

## “Evaluation of Menstrual Hygiene Practices in Patients of Reproductive Tract Infection: An Observational Study”

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### Abstract

#### Background:

Menstruation is a physiological shredding of endometrium associated with uterine bleeding that occurs at monthly interval from menarche to menopause<sup>1</sup>. Menstruation is a natural and beneficial monthly occurrence in healthy adolescent girls and pre-menopausal adult women. Globally, women and girls have developed their own personal strategies to cope with menstruation. unhygienic menstrual habits contribute to huge burden of non sexually transmitted RTIs, which can be introduced either by use of absorbent material used for absorbing blood or by moist conditions in urogenital area. Morbidity and mortality related to RTIs deprive society of important contributions made by women in terms of economic, social, and cultural development. Most of RTI are simply preventable by practicing good menstrual hygiene.

**Aim:** To compare menstrual hygiene practices in (18-45) yrs age group Females having RTI with patient having non RTI attending gynae opd.

**Objectives:** To Study menstrual hygiene practice in (18-45) yrs. age group Females and find correlation between menstrual hygiene and RTI.

**Methods:** Females of (18-45) yrs age group attending gynaecology OPD of Dr. Baba Saheb Ambedkar Hospital, Rohini, Delhi.

**Results:** women using disposable pads as compared to reusable pads were less prone to RTI and were more inclined towards the use of disposable pads in the future. Patients using reusable cloth were also determined to use disposable pads in the future. Our study has helped to determine the future aspects of using disposable pads and also has been helpful in many ways for preventing RTI. Patients who had satisfactory cleaning of genitalia were less prone to RTI as compared to patients who had unsatisfactory cleaning of genitalia. The women with RTI were also less aware of standard menstrual hygiene practices. After the counselling the women who were using reusable cloth were convinced about the practice of good menstrual hygiene techniques and proper use of disposable pad in future.

**Conclusions:** Although we are living in 21<sup>st</sup> century homemade cloth is still used, which is a cause of high prevalence of RTI in community. The prevalence of RTI is increasing in women using reusable cloth. The link between socioeconomic status and reproductive health has been established before [33], and it is plausible that increased wealth is associated with overall better hygiene resulting in lower susceptibility to infections.

**Key words:** menstruation, menstrual hygiene, RTI.

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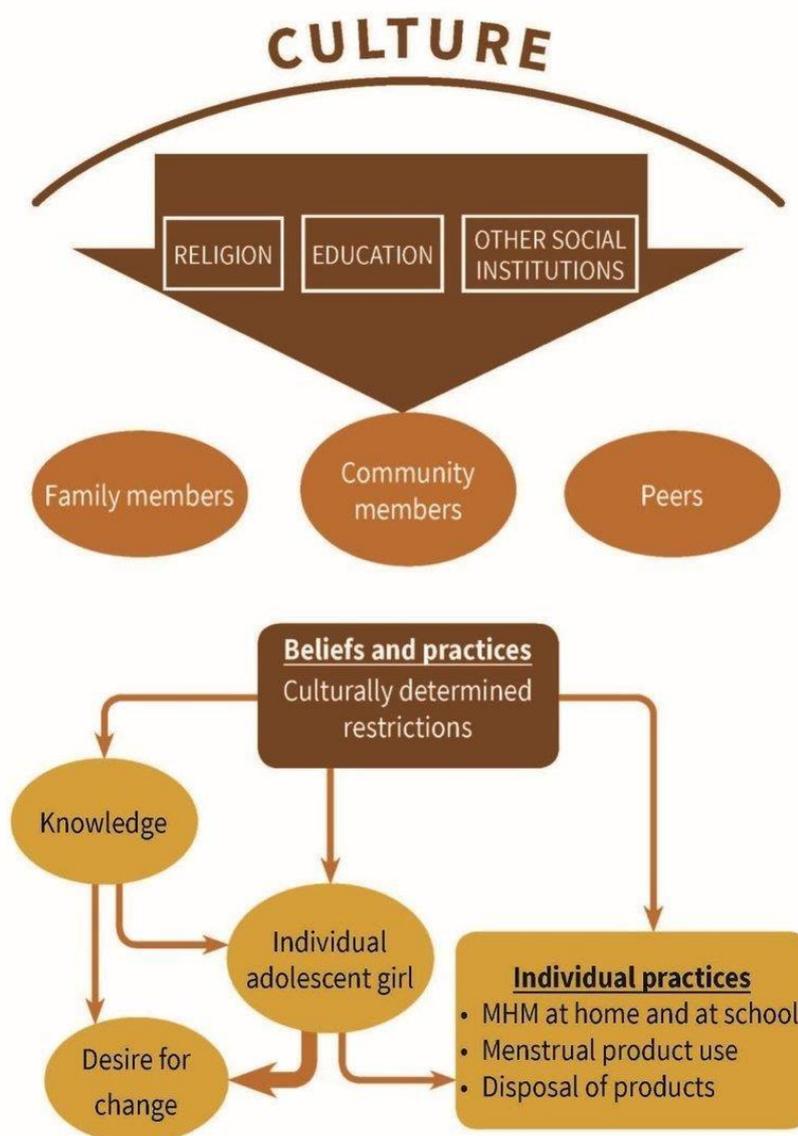
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### I. Introduction

Menstruation is a physiological shredding of endometrium associated with uterine bleeding that occurs at monthly interval from menarche to menopause<sup>1</sup>. Menstruation is a natural and beneficial monthly occurrence in healthy adolescent girls and pre-menopausal adult women. It concerns women and men alike as it is among the key determinants of human reproduction and parenthood. The age of menarche varies by geographical region, race, ethnicity and other characteristics but ‘normally’ occurs in low income settings between the ages of 8 and 16 with a median of around 13.<sup>[1,2]</sup> The median age of menopause is estimated at around 50 years<sup>[3]</sup>.

Globally, women and girls have developed their own personal strategies to cope with menstruation.

These vary greatly from country to country, and within countries, dependent on an individual's personal preferences, available resources, economic status, local traditions and cultural beliefs and knowledge or education. Due to these restrictions women often manage menstruation with methods that could be unhygienic or inconvenient, particularly in poorer settings.



unhygienic menstrual habits contribute to huge burden of non -sexually transmitted RTIs, which can be introduced either by use of absorbent material used for absorbing blood or by moist conditions in urogenital area. RTI are particularly widespread in low socioeconomic group, which also correlate with poor menstrual hygiene in low income setting. This increased burden of RTI is associated with increased morbidity and mortality in term of chronic PID, ectopic pregnancy, cervical cancer, acute and chronic infection of uterus and fallopian tube, infertility, puerperal sepsis. RTI also contribute to frequent hospital visits, overuse of antibiotics, laboratory burden and psychological upset because of RTI symptoms-lower abdominal pain, white discharge, burning micturition, itching. Morbidity and mortality related to RTIs deprive society of important contributions made by women in terms of economic, social, and cultural development. Most of RTI are simply preventable by practicing good menstrual hygiene.

The joint monitoring programme (JMP) of WHO and UNICEF has proposed the following definition for menstrual hygiene<sup>[10]</sup>.

Typical preconditions that have to be met for this are—

1. Access to accurate and pragmatic information (for females and males) about menstruation and menstrual hygiene.
2. Access to menstrual hygiene materials to absorb or collect menstrual blood.

3. Access to facilities that provide privacy for changing materials and for washing body with soap and water.
4. Access to disposal facilities for used menstrual materials.

## II. Material And Methods

Gynae OPD of Dr Baba Saheb Ambedkar Medical College and Hospital, Rohini, New Delhi. Females of (18-45) yrs age group attending gynaecology OPD of Dr. Baba Saheb Ambedkar Hospital, Rohini, Delhi.

### INCLUSION CRITERIA

Females between the age group of 18-45 years of age.

### EXCLUSION CRITERIA:

- Less than 18 years girls
- Other causes related to menstrual problems .
- Any pathology predisposing to RTI, diabetes, immunocompromised patients.

**STUDY DESIGN:** An Observational study.

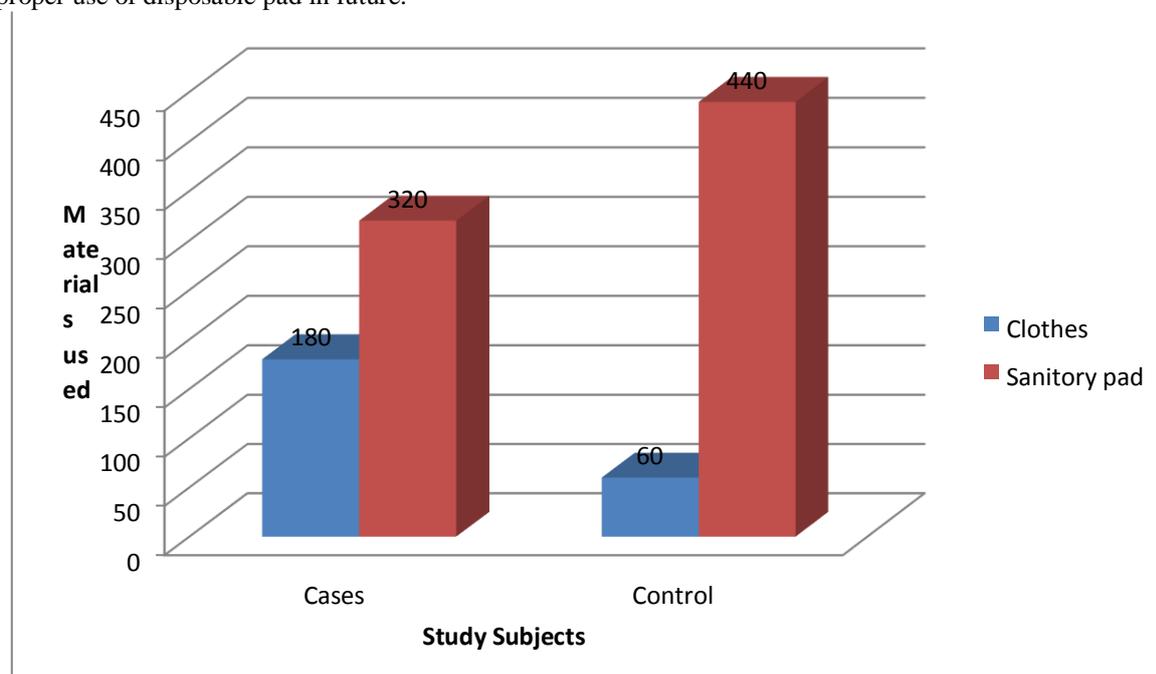
**SAMPLE SIZE AND SAMPLE TECHNIQUE:** 1000

## III. Observation And Result

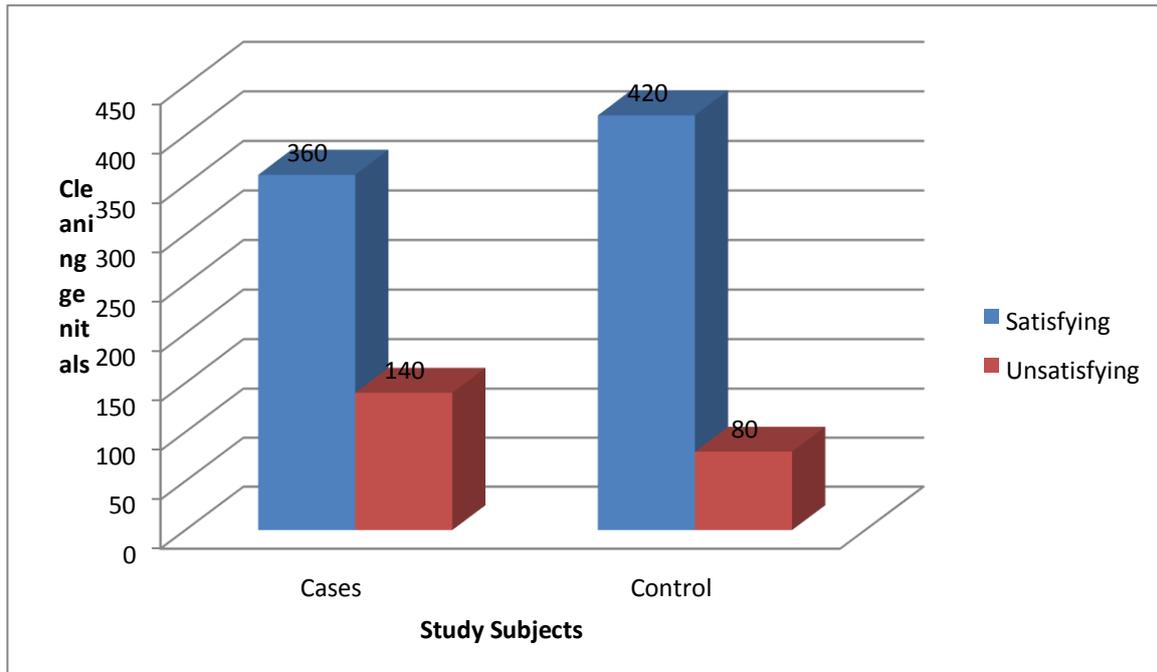
The present study” **Evaluation of menstrual hygiene practices in patients of reproductive tract infection: an observational study**” was carried out in the department of obstetrics and gynaecology, Dr Baba Saheb Ambedkar Medical College and Hospital, New Delhi.

In our present study 1000 women of age group 18 -45 yrs. attending opd of obstetrics and gynaecology department meeting the inclusion criteria were included. of the total 1000 patients 500 were of cohort group and 500 were included in control group.

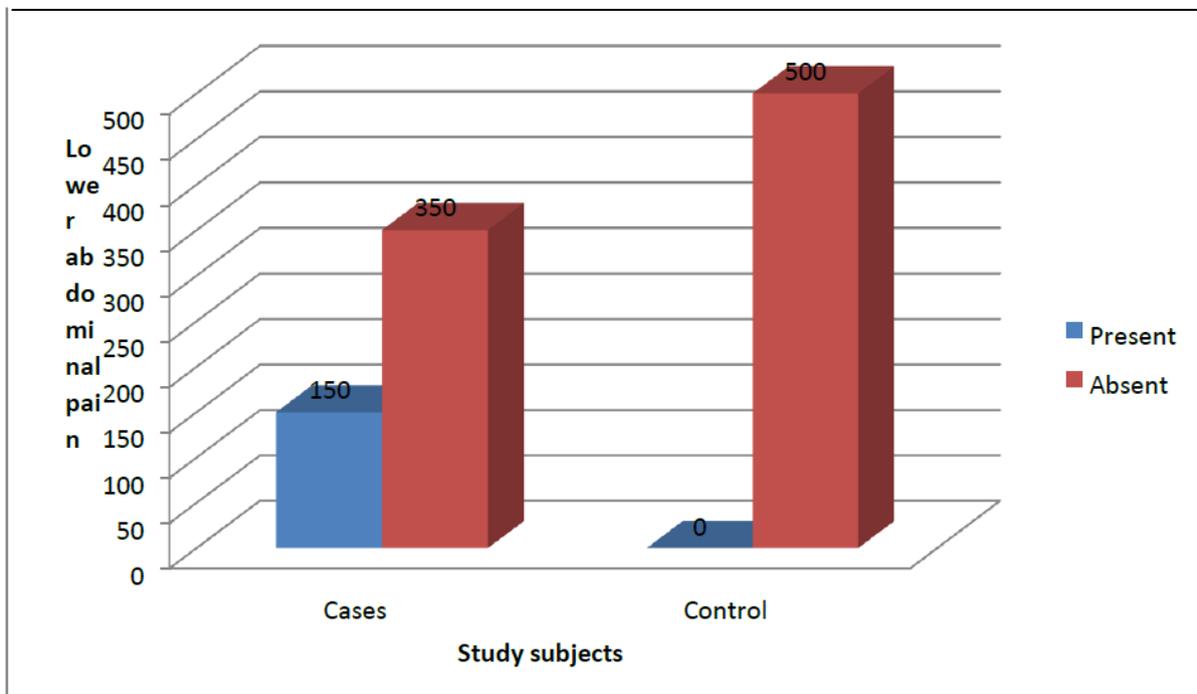
Detailed examination was done and data was analysed reaching the conclusion that women using disposable pads as compared to reusable pads were less prone to RTI and were more inclined towards the use of disposable pads in the future. Patients using reusable cloth were also determined to use disposable pads in the future. Our study has helped to determine the future aspects of using disposable pads and also has been helpful in many ways for preventing RTI. Patients who had satisfactory cleaning of genitalia were less prone to RTI as compared to patients who had unsatisfactory cleaning of genitalia. Patients who had more frequent change of homemade cloth were less prone to RTI as compared to patients who had less frequent change of cloth. The women with RTI were also less aware of standard menstrual hygiene practices. After the counselling the women who were using reusable cloth were convinced about the practice of good menstrual hygiene techniques and proper use of disposable pad in future.



**Figure 1-** Distribution of study subjects according to the type of material used



**Figure 2- Distribution showing the cleaning of genitalia in cases and control groups**



**Figure 3 - Distribution of lower abdominal pain in study subjects.**

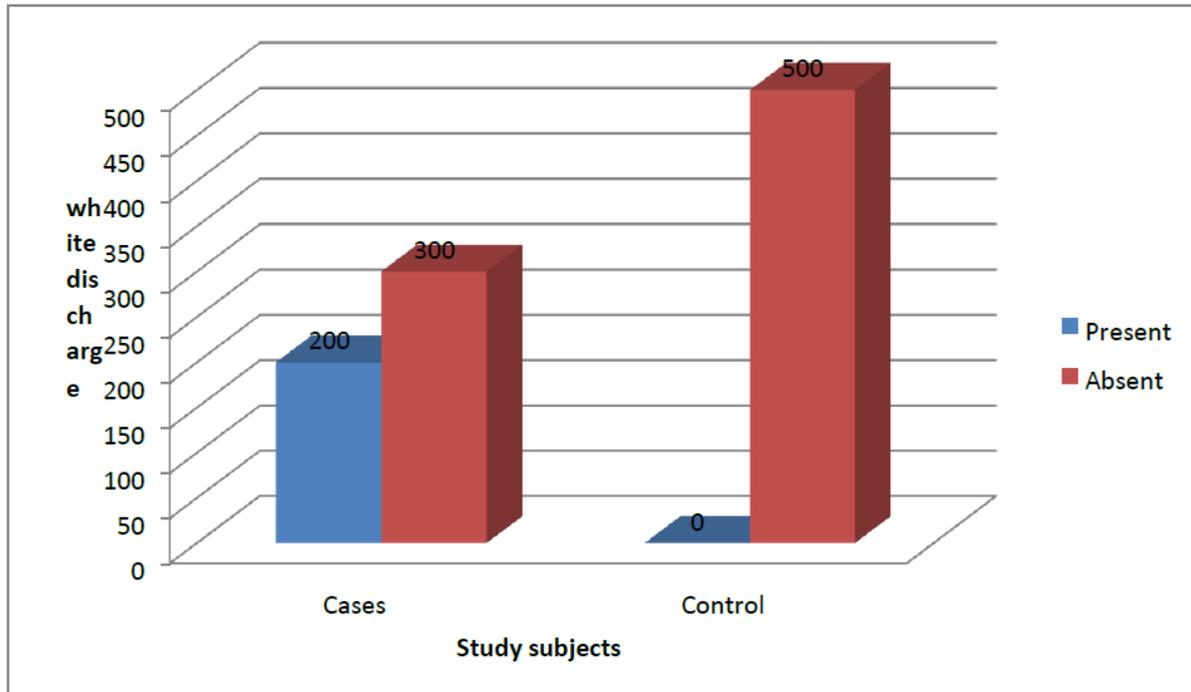


Figure 4 -Distribution According the presence or absence of discharge per vaginum in study subjects.

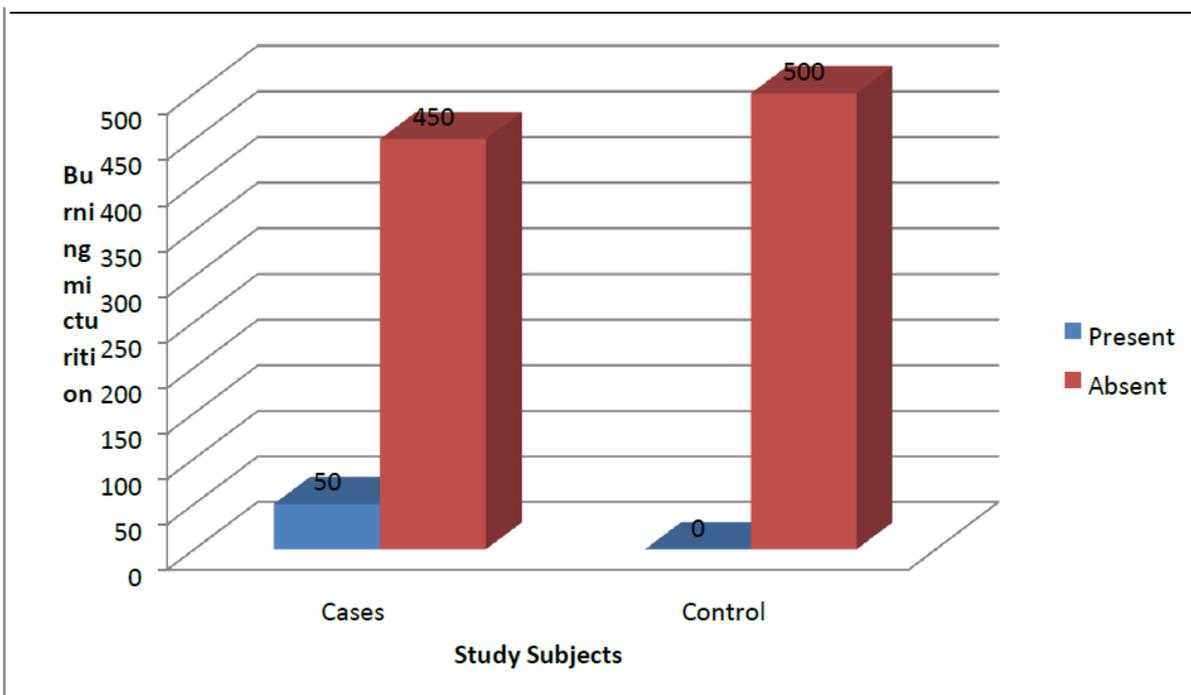


Figure 5-Distribution According the presence or absence of burning micturition in study subjects.

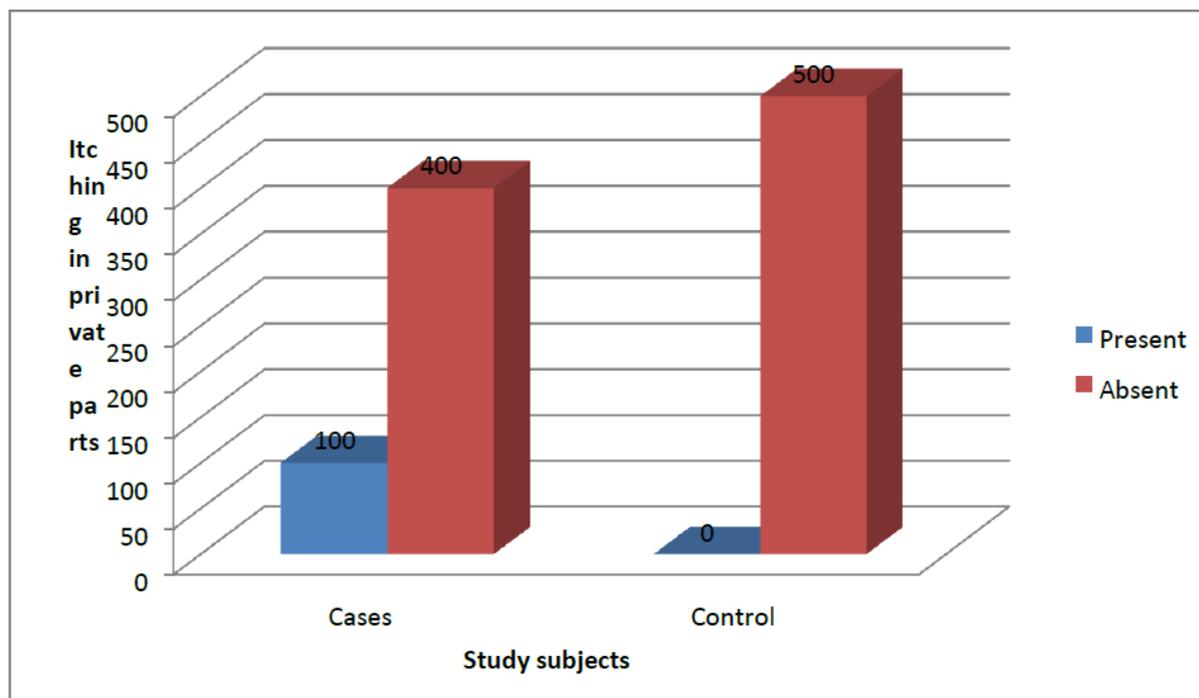


Figure 6 – Distribution according to the presence or absence of itching in vulva in study groups.

#### IV. Discussion

Menstruation is a natural and beneficial monthly occurrence in healthy adolescent girls and premenopausal adult women. Almost always, there are social norms or unwritten rules and practices about managing menstruation and interacting with menstruating women. Some of these are helpful but others have potentially harmful implications. Most striking is the restricted control which many women and girls have over their mobility and behaviour due to their ‘impurity’ during menstruation, including the myths, misconceptions, superstitions and (cultural and/or religious) taboos concerning menstrual blood and menstrual hygiene.

In our study out of 500 cases 180 females used homemade cloth whereas 320 females used disposable pads. However out of 500 controls 60 females used homemade cloth and 440 females used disposable pad. After statistical comparison of two groups P-value is significant (0.000001) which signifies that use of homemade cloth is associated with increase of incidence of RTI. In our study (reuse of homemade cloth) shows that out of 500 cases 80 females reused homemade cloth whereas 420 females did not reuse the homemade cloth. However out of 500 controls 8 females reused homemade cloth whereas 492 females did not reuse homemade cloth. After statistical comparison of two groups Pvalue is significant(0.000001) which signifies that use home homemade cloth is associated with increase of incidence of RTI. In our study (cleaning of genitalia) shows that out of 500 cases 360 females had satisfactory cleaning whereas 140 females had unsatisfactory cleaning. However out of 500 controls 420 females had satisfactory cleaning whereas 80 females had unsatisfactory cleaning of genitalia. After statistical comparison of two groups P-value is significant(0.000001) which signifies that unsatisfactory cleaning of genitalia is associated with increase of incidence of RTI.

In our study (frequency of disposal of homemade cloth/disposable pads) shows that out of 500 cases the frequency of change of homemade cloth and disposable pads ,once twice and thrice was 40,100,40 and 40,260,20 respectively. However out of 500 controls the frequency of change of homemade cloth and disposable pads, once twice and thrice was 20,30,10 and 60,360,20 respectively. After statistical comparison of two groups P-value is not significant (0.2074) in homemade cloth and P-value (0.545) in disposable pad which signifies that the frequency of change of homemade cloth and that of disposable pads does not affect the incidence of RTI.

In our study(discharge per vaginum) shows that out of 500 cases 200 females had white discharge per vaginum whereas 300 females did not had white discharge per vaginum. However out of 500 controls none had white discharge per vaginum. After statistical comparison of two groups P-value is significant(0.000002) which signifies that white discharge per vaginum is associated with RTI.

In our study is burning micturition which shows that out of 500 cases 50 had burning micturition whereas 450 did not had burning micturition. However out of 500 controls none had burning micturition. After statistical comparison of two groups P-value is significant (0.000001) which signifies that burning micturition is associated with RTI.

The other variable taken in our study is itching vulva which shows that out of 500 cases 100 had itching vulva whereas 400 did not had any itching of vulva. However out of 500 controls none had itching vulva. After statistical comparison of two groups P-value is significant (0.000001) which signifies that itching vulva is associated with RTI.

The next variable taken is lower abdominal pain which shows that out of 500 cases 150 females had lower abdominal pain whereas 350 did not had any lower abdominal pain. However out of 500 controls none had lower abdominal pain. After statistical comparison of two groups P-value is significant (0.000001) which signifies that lower abdominal pain is associated with RTI. **This variable reported in our study is the first endeavor where lower abdominal pain is used to assess UTI disease status. We had got a significant P – value.** Menstrual hygiene and prevention of STD diseases should be considered important issue at all the levels of health care system, where number of factor influence in the awareness and practice in rural area. Little is known about whether unhygienic MHM practices increase a woman’s exposure to urogenital infections, such as bacterial vaginosis (BV) and urinary tract infection (UTI).

RTIs are a major public health concern worldwide and are particularly common in low income settings [6,17]. We are aware of very few population based prevalence surveys of bacterial vaginosis conducted in India [18]. Surveillance studies on BV are mostly based on specialist clinic settings, such as genitourinary medicine clinics [19], gynecology and antenatal clinics [20], which underestimate the true burden of disease in the community given the high proportion of asymptomatic or unreported cases [21]. Urinary tract infection (UTI) is the most common type of infectious disease in community practice after respiratory tract infections. Urinary tract infections are believed to be among the most common form of infection in girls and women of menstruating age and this is held to be due to unhygienic practices [23]. Most of the studies in the literature [24] which aim to investigate the association between menstrual management and health outcomes used RTI endpoints, but only a few of them employed clinically or laboratory confirmed bacterial vaginosis (BV) assays. The remainder relied on self-reported vaginal discharge [24].

When trying to explore menstrual hygiene practices, all the papers found in the literature used self-reported methods [24].

This study provides support for the hypothesis that some menstrual hygiene practices can increase the risk of urogenital symptoms. Women who used reusable absorbent pads were more likely to have symptoms of urogenital disease than women using disposable pads.

The link between socioeconomic status and reproductive health has been established before, and it is plausible that increased wealth is associated with overall better hygiene resulting in lower susceptibility to BV and other infections.

The findings from our study are unique in demonstrating that the type of pad is not the only important factor to consider, but that other factors related to having privacy and comfort for MHM are also important. However, none of these associations with access to WASH facilities was significant. With education, people are better prepared to prevent disease and to use health services effectively [31,32]. **Our report is the first endeavor where we were aimed at finding an association between MHM and RTI.** We observed differences in the effect of the different MHM practices on the specific health outcomes. However, what is more likely is that poor MHM creates unhygienic vaginal conditions that universally promote opportunistic infection and inflammation from a broad spectrum of diseases. These findings support the argument that using symptoms to define cases and controls of urogenital infections could be used in future studies aiming to measure urogenital health impact of menstrual hygiene practices. Therefore from the findings of our study, we could define a case as a participant who reports one of the following 4 symptoms: abnormal vaginal discharge (unusual texture and color, more abundant than normal); burning micturition, itching in the genitalia and lower abdominal pain. A control could be defined as not having any of the above mentioned symptoms. The only case-control study found in the literature, which explored the link between MH practices and health outcomes solely addressed secondary infertility [25]. However, several cross-sectional studies have used self-reported symptoms as a measure of health outcomes, with the most commonly used self reported symptoms being abnormal vaginal discharge and itching in the genitalia. In most of these studies the presence of the above symptoms was positively associated with the use of reusable absorbent pads. We did not observe that participants practicing more thorough hygiene practices such as washing the cloth with soap and water in a private or enclosed place like their toilet, or drying pads in the open and storing them in a plastic bag to protect them from other sources of contamination were protective for infection. However, this estimation of the effect is likely underpowered due to an inadequate sample size, as the primary objective was not to assess these associations. Another possible explanation is that managing your pad hygienically will probably comprise a mix of these practices and not only one. But in this study we see that, reusing pads has stronger potential to have a negative impact on woman’s health. Across these studies these practices are found to be particularly acute in rural areas and amongst women and girls in lower socio-economic groups.

There are several limitations to our analysis. This is an observational study and so we cannot determine causality of the observed associations. Residual confounding may have remained when adjusting for self-reported risk factors, especially in relation to menstrual practices. We also did not adjust for other possible related factors, such as sexual practices or other infections (STIs and HIV). Strengths in our work include a good sample size and diagnosis of BV and UTI and the fact that all of the doctors and interviewers involved were females, which assured a relaxed environment to discuss a stigmatized topic.

Given the association of reusing pads with different symptoms or even being diagnosed with BV or UTI, and the high prevalence of women using reusable pads in India, more research is needed to investigate factors that could help women to adopt more hygienic menstrual practices with comfort and privacy. The crux of this study being that all the variables in our study had P-value significant. The only variable having a non-significant p-value in our study was frequency of change of homemade cloth and that of disposable pads. However, this variable was not directly related to the frequency of RTI and did not hamper our study significantly.

## **V. Conclusion**

Although we are living in 21<sup>st</sup> century, homemade cloth is still used, which is a cause of high prevalence of RTI in the community. The prevalence of RTI is increasing in women using reusable cloth. There are many other complications of using reusable cloth which is also not in consensus with the social harmony of the patient. The link between socioeconomic status and reproductive health has been established before [33], and it is plausible that increased wealth is associated with overall better hygiene resulting in lower susceptibility to infections. Our study, an observational study, has found a positive correlation between MHM and RTI. It has been observed that women using reusable cloth are more prone to developing RTI, in contrast to women who are using disposable pads, are less prone to develop RTI and its side effects. Patients who had satisfactory cleaning of genitalia were less prone to RTI as compared to patients who had unsatisfactory cleaning of genitalia. Patients who had more frequent change of homemade cloth were less prone to RTI as compared to patients who had less frequent change of cloth. Also, the women using disposable pads are more confident in discussing problems and are well aware of different problems associated with using reusable cloth. This study has also been a pathfinder to many women who were previously using reusable cloth and now have started using disposable pads after gaining knowledge and benefits of disposable pads.

This study has also been beneficial to the other classes of the community not attending OPD as women attending OPD have counselled in their neighborhood about the beneficiaries of using disposable pads.

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