



**ASSESSMENT OF GOOD MENSTRUAL HYGIENE AMONG ADOLESCENT GIRLS IN
SELECTED SECONDARY SCHOOLS IN JOS, PLATEAU STATE, NIGERIA.**

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ABSTRACT

Background: Menstruation, though a natural process is linked with several misconceptions and practices which sometimes results in adverse health effects due to lack of adequate information on menstrual hygiene.

Aim: The study focused on assessment of good menstrual hygiene practices among adolescent girls in selected secondary schools in Jos North Local Government Area, Plateau State.

Method: A cross-sectional study design was adopted with a convenience sampling technique and 163 adolescent girls from three secondary schools were selected for the study. A validated ($r=0.8$) structured questionnaire was used for data collection.

Results: The findings indicates that, all the respondents have experienced menstruation with majority (43.18%) observing good menstrual hygiene while (30.6%) did not have the idea of good menstrual hygiene. Some identified ways of managing menstrual periods were: use of good absorbent materials (34.6%), cleaning with absorbent materials after use (13.3%). The study reported a significant association between good menstrual hygiene and the adolescents' general health and well-being ($P = 3.84$) ($P > 0.05$).

Conclusion: Majority of the adolescent girls in the study area observed good menstrual hygiene with

the use of absorbent materials though some of them did not have adequate information on good menstrual hygiene. A significant relationship exists between good menstrual hygiene and adolescent's health and well-being. An enlightenment campaign is needed to strengthen adolescents' information on good menstrual hygiene.

Key words: Adolescents, Assessment, Girls, Menstrual hygiene.

Introduction

Adolescence is a special period which signifies the transition from girlhood to womanhood, and this period of attaining reproductive maturity (between the ages of 10-19 years) is marked by a number of physiological, behavioral and psychological changes, with the onset of menstruation, as the most notable; during this period, girls should be educated about the significance of menstruation, development of secondary sexual characteristics, use of sanitary menstrual absorbent and its proper disposal (Adhikari et al., 2007). Menstruation is a cycle that consists of series of changes taking place concurrently in the ovaries and the uterine walls stimulated by changes in the blood concentration of hormones - these hormones are regulated by negative feedback mechanism; with changes evident in menstruation (menses) which is a flow of blood and other materials (such as debris and mucus) from the uterus through the vagina to the exterior (Adhikari et al., 2007). During menstruation, some of these girls are isolated and restrictions from daily activities is being imposed on them within the family, thus reinforcing a negative attitude towards this phenomenon, which may lead to low self-esteem, and withdrawal (Adinma & Adinma, 2008). Good hygienic practices during menstruation can be described as the use of sanitary pads (rather than cloth pad), and adequate washing of the genital area with warm water are essential during menstruation; hence, women and girls of the reproductive age need access to clean and soft, absorbent sanitary pads as this product tends to protect their health (Adinma & Adinma, 2008). Although menstruation is a natural process, it is linked with several misconceptions and practices, viewing it as a moral and spiritual uncleanliness, sign of disease or a curse for evil, and several others which vary with the local socio-cultural and economic context (Aniebue et al., 2009). Approximately every year, 10 % of women worldwide are exposed to genital infections including urinary tract infections and bacterial vaginitis, with 75 % of them having a history of a genital infection, as a result of poor menstrual hygiene (Arumugam et al., 2014). Hygiene related practices of women and adolescents during menstruation are of considerable importance with good

menstrual hygiene materials such as disposable pads, cups and tampons to curb the menstrual flow as it has a health impact in terms of increased vulnerability to reproductive tract infections (RTI), and the interplay of socio-economic station, menstrual hygiene practices and RTI are noticeable within the confines of these practices (Bulto, 2021). Menstrual health hygiene according to UNICEF “encompasses both menstrual management and the broader systemic factors that links menstruation with health, gender equality, education, empowerment and rights” (Hennegan et al., 2017). These factors are linked to “access to menstrual education, access to health services, hand washing facilities and period products, social norms surrounding periods, access to safe and hygienic disposal and also period advocacy and policy”. Menstruation is a biological process while menstrual health and hygiene are social, political and economic factors that allow them to safely manage this biological process so that it will have a little impact on their life as possible (Afiaz & Biswas, 2021). Good menstrual health and hygiene practices can prevent infections, reduce odors and help the girls to stay comfortable; hence, knowledge, information, materials and facilities needed to manage menstruation effectively is of high priority to the adolescents (Bulto, 2021). Inadequate water sanitation and hygiene (WASH) facilities in public places such as schools and hostels can pose a major challenge to secondary school students regarding the safe disposal of the used menstrual materials and the ability to wash their hands (UNICEF, 2017). School adolescent girls should have adequate and appropriate information about menstruation, planning for the menstrual cycle, use and disposal of sanitary materials and maintenance of personal hygiene while health care providers or teachers should engage in activities to promote menstrual hygiene; such as organizing monthly meeting on a fixed day for adolescent girls, conducting home visits for girls who do not regularly attend monthly meetings and other village health and sanitation committee meetings to discuss menstrual hygiene issues with them (Mirembe, 2019). Adolescent girls constitute a vulnerable population not only with respect to their social status, but also in relation to their health; therefore, there is a need for good hygienic practices, such as use of sanitary pads and adequate washing of the genital area during menstruation to reduce the incidence of urinary and reproduction tract infections. It is against this backdrop, that this study looked at assessment of the level of good menstrual hygiene among adolescent girls in selected secondary schools in Jos, Plateau State.

Purpose of the Study

The purpose of this study is to assess the level of good menstrual hygiene among adolescent girls in selected secondary school in Jos, Plateau State.

Specific Objectives of the study

The study aimed at achieving the following:

1. To assess the existing knowledge of good menstrual hygiene among the adolescent girls,
2. To determine the practice of good menstrual hygiene among the adolescent girls

Study Hypothesis

Null Hypothesis: There is no significant association between knowledge and practice of good menstrual hygiene among the adolescents.

Alternate Hypothesis: There is a significant association between knowledge and practice of good menstrual hygiene among the adolescents.

Materials and Methods

Design

The research design used in this study is descriptive cross-sectional survey design. This design was chosen to determine the level of menstrual hygiene practice among adolescent girls in selected secondary schools in Jos, Plateau State, Nigeria.

Study Setting

The study was carried out in Universal Basic Education Rusau Village, Jos North Local Government Area and Baptist High School, opposite Naraguta Hostel, University of Jos.

Jos is known for her cultural diversity with map coordinates of 9 56'N, 8 53'E. It is located in the middle belt of Nigeria. Jos North Local Government Area has a population of 900,000.¹⁰

Study Population

Statistics from school records, showed the total number of adolescent girls attending Universal Basic Education Rusau Village as 71, while those in Baptist Science School - Opposite Naraguta Hostel, University of Jos were 92 making a total of 163; out of which 150 had attained menarche.

Inclusion and Exclusion Criteria

The criteria for inclusion of study participants were:

- Those who are within the ages of 10 - 21 years
- Only female students from the study settings who had attained the age of menarche.

The criteria for exclusion of study participants were:

- Students of other secondary schools
- Students above 21years; and
- Those who had not attained menarche.

Sample and Sampling Technique

The sample size was determined through the use of formula for estimation and sample size determination for finite population as updated (Ellen, 2020)

$$n = \frac{N}{1 + N(e)^2}$$

Where

N = sample size

N = the target population/population size (230)

e = margin of error (5%)

$$n = \frac{230}{1 + 230(0.05)^2}$$

$$n = \frac{230}{1 + 230(0.0025)}$$

$$n = \frac{230}{1 + 0.5375}$$

$$n = \frac{230}{1.5375}$$

$$n = 150$$

Therefore by this calculation, the sample size required for this study was approximated to 150.

Instrument

The instrument for data collection was a modified structured questionnaire with close ended questions consisting of four (4) sections: Socio-Demographic variables, knowledge about good menstrual hygiene, level of practice of good menstrual hygiene and factors affecting good practice of menstrual hygiene.

Validity of Research Instrument

The instrument was subjected to face and content validity by the use of relevant literature and congruence of the instrument with research objectives. It was also reviewed by research experts in the field of adolescents' reproductive health. The items were matched with predetermined **objectives**.

Reliability of Research Instrument

A pilot study was conducted in Mafeng Comprehensive High School located at Etubaba in Jos North Local Government with a population of forty (40) students with the results of Cronbachs Alpha reliability score of 0.8

Data Collection Method

A total of 150 adolescent girls at the age of 10 to 21 years were found eligible for the study in the two selected government schools in Jos North Local Government Area, Plateau State. Data were collected through face to face administration of the copies of the structured questionnaires from respondents in the school. Respondents were briefed on how to answer the questions, where assistance was required in completing the questions, it was accordingly provided by the researchers.

Data Analysis

Data obtained from the study were analyzed by the use of descriptive statistics and presented in Tables consisting of measured variables, frequencies and percentages. The hypothesis was tested by the use of inferential statistics using Chi-squared Test.

Ethical Consideration

Ethical clearance and permission was secured from the selected schools via official letters to the institution. Managers of the schools were briefed on the relevance and objectives of the study. The purpose of the study was also explained to the students and written informed consent were obtained from the participants. Confidentiality and anonymity was maintained by the use of pseudonyms. Participation was voluntary and students were informed of the right to withdraw from the study at any time if they so wish without any repercussion.

Results

Table 1: Socio-demographic characteristics

Age in years		Frequency	Percentage
Age in years	10-12	52	35
	13-15	68	45
	16-18	30	20
	19 - 21	0	0
	Total	150	100.0
Ethnicity	Hausa	74	49.3
	Yoruba	39	26
	Igbo	24	16
	Igala	13	8.7
	Others	0	0
	Total	150	100.0

Religion	Christianity	67	44.7
	Islam	83	55.3
	Total	150	100.0
Marital status	Single	150	100.0
	Married	0	0
		16	10.6
Class in School	JSS 1	28	18.6
	JSS 2	21	14.0
	JSS 3		
		27	18.0
	SSS 1	29	19.3
	SSS 2	29	19.3
	SSS 3	150	100.0
	Total		

Table 1 above shows the socio-demographic information of respondents. The age of respondents ranges from 10-21 years. Those within 10-12 years had a frequency of 52 (35%), 13-15 years had the highest frequency of 68 (45%) and then 16-18 years was 30 (20%). The ethnic distribution of respondents is among Hausa, Yoruba, Igbo, Igala and others respectively. 74(49.3%) respondents were Hausa, 39 (26%) were Yoruba, 24 (16%) were Igbo, 13 (8.6%) were Igala while there was none from other ethnicity.

Table 2: Level of knowledge of practice of good menstrual hygiene among the students

S/N	Practice	5	4	3	2	1	Total
		Very Frequently	Frequently	Occasionally	Rarely	Never	
1	How often do you use absorbent materials to absorb discharges during menstruation	52	74	12	3	9	150
		34.6%	49.3%	8%	2%	6%	100%
2	How often do you clean the absorbent material after use?	20	44	5	31	50	150
		13.3%	29.3%	3.33	20.6%	33.33%	100%
3	How often do you dispose the absorbent material after use?	93	37	6	4	10	150
		62%	24.6%	4	2.6	6.6%	100%
4	How often do you change the absorbent material within a day?	98	39	1	11	1	150
		65.3%	26%	0.6%	7.3%	0.6%	100%
5	How often do you clean your genitalia during menstruation?	80	52	8	9	1	150
		53.3%	34.6%	5.3%	6	0.6%	100%
6	How often do you clean your hands after changing or removing the absorbent material?	104	36	6	2	2	150
		69.3%	24%	4%	1.3%	1.3%	100%

Table 2 above depicts the level of practice of menstrual hygiene from the 150 respondents. It shows the various degrees practiced with respect to the knowledge-related questions previously asked.

Table 3: Materials Used in Absorbing Menstrual Discharges

Variables	Frequency	Percentage
Sanitary pad	45	30
Napkin	83	55.3
Tissue Paper	20	13.3
Cloth	2	1.3
Total	150	100.0

Table 3 above shows that 45(30%) respondents use Sanitary pad as absorbent materials in absorbing discharges during menstruation, 83 (55.3%) use napkin, 20 (13.3%) use tissue paper and 2 (1.3%) use cloth.

Table 4: Cleaning of absorbent materials

Variables	Frequency	Percentage
Soap and water	104	69.3
Water	35	23.3
Others	11	7.3
Total	150	100.0

Table 4 above depicts that 104 (69.3%) respondents clean absorbent materials using soap and water, 35 (23.3%) respondents use water only and 11 (7.3%) use other methods of cleaning, not specified.

Table 5: Drying of the absorbent materials

Variables	Frequency	Percentage
Privately inside the house	132	88.0
Under the sun	18	12.0
Total	120	100.0

Table 5 above shows that out of the 150 respondents, 132 (88.0%) dry absorbent materials privately inside the house and 18 (12.0) dry under the sun.

Table 6: Disposal of the absorbent materials

Variables	Frequency	Percentage
Burn it	18	12.0
Dispose in toilet	40	26.6
Dispose in dustbin	92	61.3
Total	150	100.0

Table 6 above shows that 18 (12.0%) respondents burn absorbent materials as a means of disposal, 40 (26.6%) dispose it in toilet and the rest 92(61.3%) dispose it in dustbin.

Table 7: Time duration of the change of absorbent materials

Variables	Frequency	Percentage
Once	54	36
Twice	47	31.3
Three times	27	18
Four times and more	22	14.6
Total	150	100.0

Table 7 shows that out of the 150 respondents, 54(36%) change absorbent material once in a day, 47 (31.3%) change twice, 27(18%) change three times and 22(14.6%) change four times or more.

Table 8: Methods used for cleaning the Genitalia

Variables	Frequency	Percentage
Water	72	48
Cloth material	51	34
Tissue paper	27	18
Others	0	0
Total	150	100.0

Table 8 above shows that 72(48%) respondents use water for cleaning the genitalia, 51 (34%) use cloth

material, 27(18%) use tissue paper and 0(0%) use other method, not specified.

Table 9: Methods Used in Cleaning Hands after Removing or Changing Absorbent Material

	Variables	Frequency	Percentage
Valid	Use of tissue paper	34	22.6
	Use of cloth	1	.8
	Use of water	11	7.33
	Use of soap and water	104	69.3
	Total	150	100.0

Table 9 above shows that 34(22.6%) use tissue paper as a method for hands cleaning, another 1 (0.8%) use cloth, 11 (7.33%) use water, then 104 (69.3%) use soap and water.

Table 10 Association between Knowledge and practice of good menstrual hygiene

Knowledge about the practice of good menstrual hygiene	Yes	NO	Total
Good	92	58	150
Poor	48	102	150
Total	140	160	300

Expected frequency = row total x column total

A	B
70	30
C	D
70	30

Grand total

$$A = \frac{150 \times 140}{300} = 70$$

$$B = \frac{150 \times 160}{300} = 80$$

$$C = \frac{150 \times 140}{300} = 70$$

$$D = \frac{150 \times 160}{300} = 80$$

S/N	\emptyset	$\emptyset - E$	$(\emptyset - E)^2$	$(\emptyset - E)^2$
1	92	92 - 70	22	484
2	58	58 - 30	28	784
3	48	- 70	-27	729
4	102	102 - 30	72	5184
P = 3.84 (P > 0.05)				84.7

$$P = 3.84$$

$$DF = (C - 1) \times (V - 1)$$

$$= (Z - 1) \times (Z-1)$$

According to the calculated hypothesis with degree of freedom of 1, and significant value of 0.05 of the P-value, the Chi-value of 84.7 is greater than P-Value of 3.84, therefore the null hypothesis which states that there is no significant association between the knowledge of good menstrual hygiene and its

practice among adolescents is therefore rejected; hence, there is a significant association between the knowledge and practice of good menstrual hygiene.

Discussion

This study examines the practice of good menstrual hygiene among adolescent girls in selected secondary schools in Jos North Local Government Area of Plateau State. The study presented in the results focuses on the knowledge and practice of good menstrual hygiene among adolescents. The findings are based on a survey of 150 respondents and cover various aspects such as socio-demographic characteristics, level of knowledge and practice of menstrual hygiene, materials used for absorbing menstrual discharges, cleaning and disposal of absorbent materials, and the association between knowledge and practice of good menstrual hygiene.

The study found that the age of the respondents ranged from 10 to 21 years, with the highest frequency of respondents falling within the 13-15 years age group. This might be because the study is an institutionalized study and secondary school students were the respondents. The ethnic distribution of respondents included Hausa, Yoruba, Igbo, Igala, and others. The majority of the respondents were of the Christian faith, and most were single. The respondents were also distributed across different classes in school. This findings might be due to the geographical location and settings of the study. The findings revealed varying degrees of practice in different aspects of menstrual hygiene, such as the use of absorbent materials, cleaning and disposal of the materials, duration of changing absorbent materials, methods used for cleaning the genitalia and hands, and the source of obtaining absorbent materials.

Among the findings of this study; the majority of respondents used napkins as absorbent materials, followed by sanitary pads, tissue paper, and cloth. 36% among the participants use absorbent materials on a daily basis to tackle the practice of good menstrual hygiene. This partially corroborates UNICEF's recommendations on menstrual hygiene management in the curricular of primary schools in the Asian and African region (UNICEF, 2017). There is a little menstrual hygiene education from home may lead to the development of many misconceptions and poor practices regarding menstrual hygiene (Sharma et al., 2020).

The results of this study however, indicated that the participants had on average level of knowledge as most respondents cleaned absorbent materials using soap and water, and they predominantly dried the

materials privately inside the house. Only 34.6% frequently use absorbent materials, In terms of disposal, the majority disposed of the materials in the dustbin. 62% dispose absorbent material frequently after use, where only little above 3/5th of the respondents (65.3%) frequently changed the absorbent material within a day, those that cleaned their genitalia (53.3%) and only 69.3% wash their hands after changing or removing the absorbent material. This findings is contradicted by other studies carried out in Indonesia with 66.6%, Nepal with 87.7%, and Afghanistan with 53.3% where participants had good level of knowledge regarding menstrual hygiene (Andani, 2020; Bhusal, 2020; Neyazi et al., 2021). This inconsistency could be due to the absence of proper sexual and reproductive health education at the school level and the majority of the mothers being culturally sensitive by given little of no adequate information about menstruation. This was a hurdle in providing correct knowledge to young girls (Mathiyalagen et al., 2017). However, it varies largely with the work on menstrual hygiene practices in the context of schooling that out of total of 650 respondents, only 31% respondents were reusing sanitary pads during mensuration (Sangeetha et al., 2016). The students in this study needs to be enlightened on the health benefits of the use of sanitary pad to have been the best absorbent (Adika et al., 2011).

The study conducted a statistical analysis to determine the association between knowledge and practice of good menstrual hygiene. The chi-square test revealed a significant association between the knowledge and practice of good menstrual hygiene among adolescents. The null hypothesis, which stated that there is no significant association between knowledge and practice, was rejected based on the calculated chi-square value. This can be buttressed by the investigation on knowledge towards menstruation having significant association with menstrual hygienic practices of girls (Upashe et al., 2015). Furthermore, there is confirmation that girls with poor knowledge about menstrual flow were more likely to practice their menstrual hygiene incorrectly due to the effects of cultural beliefs and social taboo regarding menstrual and its hygienic practices attributed by the community where they live (Amoo et al., 2018; Chothe et al., 2014).

Similarly, the odds of poor menstrual hygiene practice among adolescent school girls with age more than 15years could possibly be explained by the fact that girls with older age can have a better

opportunity to share more information, gain adequate knowledge regarding menstrual hygiene, and prepare themselves to demonstrate safe hygienic practice during their menstruation period as compared to girls with lower ages (Sommer & Sahin, 2013).

Study Limitations

This study was conducted in one local government area of the state.

Conclusion

Based on the findings, the students had a fair knowledge and marginally practice good menstrual hygiene there is a significant association between the knowledge of menstrual hygiene and its practice among the students, and also between the practice of good menstrual hygiene and students' general health and well-being. The findings highlight the need for targeted interventions to improve menstrual hygiene practices among this demographic group.

Recommendations.

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

1. Good menstrual hygiene education should be given more concern among adolescent girls by the health sector.
2. Students should be educated on the use of sanitary pad instead of napkin, and tissue paper because of the health implications.
3. Non-governmental organization should also be involved in provision of sanitary pads for secondary schools girls.
4. Teachers and Parents should be health educated and encouraged to pass on good menstrual hygiene knowledge to their students and wards. They should guide the adolescent through her monthly period in enforcing good hygiene practices.
5. The Government through the ministry of health, ministry of education and other relevant ministerial departments and agencies (MDAs) should continue raising the campaign and awareness on various platforms to sensitize the populace, and also consider making absorbent materials available at an affordable/subsidized cost, especially for the needy.

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Conflict of Interest

There is no conflict of interest to declare in the conduct of this study.

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