Menstrual Health Expenditure and Human Development: An Economic Analysis of Women's Health and Well-being

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Abstract:

Menstrual hygiene is often overlooked because of the stigma that surrounds menstruation, which makes menstrual hygiene the need of the hour. Menstrual hygiene management [MHM] is still a burning public health issue, and a critical socio-economic problem even in developed cities of India. The high costs of sanitary pads and lack of awareness are the two significant etiological factors behind the poor sanitation in India. This study aims to examine the relationship between human development and menstrual health expenditure, from an economic perspective, while significantly emphasising its effects on women's health, education, employment status, and overall well-being of the family. The study mainly utilises secondary data sources, including statistical studies performed by recognised institutes such as NFHS, UNDP reports, past government budget reports and other published studies used in the literature review. It might come as a surprise, but for many low-income households, menstrual health expenses like sanitary pads or tampons pose a substantial economic burden. For women living in many low-income households, it is not a personal expense; it is the expense of their sanity, which is often overlooked. This study reaches a plausible conclusion by making some significant recommendation regarding governmental measures such as tax breaks, menstrual education initiatives, free of cost or heavy discount on menstrual supplies, and adding a detailed manual about it's use and impact in the regional language which is now more essential than ever for improving public health and advancement of the human development as it directly impacts the reproductive health of the women, which impacts the infant morbidity and mortality rate.

1. Introduction:

India is emerging as a global healthcare choice due to its groundbreaking progress in significant sectors of healthcare, like medical tourism, robotic surgery, free-of-cost healthcare at many government-based community health centres, and many free surgical procedures under government schemes, which massively impact the progress of the healthcare industry in India.

On the flip side of the coin, many rural and remote areas continue to indulge in unhygienic practices even for basic matters like menstruation. Human development, which can be defined as the increase in human capabilities, such as health, education, and living conditions, is a crucial need of the hour. Human development not only impacts personal well-being or the well-being of a particular household, but it also impacts the entire nation by inclining or declining the nation's vital statistics like mortality rates and morbidity rates. It is a widely known fact

that menstruation in women marks puberty, and it is a biological process, and its occurrence is completely normal; however, social taboos and stereotypes often restrict women's access to sanitary products.

Despite having significant economic ramifications, menstruation is frequently viewed as a private matter in India. Due to their inability to purchase sanitary pads, many women turn to risky substitutes like paper, ash, or cloth, which can result in infections and issues with reproductive health. Spending on menstrual health adds to the financial strain on low-income households and frequently conflicts with other necessities like food, education, and medical care. Menstrual hygiene is a significant concern for gender equality and also human development and economic growth of the nation.

This study highlights the relationship between menstrual health and related spending, and economic analysis and growth based on factors like female workforce engagement, gender discrimination and human development.

2. Review of Literature

Menstrual health and hygiene management, or MHM, has drawn interest as a significant topic concerning basic human rights, gender discrimination and equality concerns, women's empowerment, women's health and also public health. Moreover, from an economic point of view, menstrual hygiene and health can also be directly linked to their income status, spending habits of the family, educational and awareness ratio of the families, labour productivity and per capita income.

2.1 Concept of Menstrual Health and Menstrual Hygiene Management

The simplest definition of Menstrual Hygiene Management (MHM) can be quoted as the accessibility and knowledge of using clean menstrual products like tampons, sanitary pads, or menstrual cups along with sufficient privacy to change them and having access to basic hygiene facilities like clean water and soap. UNICEF (2019) states that access to clean restrooms, sanitary menstrual products, water availability, and menstruation awareness are all necessary for effective MHM. In a similar vein, the World Health Organisation (WHO) highlights that inadequate menstrual hygiene practices can raise the risk of UTIs, RTIs, and other health issues, especially for women and adolescent girls living in low-income areas (WHO, 2018).

Furthermore, the WHO and UNICEF Joint Monitoring Programme (JMP) report from 2021 highlights that menstruation is not only a health issue but also a sanitation and dignity issue because insufficient WASH facilities create barriers for women in the workplace and girls in

schools. The report also highlights the close relationship between sustainable development goals, gender equality, and public health and safe menstrual hygiene.

Sommer et al. [2015] highlight menstruation as a global public health issue, rather than limiting it to a particular nation or status. The stigma and stereotype around the menstrual cycle create an environment which limits women's access to products that help maintain menstrual hygiene. Such circumstances often result in physical discomfort and psychological stress, which eventually indicates that menstrual health is directly proportional to women's well-being, social participation and thus overall human development.

2.2 Lack of Menstrual Health Hygiene as a Global Development Challenge:

Period Poverty is a term that can be explained as a lack of monetary resources to fund or afford basic menstrual hygiene products. This is acknowledged as a global problem. Many surveys and research state that young girls and women face massive troubles from the lack of a proper sanitary infrastructure and the expensive cost of sanitary goods, which seem to be unaffordable to many, even though it is a normal biological function which a huge frequent occurance.

UN Women declared a stats where it states more than 2 billion individuals of the total world population menstruate, and yet many women face restricted or limited access to menstrual products, which directly impacts their ability to make the best of educational and career opportunities laid for them.

According to the research, the absence of menstruation products result in absenteeism from educational institutions or work for five to seven days each month, which significantly reduces the development of human capital (UN Women, 2023). This demonstrates that in addition to being a health concern, menstrual poverty also affects Menstrual Health and Women's Physical Well-being.

2.3 Economic Burden of Menstrual Health Expenditure

A lot of studies also suggest a strong connection between obstretrical and gynaecological difficulties, urinary tract infections [UTI], or reproductive tract infections [RTI]. A study conducted by WHO in 2018 states that many women even today use unsafe and unhygienic materials like paper, cotton, cloth instead of a sanitary pad, which can develop long term health issues and infection. According to research, women's quality of life and productivity are negatively impacted by discomfort, stress, and anxiety brought on by poor menstrual hygiene (Hennegan & Montgomery, 2016).

Furthermore, research conducted in developing nations reveals that women with menstrual infections frequently put off seeking medical attention out of embarrassment and a lack of funds, which exacerbates their health problems (Kaur, 2018). This suggests that access to healthcare and health spending are strongly correlated with menstrual hygiene.

2.4 Economic Burden of Menstrual Health Expenditure

Maintaining good menstrual hygiene costs money every month. For low-income households, the expense of sanitary pads, painkillers, hygiene supplies, and medical visits becomes a financial strain. According to economic research, low-income households frequently view sanitary pads as a luxury and push women to adopt riskier substitutes (Bora et al., 2020). This reflects gender disparity inside households, where women's health needs are frequently prioritised less.

2.5 Menstrual Hygiene and Female Literacy

Female literacy and menstrual health are closely related. According to studies, a shortage

females avoid school when they are menstruating. Dasra (2014) asserts that inadequate facilities for menstrual hygiene in schools' lower academic achievement and cause absenteeism. Frequent absences raise the likelihood of dropping out, which has an impact on the literacy and skill development of women.

According to UNICEF, teenage girls' education and self-esteem are adversely affected by poor WASH (Water, Sanitation, and Hygiene) facilities in schools (UNICEF, 2019). This is further supported by UN Women (2023), which claims that menstruation-related absences from school hinder women's empowerment and future earning potential by resulting in a long-term loss of educational possibilities. Menstrual hygiene is therefore crucial for the development of human capital and sustained economic growth.

2.6 Menstrual Health and Female Work Participation and Productivity

Menstrual health is also a labour economics and workplace concern. Clean restrooms, sanitary disposal systems, and hygienic rest areas are frequently inaccessible to women employed in unorganised industries like manufacturing, street vending, household work, and agriculture. Menstrual discomfort and a lack of sanitary facilities have been shown to decrease women's engagement in economic activities and raise absenteeism, according to Hennegan and Montgomery (2016).

According to research from the International Labour Organisation (ILO), issues with reproductive health may be a factor in working women's decreased productivity, which has an impact on both individual earnings and labour market participation (ILO, 2017). Many claims

are also made that women's productivity at work is highly connected to her menstrual cycle, as she may face hormonal changes, mood swings, psychological stress, physiological pain and so on.

2.7 Menstrual Hygiene, Stereotypes and Gender Discrimination:

The major obstacle that surfaces in this scenario is the excessive stereotypical criticism that women have been facing related to menstruation for decades now, which generally includes myths around menstruation and is caused due to lack of education and awareness among the men and women. Menstruation is also related to impurity based on a mythological belief, and hence women are often restricted from participating in family decisions or engaging in religious activities and so on.

UN Women [2023] highlights that period stigma contributes to discrimination and emotional stress among girls and women. The mental health of women and girls is highly impacted because of this stigma, and it can directly result in social isolation and perpetuate gender discrimination.

Menstrual health is directly proportional to women's empowerment and social engagement and is linked to a family's status in society.

2.8 Menstrual Health and Human Development Index (HDI) Link

The three primary factors used to calculate the Human Development Index (HDI) are income, education, and health. All three elements are impacted by menstrual health. Life expectancy and general well-being are impacted by poor menstrual hygiene, which also causes infection and a decline in health. Menstruation-related absences from school lower academic achievement. Women's income and labour involvement are impacted by productivity loss brought on by inadequate menstruation management amongst women and young girls.

According to UNDP Human Development Reports, enhancing women's health and education is crucial to raising the country's HDI and lowering inequality (UNDP, 2022). Menstrual hygiene is crucial to inclusive human development since it affects women's capacities.

2.9 Government Policies and Menstrual Hygiene Initiatives

The Government of India has launched numerous initiatives with the purpose of spreading awareness campaigns. Under the NHM [National Health Mission], the menstrual hygiene scheme actively aims at increasing awareness in the teenage girls and also provides free-of-cost sanitary pads. Even though this scheme has started in many major states, it has yet to reach

many remote areas, indicating there is a lot of scope for improvement in the distribution and implementation of the policies.

In order to yield long-term results, WHO and UNICEF often issue guidelines and advise the integration of awareness campaigns and distribution of free menstrual hygiene goods. It also suggests that menstrual hygiene isn't a welfare expense but an investment in human development.

3. Statement of the Problem

Menstrual health continues to be overlooked in policy planning, even in the face of economic expansion and better healthcare facilities. Inequality in access to menstrual hygiene is caused by the price of period products, their scarcity, and inadequate sanitation facilities. This disparity leads to less productivity at work, poor health, and lower school attendance.

Not all economic groups spend the same amount on menstrual health care. Menstrual poverty affects low-income households, putting women's health at risk and limiting their possibilities. The results of women's human development are adversely affected by this.

Hence, the study examines menstrual health expenditure as an economic barrier to human development.

4. Significance of the Study

This study is significant because

1) It links human and economic growth with menstrual health.
2) It draws attention to the hidden financial burden that menstruation places on families.
3) It links human and economic growth with menstrual health.
4) It draws attention to the hidden financial burden that menstruation places on families.
5) It demonstrates how productivity and education are impacted by menstrual health.
6) It backs the idea that gender equality requires policy-level action
7) It advances economic studies on the capabilities and health of women

5. Objectives of the Study

The study mainly aims:

1. To determine the relationship between menstrual health expenditure and human development.
2. To study the household budget and expenses on menstrual hygiene.
3. To analyse the impact of menstrual health on the education of girls and attendance in school.

4. To study the impact of lack of menstrual hygiene on women's general and reproductive health.
5. To analyse the impact of menstrual health on female workforce participation and work efficiency.
6. To study and review policies launched by the government related to menstrual health and hygiene.
7. To recommend policies and schemes for improving menstrual hygiene related products access thus aiming for more inclusive human development.

6. Research Questions

The study attempts to answer the following questions:

1. Does menstrual health expenditure affect women's access to hygiene and health services?
2. How does menstrual poverty influence human development indicators?
3. Does menstrual health affect female education and labour productivity?
4. Are current public health policies sufficient to reduce menstrual inequality?

7. Research Methodology

i) Research Design

This paper is based on a study conducted by using a descriptive research design and secondary data.

ii) Nature of Data

The research is conducted using secondary data sources.

iii) Sources of Secondary Data The major data sources include:

- NFHS (National Family Health Survey) Reports
- UNDP Human Development Reports
- World Bank Gender and Health Reports
- Government of India Health Budget Reports
- NITI Aayog Reports
- Ministry of Health and Family Welfare Reports
- Published journals, books, and research papers
- WHO and UNICEF reports on menstrual hygiene

iv) Tools of Analysis

The study uses the following analytical tools:

- Percentage analysis

- Trend analysis
- Comparative analysis (rural vs urban, rich vs poor)
- Human Development framework analysis (HDI, GDI indicators)
- Correlation-based logical interpretation (qualitative)

8. Limitations of the Study

The present study provides various insights about the relationship between menstrual health-related expenditure and human development. It has certain limitations:

1. **Dependence on Secondary Data:**

This study is based on secondary data that is published on official sites of NFHS, UNDP and other research conducted by the publishers. Hence, there might be some limitations based on the accuracy and availability of the existing data.

2. **Unavailability of micro-level budgeting and household data:**

Since no primary data were collected and no per capita income or micro-level household expenditure data are directly available.

3. **Variability of Menstrual Health Costs:**

Menstrual health expenditures include using products during menstruation and also any other physical and mental stress that is caused by it. Moreover, these costs vary from person to person and from region to region.

4. **Causal Relationship Cannot Be Fully Proved:**

Since the research is descriptive and analytical in nature, it identifies associations between menstrual health and human development but cannot fully establish cause-and-effect relationships.

5. **Social and Psychological Factors Not Quantified:**

Menstrual stigma, emotional stress, and cultural restrictions are important factors, but these are difficult to quantify using statistical secondary sources.

9. Conceptual Framework

Menstrual health expenditure affects human development through the following channels:

9.1 Household Budget Burden

High menstrual costs reduce spending capacity for:

- nutrition
- education
- healthcare

9.2 Health Impact

Lack of hygiene leads to:

- infections
- anaemia
- reproductive health problems

9.3 Education Impact

Poor menstrual management leads to:

- school absenteeism
- dropout risk
- reduced literacy

9.4 Work Participation and Productivity

Menstrual pain, lack of awareness and facilities affect:

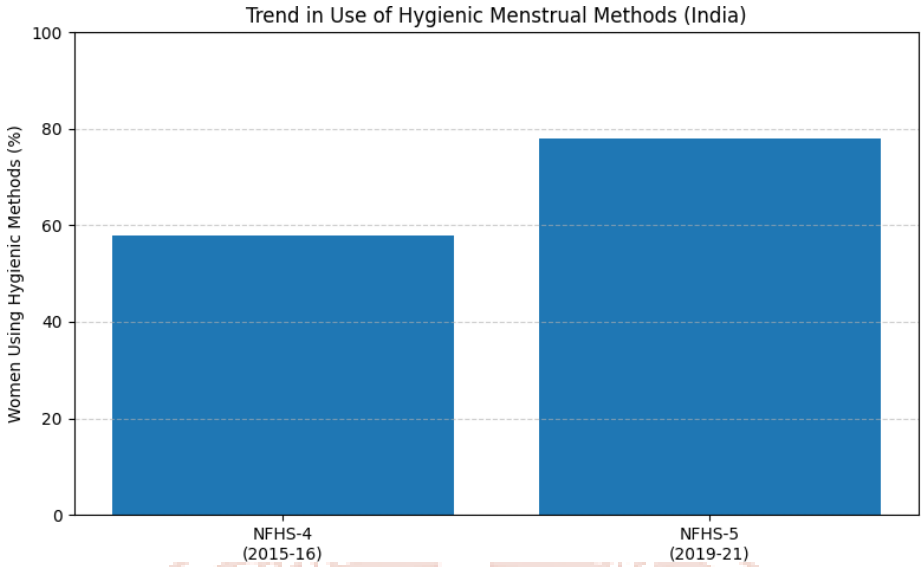
- efficiency of women both at home and at the workplace
- Ratio of male to female labour
- Income Opportunities or per capita income

Thus, menstrual health is closely related to human development.

10.Results and Discussion (With Real Secondary Data)

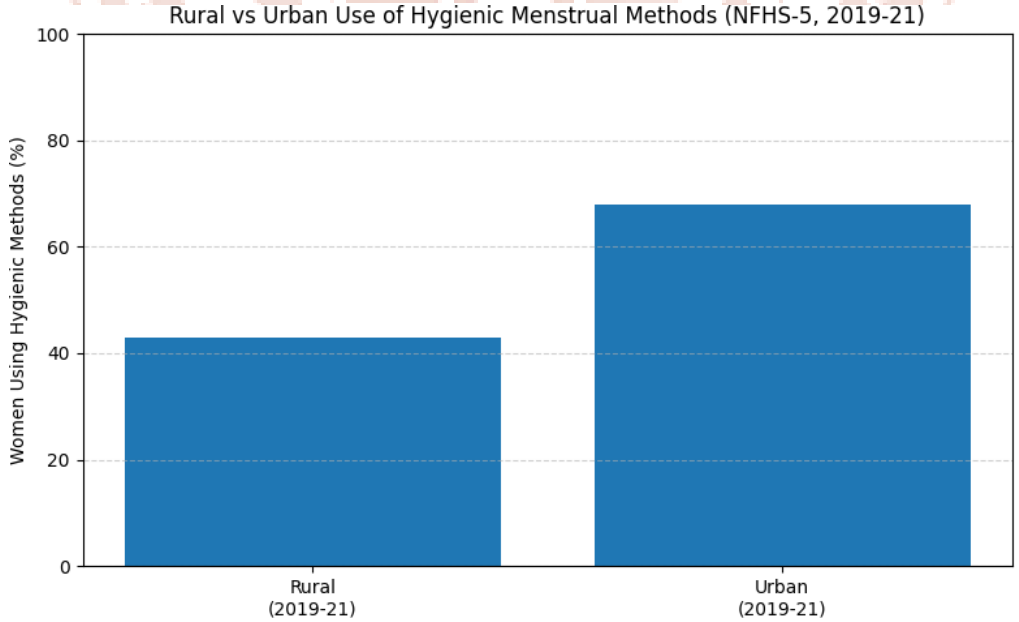
10.1 Increasing Use of Hygienic Menstrual Methods in India

The reports of National Family Health Surveys indicate that there has been a significant increase seen in the use of menstrual hygiene products in India, which clearly is the result of lot of factors like awareness campaigns, distribution management, and efficient implementation of the schemes. The National Family Health Survey 5 (NFHS-5, 2019–21), indicate that the proportion of women aged 15-24 years who use menstrual hygiene methods has increased to 78%, which was 58% in 2015-16 as per the reports of NFHS-4. This is the result of the government and private sectors actively working to spread awareness about various menstrual products like sanitary pads, tampons, vaginal cups and so on over cloth, cotton or any other unhygienic and traditional methods.



10.2 Rural-Urban and Regional Disparities

In 2019-21, as the survey of NFHS-5 reveals, that only 43% of women living in rural areas have access to menstrual hygiene products, while women residing in urban areas have 68% women having access to them. The disparity between the urban and rural statistics is still very significant, and the factors contributing to this are the high literacy rates in urban areas, which lead to more awareness, empowerment and employment of women, hence increasing the numbers of the urban areas. Moreover, these figures also vary from state to state. To cite an example, the ratio is 24% in Uttar Pradesh and 85% in Tamil Nadu.



10.3 Evidence of Persistent Period Poverty

A report published by World Bank in 2023 states that around 500 million women globally suffer from period poverty. Period poverty can be defined as the lack of access to

menstruation and menstrual hygiene related products due to economic restrictions. In India, analysis of NFHS-5 data indicates that over 30 % of women aged 15–24 do not employ proper hygienic methods, especially in economically disadvantaged groups.

Additional surveys indicate that nearly 25 % of women experience difficulties accessing sanitary products, and lower income and social status are strongly associated with higher rates of period poverty.

10.4 Menstrual Hygiene and Education Impact:

Evidence also links poor menstrual hygiene practices with school absenteeism. According to UNICEF and NFHS-based analyses and related reports (2019-2021), nearly one in four girls aged 15–19 has missed school due to menstruation, primarily because of pain, lack of sanitation facilities, or fear of stigma and discomfort. In some contexts, studies indicate that up to 40 % of students may miss school during menstruation, which can hinder learning, lower academic performance, and reduce future economic opportunities.

This directly affects female human capital formation, since repeated absenteeism reduces academic performance and increases dropout risk.

10.5 Health and Menstrual Hygiene

There have been several cross-sectional health surveys (2020-2022) that indicate inadequate menstrual hygiene practices that are directly related to a higher prevalence of infections and other reproductive health issues among women. To cite an example, many women who experience period poverty have significantly higher rates of UTI [urinary tract infection] of 20.9%, reproductive tract infections (9.7 %). Many reports have also established how poor menstrual health is linked to poor mental health too. Even today, many women still use traditional and unhygienic products like cloth, ash or paper, which have a higher prevalence of infections.

10.6 Policy Implications from Data

Policy Implications

1. Targeted Subsidies – Even with growth in usage, rural and low-income groups lag. Subsidising menstrual products can reduce period poverty.
2. Sanitation Infrastructure – NFHS data highlights the need for improved toilets and waste disposal systems in schools and workplaces.
3. Menstrual Health Education – Awareness programs should be integrated into school curricula and community health planning.

The observed improvements in menstrual hygiene usage rates highlight the success of policy interventions (e.g., Menstrual Hygiene Scheme). However, continued disparities and persistent period poverty show that efforts must be expanded. Strengthening sanitation infrastructure, reducing the cost of menstrual products, integrating menstrual education into school curricula, and targeting outreach in rural and low-income areas are essential to improve overall menstrual health outcomes.

11.Major Findings

The key findings of the study are:

1. Menstrual health expenditure is a recurring financial burden for poor households.
2. Rural women and adolescent girls face higher menstrual hygiene challenges.
3. Menstrual poverty contributes to poor female health outcomes.
4. Menstrual health affects education through absenteeism and dropout.
5. Lack of menstrual-friendly workplace facilities reduces female work efficiency.
6. Menstrual health is linked with human development through health, education, and income indicators.
7. Government schemes exist but require better implementation and awareness.

11.1 Subsidised or Free Menstrual Products

The government should provide sanitary pads free or at a low cost through:

11.2.1 schools

11.2.2 Anganwadi centres

11.2.3 PHCs (Primary Health Centres)

11.2.4 self-help groups

(SHGs). This will reduce menstrual poverty.

11.2 Menstrual Hygiene Education

Menstrual awareness programs should be introduced in:

11.2.1 schools

11.2.2 colleges

11.2.3 rural community meetings

Education should include both girls and boys to reduce stigma.

11.3 Improve Sanitation and Toilet Facilities

Menstrual-friendly toilets should be developed in:

11.3.1 schools

11.3.2 workplaces

11.3.3 rural areas

Availability of water and disposal systems is essential.

11.4 Tax Reduction on Menstrual Products

Sanitary products should remain tax-free and affordable to promote universal access. Workplace Menstrual Health Support: Employers should provide:

11.4.1 clean toilets

11.4.2 sanitary disposal units

11.4.3 rest breaks

11.4.4 paid menstrual leave policies (optional)

This will improve female productivity and labour force participation.

11.5 Strengthening Government Programs

Existing schemes should be strengthened with:

11.5.1 better distribution system

11.5.2 monitoring and evaluation

11.5.3 community participation

11.6 Inclusion of Menstrual Health in Human Development Planning

Menstrual health must be treated as an economic development issue and included in:

11.6.1 gender budgeting

11.6.2 health budgeting

11.6.3 human development planning

12.Conclusion

Menstrual health expenditure is a major socio-economic issue influencing women's health, education, and productivity, but often a neglected component of women's health and well-being. This study highlights that menstruation is not merely a biological process but also a major socio-economic and development issue. The analysis based on secondary data reveals that menstrual hygiene management (MHM) is strongly associated with affordability, awareness, sanitation facilities, and gender-sensitive policy interventions. The inability of poor households to allocate sufficient resources for menstrual hygiene results in the continuation of menstrual poverty, which adversely affects women's dignity, physical health, emotional well-being, and overall quality of life. It hinders human growth, especially in rural and low-income households. Menstrual poverty lowers work productivity and school attendance while also

contributing to poor hygiene habits and worsening women's health outcomes. The study concludes that menstrual health is a significant public health and economic development issue rather than just a personal one. Women's well-being and inclusive human development can be promoted by appropriate policy interventions such as gender-sensitive budgeting, enhanced sanitation facilities, awareness campaigns, and subsidised sanitary goods. To achieve sustainable development in India, investments in menstrual health should be seen as long-term human capital investments.

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