

## Original Research Article

## Impact of Poor Menstrual Hygiene on Reproductive Health among Female Students in Tertiary Institutions in South-South, Nigeria

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**Abstract:** Poor menstrual hygiene is a significant public health issue, especially among female students in tertiary institutions where academic pressure, limited facilities, and social stigma can worsen hygiene practices. Its impact on reproductive health is both immediate and long-term. Poor hygiene practices (such as prolonged use of one pad or improper cleaning) may alter the natural vaginal pH and encourage growth of harmful bacteria and fungi. This imbalance can lead to conditions like bacterial vaginosis and yeast infections, which affect reproductive health and comfort. This study aimed to Assess Impact of Poor Menstrual Hygiene on Reproductive Health among Female Students in Tertiary Institutions in South-South, Nigeria. This was a cross-sectional study involving 250 women. Participants' age is between 18 to 47 years. A well-structured questionnaire was administered to participants. The study lasted for a period of 3 months. Statistical analysis was done using SPSS version 25.0 and  $p < 0.05$  was significant. The results revealed that 60% of the participants were university students, 76% have no knowledge about menstrual hygiene, 60% changed change sanitary pad when it is completely soaked, 60% never washed before and after changing menstrual pad, 60% uses tissue materials as pad, 60% do not have access to clean water and toilet facilities during menstruation, 40% disposed used pads in open dumping, 60% are not comfortable during menstruation within school environment. The participants also experienced the following after poor menstrual hygiene including vaginal discharge, bacterial infection, PID, UTI, vaginitis and others, 76% have missed classes due to menstrual discomfort or hygiene challenges.

**Keywords:** Impact, Poor, Menstrual Hygiene, Reproductive Health, Students.

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## INTRODUCTION

Menstrual cycle is a process that every woman who have attained puberty must undergo, and this occur monthly in a normal physiological pattern unless in some cases were certain factors may halt the monthly process (Gbaranor *et al.*, 2022). This cycle varies in individual in duration of flow, length of cycle, pattern of flow (scanty, moderate or heavy with or without clot). Virtually every woman who have attained puberty and she has started menstrual period will experience certain physiological

changes in her body. These changes may occur before or during the menstrual cycle. These physiological changes vary in individuals (Gbaranor *et al.*, 2022). Every woman must pass through the periodic process of menstrual cycle as soon as they attain maturity and it continues until certain age when the menstrual cycle stops to set in another stage of life (Gbaranor *et al.*, 2022). The menstrual cycle begins on the first day of menstrual bleeding and end with the beginning of the next menstrual bleeding. However menstrual cycle commonly called menstrual period varies in individual in

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terms of duration of flow, length of cycle, pattern of flowing, stability in periodicity and premenstrual syndrome (Gbranor *et al.*, 2022). Menstrual hygiene refers to the use of clean menstrual materials, adequate washing of the body, and access to proper sanitation facilities during menstruation. Reproductive health, on the other hand, encompasses the proper functioning of the reproductive system free from disease and disorders. Studies indicate that inadequate menstrual hygiene practices are a significant risk factor for reproductive health problems among young females (Mcharo *et al.*, 2025). Evidence shows that many female students adopt unhygienic practices such as using unclean cloths, prolonged use of sanitary materials, and inadequate washing due to lack of resources or knowledge. A systematic review found that poor menstrual hygiene practices are prevalent among adolescent girls, particularly in developing countries, due to socio-cultural taboos and lack of education (Das *et al.*, 2022). Similarly, cultural stigma and secrecy surrounding menstruation discourage open discussion and proper hygiene practices, further exacerbating poor menstrual health behaviors (Shah *et al.*, 2019). A strong relationship exists between poor menstrual hygiene and reproductive tract infections (RTIs). Poor practices such as the use of unhygienic absorbents and lack of sanitation increase exposure to pathogens, thereby elevating the risk of infections. Research demonstrates that inadequate menstrual hygiene management is a major contributor to RTI symptoms such as abnormal discharge, itching, and genital irritation (Mcharo *et al.*, 2025). Furthermore, studies highlight that improved menstrual hygiene practices significantly reduce some RTI symptoms, reinforcing the link between hygiene and reproductive health outcomes (Mcharo *et al.*, 2025). Poor menstrual hygiene does not only cause immediate infections but can also result in long-term reproductive health complications. Untreated RTIs may lead to pelvic inflammatory disease, infertility, and increase susceptibility to sexually transmitted infections. Literature indicates that these complications are particularly concerning among young women, including those in tertiary institutions, due to delayed treatment and lack of awareness (Mcharo *et al.*, 2025). The institutional environment plays a crucial role in menstrual hygiene

practices. In many tertiary institutions, inadequate water, sanitation, and hygiene (WASH) facilities hinder proper menstrual hygiene management. A scoping review on African schools found that infrastructural challenges, lack of privacy, and limited access to sanitary products significantly influence menstrual hygiene practices (Tshivule *et al.*, 2025). Menstrual hygiene is also influenced by psychological and social factors. Stigma, embarrassment, and misinformation about menstruation often prevent students from adopting proper hygiene practices or seeking medical help when needed. Cultural norms that restrict discussions about menstruation contribute to poor knowledge and negative attitudes toward menstrual health (Shah *et al.*, 2019).

## MATERIAL AND METHOD

This is a cross-sectional study involving 250 women who are within the age of 18 to 47 years and reside in the six (6) South-South States, in Nigeria. The study lasted for a period of 2 months. Consent was sorted from the participants before giving them the questionnaires. Questionnaires were given to the participants. Each participant had one questionnaire to fill appropriately and independently after instructions were given to them by the research Assistants. Data was obtained and analyzed using SPSS version 23 and P value < 0.05 was said to be significant.

## RESULTS

The results revealed that 60% of the participants were university students, 76% have no knowledge about menstrual hygiene, 60% changed change sanitary pad when it is completely soaked, 60% never washed before and after changing menstrual pad, 60% uses tissue materials as pad, 60% do not have access to clean water and toilet facilities during menstruation, 40% disposed used pads in open dumping, 60% are not comfortable during menstruation within school environment. The participants also experienced the following after poor menstrual hygiene including vaginal discharge, bacterial infection, PID, UTI, vaginitis and others, 76% have missed classes due to menstrual discomfort or hygiene challenges. See tables below.

**Table 1: Participants Institutions**

Institutions	Frequency (%)	Percentage (%)
University	150	60.00
Polytechnic	70	28.00
College of education	30	12.00
<b>Total</b>	<b>250</b>	<b>100</b>

**Table 2: Participants who have knowledge about menstrual hygiene before**

Response	Frequency (%)	Percentage (%)
Participants who have knowledge about menstrual hygiene	60	24.00

Participants who do not have knowledge about menstrual hygiene	190	76.00
<b>Total</b>	<b>250</b>	<b>100</b>

**Table 3: Duration of changes to sanitary pad during menstruation**

Response	Frequency (%)	Percentage (%)
Every 2-4 hours	10	4.00
Twice a day	20	8.00
Once a day	70	28.00
When it is completely soaked	150	60.00
<b>Total</b>	<b>250</b>	<b>100</b>

**Table 4: Participants who wash hands before and after changing menstrual materials**

Response	Frequency (%)	Percentage (%)
Always	20	8.00
Sometimes	70	28.00
Never	150	60.00
<b>Total</b>	<b>250</b>	<b>100</b>

**Table 5: Type of menstrual products used by participants**

Response	Frequency (%)	Percentage (%)
Sanitary pads	70	28.00
Tampons	10	4.00
Menstrual cup	20	8.00
Cloth	20	8.00
Tissues materials	150	60.00
<b>Total</b>	<b>250</b>	<b>100</b>

**Table 6: Participants who have access to clean water and toilet facilities in their institution during menstruation**

Response	Frequency (%)	Percentage (%)
Participants who have access to clean water and toilet facilities in their institution during menstruation	40	16.00
Participants who do not have access to clean water and toilet facilities in their institution during menstruation	150	60.00
Sometimes	60	24.00
<b>Total</b>	<b>250</b>	<b>100</b>

**Table 7: Participants who experienced any of the following during or after menstruation**

Response	Frequency (%)	Percentage (%)
Vaginal discharge	40	16.00
Vaginitis	50	20.00
Lower abdominal	20	8.00
Bacterial infection	90	36.00
Pelvic inflammatory disease (PID)	10	4.00
Urinary Tract Infections (UTIs)	40	16.00
<b>Total</b>	<b>250</b>	<b>100</b>

**Table 8: Participants who missed classes due to menstrual discomfort or hygiene challenges**

Response	Frequency (%)	Percentage (%)
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Participants who missed classes due to menstrual discomfort or hygiene challenges	190	76.00
Participants who do not missed classes due to menstrual discomfort or hygiene challenges	60	24.00
<b>Total</b>	<b>250</b>	<b>100</b>

## DISCUSSION

Poor menstrual hygiene is a significant public health issue, especially among female students in tertiary institutions where academic pressure, limited facilities, and social stigma can worsen hygiene practices. Its impact on reproductive health is both immediate and long-term. Poor hygiene practices (such as prolonged use of one pad or improper cleaning) may alter the natural vaginal pH and encourage growth of harmful bacteria and fungi. This imbalance can lead to conditions like bacterial vaginosis and yeast infections, which affect reproductive health and comfort.

Menstrual hygiene management (MHM) is increasingly recognized as a critical component of women's reproductive health, particularly among adolescents and young adults in educational settings. Poor menstrual hygiene practices have been widely linked to adverse reproductive health outcomes, especially in low- and middle-income countries where access to sanitary materials and adequate facilities remains limited.

The results revealed that 60% of the participants were university students and 76% have no knowledge about menstrual hygiene despite been in the university. Again, majority (60%) of the participants change sanitary pad when it is completely soaked and this becomes a vehicular drive for bacterial infection to strife. A completely soaked sanitary pad isn't just uncomfortable, it may have several health and hygiene consequences, especially if it stays in place for long periods.

Also, when a pad is fully soaked with menstrual blood it becomes a warm, moist environment ideal for bacterial growth and prolonged use may lead to reproductive tract infections (RTIs), urinary tract infections (UTIs) and vaginal irritation or imbalance (e.g., overgrowth of harmful bacteria). Again, majority (60%) of the participants use tissue as sanitary pad and this comes with several health and hygiene risks, especially if used repeatedly. Tissue is not designed to absorb menstrual flow because it breaks apart easily when soaked, requires very frequent changing and could leads to leakage, staining, and poor hygiene thus, increases discomfort and the chance of contamination of the genital area. Again, tissue paper is not sterile and may introduce bacteria, retain moisture when layer, creating a damp environment. This can lead to urinary tract infections (UTIs), reproductive tract infections (RTIs)

and vaginal irritation or imbalance. Unlike proper pads that lock in fluid tissue holds moisture on the surface and encourages bacterial growth, leading to unpleasant odor. The study revealed that 60% of the participants never washed hands before and after changing menstrual pad and this is unhygienic and may spread gems. Also, 60% do not have access to clean water and toilet facilities during menstruation and may be reason why majority of the participants do not wash their hands after changing their sanitary pads. The study also shows that 40% of disposed used pads in open dumping and this could create an avenue for infection drive.

The study also revealed the impact of poor hygiene during menstrual period on university female students. This aftermath due to poor hygiene during menstrual period includes vaginal discharge, bacterial infection, PID, UTI, vaginitis and abdominal pain. These poor hygiene practices such as prolonged use of one pad, use of unclean materials, create a moist environment that promotes bacterial growth, thus leading to vaginitis, bacterial infections, pelvic inflammatory disease (PID). Poor hygiene practices due to lack of knowledge on menstrual hygiene and lack of clean water by the participants have them to uncomfortable situation vaginal discharge, vaginitis, bacterial infections, pelvic inflammatory disease (PID and abdominal pain).

Improper cleaning and infrequent changing of absorbents may introduce pathogens into the urinary tract, leading to painful urination, frequent urination and long-term kidney complications if untreated. Again, untreated reproductive infections due to poor menstrual hygiene may ascend into the upper reproductive tract, potentially causing tubal blockage, chronic pelvic infections and reduced fertility. This is particularly concerning for young women in tertiary institutions, as reproductive health complications may persist into adulthood. As a result of the impact of poor menstrual period, participants developed psychological and emotional trauma such as anxiety due to fear of leakage or odor, low self-esteem and embarrassment and menstrual stigma and these factors may discourage students from seeking medical help, worsening reproductive health outcomes.

Also, 76% of the participants missed classes due to menstrual discomfort or hygiene challenges causing academic and behavioral consequences such as absenteeism from lectures, reduced concentration and academic performance and withdrawal from social or

academic activities and thus, poor menstrual hygiene is therefore not just a health issue but also an educational barrier.

## CONCLUSION

Poor menstrual hygiene among female students in tertiary institutions has profound effects on reproductive health, including infections, infertility risks, and long-term gynecological complications. These outcomes are often worsened by lack of knowledge, clean water, inadequate facilities, and psychological and emotional trauma. Improving menstrual hygiene through education, access to sanitary products, and better campus facilities is essential for protecting the reproductive health and overall well-being of female students.

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## REFERENCES

- Das, P., Baker, K. K., Dutta, A., Swain, T., Sahoo, S., Das, B. S., Panda, B., Nayak, A., Bara, M.,

Bilung, B., Mishra, P. R., Panigrahi, P., Cairncross, S., & Torondel, B. (2022). Menstrual hygiene practices and associated factors among adolescent girls: A systematic review and meta-analysis. *Reproductive Health*, 19(1). <https://doi.org/10.1186/s12978-022-01453-3>

- Gbaranor K. B., Mube W. A., Gilbert U. D., Nonju T. I, Daka I.R, Amadi Hebinchi, Wami-Amadi C. F., Nonju I. I., Oriji E. I., Amadi N. C., Emeghara G. I., Nwosu G. N. and Ajumoke O.O (2022). Physiological variation of menstrual cycle among female students in tertiary institutions of Rivers State. *World Journal of Pharmaceutical and Medical Research*. 8(1), 17-20.
- Mcharo, O., Kapesa, A., Materu, J., Luwayi, J., Nahay, F., Basinda, N., Chibwe, E., & Okello, E. (2025). Effects of a comprehensive menstrual and sexual reproductive health intervention on reproductive tract infection symptoms among adolescent girls in the Mwanza region: A mixed-methods analysis. *Reproductive Health*, 22, 224. <https://doi.org/10.1186/s12978-025-02087-x>
- Shah, V., Nabwera, H. M., Sosseh, F., Jallow, Y., Comma, E., Keita, O., & Mills, E. J. (2019). A rite of passage: Knowledge, perceptions, and practices of menstrual hygiene management in rural Gambia. *BMC Public Health*, 19, 277. <https://doi.org/10.1186/s12889-019-6599-2>
- Tshivule, M. Z., Rasweswe, M. M., Mothiba, T. M., & Bopape, M. A. (2025). Factors influencing menstrual hygiene knowledge, attitudes, and practices among adolescent girls in African rural schools: A scoping review. *Frontiers in Reproductive Health*, 7. <https://doi.org/10.3389/frph.2025.1553101>

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