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Menstrual Hygiene Awareness, Beliefs, and Attitudes towards Menstruation among Female Secondary School Students in Rural Communities of Udenu Local Government Area, Enugu State, Nigeria

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Abstract

Menstrual hygiene awareness plays an important role in shaping adolescents 'beliefs and attitudes toward menstruation, particularly in rural communities where misconceptions and cultural taboos remain prevalent. The study assessed menstrual hygiene awareness, beliefs, and attitudes towards menstruation among female secondary school students in rural communities of Udenu Local Government Area, Enugu State, Nigeria. The study was guided by the three specific objectives and three null hypotheses. A descriptive cross-sectional survey design was adopted. Population for the study comprised of 2,421 female secondary school students from the 16secondary schools in Udenu Local Government Area, Enugu State. The sample for the study was 369 female secondary school students, selected through simple random sampling technique. Aself- developed Menstrual *Hygiene Awareness, Belief and Attitude toward* Menstruation *Questionnaire (MHABAMQ)* was used for data collection. Data were analysed using frequency, percentage, mean and standard deviation to answer the research questions, while Chi-square and t-test statistics were used to test the hypotheses at the 0.05 level of significance. The findings revealed that the respondents had a moderate level of menstrual hygiene awareness and a moderate level of negative beliefs regarding menstruation. The respondents demonstrated a positive attitude toward menstruation. There is no significant difference in the menstrual hygiene awareness possessed by female secondary school students in Udenu LGA, Enugu State based on class level, there is significant difference in the belief and attitude toward menstruation n possessed by female secondary school students in Udenu LGA, Enugu State based on class level, Hence, the study concludes that although the respondents demonstrated moderate menstrual hygiene awareness, positive attitudes, misconceptions and cultural beliefs surrounding menstruation persist among female secondary school students. The authors recommends among others that ministry of education, school authorities should strengthening school-based menstrual health education programmes to improve menstrual hygiene awareness, dispel misconceptions, and promote positive beliefs and attitudes toward menstruation.

Keywords: Menstrual hygiene Awareness, Menstruation, Beliefs, Attitudes, Female secondary school students.

Introduction

Menstruation is a natural biological process of reproductive health among adolescent girls. Globally, approximately1.8 billion people menstruate every month, yet it remains one of the most stigmatized health issues (United Nations Children's Fund [UNICEF], 2023). According to the World Health Organization [WHO] and UNICEF (2022), about 500 millions of women and adolescent girls worldwide lack adequate facilities for menstrual hygiene management, leading to poor health, social and educational consequences.

In Africa, poor menstrual hygiene awareness, negative beliefs and attitudes are widespread. The United Nations Educational, Scientific and Cultural Organization [UNESCO] (2021) reported that 1 in 10 girls in Sub-Sahara Africa miss school during menstruation, and some miss up to 20 per-cent of the school year as a result. Cultural taboos, myths, and lack of information contribute to shame, fear, and negative attitude among adolescent girls (Hennegan et al., 2021). Studies conducted across Africa have shown that inadequate menstrual hygiene awareness, negative cultural beliefs, and stigmatizing attitudes toward menstruation continue to affect adolescent girls' health, school attendance, and psychosocial well-being. Despite increasing attention to menstrual health, misconceptions, cultural beliefs, and negative attitudes toward menstruation remain widespread in many developing countries, including Nigeria.

In Nigeria, the situation is similar. The Federal Ministry of Health (2020) stated that over 37 per-cent of adolescent girls lack access to menstrual hygiene products and safe sanitation facilities in schools. Studies in Nigeria indicated that myths such as “menstruating girls are impure”are still prevalent, especially in rural communities (Adebowale et al., 2022). Most studies in developing countries, particularly Nigeria, on menstruation include only women as participants, making it a ’women’s’ topic (Gundi & Subramanyam, 2020). Also, some women participants in rural communities, agreed that menstruation is still a taboo topic, rarely discussed open (Prince&Annison, 2023). Hence, menstrual hygiene awareness is vital in rural areas.

Menstrual hygiene awareness can be described as the knowledge and understanding required for adopting safe and appropriate menstrual hygiene practices. Adequate awareness enables adolescent girls to manage menstruation hygienically through the use of clean menstrual absorbents, regular washing of the external genital area with clean water, and proper disposal of used menstrual materials. Menarche, which marks the onset of menstruation, is a significant developmental milestone during adolescence and often presents physical, emotional, and psychological challenges, particularly for girls who lack adequate menstrual health information (Reddy et al., 2024). Social prohibitions and the negative attitude of parents in discussing the related issues has led to a tendency for girls to associate a variety of negative physical and psychological changes on their body with menstruation (Sultan & Sahu, 2017). In many societies, menstruation continues to be surrounded by myths, cultural taboos, and misinformation, resulting in poor menstrual hygiene awareness, negative beliefs, and unfavourable attitudes toward menstruation (UNICEF, 2021; Van Lonkhuijzen et al., 2023).

Beliefs and attitudes toward menstruation play an important role in shaping menstrual hygiene behaviours. Positive beliefs encourage healthy menstrual practices and help reduce stigma, whereas negative beliefs often reinforce misconceptions, fear, shame, and discriminatory practices that prevent girls from seeking accurate menstrual health information and appropriate

support (Van Lonkhuijzen et al., 2023). According to, Prince and Annison (2023), negative attitude such as shame and fear were reduced when schools provided education and facilities for menstrual hygiene management. Conversely, negative beliefs and attitudes may contribute to poor menstrual hygiene practices, social isolation, school absenteeism, and reduced self-confidence among adolescent girls (WHO & UNICEF, 2023). The UNICEF (2023) further noted that stigma and misinformation continue to negatively influence adolescents' beliefs and practices regarding menstruation.

Adolescence, defined by the World Health Organization as the period between 10 and 19 years of age, is characterized by rapid physical, psychological, and social development. During this period, adequate menstrual hygiene awareness is essential for promoting healthy reproductive behaviours and ensuring the well-being of adolescent girls (WHO, 2024). However, many in-school adolescent girls, particularly in low- and middle-income countries, continue to experience inadequate menstrual health education because of cultural barriers, limited access to reliable information, and poor communication within families and schools (UNESCO, 2023). Consequently, many girls enter menarche with insufficient knowledge, increasing their vulnerability to poor menstrual hygiene practices and reproductive tract infections (Murthy et al., 2022). Manyfactors may affect adolescents' menstrual hygiene awareness, beliefs, and attitudes.

Several socio-demographic factors influence menstrual hygiene awareness, beliefs, and attitudes among adolescents. One of these factors is academic class level. As students' progress through secondary school, they are exposed to more health-related subjects such as Biology, Health Science, and Reproductive Health, which may improve their understanding of menstruation and menstrual hygiene. Consequently, students in senior secondary classes may demonstrate better menstrual hygiene awareness and more positive beliefs and attitudes than their counterparts in junior secondary classes. Previous studies have identified academic class level as a significant factor associated with menstrual hygiene awareness, beliefs, and attitudes among adolescent girls (Deepa et al., 2019; Oklu et al., 2023; Van Lonkhuijzen et al., 2023;).

In Enugu State, especially in rural communities of Udenu LGA, adolescent girls face additional challenges. Limited access to health education, inadequate water, sanitation and hygiene [WASH] facilities in schools, and strong cultural beliefs make menstrual hygiene management difficult (Enugu State Ministry of Health, 2021).The gap persist in Udenu LGA where cultural norms are strong and health education is limited. It is against this background that this study seeks to assess menstrual hygiene awareness, beliefs and attitudes towards menstruation among female secondary school students in rural communities of Udenu. LGA, Enugu State. The purpose of this study was to assess menstrual hygiene awareness, beliefs, and attitudes toward menstruation among female secondary school students in Udenu Local Government Area, Enugu State. Specifically, the study determined the;level of menstrual hygiene awareness, beliefs toward menstruation, attitudes toward menstruation among female secondary school students in Udenu Local Government Area, Enugu State; and the influence of class level on them.

Methods

Study design and setting

The descriptive cross-sectional research design was adopted in this study. The study was conducted in the rural communities of Udenu Local Government Area, Enugu State, Nigeria. Udenu LGA is one of the 17 LGAs in the northern senatorial zone of Enugu State. It share boundaries with Igbo-Eze North, Igbo-Eze South, Nsukkaand Obollo-Afor. The major occupations of the residents are farming, trading and civil service. Health facilities in the area are limited, and cultural beliefs and taboos surrounding menstruation are still strong. The fact that rural adolescent girls in the area have limited access to menstrual health information and WASH facilities, justify the choice.

Study population

The population of the study consisted of all female secondary school students in 16 secondary schools in Udenu LGA of Enugu State. Their total population is 2,421 for the 2020/2021 academic session. This is according to the statistics made available from Udenu Post Primary Education Board, Enugu State (2021).

Sample size and sample technique

The sample for the study was 400female in-school adolescents. This is in line with the suggestion of Cohen et al. (2011), that when a population size is 2,000 and above at 95 percent confidence level (5% interval), the sample size should be 322 and above. The sample size was drawn in two stages. Stage one involved a simple random sampling of 10secondary schools from the 16 schools through balloting without replacement. The second stage also involved simple random sampling through balloting without replacement of 40 female secondary school students from each of the 10 secondary schools sampled in stage one. This gave a total of 400female secondary school students used in this study.

Data collection instrument

The instrument for data collection consisted of a self-developed Menstrual Hygiene Awareness, Belief and Attitude toward Menstruation Questionnaire (MHABAMQ). The MHABAMQ comprised of four sections of A, B, C and D. Section A sought information on the socio-demographic data (academic class level) of the respondents. Section B sought information on level of menstrual hygiene awareness possessed by the respondents, Section C sought information on beliefs toward menstruation among the respondents with dichotomous response option of Yes and No. Section D sought information on the attitude towards menstruation among the respondents with polychotomous response option of Section D assessed the respondents' attitudes toward menstruation using a four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

The face validity of the instrument was established by three experts in the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. The expert’s constructive criticism, corrections and suggestions were used to modify and improve the final draft of the instrument before its use in the present study.

The reliability of the instruments was established using Cronbach's Alpha method of reliability to determine the internal consistency of MHABAMQ. Copies of the instrument were administered to 20 female secondary school students in Nsukka LGA because of their similar characteristics with the study area. The data collected from the pilot study were analyzed using kuder-Richardson formula 20 (KR-20) for menstrual hygiene awareness and belief toward menstruation, the reliability coefficient was r =0.81 and r= 0.77 respectively. While Cronbach's Alpha coefficient and split-half was used for attitude toward menstruation, the reliability coefficient was r =0.83, they are above 0.70 and are therefore acceptable.

Data collection procedure

In order to gain access to the reespondents, a letter of introduction was obtained from the Head, Department of Human Kinetics and Health Education, University of Nigeria, Nsukka, introducing the researcher and explaining the purpose of the study. This letter was presented to the principals of the secondary schools in Udenu LGA of Enugu State seeking for permission to carry out the study in their schools. Copies of the MHABAMQ were administered to female in-school adolescents by the researcher in their classrooms. The class teachers of the various classes acted as research assistants for the researcher. The research assistants were briefed on the methods of administering the questionnaire. The female in-school adolescents were asked to supply correct information. The questionnaires administered were collected on the spot by the researcher and the research assistants. After completion, the questionnaires were collected immediately and checked for completeness. A total of 400 copies of the questionnaires were distributed and 369 copies of the questionnaires were properly filled and returned, representing a 92.3% return rate. The ethical clearance certificate was issued by Research Ethics Committee of the Faculty of Education at the University of Nigeria Nsukka on the study titled: Menstrual Hygiene Awareness, Beliefs, and Attitudes towards Menstruation among Female Secondary School Students in Rural Communities of Udenu Local Government Area, Enugu State, Nigeria. The approval number for the study is REC/FE/2024/00073.

Data analysis

The information from copies of the questionnaires was coded and analysed using Internal Business Machine Statistical Package for Social Sciences, IBM-SPSS (version 23 statistics for windows). Research questions on Menstrual Hygiene awareness and beliefs towards menstruation were answered using frequencies and percentages. Research questions on attitude towards menstruation were answered using mean and standard deviation. Chi-square statistics and t-test were used to test the null hypotheses. However, p-value of .05 was used to determine statistical significance of the null hypotheses at appropriate degrees of freedom.

Results

Table1: **Socio-demographic factors of Female Secondary School Students in Udenu LGA, Enugu State(n=369)**

Variables	f	%
Class level		
JSS 1-3	149	40.40
SSS1-3	220	59.60

Table 1 showed the socio-demographic factors of Female Secondary School Students in Udenu LGA, Enugu State; that majority of the respondents were in the class level SSS 1-3, 220 (59.6%), while the respondents were in the class level JSS 1-3, 149(40.4%).

Table 2:**Percentage Responses on Menstrual Hygiene Awareness by Female Secondary School Students in Udenu LGA, Enugu State(n=369)**

S/N	Menstrual Hygiene awareness	True f(%)	False f(%)
1.	Menstrual hygiene awareness involves maintaining cleanliness during menstruation.	161(43.6)	208(56.4)
2.	Menstrual hygiene awareness involves frequent replacement of menstrual pad / absorbent.	266(72.1)	103(27.9)
3.	Menstrual hygiene awareness includes getting the menstrual pads/absorbents ready before menstruation	265(71.8)	104(28.2)
4.	Menstrual hygiene awareness involves washing the vulva/vagina properly with clean water only	282(76.4)	87(23.6)
5.	It involves recognizing the role of boys and men in creating menstrual hygiene awareness	156(42.3)	213(57.7)
6.	Menstrual hygiene awareness are creating menstruation-friendly societies	146(39.6)	223(60.4)
7.	Menstrual hygiene awareness highlights the need for better education on menstruation to reduce stigma	257(69.6)	112(30.4)
8.	Menstrual hygiene awareness increase cultural openness surrounding menstruation.	99(26.8)	270(73.2)
9.	Menstrual hygiene awareness reduces spread of communicable diseases	146(39.6)	223(60.4)
	Cluster %	**53.5**	**46.5**

Key: 0–39%=Low level; 40%-69%=Moderate level; 70% and above=High level.

Results in Table 2 show that 53.5% of the respondents had a moderate level of menstrual hygiene awareness. The findings indicate that most female secondary school students in Udenu Local Government Area had a moderate level of menstrual hygiene awareness.

Table 3: **Percentage Responses on Beliefs toward Menstruationby Female Secondary School Students in Udenu LGA, Enugu State (n=369)**

S/N	Belief towards Menstruation	Yes (f%)	No (f%)
1.	Girls cannot participate in sports duringmenstruation	208(56.4)	161(43.6)
2.	Menstruating girls are dirty and impure	194(52.6)	175(47.4)
3.	Secrecy associated with menstruation	211(57..2)	158(42.8)
4	Lack of family support during menstruation	175(47.4)	194(52.6)
5.	Girls should not attend school during menses	231(62.6)	138(37.4)
6	It is a taboo to discuss menstruation openly	252(68.3)	117(31.7)
	Cluster	**57.4**	**42.6**

Key: 0–39%=Low level; 40%-69%=Moderate level; 70% and above=High level.

Results in Table 3 showed some belief and the response of the respondent. Female secondary school students in Udenu LGA, Enugu State had moderate level of negative beliefs toward menstruation (57.4 %). This implies that these Female secondary school students in rural communities of Udenu LGA still hold some cultural beliefs about menstruation.

Table 4: **Responses on Attitude towards Menstruation among Female Secondary School Students in Udenu LGA, Enugu State (n=369)**

S/N	Attitude towards Menstruation	$\bar{X}$	SD
1.	I am afraid of blood and does not like menstrual blood	2.25	.85
2.	I feel uncomfortable talking about my menses	2.41	.74
3.	I feel uncomfortable using menstrual pad or absorbent during menses	3.05	.69
4.	I have fear for using pads or absorbent during menses	3.19	.54
5.	I feel unhappy during menses because of the fever that comes with it	3.05	.75
6.	Adopting menstrual hygiene measures help to keep the body clean during menses	2.03	.74
	Cluster	**2.66**	**.72**

Key: Positive attitude, $\bar{X}$ =≥2.50; Negative attitude, $\bar{X}$ =< 2.50

Results in Table 4 show that overall, female secondary school students in Udenu LGA, Enugu State had positive attitudes ($\bar{X}$ =2.66; SD=.72) toward menstruation.The findings indicate that most female secondary school students in Udenu Local Government Area had a positive attitude toward menstruation.

Table 5:**Summary of Chi-square Analysis on the Menstrual Hygiene Awareness by Female Secondary School Students in Udenu LGA, Enugu State Based on Class Level (n=369)**

		Menstrual Hygiene Awareness					
		True	False				
Class Level	**N**	**O (E)**	**O (E)**	χ^2	**Df**	**p-value**	**Decision**
JSS 1 – 3	149	82(79.9)	67(69.1)	0.222	1	.637	Not reject
SSS 1 – 3	220	116(118.1)	104 (101.9)				

*Significant $P< 0.05$

Table 5showsthat there is no significant difference in themenstrual hygiene awarenessby female secondary school students in Udenu LGA, Enugu State based on class level (χ^2=.222; P-value=.637). Since, the p-value of .637 is greater than .05 level of significance; the null hypothesis was not rejected. This indicates that there is no significant difference in the responses of JSS and SSS students. Therefore, there is no significant difference in the menstrual hygiene awareness by female secondary school students in Udenu LGA, Enugu State based on class level.

Table 6: **Summary of Chi-square Analysis on the Beliefs toward Menstruation by Female Secondary School Students in Udenu LGA, Enugu State Based on Class Level (n=369)**

		Belief toward menstruation					
		Yes	No				
Class Level	**N**	**O (E)**	**O (E)**	χ^2	**Df**	**p-value**	**Decision**
JSS 1 – 3	149	99(85.6)	50(63.4)	9.67	1	0.002	rejected
SSS 1 – 3	220	135 (126.4)	85 (93.6)				

*Significant $P< 0.05$

Table 6 shows that there is significant difference in the beliefs toward menstruation nby female secondary school students in Udenu LGA, Enugu State based on class level (χ^2=9.67; P-value=.002). Since, the p-value of .002 is less than .05 level of significance; the null hypothesis was rejected. This indicates that there is a significant difference in the responses of JSS and SSS students. Therefore, there is significant difference in the belief toward menstruation possessed by female secondary school students in Udenu LGA, Enugu State based on class level.

Table 7 **Summary of Independent Samples t-test on the Attitude towards Menstruation among Female Secondary School Students in Udenu LGA, Enugu State Based Class Level(n=369)**

Variable	N	$\bar{X}$	Std. Deviation	Std. Error Mean	t	df	Upper	Lower	*p*-value
Class Level									
JSS 1 – 3	149	2.80	.89	0.213					
					0.069	367	0.86327	0.80493	0.025
SSS 1 – 3	220	2.82	.99	0.266					

Note: $\bar{X}$ = Mean; SD = standard deviation; std.Em = standard error of mean; df = degree of freedom; Cl = confidence interval
*Significant at p < 0.05

Table 7 shows that there was a significant difference (t=0.069; df =367, *P*=0.025) in the attitude towards menstruation among junior students ($\bar{X}$ =2.80; SD=.89) and senior students ($\bar{X}$ =2.82; SD=.99). The null hypothesis was reject, since the p-value is less than 0.05 level of significance (p= .025< .05). Therefore, there was a significant differencein the attitude towards menstruation between junior students and senior students.

Discussion

The findings in Table 2 revealed that, most female secondary school students in Udenu Local Government Area had a moderate level of menstrual hygiene awareness. This finding was expected not surprising. The moderate level of menstrual hygiene awareness may be because the communities are rural area, access to consistent reproductive health education is limited. Hence, many girls still rely on mothers, peers and traditional sources for information, which may not always be accurate.The finding are consistent with the study by Sidra et al. (2021), who reported that Pakistani, girls feel insecure about communicating about menstruation and perceive it as a feminine issue. The finding agrees with the study of Okafor et al. (2021) who reported moderate awareness among adolescent girls in rural areas of South-East Nigeria. Conversely, the finding disagrees with Kaur et al.(2018) who found low awareness in some rural communities of Northern Nigeria, and with Adeleke& Olowookere (2019) who reported high awareness among urban students in Lagos. The difference may be due to location, with urban areas having better access to media and health facilities compared to rural areas like Udenu. The moderate level of menstrual hygiene awareness, imply that they may still be lacking critical knowledge needed for menstrual hygiene management, which may affect school attendance. Therefore, there is need for sustained menstrual hygiene education in schools in our rural communities. Also, table 5 revealed that there is no significant difference in the menstrual hygiene awareness by female secondary school students in Udenu LGA, Enugu State based on class level. This implies that both junior and senior secondary school students in Udenu LGA, have similar level of awareness regarding menstrual hygiene. The findings suggests that awareness is not necessarily dependent on class level, but rather on exposure to correct information sources.

Table 3 showed that female secondary school students in Udenu LGA, Enugu State had a moderate level of negative belief toward menstruation. This suggests that while some traditional myths and taboos still exit, that formal education and media exposure are gradually changing beliefs.This finding is consistent with Eze and Madu (2020) who reported similar socio-cultural belief among adolescent girls in rural Ebonyi State, Nigeria. Similarly, the study by Murthy, et al., (2022), stated that menstruation is a natural process but it is still a taboo in Indian society as it is considered unclean and dirty.The similarity between the two studies suggests that menstrual stigma remains a widespread social issue across different cultures. Conversely, the finding disagrees with Adeleke& Olowookere (2019), who reported more positive beliefs among urban students in Lagos. The difference may be due to Urban –rural divide in access to information and lower influence of traditional norms in cities.Furthermore, Table 6 showed that there is no significant difference in the belief toward menstruation possessed by female secondary school students in Udenu LGA, Enugu State based on class level. This indicates that students' beliefs about menstruation were similar irrespective of whether they were in junior or senior secondary school. The reason may be that beliefs are shaped more by home environment and community culture than by school grade.

Table 4 showed that, female secondary school students in Udenu LGA of Enugu State had positive attitudes towards menstruation. The positive attitude observed may be due to health talks in schools. This finding agrees with Okafor et al. (2021) who reported positive attitudes towards menstrual hygiene, among school girls in Enugu. It aligns with UNICEF(2022) which noted that when girls are educated, they develop favourable attitudes toward menstrual hygiene regardless of location. However, it disagrees with Kaur et al. (2018), who reported negative attitudes in some rural areas of India due to stigma. The difference may be due to increased intervention programs in Nigeria in recent years. Also, study by Tamphasana, et al. (2020) indicated that the adolescent girls have negative attitude towards menstruation. Although, the present study found an overall positive attitude but the negative response observed in some areas suggested that unfavourable perception toward menstruation still exist among a proportion of the respondents. Finally, table 7hypothesis testing showed that there was a significant difference in the attitude towards menstruation between junior students and senior students. The finding indicates that class level significantly influenced students' attitudes toward menstruation. This minimal difference may reflect the influence of similar socio-cultural in rural communities according to Eze and Madu (2020). The positive attitude implies a good foundation for behavior change, such that interventions will likely be well received. But, attitude alone is not enough if materials and facilities are lacking.

Conclusion

The findings revealed that female secondary school student had moderate level of menstrual hygiene awareness, moderate level of negative beliefs toward menstruation and positive attitude toward menstruation. Also, the result indicated that there was no significant difference in menstrual hygiene awareness based on class level. While there is significant difference in beliefs and attitude toward menstruation based on class level. This implies that knowledge are shaped more by environmental, cultural and social factors than by academic progression. The analysis showed that junior students held more negative beliefs compared to senior students. This implies that beliefs toward menstruation change as students' progress in school. Junior students may still rely on family and cultural sources which tends to be more traditional and restrictive. Therefore,

it can be concluded that while female students in Udenu LGA, have moderate awareness and positive attitudes toward menstruation, cultural beliefs still influence their belief toward menstruation.

Recommendation

Based on the findings of this study, the following recommendations are made:

1. School authorities, in collaboration with the Ministry of Health should integrate appropriate menstrual hygiene education into the school curriculum across all class levels. Since there is no class difference, education should early and increase in depth.

2. Ministry of Health and NGOS should organize regular seminars and health talks on menstrual hygiene, intensified at the junior class level to correct negative beliefs early.

3. Peer-mentoring programs should be established in schools to promote positive beliefs,positive attitude, and support among girls. Since, junior students held more negative beliefs compared to senior students.

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