



Knowledge of Menstrual Hygiene Among Adolescent School Girls in Female boarding Secondary School Maiduguri Metropolitan Council, Borno State, Nigeria

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Abstract

Menstrual hygiene is an important aspect of reproductive health for girls and women. It involves proper management of menstruation through the use of clean materials for absorbing and hygienic disposal of menstrual waste. Lack of knowledge and hygiene practice during menstruation can lead to several health problems and social taboos. One objective was raised, one research question was answered and one hypothesis was tested. The study was based on two theories, the theory of Planned Behaviour and also adapted part of Benjamin Bloom's taxonomy of learning domains. The Planned Behaviour theory is a psychological theory that links beliefs to behaviour to explain and predict behaviours influenced by an individual willingly engaging in activities beneficial to their overall well-being. A survey research design was used for this study. The population for this study comprises all three Female Boarding Secondary School Students for the 2022/2023 academic session in Maiduguri Metropolitan Council Borno State, Nigeria. The population were 4,362 and 354 students were sampled. Self-developed questionnaire named Knowledge of Menstrual Hygiene (KMH) was used. Descriptive statistics of frequency counts and percentage were used to describe the demographic data while one sample t-test was used to test the hypotheses at 0.05 level of significance. The result of the study revealed that students of Female Boarding Secondary School have adequate knowledge of menstrual hygiene in Maiduguri metropolis. This is indicated with a t-value of 32.582 and a p-value of 0.000 obtained at 339, degree of freedom (df) in the table. The following recommendations were made: The concerned authority should enthroned menstrual hygiene as a necessity through periodic orientation among girls in the schools. There is a need for continuous encouragement among the girls by their respective school authorities on effectiveness of menstrual hygiene management in the schools. Menstrual hygiene could be included in the school curriculum to disabuse the negative connotation associated with it by certain cultures. The study could be replicated to include Day Secondary Schools girls and expanded beyond the metropolis.

Keywords: Knowledge, Menstrual Hygiene, Adolescent School Girls, Secondary Schools

Introduction

Menstrual hygiene is a sanitary technique that helps shield women from urinary tract and reproductive illnesses while they are menstruating, adolescent schoolgirls who practice menstrual hygiene store their menstrual blood in clean materials that can be replaced on a regular basis while maintaining the highest standards of safety and cleanliness. Menstrual blood flow with physical activity is a measure of menstrual cycle management. Children's Fund of the United Nations UNICEF (2014). Using clean menstrual hygiene materials to absorb or collect blood, changing these materials in private as needed during the menstrual cycle, washing one's body with soap and clean water, having access to a safe and convenient way to dispose of used materials, and having enough knowledge about the menstrual cycle and how to manage it with dignity, fearlessness, and comfort are all examples of menstrual hygiene. Generally speaking, female students have coping mechanisms for dealing with their periods during adolescence; these differ from nation to nation based on the individual's preferences, resources available, economic standing, cultural beliefs, local customs, and educational attainment. However, the majority of adolescent schoolgirls do not receive enough education about menstrual hygiene because of different cultural and



societal misconceptions around menstruation. Girls in school need to be able to properly regulate their menstrual periods in order to lead healthy, productive, and respectable lives. In order to do this, school-age girls must have access to sufficient WASH facilities, a private area where they may change their personal hygiene products, a location to discard waste, and education about the menstrual cycle and how to handle it hygienically.

Kajang, Gorah, Elizabeth, Haruna, Janda, & Ufwil (2020). Knowledge is the culmination of all of our theories and opinions that have been proven to accurately represent the state of the world as it is, in this sense, knowledge refers to any comprehension that is founded on perceptions, of which the women's menstrual cycle is the actuality in human practice. The primary obstacles to menstrual hygiene are the numerous social, cultural, and religious prohibitions that persist regarding menstruation and menstrual cycles. The majority of girls in elementary school in many parts of the nation are not ready for menstruation, which presents numerous obstacles for them both at home and at school.

A study by (Sanober, 2023) which assessed the knowledge on menstrual hygiene of schoolgirls in rural Gilgit, Pakistan, using a cross-sectional research design to evaluate the study and used questionnaire on consecutive sampling technique on 300 female participants, ages 13 to 22, the study examined the attitudes and practices of schoolgirls in rural Gilgit, Pakistan, regarding mental health. The results were analysed using descriptive statistics, specifically mean and frequency percentage. The findings indicated that over half (>150)50.4% had a negative attitude towards mental health and a low degree of awareness about it. An essential component of women's reproductive health and wellbeing is menstrual hygiene. It covers the customs and resources that women and girls use for their menstrual cycles, such as the hygienic and safe handling of menstrual blood and the associated psychological and physical effects. Ignorance of mental health can result in a number of social and health problems. Research indicates that there are significant regional and community differences in students' awareness and knowledge of menstruation hygiene (Das, Baker, Dutta, Swain, Sahoo & Das, 2015). Knowledge is frequently influenced by social, cultural, and educational variables.

Due to social shame and taboos, girls may not have access to enough knowledge about menstruation in many low-income countries (Sommer.2016). Unhygienic habits during menstruation, such as utilizing dirty materials like rags or leaves, might result from ignorance of mental health (MH) issues (Hennegan. 2020). Health problems, such as infections and diseases of the reproductive tract, may arise from this (Rajan & Kalaivani, 2017). Furthermore, girls' education may suffer if they miss school because of pain or a fear of leaks (Haver *et al.*, 2016).

A study by Kitesa, B. (2016). in India found that high schools in the Jatinangor, India, area had generally good hygienic conditions, which was significantly responsible for the high level of MH knowledge. Descriptive cross-sectional design was used in their study; sample of 238 schoolgirls was selected using cluster random sampling, and the population was drawn from four high schools. According to the knowledge, attitude, and practice of mental health among the participants, the results indicated that 180 respondents represented 75.63%, 186 represented 78.15% of the sample, and 210 88.24%, respectively. These were deemed to be generally positive outcomes. In contrast to the cluster design employed in the stated study, the current investigation will employ a descriptive survey and random sampling. Given the diverse contextual circumstances, the expected results from the aforementioned study will differ greatly. On the surface, it is possible that the Indian environment is better developed in terms of information accessibility about mental health.

Despite efforts to improve MH knowledge, there are still challenges. Some girls may not have access to appropriate materials like sanitary pads or clean water (Hennegan. 2020). Cultural taboos and societal norms can hinder open discussions about menstruation, leading to misinformation and limited awareness (Kaur. 2018). Several countries have recognized the importance of MH education and have implemented policies to address it in schools (UNICEF, 2018). Advocacy groups and organizations like WaterAid and UNICEF work to promote MHM awareness and access to proper facilities among students (WaterAid, n.d.).

Objective of the Study

The objective was to determine the:

1. knowledge of menstrual hygiene among adolescent School girls in female boarding Secondary School Maiduguri Metropolitan Council, Borno State, Nigeria.

Research Question

The study answered the research question:



1. Do adolescent secondary school girls have sufficient knowledge of menstrual hygiene among female boarding Schools in Maiduguri Metropolitan Council, Borno State, Nigeria?

Hypothesis

The following hypothesis were tested:

H₀₁: There is no significant difference in the knowledge of menstrual hygiene among female boarding Secondary School Students in Maiduguri Metropolitan Council of Borno State, Nigeria.

Methodology

A survey design was used for this study. According to Njodi and Bwala (2010), the survey method is used to gather information at a certain time to characterize the present state of affairs or provide standards against which the current state of affairs can be measured. According to Creswell (2012), a survey design is one in which the primary goal is to reach a sample at a certain point in time rather than making inferences or more general causal assertions. Since the goal of this study is to determine the knowledge, attitudes, and practices of menstruation hygiene among female secondary school boarders in Borno State, Nigeria's Maiduguri Metropolitan Council, the survey design is appropriate.

Population for this study comprises of four thousand three hundred and sixty-two (4362) students, who attended all three (3) Boarding State Government secondary schools for females in the Maiduguri Metropolitan Council of Borno State, Nigeria, made up the study's population. (Ministry of Education, Borno State, 2023). Three hundred and fifty-four (354) students make up the sample size for this study, which Krejcie and Morgan deem suitable.

To select the sample for this study, in each of the three schools, stratified random sampling procedure with proportionate technique was used, Etikan, I. (2016). The population in each school was stratified into SS1,2 and 3. Since the population of the students in the three schools was 4362, which 354 students selected as sample for the study, based on Krejcie and Morgan tables.

The simple random sampling was carried out using fish bowl technique, Kerlinger, F. N. (1986). To carry out the fish bowl procedure, a container was used in each class. Three hundred and fifty-four pieces of paper were cut. The paper was squeezed and kept in a container. The respondents were instructed to pick one piece of paper at a time. If the paper picked had yes inscription on it, the respondent was assigned a code for identification and was instructed to return the paper into the container. The same procedure was carried out on in each class the paper was squeezed and kept in a container. Similar procedure described above, was followed to select the sample from the remaining three schools.

The instrument for this study was a self-developed questionnaire titled Knowledge of Menstrual Hygiene (KMH) and structured cluster interview. This comprised of two main sections derived from the main variables. The questionnaire will be divided in to two sections: A and B. Section "A" required information on demographic characteristics of the respondents. Section "B" obtained information on knowledge of menstrual hygiene. The questionnaire adopted the four-point type of Likert scale mode of knowledge of action format: Strongly Agree (SA)=4 points, Agree (A)=3points, Disagree(D)=2 points, Strongly Disagree (SD)=1 point.

The instrument was validated by the researcher's supervisors and experts in the department of Physical and Health Education University of Maiduguri for face and content validity. After which the final corrections were made for administration. The instrument was further pilot tested in Federal Government College Maiduguri. A split-half method was used to test the reliability of the instrument; the results showed a reliability index of 0.87. Which means the instrument is reliable and can be used for the study.

To collect data, an introductory letter was obtained from the Head, Department of Physical and Health Education, University of Maiduguri to the Borno State Ministry of Education for permission to carry out the research. The researcher employed the services of three (3) research assistants who help with the administration of the questionnaire in the three schools, some of the questionnaires were retrieved at the spot while some on the next day. That is because the students were writing their second term examinations.

Descriptive statistics of frequency counts and percentage was used to describe the demographic characteristics of the respondents based on the gender, age and schools, formulated towards the assessment of the knowledge, attitude and practice of menstrual hygiene, while one sample t-test was used to test the hypotheses at



0.05 level of significance. Data collected were analysed with the Statistical Package for the Social Sciences (SPSS), IBM version 26.

Data analysis and results

Table 1: Demographic characteristics of the respondents

Variables	Variable options	Frequency	Percent
Name of school	GGSS	128	37.6
	YGGSS	14	4.1
	GGC	198	58.2
	Total	340	100.0
Class	SSS I	123	36.2
	SSS II	119	35.0
	SSS III	98	28.8
	Total	340	100.0
Age	13-14years	27	7.9
	15-16years	130	38.2
	17-18years	158	46.5
	Above 18years	25	7.4
	Total	340	100.0

Source: Field survey, 2024

The distributions in Table1 revealed that most (58.2%) of the female students were in Government Girls College (GGC) while 37.6% were in Government Girls Secondary School (GGSS) within the metropolis. Only 4.1% of the female students were in Yerwa Government Girls Secondary School (YGGSS) within the metropolis. In terms of year of study, the distribution was relatively well spread as 36.2% of the female students were in their first year of study (SSS I) while 35.0% were in their second year (SSS II) and 28.8% were in their final years (SSS III). For their age ranges 7.9% were between the age range of 13 and 14years and 38.2% were within the 15 and 15years age bracket. Those who were between 17 and 18years age range were 46.5% of the total number of respondents involved in the study. Only 7.4% of the respondents were above 18years. This classification shows that most of the respondents were in their adolescent age where menstrual hygiene could be problematic among female students.

Research Question: Do adolescent secondary school girls have sufficient knowledge of menstrual hygiene among female boarding Schools in Maiduguri Metropolitan Council, Borno State, Nigeria?

Table 2: Opinions of the knowledge female students on menstrual hygiene.

Sn	Knowledge menstrual hygiene	SA	A	D	SD	Mean	Std. Dev.
1	I understand what menstruation is and why it occurs.	253(74.4)	79(23.2)	6(1.8)	2(0.6)	3.71	0.525
2	I know how often my menstrual cycle will occur.	155(45.6)	155(45.6)	23(6.8)	7(2.1)	3.35	0.698



3	I am aware of the various menstrual hygiene products available to manage monthly periods.	156(45.9)	125(36.8)	54(15.9)	5(1.5)	3.27	0.778
4	I know how to safely change and dispose of used menstrual hygiene materials.	180(52.9)	88(25.9)	62(18.2)	10(2.9)	3.29	0.865
5	I understand the importance of bathing and cleaning during menstruation.	224(65.9)	88(25.9)	11(3.2)	17(5.0)	3.53	0.785
Aggregate mean						3.43	0.526

(Benchmark = 2.50)

The expressed opinions of the female students in Table 2 revealed that they could be said to have adequate knowledge of menstruation and its' related management hygiene. In the table, 74.4% of the female students along with 23.2% strongly agreed and agreed respectively that they understood what menstruation is and why it occurs. The mean score was 3.71 with a standard deviation of 0.525 which showed that most respondents had this knowledge about menstruation. Only 1.8% and 0.6% of the respondents disagreed and strongly disagreed with the understanding of what menstruation is and why it occurs. In like manner, 45.6% each of the respondents strongly agreed and agreed that they knew how often their menstrual cycle will occur. But 6.8% and 2.1% of the female student disagreed and strongly disagreed with such knowledge. The mean score for the suggestion was 3.35 with a standard deviation of 0.698. The respondents were of the view that they were aware of the various menstrual hygiene products available for the management of monthly menstruation. This is indicated by 45.9% and 36.8% of the respondents who strongly agreed and agreed respectively with the suggestion. The mean score was 3.27 with a standard deviation of 0.778. Only 15.9% and 1.5% of the female students disagreed and strongly disagreed with such awareness for menstrual management.

In buttressing the adequacy of menstrual hygiene management, 52.9% and 25.9% of the respondents strongly agreed and agreed respectively that they knew how to safely change and dispose of used menstrual hygiene materials. Though 18.2% and 2.9% of the respondents disagreed and strongly disagreed with such knowledge but the mean score of 3.29 for the expressed opinion was higher than the benchmark (2.50) which was a clear indication that most respondents had the knowledge of managing such menstrual hygiene materials. The respondents were aware of the associated personal hygiene as indicated by 65.9% and 25.9% who strongly agreed and agreed respectively with the suggestion that they understood the importance of bathing and cleaning during menstruation. Only 3.2% and 5.0% of the respondents disagreed and strongly disagreed with knowledge of importance of bathing and cleaning during menstruation. With an aggregate mean of 3.43 and a standard deviation of 0.526, it could be concluded that the respondents have adequate knowledge of menstruation and its' related management hygiene among the selected Senior Boarding Secondary Schools within the metropolis.

Table 3: One sample t-test on knowledge of menstrual hygiene among Female Boarding School Students in Maiduguri Metropolis

Variables	N	Mean	Std. Dev.	Std. Error	t-value	Df	p-value
Knowledge	340	3.43	0.526	0.029	32.582	339	0.000
Test mean	340	2.50	0.000	0.000			

(Critical value of $t=1.96$, $P < 0.05$, H_0 rejected)

The mean score on table 3 shows the respondents on knowledge of menstrual hygiene management is significantly higher than the test mean score of 2.50. This means that the respondents' knowledge of menstrual hygiene was statistically significant. This is indications with a t-value of 32.582 and a p-value of 0.000 obtained at 339, degree of freedom (df) in the table. These observations provided sufficient evidence to reject the null hypothesis. The null hypothesis that, knowledge of menstrual hygiene among female Boarding School Students in Maiduguri Metropolitan Council of Borno State, Nigeria is not significant is therefore rejected. Result of the showed that the female students involved in the study have adequate and significant knowledge of menstrual hygiene management.



Discussion

The study assessed knowledge of menstrual hygiene among female Boarding Secondary School students in Maiduguri metropolis, a number of findings have been revealed. This study revealed that the female students from the selected Boarding Secondary Schools have adequate knowledge of menstruation and its' related management hygiene. It was found that they understood what menstruation is and why it occurs. It was found that the female students knew how often their menstrual cycle will occur and were aware of the various menstrual hygiene products available for the management of monthly menstruation. It was found that the female students were aware of how to safely change and disposes menstrual hygiene materials and understood the importance of bathing and cleaning during menstruation. In the test of extent of agreement of the expressed opinion, it was found to be significant. Which implied that the first hypothesis that their knowledge of menstrual hygiene was not significant was therefore rejected. The finding here is in line with Kajang, Gorah, Elizabeth, Haruna, Janda & Ufwil, (2020) who reported that knowledge is the sum of our conceptions and views which have been established and tested as correct reflection as far as they are of objective reality. The finding of this study supported the finding of Funmito, Omolola and Fehintola (2017) who conducted an assessment on knowledge about menstruation and menstrual hygiene among secondary high school girls in Ogbomoso, Oyo state, Nigeria and reported that majority (96.4%) of the adolescents have heard about menstruation before menarche while 55.9% had good knowledge of menstruation and menstrual hygiene.

The study revealed that the female students have adequate and positive attitude towards menstrual hygiene management. It was found that that they were of the view that managing menstrual periods hygienically is important for health and wellbeing and were comfortable in discussing menstruation with their peers as well as with their teachers. The study revealed that the female students were of the view that menstrual hygiene should be prioritized at school like other health issues in the school and were not ashamed about having menstrual periods. It was found that the female students were confident of handling menstrual periods at school. In the test of significance of the expressed opinion, the expressed attitude was found to be adequately positive and significant towards menstrual hygiene by the selected female students involved in the study. The finding of this study contradicted the findings of Chipfuwa. (2019) who reported from a study in Zimbabwe, that adolescent girls had negative attitudes towards menstruation due to the lack of adequate facilities and resources for menstrual hygiene in schools.

This study found the practices of menstrual hygiene by the female students to be significant and adequate. The finding revealed that the respondents used commercial sanitary pads, tampons, or menstrual cups for the management of menstrual hygiene and changed absorbent products at least 2-3 times daily in the management of the menstrual hygiene. The study revealed that they properly disposed used absorbents in designated bins and bathe daily using soap and water. It was revealed that they usually wear clean underwear each day for effective practices of menstrual hygiene. The observed findings revealed that the female students adequately practiced effective menstrual hygiene in the selected Boarding Secondary Schools within the metropolis. The finding of this study is consistent with Susana, (2018) who reported that need for female adolescent students to have a greater awareness of good menstrual hygiene practices. The finding of this study contradicted the report of George, Ehiri, Otieno & Ezeanolue, (2015) who found from a study in Uganda, that adolescent girls had poor menstrual hygiene practices due to lack of resources such as clean water and sanitary pads. The finding here support findings from a previous study by Oche *et al.*, (2017) who reported that personal hygiene practices during menstruation include regular changing of sanitary products (every 4-6 hours), washing hands before and after handling menstrual materials, and maintaining genital hygiene.

Conclusion

From the assessment of knowledge, attitude and practices of menstrual hygiene among female Boarding Secondary School students in Maiduguri Metropolis carried out in this study, the researcher wishes to conclude with the followings.

Female Boarding Secondary School students have adequate knowledge of menstrual hygiene in Maiduguri metropolis.

The attitude of Female Boarding Secondary School students towards menstrual hygiene management is positive and significant.

Female Boarding Secondary School students adequately practiced effective menstrual hygiene in the metropolis.



Recommendations

Based on the findings from the analyzed data, the researcher would want to recommend as follows:

1. The concerned authority should enthrone menstrual hygiene as a necessity through periodic orientation among girls in the schools.
2. There is a need for continuous encouragement among the girls by their respective school authorities on effectiveness of menstrual hygiene management in the schools.
3. Menstrual hygiene could be included in the school curriculum to disabuse the negative connotation associated with it by certain cultures.

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