Title:

**Prevalence of Reproductive Tract Infections amongst Lower Income Menstruating Population of Rampura Banasree, Dhaka, Bangladesh Owing to Period Poverty**

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## DECLARATION

This is hereby declared that the research works included in this thesis, titled as ‘Prevalence of Reproductive Tract Infections amongst Lower Income Menstruating Population of Rampura Banasree, Dhaka, Bangladesh Owing to Period Poverty’ has been conducted by myself under the supervision of Prof. Dr. Pradip Kumar Sen Gupta, Dept. of Epidemiology, Bangladesh University of Health Sciences during the period of Fall 2024 and submitted to the department of Epidemiology under the Faculty of Public Health, Bangladesh University of Health Sciences (BUHS) in partial fulfillment of the requirement for the degree of Master of Public Health (MPH) in Epidemiology.

No part of it has been presented previously for any other purpose or academic degree or diploma.

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This is to certify that Sumayea Binte Shafiul has completed the thesis work entitled ‘‘Prevalence of Reproductive Tract Infections amongst Lower Income Menstruating Population of Rampura Banasree, Dhaka, Bangladesh Owing to Period Poverty’’ under my guidance and supervision during the period of Fall 2024 in partial fulfillment of the requirement for the degree of Master of Public Health (MPH) in Epidemiology and he has been allowed to submit the thesis to the Faculty of Public Health, Bangladesh University of Health Sciences (BUHS).

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The undersigned certified that they have carefully read and recommended for the acceptance of the thesis work entitled ‘‘Prevalence of Reproductive Tract Infections amongst Lower Income Menstruating Population of Rampura Banasree, Dhaka, Bangladesh Owing to Period Poverty’’ submitted by Sumayea Binte Shafiul of Spring -2021 session, in partial fulfillment of the requirement for the degree of Master of Public Health (MPH) in the department of epidemiology under the Faculty of Public Health of Bangladesh University of Health Sciences (BUHS).

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## DEDICATION

This thesis work is dedicated to my professor and head of the department, who has been a constant source of support and encouragement during the challenges of my postgraduate school and life. I am truly thankful for having you in my life. This work is also dedicated to my parents, and husband, who have always loved me unconditionally and whose good examples have taught me to work hard for the things that I aspire to achieve.

## TABLE OF CONTENTS

[DECLARATION 2](#_Toc181608067)

[SUPERVISOR’S CERTIFICATE 3](#_Toc181608068)

[CERTIFICATE BY BOARD OF EXAMINERS 4](#_Toc181608069)

[DEDICATION 5](#_Toc181608070)

[TABLE OF CONTENTS 6](#_Toc181608071)

[LIST OF TABLES 7](#_Toc181608072)

[LIST OF FIGURES 9](#_Toc181608073)

[LIST OF ABBREVIATIONS 10](#_Toc181608074)

[ACKNOWLDGEMENT 11](#_Toc181608075)

[ABSTRACT 12](#_Toc181608076)

[CHAPTER I 13](#_Toc181608077)

[OPERATIONAL DEFINITION 16](#_Toc181608078)

[CHAPTER 18](#_Toc181608079)

[CHAPTER III METHODOLOGY 20](#_Toc181608080)

[Study design 20](#_Toc181608081)

[Study place and study population 20](#_Toc181608082)

[Sampling technique& Sample size 20](#_Toc181608083)

[Selection criteria 20](#_Toc181608084)

[Inclusion criteria 20](#_Toc181608085)

[Exclusion criteria 21](#_Toc181608086)

[Research instruments and tools 21](#_Toc181608087)

[Data collection plan 21](#_Toc181608088)

[Data processing and analysis plan 21](#_Toc181608089)

[Ethical Consideration 21](#_Toc181608090)

[CHAPTER IV 22](#_Toc181608091)

[CHAPTER V 31](#_Toc181608092)

[5.1 Discussion 31](#_Toc181608093)

[5.2 Limitations 32](#_Toc181608094)

[CHAPTER VI 33](#_Toc181608095)

[Conclusion 33](#_Toc181608096)

[Recommendations 33](#_Toc181608097)

[References 35](#_Toc181608098)

## LIST OF TABLES

[Table 1 Distribution of respondents according to their age group and symptoms of reproductive tract infections 22](#_Toc181616117)

[Table 2 Distribution of respondents according to their religion and symptoms of reproductive tract infections 22](#_Toc181616118)

[Table 3 Distribution of respondents according to their education and symptoms of reproductive tract infections 23](#_Toc181616119)

[Table 4 Distribution of respondents according to their marital status and symptoms of reproductive tract infections 23](#_Toc181616120)

[Table 5 Distribution of respondents according to their occupation and symptoms of reproductive tract infections 23](#_Toc181616121)

[Table 6 Distribution of respondents according to their family income and symptoms of reproductive tract infections 24](#_Toc181616122)

[Table 7 Distribution of respondents according to their family expenditure and symptoms of reproductive tract infections 24](#_Toc181616123)

[Table 8 Distribution of respondent on their family size and symptoms of reproductive tract infections 24](#_Toc181616124)

[Table 9 Association between respondents' menstruation knowledge and symptoms of reproductive tract infections 24](#_Toc181616125)

[Table 10 Association between respondents' getting menstruation education in her school and symptoms of reproductive tract infections 25](#_Toc181616126)

[Table 11 Association between respondents' shyness to talk about menstruation and symptoms of reproductive tract infections 25](#_Toc181616127)

[Table 12 Association between respondents' embarrassment of buying menstruation products and symptoms of reproductive tract infections 25](#_Toc181616128)

[Table 13 Association between respondents' menstrual product tampons used types and symptoms of reproductive tract infections 26](#_Toc181616129)

[Table 14 Association between respondents' menstrual product single use pads used types and symptoms of reproductive tract infections 26](#_Toc181616130)

[Table 15 Association between respondents' menstrual product cloth used types and symptoms of reproductive tract infections 26](#_Toc181616131)

[Table 16 Association between respondents' menstrual product menstrual cup used types and symptoms of reproductive tract infections 27](#_Toc181616132)

[Table 17 Association between respondents' menstrual product toilet paper used types and symptoms of reproductive tract infections 27](#_Toc181616133)

[Table 18 Association between respondents' getting free menstruation products in your school/workplace and symptoms of reproductive tract infections 27](#_Toc181616134)

[Table 19 Association between respondents' getting menstruation products from types of people and symptoms of reproductive tract infections 27](#_Toc181616135)

[Table 20 Association between respondents' thought that menstrual products are expensive and symptoms of reproductive tract infections 28](#_Toc181616136)

[Table 21 Association between respondents' lacked money to buy menstrual products and symptoms of reproductive tract infections 28](#_Toc181616137)

[Table 22 Association between respondents' use menstrual products that you do not like because the ones you like are too expensive and symptoms of reproductive tract infections 29](#_Toc181616138)

[Table 23 Association between respondents' good working order toilets availability and symptoms of reproductive tract infections 29](#_Toc181616139)

[Table 24 Association between respondents' thought that privacy in school/workplace is maintained during menstruation and symptoms of reproductive tract infections 29](#_Toc181616140)

[Table 25 Association between respondents used menstrual products longer than its recommendation and symptoms of reproductive tract infections 29](#_Toc181616141)

## LIST OF FIGURES

[Figure 1 Age of the respondents 22](#_Toc181631084)

[Figure 2 Respondents' educational status 23](#_Toc181631085)

[Figure 3 Types of menstrual product used, and exhibition of RTI symptoms 26](#_Toc181631086)

[Figure 4 Menstrual products are expensive 28](#_Toc181631087)

## LIST OF ABBREVIATIONS

|  |  |
| --- | --- |
| **CI** | Confidence Interval |
| **DHS** | Demographic and Health Survey |
| **DRC** | Democratic Republic of the Congo |
| **HIV/AIDS** | Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome |
| **MHM** | Menstrual Hygiene Management |
| **NGO** | Non-Governmental Organization |
| **RTI** | Reproductive Tract Infection |
| **SDG** | Sustainable Development Goal |
| **STI** | Sexually Transmitted Infection |
| **UN** | United Nations |
| **UTI** | Urinary Tract Infection |
| **WHO** | World Health Organization |
| **SPSS** | Statistical Package for the Social Sciences |
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## ABSTRACT

**Background and Objective:**

Reproductive tract infections (RTIs) represent a significant, often overlooked health issue with potentially severe consequences for women’s health. Limited research has focused on the connection between RTIs and inadequate menstrual hygiene management (MHM) practices from period poverty This study aimed to identify the socio-demographic and economic factors contributing to poor MHM thus period poverty, as well as their impact on the health of menstruating individuals resulting in reproductive tract infections.

**Methods:**

A structured questionnaire was administered to 288 eligible participants from the Rampura, Banasree, and Khilgaon areas of Dhaka, Bangladesh. The survey explored socio-demographic indicators of period poverty, symptoms of RTIs, and MHM practices among respondents, including women and transgender individuals. The data were analyzed to assess the prevalence of period poverty and its implications for reproductive health within these communities.

**Results:**

The findings indicate that 64% of participants reported inadequate access to menstrual hygiene products, while 57% experienced symptoms consistent with RTIs. Statistical analysis revealed a significant association between lower income levels, limited menstrual hygiene resources, and an increased incidence of RTI symptoms. Respondents facing period poverty reported poorer quality of life and increased health complications, highlighting the adverse effects of inadequate MHM on reproductive health.

**Conclusion:**

This study underscores the strong connection between period poverty and the prevalence of RTIs among lower-income menstruating individuals. Addressing period poverty and improving MHM practices is essential for enhancing the reproductive health and overall quality of life of vulnerable populations in urban areas of Dhaka.

**Keywords:** Menstrual health and hygiene, reproductive tract infection, period poverty, menstrual hygiene management,

# CHAPTER I INTRODUCTION

### 1.1 BACKGROUND

The reproductive tract infection (RTI) is one of the major health issues associated with menstrual hygiene management which often goes unnoticed and hence remains underdiagnosed and untreated, resulting in devastating health effects on women. It is estimated that every day nearly one million people globally acquire a new RTI17. [For example, a study in urban and peri-urban areas of Delhi, India, highlighted the high prevalence of RTIs among married women in mid to low socioeconomic neighborhoods](https://bmjopen.bmj.com/content/12/3/e059583)8.

The prevalence of RTI in Bangladesh is increasing according to a survey-based study in 2021, going from 11.1% in 2007 to 13.4% in 2014, only based on self-reported symptoms9

Access to menstrual hygiene products was a fundamental right that significantly impacted the health and well-being of menstruating individuals. However, in many low-income communities, period poverty remained a pervasive issue, contributing to adverse health outcomes such as Reproductive Tract Infections (RTIs). Despite the increasing awareness of menstrual health, limited research had focused on the intersection of socio-economic factors and reproductive health outcomes in Bangladesh. Existing studies indicated that a substantial proportion of menstruating women faced barriers to accessing sanitary products, which led to unhygienic practices and health complications.

Reproductive tract infections (RTIs) affect a substantial proportion of the world's population, with one-eighth of menstruating individuals experiencing RTIs. Addressing RTIs is crucial for sustainable development and is part of the Sustainable Development Goals. In developing countries, RTIs contribute to serious health issues, causing around one million deaths annually among women and children due to untreated complications, leading to conditions like cervical cancer and HIV/AIDS. The prevalence of RTIs in Bangladesh increased from 11.1% in 2007 to 13.4% in 2014 based on self-reported symptoms. Period poverty, defined by the American Medical Women’s Association as a lack of proper access to menstrual hygiene products and facilities, affects around 500 million females globally. Inequities in access, influenced by race, socioeconomic factors, and gender, deepen the complexity of period poverty, impacting health and human rights. Limited research and sociocultural stigma further obscure the issue, making it challenging for policymakers to address. In India, only 12% of menstruating individuals have adequate access to menstrual hygiene13, with the non-binary population also experiencing high levels of period poverty and insufficient information on menstrual health.

In Bangladesh, data on period poverty is scarce, with no available information on the third gender population. Period poverty is not widely recognized by public health officials, despite reproductive health issues posing significant public health challenges. For instance, poor menstrual hygiene linked to period poverty can lead to infections like urogenital schistosomiasis, which often goes undiagnosed in primary healthcare due to insufficient research and gender inequities18.

A study conducted in 2021 used data from the Bangladesh Demographic and Health Survey from 2007, 2011, and 2014, collecting self-reported symptoms from 46,701 women aged 15–49 years. The prevalence of RTIs rose from 10.99% in 2007 to 14.39% in 2011 and decreased slightly to 13.94% in 2014, with higher rates observed in densely populated regions like Dhaka and Chattogram9. Another 2021 study across nine countries, including India and Ethiopia, showed that females from low-income households or with lower education levels are at greater risk of period poverty due to limited access to menstrual-friendly toilets and sanitary pads16. The findings highlight that socioeconomic status, culture, and education significantly influence period poverty and, consequently, RTI prevalence.

In this context, our research aimed to fill the knowledge gap regarding the prevalence of RTIs in relation to period poverty, leveraging a community-based cross-sectional study design conducted between June and July 2023.

This study investigated the prevalence of period poverty and its correlation with RTIs among menstruating individuals aged 15 to 49 in lower-income settlements of Rampura Banasree, Dhaka, Bangladesh.

### 1.2 JUSTIFICATION OF THE STUDY

In Bangladesh, the public health sector is only at its developmental stage, it is still in the process of learning. The health policies and interventions mostly prioritize issues that affect all of the population or maternal and child health. However, menstruation is also a major part of the life of half of this population and menstrual health is of equal importance in public health. Menstrual hygiene management, period poverty and other menstrual issues are not only affecting women, but there are also other gendered humans such as non-binary, trans men, and other gender-diverse people who menstruate and suffer from lack of proper menstrual hygiene management facilities. Moreover, all females of reproductive age do not menstruate. Improper management of menstrual hygiene, which arises from period poverty increases the risk of reproductive tract infections in the menstruating population and it is a hidden epidemic which is still not recognized as a major public health concern for under-resourced countries like Bangladesh.

Reproductive tract infections in menstruating population of developing countries contribute significantly to the burden of gynecological morbidity as well as maternal mortality8. The existing crisis of period poverty and its contribution to burden of reproductive tract infections and diseases is underrated, and not emphasized as much as it should be in the national public health sector. The consequences of this burden of reproductive tract infections extend beyond the individual health, by reducing their potential and productivity, thus affecting the national economy as well as the development of the community8.

The global pandemic for the last three years has only worsened the situation for those living in period poverty and the research is largely insufficient to shed light on the spread of the problem in Bangladesh. Since, most of the factors of period poverty are come with low socioeconomic status, this study aims to investigate the prevalence in lower income menstruating population. Due to the constraint of resources, the study is limited to slum area of Banasree, Dhaka; although it can be assumed that the case would not differ widely in rural settings or other lower socioeconomic or underprivileged populations. The extent to which reproductive tract infections (RTIs) are associated with poor menstrual hygiene management (MHM) practices has not been extensively studied in Bangladesh. The findings aimed to inform policymakers, health practitioners, and NGOs about the pressing need for targeted interventions to address menstrual hygiene management and improve health outcomes in vulnerable populations.

### 1.3 RESEARCH QUESTION

The research question this study aims to answer is:

What is the prevalence of reproductive tract infections and diseases in the menstruating population who are living in period poverty?

### 1.4 OBJECTIVES OF THE STUDY

#### General Objective

To investigate the prevalence of reproductive infections and infections due to period poverty in Bangladesh

#### Specific Objectives

To estimate the prevalence of reproductive infections in menstruating population in Bangladesh.

To estimate the prevalence of RTI among the menstruating population living in period poverty.

To investigate the relationship between socio- cultural factors and accessibility to menstrual hygiene and Reproductive tract infections.

### 1.5 KEY VARIABLES

|  |  |
| --- | --- |
| Independent variables | Dependent variables |
| Socio-demographic variables:  Income level  Beliefs [Religious/Cultural]  Place of residence  Authority of decision-making/Choice  Access to menstrual hygiene (private clean safe toilets, sanitary napkins, soap, clean water, etc.) i.e., Period Poverty | Reproductive Tract Infections  Yeast Infection/ Fungal Infections  Urinary Tract Infection  Bacterial Vaginosis |

### 1.6 CONCEPTUAL FRAMEWORK

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### 1.7 OPERATIONAL DEFINITION

##### Menstrual Hygiene Management:

MHM is the access to proper menstrual health and hygiene management, which includes “accurate and timely knowledge, available, safe, and affordable materials, informed and comfortable professionals, referral and access to health services, sanitation and washing facilities, positive social norms, safe and hygienic disposal and advocacy and policy”22.

##### Period Poverty:

Period Poverty is defined as the absence of proper menstrual hygiene for a menstruating person should be “using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear”23. Period poverty stems from a lack of access to suitable menstrual products, WASH facilities, privacy &dignity, and education & information on menstrual hygiene21.

##### Reproductive Tract Infections:

In this study, reproductive tract infections primarily refer to the infections in the reproductive tract caused by introduction of pathogens or by overgrowth of the existing microorganisms of the vulva or vagina, or in the cervix. It is characterized by vaginal discharge, dyspareunia (persistent or recurrent genital pain that occurs just before, during or after intercourse), itching and burning feeling with urination, vaginal inflammation, or rash, genital sore/ulcer20, 8, 9.

##### Beliefs:

The religious or traditional beliefs of the participants.

##### Authority of decision making:

The participant’s ability to make the decisions about their life and family, healthcare, etc.

For this study, the following signs & symptoms will be used to level the Reproductive Tract Infections of the participants:

##### Yeast Infection/ Fungal Infections:

Symptomatic definition would be presence of

* Itching and irritation in the vagina and vulva
* A burning sensation, especially during intercourse or while urinating
* Redness and swelling of the vulva.
* Vaginal pain and soreness
* Vaginal rash
* Thick, white, odor-free vaginal discharge with a cottage cheese appearance
* Watery vaginal discharge

##### Urinary Tract Infection: Symptomatic definition would be presence of

* Pain or burning while urinating.
* Frequent urination.
* Feeling the need to urinate despite having an empty bladder.
* Bloody urine.
* Pressure or cramping in the groin or lower abdomen.

##### Bacterial Vaginosis:

Symptomatic definition would be presence of

* A thin white or gray vaginal discharge.
* Pain, itching, or burning in the vagina.
* A strong fish-like odor, especially after sex.
* Burning when peeing; and.
* Itching around the outside of the vagina.

# **CHAPTER** II LITERATURE REVIEW

Even though reproductive tract infections do not concern every individual of the world, it does affect a major proportion of the world’s populating, specifically one eighth of the menstruating population suffer from RTI and ensuring prevention of RTI calls to be a priority issue.

Sexual and reproductive health and rights, is now on the Sustainable Development Goal agenda, are crucial for sustainable development. As Mao Zedong said: “Women hold up, half the sky;” their health is a significance matter. In developing countries, RTI is becoming a hidden epidemic with around one million women and children lost to complications resulting from RTI and untreated RTI giving way for other diseases such as cervical cancer, HIV AIDS, chronic abdominal pain, etc.

The prevalence of RTI in Bangladesh is increasing according to a survey-based study in 2021, going from 11.1% in 2007 to 13.4% in 2014, only based on self-reported symptoms9.

The definition of ‘Period poverty’ by American Medical Women’s Association is lack of proper and sufficient access to menstrual hygiene management which includes sanitary materials, washing facilities, and waste management, etc. It may be a fairly novel phrase, but the issue has been present in the communities forever, only hidden owing to the stigma, lack of awareness and patriarchal societies deprioritizing women’s health issues.

In 2021, an estimated five hundred million females over the world shared that they do not have sufficient access to proper menstrual hygiene management. Even though menstrual equity is a matter of human rights as well as public health, inequalities based on race, socioeconomic conditions, and sex together increase the complexity of the structural barriers in access to proper menstrual hygiene management thus perpetuating period poverty. Furthermore, the limitation of data and research on this topic paired with the sociocultural stigma is shoving it under the rug, constantly away from those in the position of changing the gender as well as public health policies and interventions17.

In our neighboring country India, which has a remarkably similar context as Bangladesh, only 12% of the menstruating population have adequate access to proper menstrual hygiene management. Moreover, the non-binary and third gender menstruating population face adverse case of period poverty including access to proper information regarding their menstrual health and hygiene management13.

In Bangladesh, there is very scarce data and research on the situation of period poverty, and there no information on the cases for third gender or other gender menstruation people. The concept itself is not well known amongst the policy makers and public health professionals, and the very few studies conducted on the association between menstrual hygiene and health do not cover all aspects of period poverty.

Reproductive tract infections are made up a considerable proportion of the public health concerns all over the world, especially associated with menstruating population, but the shame and stigma associated with the topic keeps in hidden while the lack of resources and awareness push it down the priority list of national health policy makers. Bangladesh is a country with limited resources and has been listed as one of the least developed countries by the UN and is at an elevated risk for reproductive health issues in women.

Urogenital schistosomiasis is a parasitic infection associated with poor menstrual hygiene which is a direct outcome of period poverty. It is not yet well researched and often misdiagnosed during examination at primary healthcare facilities. Insufficiency of guiding information and gender inequity results in menstruating adolescents not being able to manage their menstruation properly and using poor blood management materials predispose them to various bacterial, fungal, and helminthic infections as well as viral diseases18.

The most recent study was conducted in 2021 based on Demographic and Health Survey data from 2007, 2011 and 2014 where women of reproductive age self-reported symptoms of RTI such as abnormal discharges or sore/ulcer experienced during the year prior to the survey. The aim of the study was to identify high-risk regions for RTI, through spatial-temporal analysis that can produce high resolution mapping of RTI critically useful in a resource-poor developing country like Bangladesh to guide public health strategies and interventions. Data was collected for 46,701 15-49 years old women who participated in the DHS demographics and health survey of whom 10,996 in 2007, 17,842 in 2011 and 17,863 in 2014.

The result of the study estimated higher prevalence in regions of high population density such as Dhaka and Chattogram, compared to other areas. The raw prevalence based on overall number of positive/total number of interviewed went from 10.99% in 2007 to 14.39% in 2011 to 13.94% in 2014, nationally. This study did not include the asymptomatic cases, and the included cases are not hospital diagnosed, and the study considered the symptomatic cases to be more severe than the asymptomatic cases which go undiagnosed. The study reconfirmed the negative relationship between socioeconomic status and the incidence of RTI amongst menstruating population, which is a factor contributing to period poverty9.

Another study published in 2021, with data collected between 2016 to 2018 using a multi-stage cluster sampling design, from the Kinshasa (DRC), Ethiopia, Ghana, Kenya, Rajasthan (India), Indonesia, Nigeria and Uganda found that low-income household’s females and lower education levels, have higher possibility of period poverty with lacking access to menstruation-friendly toilets, with soap and water, privacy and safety and sanitary pads. The inequality of menstrual hygiene management facility is particularly prominent in Rajasthan (India), Ethiopia and Nigeria. Based on the previous studies it is evident that the culture, economic vulnerability, and education plays key role in occurrence of period poverty, thus prevalence of RTIs. The sample population for this study was aged between 15 – 49 years, and the questionnaire was administered by female enumerators ensuring informed consent and complete privacy for the respondent16.

# CHAPTER III METHODOLOGY

This methodology aimed to provide insights into the health implications of period poverty on RTIs, informing public health interventions.

#### 3.1 Study design

A Community Based Cross Sectional Study was conducted.

#### 3.2 Study place and study population

The study took place in lower-income settlements in Rampura Banasree, Dhaka, with a population of menstruating individuals aged 15 to 49 years.

#### 3.3 Study period

The study was conducted from June 2023 to July 2023.

#### 3.4 Sampling technique& Sample size

In Bangladesh, there is no national prevalence data on RTIs or STIs. However, limited studies have shown a high prevalence of infections among women. A 2014 study found a symptomatic prevalence of RTIs at 18.19%, with 23.09% having RTIs regardless of symptoms. An internal study by Square Toiletries Limited (STL) indicated that nearly 97% of women experience vaginitis due to unhygienic menstrual practices in Bangladesh. Another study on 3,000 women in Matlab Thana showed that 22% had RTI symptoms. Other studies suggest that only 14-23% of menstruating women have access to sanitary napkins. Based on this, a 75% prevalence rate for period poverty was used to calculate the sample size with the following formula:

d=.05, (1-α)=0.95,z = 1.96 for 95% confidence level

Using this formula, the required sample size was estimated to 288.

One Mohalla with a predominantly low-income population was purposively selected from the Rampura Banasree slum. The selection began with a household near the approximate center of the area, with subsequent households chosen in an anti-clockwise direction. One eligible participant was selected from each household.

#### 3.5 Selection criteria

Female population residing in the slums of Rampura Banasree of Dhaka district.

##### Inclusion criteria

* 15 – 49 years of age
* Have menstruated in the last 3 months.

##### Exclusion criteria

* Pregnant
* Have not menstruated in the last 3 months.

#### 3.6 Research instruments and tools

A semi-structured questionnaire, mostly with close-ended questions, was used. It was translated into Bangla and reviewed by language and medical professionals. The questionnaire included socio-demographic variables, period poverty indicators, and RTI symptoms, and was pre-tested before deployment.

#### 3.7 Data collection plan

The survey questionnaire was administered by the research investigator after collecting signed informed consent for voluntary participation. Participants were informed about the sensitivity of the questions.

#### 3.8 Data processing and analysis plan

Descriptive analysis was conducted to present the prevalence of period poverty and RTI among the menstruating population. Chi-square tests and regression analysis were conducted to determine the relationship between period poverty and RTI and to explore other predictors of period poverty.

#### 3.9 Ethical Consideration

Ethical approval was obtained from the ethical review committee of the Bangladesh University of Health Sciences (BUHS). The study adhered to BUHS ethical guidelines. Informed consent was obtained from participants after explaining the study’s objectives, ensuring their autonomy, privacy, and confidentiality.

# CHAPTER IV RESULTS

The study investigated the prevalence of reproductive tract infections (RTIs) and the impact of menstrual hygiene management (MHM) on women from lower-middle-class households in the Rampura, Banasree, and Khilgaon areas of Dhaka. Of the 288 surveyed women aged 15 to 49, a substantial proportion reported experiencing symptoms associated with RTIs, particularly among those who lacked access to hygienic menstrual products. The analysis revealed significant associations between socio-demographic factors, such as education and income level, and the likelihood of reporting RTI symptoms, underscoring the role of period poverty in shaping women’s reproductive health outcomes.

Figure 1 Age of the respondents

Majority of the respondents were between 15 to 35 years of age i.e. the menstruating age.

Table Distribution of respondents according to their age group and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 19.504  P <0.001 |
| 15-25 years | 54 (52.9) | 55 (29.6) | 109 (37.8) |
| 26-35 years | 29 (28.4) | 81 (43.5) | 110 (38.2) |
| 36-45 years | 16 (15.7) | 49 (26.3) | 65 (22.6) |
| 45 years or above | 3 (2.9) | 1 (0.5) | 4 (1.4) |

From Table 1, the age group 15-25 years had the highest percentage of respondents reporting symptoms of RTIs (52.9%), with a significant P-value of <0.001. In contrast, only 2.9% of respondents aged 45 and above reported symptoms.

Table Distribution of respondents according to their religion and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 4.067  P = 0.131 |
| Christian | 1 (1.0) | 1 (0.5) | 2 (0.7) |
| Hindu | 3 (2.9) | 17 (9.1) | 20 (6.9) |
| Muslim | 98 (96.1) | 168 (90.3) | 266 (92.4) |

Table 2 shows, a striking 96.1% of Muslim respondents reported symptoms, whereas only 1.0% of Christians did, with a P-value of 0.131 indicating no statistical significance.

This chart shows the educational levels within a group. The majority, 120 people, have completed college or higher, followed by 72 with secondary education and 61 with primary education. Meanwhile, 30 individuals are illiterate, and 5 have only basic literacy skills without formal schooling.

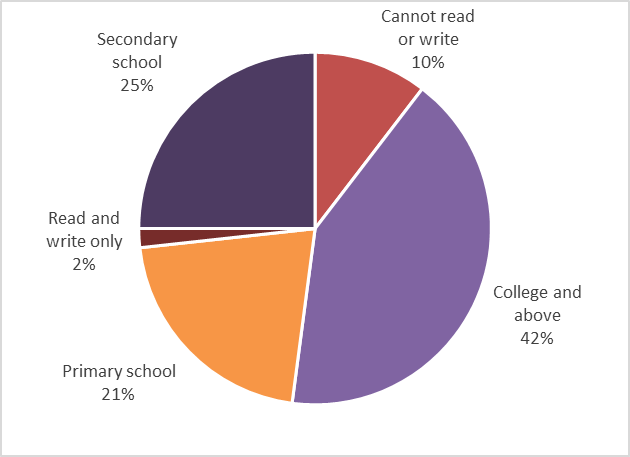


Figure 2 Respondents' educational status

Table Distribution of respondents according to their education and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 19.335  P <0.001 |
| Cannot read | 9 (8.8) | 21 (11.3) | 30 (10.4) |
| College | 41 (40.2) | 79 (42.5) | 120 (41.7) |
| Primary | 11 (10.8) | 50 (26.9) | 61 (21.2) |
| Read and write | 3 (2.9) | 2 (1.1) | 5 (1.7) |
| Secondary | 38 (37.3) | 34 (18.3) | 72 (25.0) |

From Table 3, respondents who cannot read had a 8.8% incidence of RTI symptoms, with a highly significant P-value of <0.001.

Table Distribution of respondents according to their marital status and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 31.036  P <0.001 |
| Divorced | 5 (4.9) | 1 (0.5) | 6 (2.1) |
| Married | 45 (44.1) | 141 (75.8) | 186 (64.6) |
| Single | 51 (50.0) | 43 (23.1) | 94 (32.6) |
| Widow | 1 (1.0) | 1 (0.5) | 2 (0.7) |

Table 4 illustrates, single respondents showed a high incidence of RTI symptoms (50.0%) and a significant P-value of <0.001, while widows had the lowest incidence (1.0%).

Table Distribution of respondents according to their occupation and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 41.768  P <0.001 |
| Freelancer | 2 (2.0) | 3 (1.6) | 5 91.7) |
| Government Job | 2 (2.0) | 4 (2.2) | 6 (2.1) |
| House helper | 10 (9.8) | 50 (26.9) | 60 (20.8) |
| No Job | 8 (7.8) | 4 (2.2) | 12 (4.2) |
| Others | 17 (16.7) | 60 (32.3) | 77 (26.7) |
| Private | 9 (8.8) | 25 (13.4) | 34 (11.8) |
| RMG Work | 10 (9.8) | 9 (4.8) | 19 (6.6) |
| Student | 44 (43.1) | 31 (16.7) | 75 (26.0) |

Table 5 illustrates, students had the highest percentage of RTI symptoms (43.1%), with a significant P-value of <0.001. Freelancers and those in government jobs had the lowest (2.0%).

Table Distribution of respondents according to their family income and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 16.725  P <0.001 |
| <=30000 | 52 (51.0) | 50 (26.9) | 102 (35.4) |
| >30000 | 50 (49.0) | 136 (73.1) | 186 (64.6) |

Table 6 shows, respondents from families earning ≤30,000 reported a high incidence of symptoms (51.0%), with a significant P-value of <0.001.

Table Distribution of respondents according to their family expenditure and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 12.222  P <0.001 |
| <=30000 | 55 (53.9) | 61 (32.8) | 116 (40.3) |
| >30000 | 47 (46.1) | 125 (67.2) | 172 (59.7) |

From Table 7, a high percentage of respondents with family expenditures ≤30,000 reported RTI symptoms (53.9%), and this was significant (P-value <0.001).

Table Distribution of respondent on their family size and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 3.137  P = 0.077 |
| <=4 | 43 (42.2) | 59 (31.7) | 102 (35.4) |
| >4 | 59 (57.8) | 127 (68.3) | 186 (64.6) |

Table 8 illustrates, respondents from larger families (>4) reported higher percentages of RTI symptoms (57.8%), although the P-value was 0.077, indicating no strong significance.

Table Association between respondents' menstruation knowledge and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 35.838  P <0.001 |
| Blood that comes out of the vagina | 41 (40.2) | 99 (53.2) | 140 (48.6) |
| No knowledge | 16 (15.7) | 0 (0.0) | 16 (5.6) |
| It is common to menstruate over 10 days or more | 1 (1.0) | 0 (0.0) | 1 (0.3) |
| It is related the menstrual cycle | 31 (30.4) | 51 (27.4) | 82 (28.5) |
| People menstruate every 3 weeks | 13 (12.7) | 34 (18.3) | 47 (16.3) |
| Women menstruate all their lives | 0 (0.0) | 2 (1.1)) | 2 (0.7) |

Table 9 shows, those who reported understanding menstruation had a higher incidence of symptoms (40.2%) with a P-value of <0.001.

Table Association between respondents' getting menstruation education in her school and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 53.56  P <0.001 |
| No | 46 (45.1) | 35 (18.8) | 81 (28.1) |
| Not applicable | 16 (15.7) | 112 (60.2) | 128 (44.4) |
| Yes | 40 (39.2) | 39 (21.0) | 79 (27.4) |

Table 10 illustrates, respondents who received menstrual education reported RTI symptoms at a rate of 39.2%, with a P-value of <0.001.

Table Association between respondents' shyness to talk about menstruation and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 0.980  P = 0.613 |
| No | 25 (24.5) | 45 (24.2) | 70 (24.3) |
| Somewhat | 13 (12.7) | 17 (9.1) | 30 (10.4) |
| Yes | 64 (62.7) | 124 (66.7) | 188 (65.3) |

Table 11 illustrates, a significant portion (62.7%) of respondents who were shy about discussing menstruation reported symptoms, but the P-value of 0.613 indicates no strong association.

Table Association between respondents' embarrassment of buying menstruation products and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 3.349  P = 0.187 |
| No | 31 (30.4) | 45 (31.2) | 89 (30.9) |
| Somewhat | 13 (12.7) | 17 (6.5) | 25 (8.7) |
| Yes | 58 (56.9) | 124 (62.4) | 174 (60.4) |

Table 12 illustrates, 56.9% of those embarrassed about purchasing menstrual products reported symptoms, with a P-value of 0.187, suggesting no strong association.

Participants were asked on the types of menstrual products they regularly use, where majority of the participants shared cloth pads, followed by single use pads. The bar chart displays the types of menstrual products used by respondents and the associated presence of reproductive tract infection symptoms. The majority of respondents using cloth menstrual pads (120) reported no symptoms, while 48 experienced symptoms. Similarly, among single-use pad users, 97 reported no symptoms, and 34 reported symptoms. Menstrual cup users showed lower numbers, with 3 reporting no symptoms and 1 reporting symptoms. Toilet paper and tampon users were few, with 2 and 1 reporting no symptoms, respectively, and one person in each group reporting symptoms. Overall, cloth and single-use pads were the most commonly used products, with a notable portion of cloth pad users reporting symptoms.

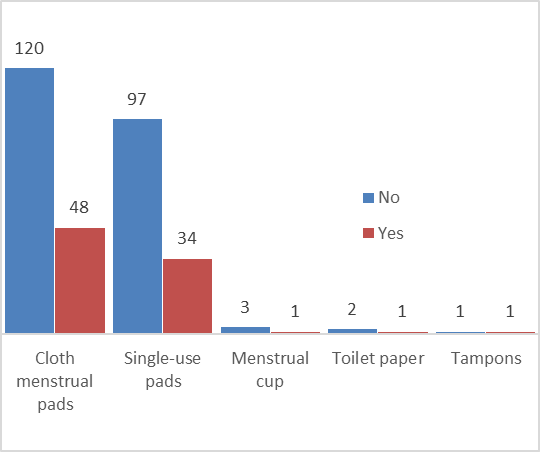


Figure Types of menstrual product used, and exhibition of RTI symptoms

Table Association between respondents' menstrual product ‘tampons’ used types and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 0.187  P = 0.665 |
| Yes | 1 (1.0) | 1 (0.5) | 2 (0.7) |
| No | 101 (99.0) | 185 (99.5) | 286 (99.3) |

From Table 13, no tampons users had the highest incidence of symptoms (99.0%) and a significant P-value of <0.001.

Table Association between respondents' menstrual product single use pads used types and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 0.010  P = 0.922 |
| Yes | 46 (45.1) | 85 (45.7) | 131 (45.5) |
| No | 56 (54.9) | 101 (54.3) | 157 (54.5) |

From Table 14, no single use pads users had the highest incidence of symptoms (54.9%) and a significant P-value of <0.001.

Table Association between respondents' menstrual product cloth used types and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 2.43  P = 0.119 |
| Yes | 64 (62.7) | 99 (53.2) | 163 (56.6) |
| No | 38 (37.3) | 87 (46.8) | 125 (43.4) |

From Table 15, cloth users had the highest incidence of symptoms (62.7%) and a significant P-value of <0.001.

Table Association between respondents' menstrual product menstrual cup used types and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 0.192  P = 0.661 |
| Yes | 1 (1.0) | 3 (1.6) | 4 (1.4) |
| No | 101 (99.0) | 183 (98.4) | 284 (98.6) |

From Table 16, menstrual cup nonusers had the highest incidence of symptoms (99.0%) and a significant P-value of <0.001.

Table Association between respondents' menstrual product toilet paper used types and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 0.006  P = 0.940 |
| Yes | 1 (1.0) | 2 (1.1) | 3 (1.0) |
| No | 101 (99.0) | 184 (98.9) | 285 (99.0) |

From Table 17, toilet paper non users had the highest incidence of symptoms (99.0%) and a significant P-value of <0.001.

Table Association between respondents' getting free menstruation products in your school/workplace and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 16.002  P <0.001 |
| No | 85 (83.3) | 114 (61.3) | 199 (69.1) |
| Not applicable | 15 (14.7) | 69 (37.1) | 84 (29.2) |
| Yes | 2 (2.0) | 3 (1.6) | 5 (1.7) |

Table 18 shows, 61.3% of respondents without access to free menstrual products reported symptoms (P-value <0.001).

Table Association between respondents' getting menstruation products from types of people and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 4.857  P = 0.183 |
| Others | 1 (1.0) | 0 (0.0) | 1 (10.3) |
| Parents/Families | 53 (52.0) | 86 (46.2) | 139 (48.3) |
| Schools | 1 (1.0) | 0 (0.0) | 1 (0.3) |
| Self | 47 (46.1) | 100 (53.8) | 147 (51.0) |

Table 19 illustrates, the source of menstrual products did not show significant differences, with a P-value of 0.367.

Table Association between respondents' thought that menstrual products are expensive and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 3.767  P = 0.152 |
| No | 16 (15.7) | 37 (19.9) | 53 (18.4) |
| Not applicable | 0 (0.0) | 5 (2.7) | 5 (1.7) |
| Yes | 86 (84.3) | 144 (77.4) | 230 (79.9) |

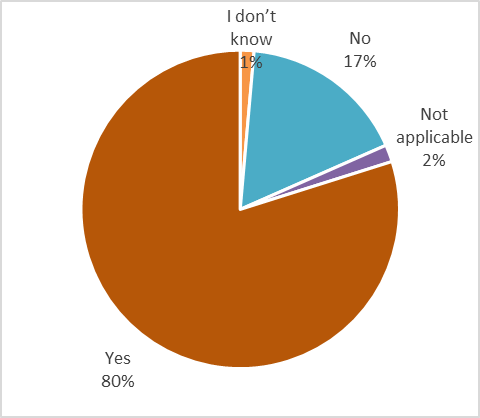


Figure 4 Menstrual products are expensive

Table 20 shows, a majority (84.3%) of respondents who found products expensive reported symptoms, with a P-value of 0.282.

As can be seen from the responses, huge proportion of the participants shared that the menstrual products available in the market are expensive for them.

Table Association between respondents' lacked money to buy menstrual products and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 1.055  P = 0.788 |
| Always | 56 (54.9) | 93 (50.0) | 149 (51.7) |
| Never | 22 (21.6) | 50 (26.9) | 72 (25.0) |
| Sometimes | 15 (14.7) | 27 (14.5) | 42 (14.6) |
| Very few times | 9 (8.8) | 16 (8.6) | 25 (8.7) |

Table 21 illustrates, financial constraints impacted 54.9% of those who always lacked money for products, with a P-value of 0.899, indicating no strong correlation.

Table Association between respondents' use menstrual products that you do not like because the ones you like are too expensive and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 1.450  P = 0.484 |
| No | 24 (23.5) | 24 (23.5) | 80 (27.8) |
| Somewhat | 4 (3.9) | 4 (3.9) | 10 (3.5) |
| Yes | 74 (72.5) | 74 (72.5) | 198 (68.8) |

From Table 22, a high percentage (72.5%) of respondents using products they dislike reported symptoms, with a P-value of 0.484.

Table Association between respondents' good working order toilets availability and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 43.256  P <0.001 |
| No | 4 (3.9) | 71 (38.2) | 75 (26.0) |
| Somewhat | 10 (9.8) | 7 (3.8) | 17 (5.9) |
| Yes | 72 (70.6) | 80 (43.0) | 152 (52.8) |

Table 23 shows, those without access to good toilets reported symptoms at a high rate (70.6%), with a P-value of <0.001.

Table Association between respondents' thought that privacy in school/workplace is maintained during menstruation and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 5.591  P = 0.133 |
| No | 2 (2.0) | 3 (1.6) | 5 (1.7) |
| Somewhat | 9 (8.8) | 5 (2.7) | 14 (4.9) |
| Yes | 75 (73.5) | 150 (80.6) | 225 (78.1) |

Table 24 illustrates, 73.5% of respondents who felt privacy was maintained reported symptoms, but the P-value of 0.133 indicates no strong association.

Table Association between respondents used menstrual products longer than its recommendation and symptoms of reproductive tract infections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Symptoms of reproductive tract infections in the last 6 months | | | Chi square test and p-value |
|  | **Yes**  **n (%)** | **No**  **n (%)** | **Total**  **n (%)** | X2 = 90.202  P <0.001 |
| Always | 36 (54.9) | 0 (0.0) | 36 (12.5) |
| Never | 6 (5.9) | 49 (26.3) | 55 (19.1) |
| Sometimes | 28 (14.7) | 42 (22.6) | 70 (24.3) |
| Very few times | 16 (8.8) | 67 (36.0) | 83 (28.8) |

From Table 25, those who always used products longer than recommended reported symptoms at 54.9%, with a significant P-value of <0.001.

# CHAPTER V DISCUSSION AND LIMITATION

### 5.1 Discussion

The findings from various studies on reproductive tract infections (RTIs) and menstrual hygiene management (MHM) in Bangladesh underscore the critical need to address the interplay between socio-demographic factors, healthcare access, and women’s health outcomes. The significant association between non-use of hygienic menstrual products and increased prevalence of RTIs and abnormal vaginal discharge highlights the pressing issue of menstrual hygiene as a determinant of reproductive health. This correlation aligns with existing literature indicating that inadequate MHM practices contribute to a higher risk of infections, emphasizing the necessity for interventions that promote safe menstrual practices among women, particularly those from low-income and marginalized communities.

The study highlights a complex interplay of education status, financial condition, cultural barriers, and product access, all of which contribute significantly to the prevalence of Reproductive Tract Infections (RTIs) among menstruating women. Low educational attainment emerges as a pivotal factor: women with limited education are less likely to be informed about safe menstrual hygiene practices, making them more susceptible to RTIs. Education influences health literacy, and women with higher education levels are more likely to prioritize MHM and recognize early symptoms of infections. This connection underscores the importance of educational opportunities not only for individual health literacy but also for broader public health outcomes.

Period poverty is a multifaceted issue rooted in limited access to education, financial constraints, cultural stigma, and restricted availability of sanitary products, all of which collectively heighten the risk of reproductive tract infections (RTIs). Women with lower education levels often lack adequate health literacy regarding safe menstrual hygiene practices, while financial hardship restricts their ability to afford hygienic menstrual products, forcing them to resort to unsafe alternatives. Cultural stigmas surrounding menstruation further marginalize these women, discouraging open conversations and support that could help improve their menstrual health.

Financial condition further compounds the challenge. For low-income women, the cost of hygienic menstrual products is often prohibitive, leading them to rely on unsafe alternatives. Period poverty, exacerbated by economic limitations, forces women to make do with unsanitary materials, which increases their risk of infections. The study's finding that women without access to proper MHM are more likely to experience RTI symptoms highlights the financial barriers that prevent adequate menstrual hygiene. Economic constraints can thus trap women in a cycle of poor health outcomes, as they are unable to access the necessary products for safe menstruation.

Cultural barriers also play a significant role, as menstruation is often stigmatized in low-income communities. This stigma restricts open discussions on menstrual health and limits women’s willingness to seek information or help, perpetuating ignorance and unsafe practices. Many women are discouraged from openly discussing their menstrual health, further isolating them from resources and information that could protect them from RTIs. Cultural norms often prioritize silence around menstrual health, which keeps menstrual hygiene low on family and community agendas, leading to insufficient support for managing menstruation safely.

Access to products is the fourth critical element, as availability and affordability of sanitary products are essential for proper menstrual hygiene. In slum areas, where this study was conducted, affordable menstrual products are scarce, compounding the challenges posed by limited financial resources and cultural stigmas. Without regular access to sanitary products, women in these communities are more likely to use unsanitary materials, contributing directly to higher rates of RTIs. The study’s evidence supports that even slight improvements in access to affordable and safe menstrual products could significantly reduce infection risks among these women.

Furthermore, the comparative analysis of RTI prevalence among different religious communities, which noted a higher incidence among Hindu females, points to the complex cultural factors that may affect health-seeking behavior and access to healthcare services. The findings suggest that cultural practices, religious beliefs, and stigma surrounding reproductive health may influence how women perceive and address their health needs, necessitating culturally sensitive health promotion strategies.

Despite these insights, a notable gap remains in the availability of nationally representative data on RTIs and menstrual hygiene practices in Bangladesh. The lack of comprehensive research hinders the formulation of effective policies and interventions to address period poverty and its ramifications on women's health. The concept of period poverty is still largely unrecognized among the general population and healthcare providers, which impedes progress in addressing the root causes of inadequate menstrual hygiene. Given the urgency of the situation, it is crucial to prioritize research on the intersection of period poverty and reproductive health. Policymakers must recognize the impact of socio-economic factors on menstrual hygiene practices and the prevalence of RTIs, developing targeted interventions that address these issues. Public health initiatives should focus on raising awareness, improving access to sanitary products, and providing education about proper MHM practices.

### 5.2 Limitations

Limitations include reliance on self-reported data and the cross-sectional nature of the study, which restricts causal inferences. Future research should aim to incorporate longitudinal studies and mixed method approaches to deepen understanding and inform policy. Cultural stigma surrounding menstruation could lead to underreporting of RTI symptoms and inadequate hygiene practices. Furthermore, excluding pregnant women and those who have not menstruated in the last three months may overlook important aspects of reproductive health. Lastly, without longitudinal data, the long-term impact of period poverty and menstrual hygiene practices on women's health outcomes remains unclear. Despite these limitations, the study provides valuable insights into the critical issues of menstrual hygiene management and its association with reproductive health.

# CHAPTER VI CONCLUSION AND RECOMMENDATIONS

### 6.1 Conclusion

In conclusion, this study demonstrates the critical connection between period poverty and the prevalence of Reproductive Tract Infections (RTIs) among lower-income menstruating females in the Rampura, Banasree, and Khilgaon areas of Dhaka, Bangladesh. The sample from this specific geographical area serves as a representative reflection of the overall scenario faced by marginalized communities across the country. The findings underscore the urgent need for targeted public health interventions that enhance access to menstrual hygiene products and education.

By raising awareness of the impact of period poverty on women's health, stakeholders can develop comprehensive strategies to mitigate the adverse effects of RTIs and promote overall well-being. This research adds to the growing body of evidence advocating for gender-sensitive health policies that prioritize the reproductive health needs of vulnerable populations. Further studies are recommended to explore the underlying socio-cultural factors influencing menstrual hygiene practices and to evaluate the effectiveness of interventions aimed at improving health outcomes for menstruating individuals.

### 6.2 Recommendations

To address the significant impact of period poverty on reproductive health, particularly in low-income communities, targeted actions are essential. The following recommendations outline strategies to enhance menstrual hygiene management (MHM), improve access to sanitary products, and increase health awareness in light of this study:

* Implement subsidized programs or provide free sanitary products, particularly in low-income and marginalized communities, to address period poverty and promote hygienic menstrual practices.
* Conduct awareness campaigns focused on menstrual hygiene management (MHM) and reproductive health, targeting both women and community leaders to reduce stigma and increase knowledge about safe practices.
* Introduce menstrual health education into school programs, especially in underserved areas, to improve young women’s understanding of menstrual hygiene and reproductive health.
* Design health promotion strategies that respect cultural and religious beliefs, particularly for communities where stigma around menstruation may influence health-seeking behaviors.
* Conduct nationally representative studies on the prevalence of reproductive tract infections and menstrual hygiene practices to inform evidence-based policy and program development.
* Prioritize gender-sensitive health policies that address the unique reproductive health needs of low-income and marginalized women.
* Engage community-based organizations to promote MHM and support initiatives that improve access to healthcare and hygiene products in slum areas and other underserved regions.
* Encourage future research using longitudinal and mixed-method approaches to better understand the long-term impacts of period poverty and menstrual hygiene practices on women’s health.
* Train healthcare providers to recognize period poverty and its health implications, ensuring they can offer appropriate guidance and support for women experiencing MHM challenges.
* Provide menstrual health resources and safe spaces for transgender and intersex individuals, recognizing their unique needs and reducing stigma related to menstruation.
* Regularly assess the effectiveness of public health interventions aimed at improving MHM practices and reducing RTI prevalence, adjusting strategies as needed to maximize impact.

These steps aim to reduce the prevalence of reproductive tract infections (RTIs) and foster better health outcomes especially for lower income menstruating population. By implementing these initiatives, policymakers, healthcare providers, and community organizations can work collaboratively to promote menstrual health and well-being.

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**ANNEXURES**

Annex 1 Informed Consent Form

Annex 2: Questionnaire (In English and Bangla)

Annex 3: Ethical Review Approval letter from BUHS