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Menstrual Hygiene Management Practices and Associated Factors Among Female Adolescents in Amai Secondary School, Delta State, Nigeria

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ABSTRACT

Background: Menstrual hygiene is essential for adolescent girls' health, wellbeing, and involvement in school. Sociodemographic factors, such as age, class, and parental occupation, may influence hygiene practices. This study assessed menstrual hygiene practices and the influence of sociodemographic variables on menstrual hygiene practices among female adolescents.

Methods: A school- based cross-sectional study involved 380 girls aged 10-19 years, selected through simple random sampling. Data on sociodemographic characteristics were collected alongside hygiene practices; handwashing, genital cleansing, absorbent use and disposal, bathing, and changing sanitary materials. Descriptive statistics summarized participant's sociodemographic, menstrual hygiene practices, and logistic regression evaluated predictors of good menstrual hygiene.

Results: The mean age was 14.7 ± 2.5 years**,** with nearly equal proportions aged 10-14 (46.1%) and 15-19 (53.9%). JSS3 students had the highest percentage (22.9%) and JSS1 the lowest (9.7%). Most parents of the respondents were farmers (53.4%) or business owners (31.8%). Sanitary pads were the most common absorbent (32.6%), though some used cotton (19.5%) or foolscap sheets (6.8%). Frequent bathing, genital cleansing, and pad changing were reported by the majority, and 65% practiced good menstrual hygiene. Age, class, and parental occupation were not found to influence good hygiene practices.

Conclusion: Despite generally good hygiene practices, gaps in product access and school facilities remain. Interventions providing education, affordable products, and supportive environments are recommended.

Key Words: Menstrual Hygiene Management, Adolescents, Sanitary Practices, Sociodemographic Factors, Nigeria

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INTRODUCTION

According to the World Health Organization, adolescence is a period of transition between the ages of 10 and 19 that is characterized by puberty, sexual maturity, and menarche which is a significant milestone that calls for proper care[1-3]. The uterine lining sheds during the normal monthly process of menstruation, which emphasizes the significance of maintaining proper menstrual hygiene. Clean absorbent materials, soap and water cleansing, appropriate disposal, and seclusion are all part of this[4,5].

The type of absorbent materials used, how often they are changed, and personal hygiene routines during menstruation are standard ways to evaluate teenage menstrual hygiene practices. The most often used absorbents, according to studies conducted in Ghana, Nigeria, and other places, are disposable sanitary pads, while reports also include handmade substitutes, sponges, toilet paper, and reusable cloths. While most people bathe during their periods, there are differences in genital hygiene practices, from using water alone to using soap or antiseptics[6-8].

Handwashing before and after changing pads is not always followed, and whereas some girls change their absorbents several times a day, others report changing them infrequently or not at all during their periods[7-9]. There are several other methods of disposal, such as burning, using toilets, or drying reusable items inside[9,10]. These differences demonstrate how menstrual hygiene is impacted by environmental factors, cultural norms, and the availability of resources. Menstrual hygiene is a critical public health concern because, crucially, poor practices in places with low resources are associated with psychological stress and reproductive tract infections such vulvovaginal candidiasis and bacterial vaginosis[11,12]. Adolescents' menstrual hygiene habits are greatly influenced by sociodemographic variables. Older females and those who menarched later exhibit superior hygienic behaviors, and age and educational achievement are frequently identified as important variables[13,14]. Parental background also matters: whereas father work and education influence access to knowledge and resources, higher mother education is associated with better behaviors[14,115]. Perceptions have been demonstrated to be influenced by religion; Muslim girls in Assamese urban slums and Nigeria express more positive attitudes and more understanding of menstrual hygiene[13,16].The choice of absorbent materials is also influenced by economic position, because families with higher incomes are more likely to be able to purchase disposable sanitary pads, whilst those with lower incomes are more likely to use cloth or makeshift substitutes[17,18]. These differences are made worse by inadequate puberty education and unsupportive family contexts, underscoring the influence of parental direction and education in forming behavior and knowledge[19]. The capacity of adolescents to maintain good menstrual hygiene is significantly influenced by a number of factors, including age, religion, education, profession, and household income. Therefore, the purpose of this study is to determine the degree of menstrual hygiene practices among female adolescents and the socio-demographic variables influencing the adoption of good menstrual hygiene practices.

METHODOLOGY

Study Setting and Design

In a government secondary school in Amai, Delta State, research using a descriptive cross-sectional design was carried out with female adolescents. The school is the sole secondary institution in the neighborhood and enrolls both male and female pupils.

Study Population

All female adolescents between the ages of 10 and 19 who had menarched and started menstruating met the eligibility requirements. Adolescent girls in the same age range who had not yet reached menarche were excluded.

Sample size and Sampling Method

The proportion population formula was used to get the sample size[20] $n=Z^2 p (1-p) /E^2$ with a 95% confidence level and a 5% margin of error, a prevalence rate of 45.5% on menstrual hygiene behaviors from prior research[14] was used. By entering these values into the calculation, a minimum sample size of around 380 was obtained.

Using the school registration as the sample frame, simple random sampling was used. A random number system was used to choose participants after each female student was given a unique identity number. The following random number was selected as a substitute in the event that a chosen student declined to participate.

Method and instrument of data collection

Data was gathered using a survey with a structured questionnaire to evaluate menstrual hygiene practices

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and factors that influence menstrual hygiene practices. The study's two primary components were adapted from[14]. Questions about age, class and parental occupation were used to operationalize the sociodemographic characteristics covered in the first section. These questions supplied crucial background variables for the research. Items on the type of absorbent materials used, how often they are changed and personal hygiene habits during menstruation were used to gauge menstrual hygiene practices in the second section. The study's content validity was confirmed by an expert evaluation of the questionnaire.

Statistical Methods

Statistical Package for Social Sciences version 23.0 was used to analyze the data. Descriptive statistics (frequency and percentage) described sociodemographic data and menstrual hygiene practices while bivariate and multivariate logistic regression revealed factors that contribute to effective menstrual hygiene habits. The results were given as crude and adjusted odds ratios (95% CI) at a significance level of $p < 0.05$. Eight items; including bathing, genital cleanliness, pad changing, underwear washing, availability to sanitary pads, and blood collection supplies were used to evaluate menstrual hygiene practices. On a 16-point weighted scale, each item was given a score of two points for good hygiene practices (often and very often) and zero points for bad practices (sometimes and never). Respondents with scores between 0 and 16 were categorized as having good menstrual hygiene practices if they scored at least 8 points, while those with scores below 7 points were deemed to have poor practices.

Ethical approval

The research was conducted in accordance with the Helsinki Declaration, and because it was a school-based study, institutional ethical permission was granted by the administrative head of the school along with ethical approval from the Research, Ethics and Grant Committee, Delta State University, Abraka, with reference number RBC/FBMC/DELSU/24/617**.**

RESULTS

Respondents' sociodemographic attributes

Out of 400 questionnaires that were distributed, 380 were successfully completed, yielding a 95% response rate. Respondents were almost evenly split between the age groups 10-14 years (46.1%) and 15-19 years (53.9%). 14.7 was the average age, while the standard deviation was 2.5. In terms of class, the distribution is relatively even across JSS2, JSS3, and SSS1, with JSS3 having the highest percentage (22.9%) and JSS1 the lowest (9.7%). The majority of the respondents' parents were engaged in farming (53.4%), followed by business (36.8%). A smaller percentage of parents were teachers (6.8%) or professionals in the civil service (2.9%) (Table 1).

Table 1: Socio-Demographic Information of Respondents (n=380)

Variables	Frequency	Percentage
Age		
10-14	175	46.1
15-19	205	53.9
Class		
Jss1	37	9.7
Jss2	82	21.6
Jss3	87	22.9
Sss1	86	22.6
Sss2	70	18.4
Parents' Occupation	203	53.4
Farming	140	36.8
Business	11	2.9
Civil service	26	6.8
Teacher		

Menstrual Hygiene Management Practices: Most respondents bathed often (57.6%) or very often (34.7%) during menstruation, and 65% cleaned their vaginal area often with 26.6% doing so very frequently. Pad changing was common both at school (32.9% often, 35.5% very often), though 12.1% never did so, and at home (57.6% often, 26.6% very often). Underwear washing with soap and water was reported often by 62.9% and very often by 30.5%, while 51.3% changed underwear often and 36.8% very often. Access to sanitary pads was limited, with only 31.1% reporting access often, 25.8% very often, and 18.9% never. Sanitary pads were the most used absorbent (32.6%), followed by a cloth–pad combination (25.8%), cloth alone (19.5%), and foolscap sheets (6.8%) (Table 2). Overall, 65% of respondents practiced good menstrual hygiene, while 35% had poor practices. (Fig. 1)

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Table 2: Menstrual Hygiene Practices of The Respondent (n=380)

Variables	No. of Respondents	Percentage
How often do you bath during menstruation?		
Often	219	57.6
Very often	132	34.7
Some times	29	7.6
Never	0	0
How often do you clean your genital area after defecating or urinating during menstruation?		
Often	247	65
Very often	101	26.6
Some times	32	8.4
Never	0	0
How often do you change your sanitary pad in school?		
	125	32.9
Often	135	35.5
Very Often	74	19.5
Some times	46	12.1
Never		
How often do you change your sanitary pad at home?		
Often	219	57.6
Very often	101	26.6
Some times	60	15.8
Never	0	0
How often do you wash you under wear with soap and water?		
Often	239	62.9
Very often	116	30.5
Some times	25	6.6
Never	0	0
How often do you change your under wears per day?		
Often		
Very often	195	51.3
Some times	140	36.8
Never	45	11.8
	0	0
How often do you have access to sanitary pad?		
Often	118	31.1
Very often	98	25.8
Some times	92	24.2
Never	72	18.9
What do you use to collect menstrual blood during menstruation		
Pieces of cloth	**74**	19.5
Tampons	**58**	15.3
Sanitary pad	**124**	32.6
Foolscap sheet	**26**	6.8
Piece of cloth and sanitary pad	**98**	25.8

Number of Respondents (n) is the number of participants who chose each answer. Often = bathe once per day; Very often = two or more times per day; Sometimes = less than once per day; Never = not at all during menstruation.

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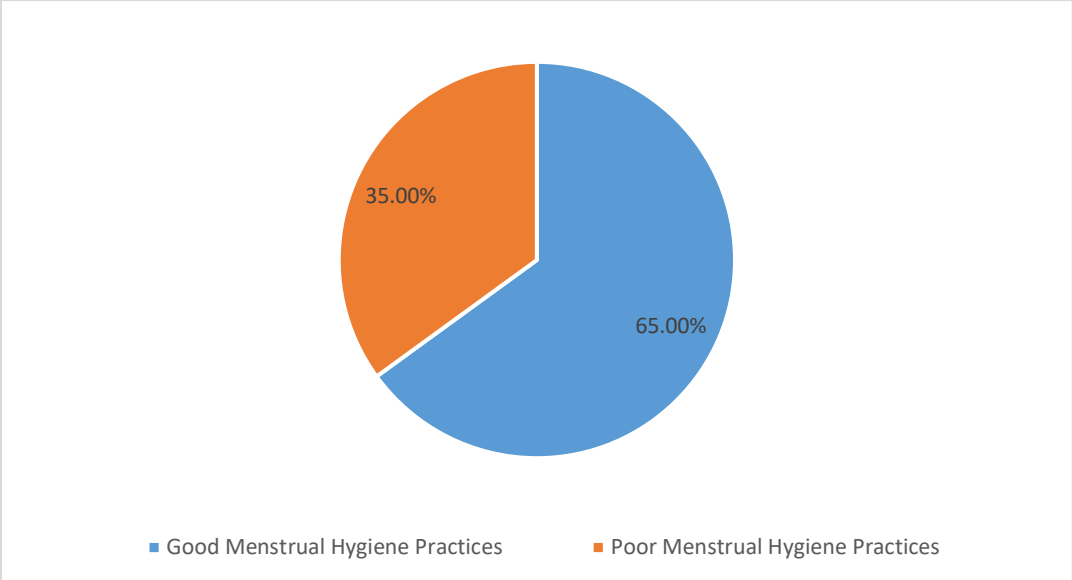

Figure 1: *Menstrual Hygiene Practices among Respondents*

Factors Influencing Good Menstrual Hygiene Practices

Although there was a modest increase in the likelihood of practicing excellent menstrual hygiene among adolescents aged 15–19 compared to those aged 10–14, the difference was not statistically significant (AOR = 1.22, 95% CI: 0.69–2.17, p = 0.50). Similarly, there was no association between good menstrual hygiene practice and parental employment or class level. In this group, menstrual hygiene behaviors were not independently predicted by age, class, or parents' profession (Table 3).

Table 3: Bivariate and Multivariate Logistic Regression analysis of predictors of good menstrual hygiene practice

Predictors	**Crude**		**Adjusted**	
	OR (95% C.I)	**p-value**	**OR (95% C.1)**	**p-value**
Age (years)				
10-14	1.00	-	1.00	-
15-19	0.85 (0.38-1.92)	0.36	1.22 (0.69-2.17)	0.50
Class				
JSS1	1.00	-	1.00	-
JSS2	0.80 (0.13-1.60)	0.22	1.26 (0.54-2.96)	0.59
JSS3	0.57 (0.17-1.92)	0.36	0.54 (0.25- 1.19)	0.12
SS1	1.98 (0.12-9.34)	0.34	1.38 (0.73-2.64)	0.32
SS2	-	-	1.10 (0.50-2.42)	0.80
Parents' Occupation				
Farming				
Business	1.00	-	1.00	-
Civil Servants	2.19(0.43-12.36)	0.28	1.08 (0.47-2.48)	0.86
Teachers	-	-	1.56 (0.66-3.71)	0.31
	-	-	1.74 (0.41- 7.38)	0.45

OR= Odd Ratio, C.I= Confidence Interval

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DISCUSSION

In order to compare early and late adolescence, the respondents' mean age was 14.7 years (SD = 2.5), with a nearly equal distribution across ages 10–14 (46.1%) and 15–19 (53.9%). The distribution of classes was pretty uniform among JSS2, JSS3, and SSS1, with JSS3 having the most representation and SSS1 having the smallest.

The majority of respondents reported favorable menstrual hygiene practices, which is in line with other research that found Nigerian adolescents usually practice good hygiene[21,22]. None of the respondents said they never took a bath, and most took one at least once a day. After urinating or defecating, most people conducted vaginal hygiene, washing their vaginas most frequently. Disparities in pad management were found, although many people reported changing their pads at home and at school, a significant portion never did it in school, most likely because there were not enough private restrooms. Routine underwear washing during menstruation also promoted personal hygiene. These findings underscore the need of supporting environments, especially in schools, to promote regular menstrual hygiene, as well as the generally excellent behaviors among responders[23]. Other research that emphasizes the significance of adolescent's girls' personal hygiene practices confirm these findings[23-25].

Access to sanitary pads is still a major obstacle, even with good hygiene habits. While some respondents said they used sanitary pads frequently, others said they used very frequently or never. Due to the limited supply of menstrual hygiene items, some girls turned to nontraditional materials like foolscap sheets, while others used cloth and pads encouraging a dependence on alternatives. Similar trends have been seen in other research, highlighting the ways in which menstrual hygiene behaviors are influenced by resource constraints[21,26]. Many young people did not have sanitary pads, despite the fact that the majority had access to some kind of absorbent substance, according to a poll of them. Poor menstrual hygiene habits were associated with this lack of access, underscoring the crucial influence of product availability on hygiene practices[27].

Overall, the majority of respondents practiced appropriate menstrual hygiene, however some showed poor menstrual hygiene practices. This suggests that a sizable minority is nonetheless at risk for poor menstrual hygiene management outcomes even while the majority maintain appropriate menstrual hygiene. These results are in line with earlier research conducted in low-resource environments, which also demonstrates that although awareness and knowledge are typically high, continuous good practice is limited by real-world issues with access to facilities and goods.

Good menstrual hygiene behaviors were not independently predicted by age, class, or parental profession, according to multivariate analysis. Although this difference was not statistically significant, adolescents aged 15-19 years had a slightly higher likelihood of practicing excellent menstrual hygiene than adolescents aged 10-14 years (AOR = 1.22, 95% CI: 0.69-2.17, p =0.50). In a similar vein, although JSS2–SS2 students had varying odds of good practice in comparison to JSS1 students, none of these variations were statistically significant. There was no discernible difference in the likelihood of excellent practice between children of farmers and children of parents in the business, government, or educational sectors. The absence of statistically significant relationships implies that peer pressure, cultural views, personal knowledge, and school-based health education may have a greater impact on menstrual hygiene behaviors in this population than sociodemographic characteristics. According to earlier studies, menstrual hygiene practices may be greatly influenced by family supervision, supportive school environments, and correct information availability, sometimes regardless of socioeconomic level[21,22].

Limitations of Study

It is critical to acknowledge this study's shortcomings. First of all, the study was limited in its applicability to other areas with distinct socioeconomic and cultural settings since it was limited to a single high school in Delta State. Second, because respondents may have overreported good activities, the use of self-reported surveys may have introduced recollection or social desirability bias. These were lessened by conducting the survey under supervision to assure clarity and to provide confidentiality and anonymity to promote truthful answers.

Implications of the Findings of Study

The study shows the adolescent females' menstrual hygiene habits' strengths and gaps. Frequent bathing and high personal cleanliness are signs of good health, but issues requiring immediate attention include restricted

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availability to sanitary goods and the ongoing use of makeshift materials. Access to menstrual hygiene products should be improved, and private facilities for changing pads should be given priority in schools. Programs at the community level can teach adolescents and parents about good menstrual hygiene practices and the dangers of poor hygiene.

CONCLUSION

The study revealed that the majority of the teenagers in this survey showed good menstrual hygiene habits, a sizeable percentage still struggle to get and make the best use of menstrual hygiene supplies. Adolescent girls' menstrual hygiene practices must be maintained and improved through interventions that emphasize education, accessibility, and supportive school settings.

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