.

The urban population in India is one of the largest in the world, with many living in urban slums. A study on women's reproductive health showed that a significant lower proportion of women living in slum areas compared with women living in non-slum areas had ever used contraceptives, were less likely to use skilled attendants at delivery, and less likely to receive postpartum check-ups

Gender issues:

In many cultures, girls and women suffer methodical discrimination in access to power, prestige and resources. Health effects of discrimination can be instantaneous and ruthless. Gender divisions within society also affect health through less visible biosocial processes, whereby girls' and women's lower social status and lack of control over resources exposes them to health risks. Women's lack of decision making, a lesser value placed on their lives, and the health system's neglect of issues affecting women. Son preference, social stigma and lack of care is also predominant determinant of maternal death. The burden of costs for maternal health care among the population living in slums is often significant. "Data from the NFHS 3 conducted in 2005–2006 indicated that a majority of men think that husband and wife should make decisions jointly but that the husband should have the final word. This has implications for the health-seeking behaviour of women, who may be dependent on their husband's permission to access health services" (Linda et al, 2013; pg.1).

Cultural practices surrounding pregnancy

One main system in which socio-cultural norms and practices threaten the health of pregnant women is their replacement for modern medical practices. This is predominantly true of poor backgrounds where there is a greater reliance on traditional values and beliefs - **perhaps a direct result of a lack of education.**

Eventually, there is no simple solution to the deep-rooted socio-cultural factors that play such an important role in the well-being of pregnant women. These issues, whether they be gender norms that mean women must continue to take on greater domestic workloads than men well into their pregnancies, or traditional practices that lead to pregnant women receiving insufficient medical care, are ingrained into the lifestyle of a population. The belief that pregnant women should be discouraged from eating particular foods, including fruit, vegetables and certain high-caloric foods; these are foods that tend to be nutritionally important during pregnancy.

Caste and Religion

In societies marked by racial discrimination and exclusion, people's belonging to a marginalized racial/ethnic group affects every aspect of their status, opportunities and trajectory throughout the life-course. Health status and consequences among oppressed racial/traditional groups are often significantly poorer than those listed in more privileged groups or than population averages.

Almost 45 percent of the women who died were from scheduled tribes and a further 17 percent were from scheduled castes'

culture and other issues: Maternal death is often not only a result of technical incompetence or medical negligence, but is also caused by superstitions and cultural practices and deliveries attended by traditional

birth attendants; also lack of easy access due to lack of transportation facilities has also been quoted as one of the contributing cause. Actions people take or do not take for their health e.g. attending or refusing to antenatal care by pregnant women or seeking help only when complications arise. Example Mother-in-law stopped her from attending to antenatal check-ups and that she could not disobey her. Young women below the age of 18 years getting married, forced into conception within a year, face obstructed labour, because their body is not mature for motherhood and even child care. Death due to a number of biological factors occur. First child birth is risky for the adolescent mother and many cases of young mother dying in maternity.

Geographical location

Women from remote villages were especially vulnerable and were excluded from care were those in remote hamlets, a typical feature of most tribal villages as well as most of rural India. Families revealed that these villages did not receive any services at all.

Other issues: unwanted pregnancies and resorting to abortions through dais and quacks lead to complications and maternal death.

Health system factors

Lack of availability of emergency obstetric care and its poor quality emerged as a significant issue from our analysis of maternal deaths. Blood seemed to be unavailable in emergencies. In situations of emergency, blood transfusion was either delayed or inadequate. Another probable causes of death such as post-partum haemorrhage, anaemia and ante-partum haemorrhage. However, post-partum care was found to be highly inadequate both within the facility and in the community. Post-partum care largely seemed to be absent in facilities and women were discharged soon after delivery and families left to fend for them in the case of any complication. Once the woman was discharged from a facility, there seemed to be no system of following her up at home and providing any care to her. Further, due to refusal by the admitting hospital due to lack of funds and other reasons of the women who dies visited three or more facilities seeking care when they were faced with an obstetric emergency. Also difficulty in getting vehicles to transport women from one place to another, families often also narrated that they faced difficulties in getting designated ambulances or vehicles to come to their homes to pick up women during an emergency.

SOCIO ECONOMIC STATUS OF WOMEN AND HEALTH.

1. Government allocated funds for BPL families, do not reach the beneficiaries for whom it is intended for. In spite of many possessing a BPL Card, So many 2. Poverty being the main issue, it obfuscates and compromises the health of the people, especially women and children. Women are caught up in the vicious cycle of lack of food, nutrition leading to anaemia. Poor women crying for jobs that can supplement their family income so that a little more can be put for child care and for their own wellbeing.

3. Pregnancy and malnutrition being a deadly combination makes susceptible many lives and causing maternal deaths.

4. Economic causes masked in social ethos and cultural practices and vice versa. Which one takes priority over the other is hard to say. Poverty and lack of economic ability to buy food or access food leads to a variety of results unfavourably impacting on the health of people particularly women and the girl child.

All these factors work simultaneously and thus the unbroken chain of reasons originating from the socio-economic determinants cannot be over ruled.

Structural Factors

Several system-induced susceptibilities could be seen in the narratives. Policies and programmes of the government meant to improve health outcomes, actually affect the most vulnerable most adversely. The impact of the family planning programme and the two child norm on front-line workers affects maternal health.

Education and Awareness:

Eliminating gender difference in mortality rates would help reduce child and infant mortality rates.

Encourage women to avail all health services for safe pregnancy, delivery and child survival and curbing infanticide practices. Prominence should be given to government benefit schemes for women and girl child. Connecting adolescent girls groups and PRI groups for health issues related to body mapping, reproductive health, family welfare, girl child protection, institutional delivery, to eliminate sex determination tests and work for gender equality. To start operation theatres in PHCs to facilitate family planning services and medical termination of pregnancies.

To educate the mother of the merits of antenatal care, institutional delivery, importance of exclusive breast feeding, immunization, home care for diarrhoea; all these are meant to create awareness among family members to provide support to women during pregnancies and deliveries

Conclusion:

In India, economic status, gender, and social status are all diligently interconnected when influencing use of and access to maternal and reproductive health care. Appropriate care and attention should be given to how these societal factors interplay in making and sustaining injustice when designing policies and programs to reach justifiable progress toward improved maternal and reproductive health. In the primary care setting, even though time may be a scarce resource, it is important to be mindful of social and cultural factors that can negatively impact on patient well-being.

There is a usual difference between discrimination and inequality in the study of health outcomes. Discrimination mirrors the totality of differences between persons, regardless of the source of these differences and, in particular, regardless of whether or not these sources stem from actions within a person's control. Unfairness reflects that part of inequality that is produced by factors outside a person's control. Hence, while inequality may not be seen as "biased", unfairness is properly regarded as being discriminating.

A Countrywide provision for modus operandi and updated technology is a must. A storehouse of awareness and knowledge, is out there awaiting the attention of our people. Let new science, new technology and new management be

henceforth our escort. Ones this transition takes place India to get rid of Maternal Mortality.

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15.

**ZOOPLANKTON DIVERSITY AND DISTRIBUTION IN
KAMWADI RIVER OF BHIWANDI, DIST-THANE, MAHARASHTRA.****Vinchu Shifa Jahangir and Nisar Shaikh.**

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Abstract: Zooplankton is an essential community in aquatic ecosystems due to its association between primary producers and secondary consumers. It also plays a vital role in cycling of organic materials. The diversity of various types of zooplankton was studied in Kamwadi River, Bhiwandi, Dist. Thane, Maharashtra. The planktonic forms were collected from the surface of the river water with plankton net of 120 μ mesh size nylon cloth and were preserved for laboratory analysis. Zooplankton were identified using standard references. The result revealed that the zooplankton were represented by various phyla like, Protozoa, Helminthes, Rotifera, Annelida, Arthropoda etc. Zooplankton diversity in the river was monitored during summer, winter and monsoon seasons, from two sites in Kamwadi River. The study indicates that species abundance was lower in summer as compared to winter season which may be due to variation in environmental characteristics of the river water.

Keywords: Zooplanktons Diversity, Kamwadi River.

Introduction:

Zooplankton are feeble organisms, form primary and secondary links in the food webs of all aquatic ecosystems. They feed on phytoplankton which directly provide food source for larval vertebrates and invertebrates as well as related to the growth of juvenile and larger fish (Boyd CE 1982). They are also important component in the transfer of energy from primary producers of phytoplankton to higher trophic levels such as fish. Since times immemorial, fresh water has always been of vital importance to man. Early habitations were within easy reach of lakes and rivers. Man's primary concern with water was thought to be for drinking, cooking food and as means of cleaning. But with the passing of time, man realized the inherent mysteries of aquatic phenomenon and that water is the basis of all life activities.

The rise in human population exploits more natural resources and its demands are met through the growth of industries. The industries and the urban sprawl discharge their waste in to the rivers. The deforestation process itself aggravates the sedimentation transport into the streams. The use of chemicals in agriculture for better production contaminates water through percolation. All these sporadic degrading activities have led to gradual deterioration in the quality of surface and sub-surface water.

Management of lentic water bodies and their ecosystems has become a necessity for mankind's endeavor to have a better quality of life. With the current development phase, every ecosystem is changing very fast and any such change exerts immense influence on the flora and fauna, hence physicochemical and biological properties of a water body need to be monitored. The present study is aimed to study zooplankton diversity of Kamwadi River and its impact on the pollution status of the river.

Material and methods

The water samples were collected seasonally (summer, monsoon and winter) from the Kamwadi river over a period of one year from September 2017 to August 2018. The sample were collected from two site. The zooplanktons were collected using plankton net of mesh size 120 μ m. The zooplankton were collected by filtering 50 liter surface water through plankton net then sample water is collected in polythene bags. Immediately after collection of the sample, the zooplankton were preserved by adding lugol's iodine solution and were then brought to laboratory for further studies. For identification of zooplankton, a drop of sample was taken on a slide and observed under a light microscope initially under 10x followed by 40X. Zooplanktons were then identified by using plankton identification keys by Sharma and Sharma (2008).

Results and Discussion

Fresh waters bodies compose of an enormously diverse group of organisms represented by almost by all phyla of invertebrates. They mainly comprise of zooplankton such as Protozoans, Rotifers, Cladocerans and Copepods which float on the surface of water and are flow along with the water current. The physical and chemical characteristics of water affect the abundance, species composition, stability and productivity of the indigenous population of aquatic organisms. The presence and dominance of zooplankton species plays an important role in the functioning of fresh water ecosystem. They occupy an intermediate position between the autotrophs and the carnivores in the food web. They also constitute an important component of secondary production in aquatic system and plays a vital role in the energy allocation at different trophic levels.

Table: Distribution pattern of zooplankton species (organism /liter) at two sites in Kamwadi River during September 2017 to August 2018

| Zooplankton | Site 1 | | | Site 2 | | |
|---------------------|--------|--------|-------|--------|--------|-------|
| | Winter | Summer | Rainy | Winter | Summer | Rainy |
| Tabilaria | 0 | 5 | 2 | 1 | 6 | 3 |
| Cocconodiasis | 8 | 9 | 3 | 7 | 3 | 1 |
| Keratellacochlearis | 15 | 13 | 9 | 18 | 10 | 5 |
| Gastrotricha | 6 | 5 | 2 | 9 | 7 | 2 |
| Cypris | 22 | 23 | 24 | 25 | 21 | 19 |
| Cyclops | 21 | 15 | 18 | 16 | 11 | 5 |
| Planaria | 0 | 1 | 0 | 0 | 0 | 0 |
| Daphnia | 30 | 29 | 26 | 35 | 31 | 28 |
| Braculus | 16 | 25 | 29 | 18 | 22 | 26 |
| Dragonfly larva | 10 | 11 | 15 | 13 | 15 | 23 |
| Paramoecium | 20 | 12 | 4 | 28 | 21 | 13 |
| Diaptomus | 12 | 25 | 11 | 13 | 16 | 21 |

Fig. 1: Distribution pattern of zooplankton species (organism /liter) at two sites in Kamwadi River at Site I during September 2017 to August 2018

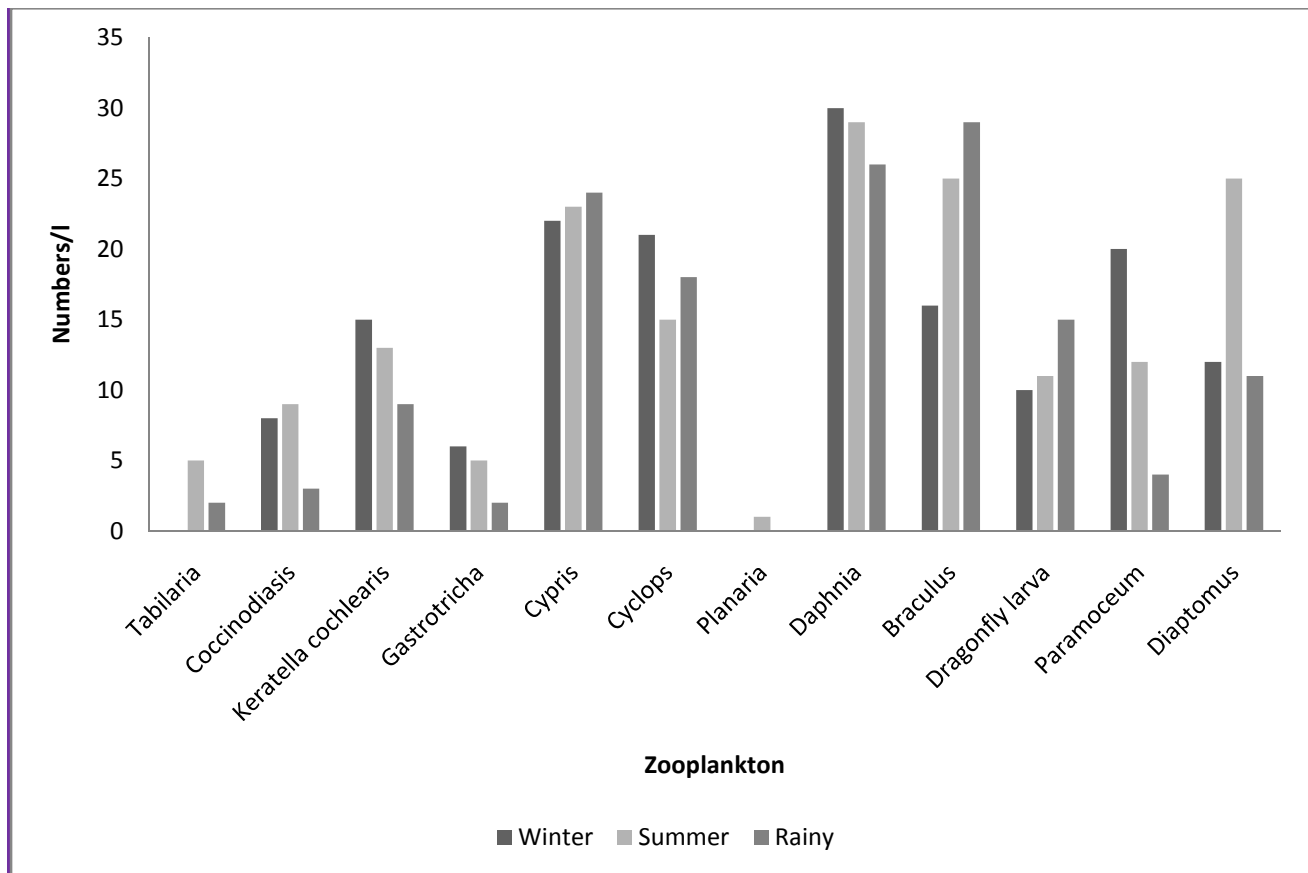
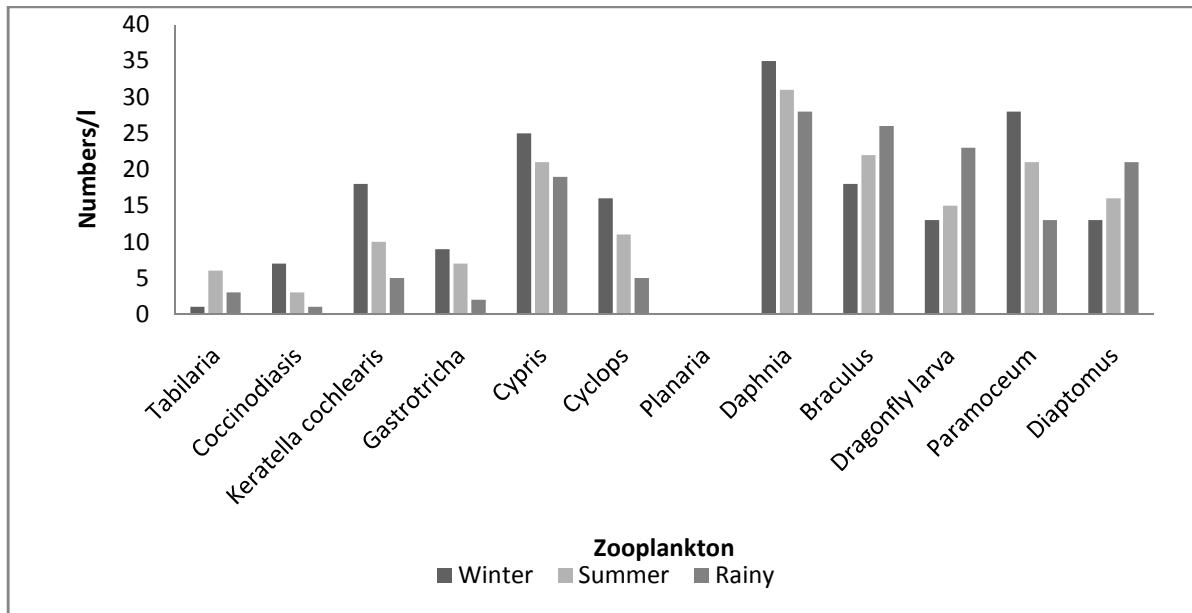


Fig. 2: Distribution pattern of zooplankton species (organism /liter) at two sites in Kamwadi River at Site Ilduring September 2017 to August 2018



Planktons are the diverse collection of [organisms](#) that live in [large bodies of water](#) and are unable to swim against a current. The quality of water bodies is very much necessary for the regulation of biotic and abiotic factors of the water body. The present investigation reveals the presence of seasonal variations in zooplankton (Numbers/l) of water samples of two stations of Kamwadi River.

The zooplankton analysis showed that, the total Zooplankton density was high in summer season. The peak is due to favourable climatic condition, temperature which is good for growth of phytoplankton. Abundance of phytoplankton provides sufficient food for zooplankton and low in winter season. Composition of zooplankton communities revealed that rotifera was the most dominant group followed by copepoda in summer, while rotifera was the most dominant group followed by cladocera in autumn season

Discussion and Conclusion

Zooplanktons have long been used as indicator of eutrophication (Vandysh, 2004; Webber *et al.*, 2005). Presence of high density of Rotifer in the water body is an indication of pollution. During the entire study period it has been observed that high human activities such as discharge of sewage, effluents from textile industries, bathing of animals, cleaning of vehicles, etc. are the leading source of pollution. Zooplanktons are good indicators of changes in water quality, because they are strongly affected by environmental conditions and responds quickly to change in environmental quality. Hence, qualitative and quantitative study of zooplanktons is of great importance.

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16.

CONTEMPORARY WOMEN'S HEALTH ISSUES: ANEMIA A MAJOR CONCERN**Mrs. Farid Oneza Tanveer¹**I/C Principal and Asst. Professor in Sociology at Aqsa Women's Degree College, Bhiwandi.
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Abstract: In India as many as 59% women are found to be anaemic with almost 45% women were found to be severely lacking adequate haemoglobin levels in blood. Anemia is one of the most prevalent nutritional deficiency disorder in women in India today. Iron deficiency is the most common nutritional disorder in the world. The highest prevalence of anaemia exist today in India due to multifactorial causes. National familial health survey reveals that every second Indian women is anaemic and one in five maternal death is due to anaemia. This paper will look into the causes and consequences of anaemia and how we can create awareness among today's women. In today's 21st century where India GDP is increasing our female mortality rate is increasing at very high. Majority of adolescent Indian girls are at a greater risk of iron losses, the major causes being early marriage, early initiation on sexual activity, repeated child bearing and continuous lactating.

Key words: anemia, health, mortality, awareness.

Introduction: Today's urban women are liberated, independent and have redefined gender roles, have more freedom and power than early years, but in this whole phenomenon of preparing a place for themselves its usually their health that takes a toll. In contrast to this the rural women still have to struggle for their healthy living, education and good status. Iron deficiency is the most common nutritional disorder in the world. "Forgoing study has identified a number of potential causes of anemia in the Indian setting, such as low iron intake, limited vitamin C. Amongst females, recurrent reproduction, lactation, and poor access to nutritional food during pregnancy may cause or further aggravate anemia. Furthermore, parasitic infections, such as hookworm and malaria, are also important causes of anemia. Such issues highlight the various sociocultural problems that impact anemia status, including poverty, micronutrient deficiencies, cultural and religious practices, access to health services, and poor awareness of the condition and preventive measures. Thus, the etiology of anemia in India is multifactorial and population-specific (Little et al, 2018).

Anemia is an ailment characterized by a reduced number of red blood cells and has serious implications for the health, cognitive development, and productivity of adults and children globally.

Anemia affects an estimated 50% of the population of India. The problem becomes more severe as more women are affected with it as compared to men. One of the major causes of maternal deaths in India is anemia. According to 'India Spend Analysis' of the last two global burden of disease (GBD) surveys, iron deficiency anemia is one of the major cause of disability in India for the last 10 years. One in every two Indian women suffer from anemia and it remains to be major cause of maternal mortality and low birth weight in India.

Worldwide, anemia affects 1.62 billion people, and generally the women. The highest commonness is in preschool-age children, and the lowest prevalence is in men. In India, anemia is a common, yet widely neglected problem, with major consequences for the health of pregnant women, children, and adolescent girls. Over 55% of women and 70% of children in India suffer from anemia and it is considered an

indirect or direct cause of 40% of maternal deaths. However, the population group with the greatest number of individuals affected is pregnant women lactating women and adolescent girls and infants with low birth weight. In females, anemia may become the primary cause of maternal mortality and prenatal mortality. Nearly 50 per cent of women of reproductive ages are weak and suffer from anemia. Early marriage, early initiation of sexual activity, recurrent early child bearing causes are chief causes for anemia among Indian girls.

A considerable group of Indian adolescent girls are susceptible and are at a greater risk of death and illness as this is the stage when major physical, psychological, hormonal; and behavioral changes takes place. These girls are more likely to suffer from iron deficiency due to an increase demand of iron for hemoglobin, myoglobin as in this age loss of blood due to menstruation is higher and their diet is very low. Anemia begins in childhood, worsens during adolescence in girls and gets aggravated during pregnancy. Currently 27% of Indian girls aged 15 to 19 years are married and Studies show that married adolescent Indian girls tend to consume diets high in phytates, low in vitamin C and iron and expectedly, have high prevalence of iron deficiency anemia. 20% maternal deaths are attributable due to anemia in India.

Defining Anemia:

"Anemia is defined as, "a condition in which the hemoglobin concentration in the blood is below a defined level, resulting in a reduced oxygen carrying capacity of red blood cells." The most common type of anemia is due to nutritional factors and is also found especially among women of childbearing age group (15-49 years), pregnant, and lactating mothers. Nutritional anemia is a worldwide problem, with the highest prevalence in developing countries. Iron deficiency is the most common nutritional disorder in the world" (Ganapathi and Kumar, 2016; pg. 524) Anemia is defined as the hemoglobin of less than 12 g/dl in females. Mild anemia is defined as hemoglobin level of 10-11.9 g/dl, moderate anemia as hemoglobin level of 7-9.9 g/dl and severe anemia was defined as hemoglobin level of less than 7g/dl among females

Anemia is a common condition and can occur in both men and women of any age and from any ethnic group. Some people may be at a greater risk for iron deficiency anemia than others. Anemia is the most common nutritional deficiency disorder in the world. It is a condition that occurs when the red blood cells do not carry enough oxygen to the tissues of the body. WHO defines Anemia as a condition in which the

Causes of Anemia:

The leading causes of anemia in India are-

- inadequate supply of nutrients like iron, folic acid and vitamin B12, proteins, amino acids, vitamins A, C, and other vitamins of B-complex group i.e.,
- Poverty, caste factors and poor sanitation.
- Frequent occurrences of Malaria and Worms infestations result in high incidence of anemia.
- Iron deficiency due to monotonous diet is one of the causes
- Anemia can also be due to excessive blood loss, such as gastrointestinal infections associated with diarrhea.
- Malnutrition and water-borne or water-related infections.
- A vegetarian diet is also linked with iron deficiency.
- Tuberculosis, HIV and cancers remain as major contributors to anemia.
- The use of aspirin or non-steroidal anti-inflammatory medications (NSAIDs),

Social Causes:

High occurrence of anemia existed among illiterate women when compared to literate women as seen in studies in India (illiterate 56% and literate 40%). This discloses that women's educational status plays a significant role in the occurrence of anemia in the reproductive age group, which can be credited to improved information of well-educated women on the importance of taking iron rich diet and the importance of own cleanliness and environmental hygiene. Increased loss of iron is the main cause of anemia in women with excessive menstrual bleeding and undernourishment and already existing anemia is the main cause for anemia in women with scanty menstruation.

In India due to patriarchal nature of our society women are discriminated from birth. Neglecting girls and women in their nutritional food and diet requirement as compared to men right from childhood which results in various nutritional deficiencies.

- Discriminatory social beliefs and food restrictions.
- Many a time, the girl child is not only breastfed for a less duration but food supplementation to her is also delayed.
- The lack of self-esteem makes women offer their husbands the best of everything available in the household including food.
- Most girls are not groomed to make decisions regarding their life, health, education or marriage.

Signs and symptoms:

- Fatigue or lack of energy
- Headaches
- Shortness of breath
- Pale complexion
- Heart palpitations
- In severe cases spoon shaped nails (Koilonychia)

- Numbness of hands and feet
- Low body temperature.
- Dementia
- Soreness of mouth with cracks in corners.
- Sore tongue
- Brittle nails, concave nails
- Unusual food cravings (called pica)
- decreased appetite (especially in children)
- Low haematocrit and haemoglobin in a RBC
- Low serum ferritin (serum iron) level

Effects and consequences of anemia:

An initial indication of anaemia is tiredness, fatigue and reduced ability to work. Anaemia can be connected with an increased risk of death and cognitive loss in those who survive. Maternal anaemia is associated with 20% of maternal deaths, with greater evidence that anaemia may cause increased blood loss at delivery and put women at risk of postpartum haemorrhage. Anaemic mothers are at greater risk of delivering premature and low-birth-weight babies who have an increased risk of dying. Children younger than two years of age with severe anaemia, caused by malaria and iron deficiency, are at increased risk of mortality, and less milder forms, even if corrected, cause permanent cognitive damage by decreasing attention span and shortening memory. Children with anaemia have, on average, IQs that are two points lower per every 10 g/L decrease in haemoglobin than other children. The concerns of anemia for women include increased risk of low birth weight or prematurity, perinatal and neonatal mortality, inadequate iron stores for the new-born, increased risk of maternal morbidity and mortality, and lowered physical activity, mental concentration. Women with even mild anemia may experience fatigue and have reduced work capacity

Severe anaemia can cause tissues and organs to be completely starved of blood and oxygen. When this happens, cells rapidly die in a process called *ischemia*.

- Increased maternal and prenatal mortality.
- Increased number of pre-term birth and LBW infants.
- Depressed Cognition.
- Inferior school performance.
- Reduced future earnings & productivity.
- Depressed immunity.
- Repeated infections

Types of anemia:

- Anaemia of B12 deficiency
- anaemia of chronic disease
- anaemia of folate deficiency
- drug-induced immune haemolytic anaemia
- haemolytic anaemia
- haemolytic anaemia due to g6pd deficiency
- idiopathic aplastic anaemia
- idiopathic autoimmune haemolytic anaemia
- immune haemolytic anaemia
- iron deficiency anaemia
- pernicious anaemia
- secondary aplastic anaemia
- sickle cell anaemia

Malnutrition causing intergenerational anemia:

This means that the nutritional status of a mother has an effect on that of her children, and even her grandchildren. If a mother is in a healthy condition then her child is healthy as well and the cycle goes on. In order to improve nutrition, people at all stages of the life

cycle must be able to have better access to food, health and care. Women and girls are especially affected by malnutrition during the life cycle, and from one generation to the next, because of process of reproduction. As the primary care givers of the entire family, girls and women also need to be in good health and nutritional status to properly perform these roles. Therefore a good start in life for a new born infant is dependent on the health and nutrition of his/her mother, and on her development and well-being when she was a girl. Programmes to fight malnutrition must link the nutritional status of the infant, the adolescent, the mother, and the grandmother.

Preventive measures:

In India male female ratio is still alarming, the issue becomes more serious as females are deprived of almost everything from their birth and being affected at the nutritional front is not uncommon. Need is to change the view point and bring women's health at priority not at family level but at state level as maternal iron deficiency and anemia makes the offspring weak for developing iron deficiency and anemia right from infancy.

There is a crucial need for improving overall nutritional status of adolescents through nutrition education, public awareness and supplementation programs. The necessity for regular blood tests to check hemoglobin levels. Nutrition component needs to be incorporated in the school curriculum.

Importance is needed for corrective measures of anemia and iron deficiency in girls before they enter into adolescent age group.

60 mg/day of elemental iron helps to prevent IDA in both adolescent and adult pregnancies. Besides, among 12 women who developed IDA during the second trimester and received therapeutic supplementation with 180 mg of elemental iron daily, 9 of 12 (75%) had resolved the IDA by the end of their pregnancies. Given that the side effects often attributed to iron supplements are similar to those of normal pregnancy, it is hoped that increased adherence in taking iron supplements will allow further success in the treatment of IDA during pregnancy.

- Improved Breast feeding practices
- Ensuring Dietary Diversification
- Supplementation of IFA, Vitamin A and other essential micronutrients
- Control of other factors affecting Iron, Vitamin A Deficiency by biannual deworming and Vitamin A supplementation.
- Iron inhibitors, such as tannin and caffeine, and some essential minerals, prevent iron from being absorbed and should be consumed separately from iron sources.
- Screening for anemia, treatment of anemic women, and availability of food fortification (wheat flour with iron and folic acid), milk sugar and salt with iron to build long term iron stores remains the key to reduce anemia.
- Cooking in cast iron utensils improves iron content in food.
- The anemia control programs needs to be implemented more efficiently.
- Through a preventative, school-based model we can teach girl's about anemia and its detrimental

consequences on health, the importance of iron folic acid supplementation and ways to avert potential side effects, and the importance of overall nutrition in future pregnancies.

- Parasitic infestation is also a great cause for anaemia. The best way to avoid getting intestinal parasites is to wash hands frequently, and always after using the toilet and before eating food, using soap and safe water. Dishes, eating utensils and pots and pans, as well as vegetables and fruits must be thoroughly washed, and cleaned, and if necessary treated with disinfectant, and stored in hygienic conditions. Keeping the environment clean and free from excreta (human and animal) is also important to prevent parasites from acting on our body with different types of diseases.
- Living areas should be swept and washed regularly, and toilets used by all members of the family. Animals should be kept in separate, preferably fenced areas, to avoid contamination where children are likely to play, especially on or near the ground.

Treatment of mild and severe cases-

Identification of Anemia is most essential treatment. Iron deficiency, especially severe deficiency, is serious and even life-threatening. Usually, it cannot be overcome by increasing dietary intake alone. Iron Supplements, along with improved diet and eating habits, healthier hygiene and sanitation practices, deworming, and other solutions are always required. The best absorption of iron is on an empty stomach, but many people are unable to tolerate this and may need to take the supplement with food. Milk and antacids containing calcium may interfere with absorption of iron and should not be taken at the same time as iron supplements. Taking vitamin C supplements or eating vitamin C-rich foods at the same time as iron supplements can increase absorption and is essential in the production of haemoglobin. Iron supplements are needed during pregnancy and lactation because normal dietary intake cannot supply the required amount for the mother and the growing foetus.

In case for severe anaemia-

Intravenous or intramuscular iron is available for patients when iron taken orally is not tolerated. Severely anaemic persons may require blood transfusions, but even this solution is not without serious risk. After a prolonged period of iron deficiency, a sudden increase in blood iron can cause shock, and even death. In mild and moderate anaemia, there are usually no complications; however nutritional anaemia may recur, so regular follow-up is encouraged. Anemic persons may have an increased susceptibility to infection.

A special contribution from the Government of India

National Nutritional Anaemia Control Program (NNACP) in India have started many strategies to prevent anaemia. The program, implemented through the Primary Health Centres and its sub-centres, aims at decreasing the prevalence and incidence of anaemia in women of reproductive age. It focuses on three vital strategies: promotion of regular consumption of foods rich in iron, provisions from government, iron and folate supplements in the form of tablets to the high risk groups, and identification and treatment of severely anaemic cases. This program appeals the support of various departments in realising the dietary

modification and supplementation measures. Pregnant women are recommended to have one big tablet per day for 100 days after the first trimester of pregnancy; a similar dose applies to lactating women and IUD acceptors. Preschool children (ages 1-5 years) are recommended to take one small tablet per day for 100 days every year. Adult tablets contain 100 mg iron and 500 mg folic acid, while paediatric tablets contain 20 mg iron and 100 mg folic acid. For treatment of severe anaemia, women in the reproductive age group are recommended to take three adult tablets per day for a minimum of 100 days. Drinking tea is discouraged and avoided, as it may inhibit the absorption of iron in the stomach. There are proposed initiatives to improve coverage, quality, and efficiency of the NNACP in the Ninth Plan period.

Conclusion:

Our study contributes to the growing body of research documenting the high occurrence of anaemia in India, while also emphasising related risk factors. Our conclusions confirm and elucidate the multidimensional ethology of anaemia in India. The implications of the research are considerable. Outcomes of this study upkeearlier findings that certain demographics (such as women and older men) are at higher risk of anaemia in the Indian context. The results of our study, which may contribute to a shift of discourse towards a multidimensional focus on socio-cultural, economic, and environmental factors, have important implications for policy design and public health. These results underscore the importance of a balanced and multifaceted policy approach to addressing anaemia. Targeting the most vulnerable populations (women) in food and social welfare programs, developing or maintaining policies and programs directed towards reducing inequities in education, income, and access to services. The concerns of anaemia for women include increased risk of low birth weight or prematurity, perinatal and neonatal mortality, inadequate iron stores for the new-born, increased risk of maternal morbidity and mortality, and lowered physical activity, mental concentration. Women with even mild anemia may experience fatigue and have reduced work capacity. (Bentley & Griffiths, 2003) Finally, while both research on and treatment for anemia should remain context-specific and individualized, interventions that address both age- and gender-specific iron intake and non-dietary factors such as comorbid diseases, gender

inequality, and socioeconomic processes should be further investigated.

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17.

WETLAND AND VECTORS OF DISEASES**Vinchu Shifa & Ayesha Shaikh**

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ABSTRACT: Wetlands are the most diverse and among the most productive ecosystem on earth. Wetlands are a valuable habitat that provides important social, economic and ecological services like pollutant removal, aquatic food chain, flood control, water quality improvement. Wetland provide habitat for many animals and species which are endangered and threatened whereas wetlands also harbors vectors which are responsible for causing nuisance to human health and therefore effects life of neighboring human habitation. Wetlands provides rich and varied habitat for aquatic insects including pest and disease vector species that have been neglected of ecological research. As infections are a serious concern for public health, the recommendations should be adhered in order to protect the health of households and the local communities in general. The high turbidity in water is due to discharge of sewage and garbage from urban area. Hence the provision of pollution control measure at source including soil erosion, identification of vulnerable zones favoring the vector borne diseases will help to control pollution especially from urban area and prevent vector borne diseases. We attempted to identify the significant wetland characteristics related to spread of vector borne diseases such as malaria, chikungunia, dengue fever in wetland. There is a need to ensure that both vector borne diseases and wetland management communicate and integrate to sustain wetland and human health.

Key words: Wetland, vector borne diseases, human habitation, ecosystem.

Introduction: Wetlands are denoted as the area covered with water which includes all rivers, lakes, paddy fields and occasionally flooded lands. As per the definition given at Ramsar Convention (Ramsar, 1996), 'Wetlands are areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing; fresh, brackish, or salty, including areas of marine water the depth of which at low tide does not exceed 6m.

What is a wetland disease? For the purposes of this Manual a wetland disease is considered to be one that either occurs in wetlands or is caused by agents that depend on wetlands.

Two third of this world is surrounded by water bodies. Wetlands occupy an estimated amount of 6.4% of the earth's surface (IUCN Environmental Policy and Law paper No.38). Wetlands are among the earth's most diverse and productive ecosystems. Wetland sustains all life and performs some useful functions in the maintenance of overall balance of nature. Wetlands such as tanks, ponds, lakes, and reservoirs have long been providing multiple-use water services which include water for irrigation, domestic needs, fisheries and recreational use like bird watching or sailing, or scientific study, flood control, nutrient recycling, ground water recharge; and silt capture.

There is a historical association between wetlands and infectious disease that has led to the modification of wetlands to prevent disease. The alteration of wetlands or environmental management of wetlands for the control of disease is well documented and continues to be the main method of reducing the risk of disease. In addition, the development of water resources for a wide range of human activities such as energy and agricultural production has increased the need for mitigating the effects caused by such construction. The construction of water development projects will continue long into the future. There are inherent trade-offs in many types of ecosystem changes associated with economic development, where the costs of disease emergence or resurgence must be weighed against a project's benefits to health and well-being. Such trade-offs particularly exist between infectious disease risk and development projects geared to food production, electrical power, and economic gain. Intact ecosystems play an important role in regulating the transmission of many infectious diseases.

The reasons for the emergence or re-emergence of some diseases are unknown, but the main biological mechanisms that have altered the frequency of many infectious diseases include distorted habitat, leading to changes in the number of vector breeding sites or reservoir host distribution; or interspecies host transfers; changes in biodiversity (including loss of predator species and changes in host population density); human-induced genetic changes of disease vectors or pathogens (such as mosquito resistance to pesticides or the emergence of antibiotic resistant bacteria); and environmental contamination of infectious disease agents (high certainty).

Wetland diseases and factors responsible for vector borne diseases: Major tropical diseases, particularly malaria, dengue, encephalitis, trypanosomiasis, filariasis, and diarrheal diseases still infect millions of people throughout the world. Other diseases such as encephalitis are important in more restricted geographical areas.

There are numerous other diseases (such as bovine tuberculosis and some of the tick borne diseases) which, at first consideration, would seem to be unrelated directly to water and wetlands. Yet these habitats are involved in the dynamics of the disease. This may, for example, relate to seasonal rainfalls, heralding temporary wetlands, flushes of vegetation attracting high densities of water birds or grazing ungulates and conditions for hatch-off of large numbers of invertebrate vectors. These seasonal triggers, thus, result in 'seasonal' disease – related to water and wetlands. Considering wetlands, temporary or permanent, as 'meeting places' where wildlife and humans, with their associated livestock, are attracted due to the provision of food and water, allows us to appreciate how density and variety of hosts at wetlands result in diseases being related to these wetland settings. One of the greatest central causes of disease problems in wetlands is the issue of faecal contamination in wastewaters from both humans and livestock. The problem is particularly great where there are intensive animal rearing facilities or high densities of people with poor or little sanitation and sewage treatment. The shared nature of so many infectious diseases across the sectors of humans, livestock and wildlife which can then perpetuate infection cycles and spillback into the original sector.

Preventive measures: Reconsidering the relationship between human well-being and environmental quality is central for the management of wetlands and water resources and for public health itself. We propose an integrated strategy involving some approaches like make assessments of the ecosystem services provided by wetlands more routine, to adopt the “settings” approach, wherein wetlands are one of the settings for human health and provide a context for health policies and core requirements for human health (food and water); health risks from wetland exposures; and broader social determinants of health in wetland settings. Together, these strategies will allow wetland managers to incorporate health impact assessment processes into their decision making and to examine the health consequences of trade-offs that occur in planning, investment, development, and decision making outside their direct influence. Vector borne diseases are a threat to human health. Little attention has been paid to the prevention of these diseases. High/medium turbid coastal lagoons and inland water-logged wetlands with aquatic vegetation have significant effect on the incidence of chikungunya while dengue influenced by high turbid coastal beaches and malaria by medium turbid coastal beaches. The high turbidity in water is due to the urban waste discharge namely sewage and garbage from the densely populated cities and towns. The large extent of wetland is low land area favours the occurrence of vector borne diseases. Hence the provision of pollution control measures at source including soil erosion control measures is vital. The identification of vulnerable zones favouring the vector borne diseases will help the authorities to control pollution especially from urban areas and prevent these vector borne diseases. Future research should cover land use cover changes, climatic factors, seasonal variations in weather and pollution factors favouring the occurrence of vector borne diseases.

Specific Responses to Vector-Borne Disease in an Ecosystems Framework This section considers policies and strategies for vector-borne disease management. In particular, it assesses the emerging relevance of integrated vector management, which provides a conceptual approach, along with environmental management and other tools for controlling disease, within an ecosystems framework. A parallel but interrelated track relates to emerging scientific knowledge as well as behavioral and social changes that may contribute to better disease management. Case studies are used to illustrate important features of the different types of responses

- Develop a landscape approach to investigating wetland and disease issues.
- Eliminate political and administrative boundaries in favor of ecosystem boundaries.
- Define the ecological and health impact determinants.
- Incorporate health impact assessment into water development projects, either in parallel or incorporated into environmental impact assessment pre- and post-development.
- Develop integrated infectious disease control strategies that do not demand modification of natural wetlands.
- Conduct economic valuation of wetland resources.

Emergency communications for a disease outbreak Emergency communications are inevitably focused on managing for the worst case scenario. This is where planning will be invaluable. Above all, a communication plan is a resource of information for those that need it and should be integrated into the overall wetland disease management strategy. All relevant wetland stakeholders, disease control authorities, spokespersons and communications professionals should be involved (e.g. wetland users, animal and human health agencies and governmental authorities), key messages should be clear and understood by all, and resources should be shared. In the case of a significant disease outbreak, it is likely that the media will want information. Tactics for dealing with the media should be covered within a communications plan. By being prepared and planning for this scenario, it can be ensured that the attention of the media works to help the situation.

Challenges: The increase in artificial wetlands (i.e., water resource development) and the destruction of natural wetlands to decrease disease risk are the major concerns associated with wetlands and disease today.

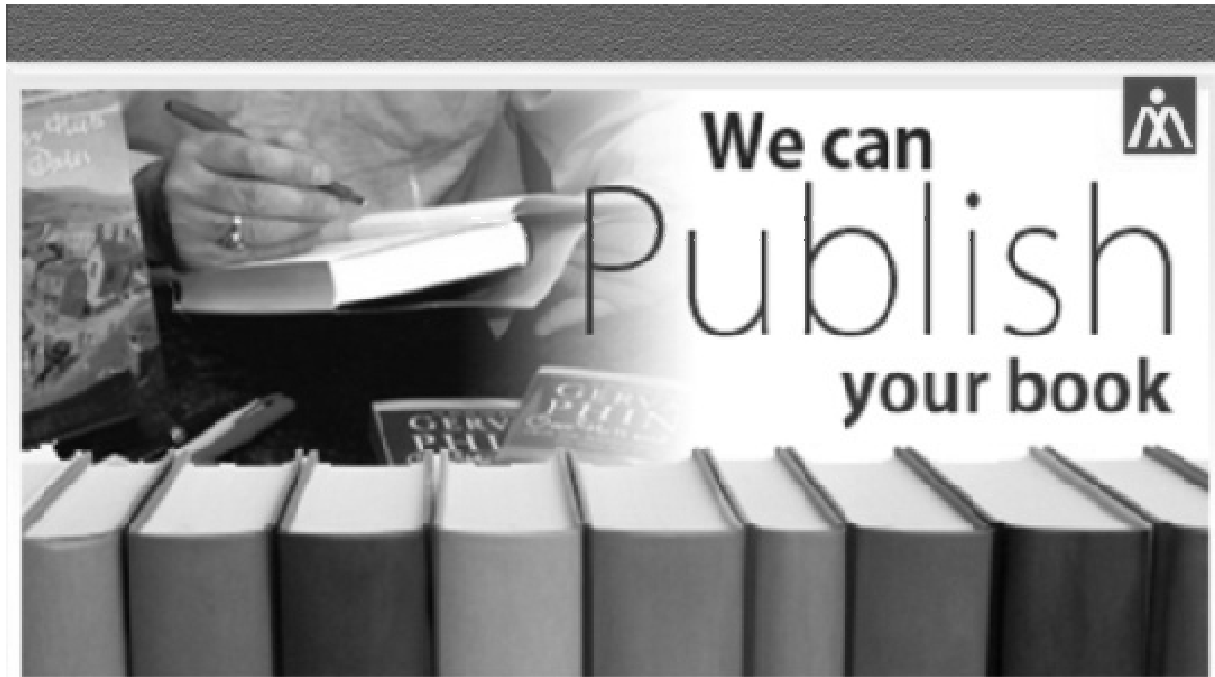
Develop integrated infectious disease control strategies that do not demand modification of natural wetlands.

Rapidly changing climates and habitats may increase opportunities for invasive species to spread because of their adaptability to disturbance. Invasive species control efforts will be essential, including extensive monitoring and targeted control to preclude larger impacts

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