DOI: 10.53704/fujnas.v12i2.417
A publication of College of Natural and Applied Sciences, Fountain University, Osogbo, Nigeria.
Journal homepage: www.fountainjournals.com
ISSN: 2354-337X(Online),2350-1863(Print)

Assessment of Adolescent Girls' Menstrual Hygiene Knowledge and Practice in Ede South Local Government Secondary Schools, Ede, Osun State

[1*]Oshineye, A., [1]Olayanju, O., [1]Adeami, T., [1]Azi, K., [1]James, A., [1]Onifade P. and [2]Benedicta O.

Department of Public Health, Adeleke University, Ede, Osun State
[2]Provost, College of Postgraduate Studies, Adeleke University, Ede, Osun State

Abstract

The onset of menstruation denotes a landmark event in the pubertal development of the adolescent girl. Adolescent girls should have adequate knowledge of menstrual hygiene before menarche. Lack of adequate knowledge and good menstrual hygiene practices can have far-reaching consequences for a girl's well-being, dignity, reproductive health, and sexual health. Hygiene-related practices during menstruation are of considerable importance. This study assessed the knowledge and Practice of menstrual hygiene among adolescent girls in Ede South local government secondary schools, Ede, Osun State. This study adopted a descriptive cross-sectional study design. The study population was adolescent girls between the ages of 10 and 19 who have attained menarche, using multi-stage sampling as the sampling technique. A structured questionnaire comprising three sections was used to elicit information from the respondents. The data were analysed using Statistical Package for Social Sciences (SPSS) version 20. The result showed that the majority (62.6%) of the respondents were between 16 and 18 years old and had attained menarche at 13. Most respondents had heard about menstruation before menarche (85.0%), and mothers (79.1%) were the primary source of information. Most (89.70%) respondents had good knowledge of menstrual hygiene. Also, most (53.0%) respondents had good menstrual hygiene practices. In the test for the hypothesis, there is a significant association between sociodemographic characteristics such as tribe, class, age at menarche, and the Practice of menstrual hygiene. There is also a significant relationship between knowledge and Practice of menstrual hygiene ($p = 0.017$). This study concluded that the majority of the respondents had good knowledge as well as good practice regarding menstrual hygiene.

Keywords: Menstrual Hygiene, Adolescents, Knowledge, Practice

Introduction

Menstruation is a physiological process that occurs naturally in women and involves monthly cyclical bleeding defined by the release of uterine blood through the vaginal canal (Hamal & Susma, 2014). Menstruation is a watershed moment in the pubertal development of an adolescent girl (Diorgu *et al.,* 2019). Feelings of dread, confusion, and even sorrow are often associated with the start of menstruation (Igwe *et al.,* 2020). Menstruation and its cleanliness are rarely discus- sed in schools,

*Corresponding author: Oshineye, A
Email address: princeadex26@gmail.com

homes, and rural communities. Most families treat it with enormous humiliation and secrecy. Traditional village culture and negative perceptions significantly impact discussions about menstruation and its hygienic practices (Vaughn, 2013). Emotions of impurity, shame, and cultural restrictions are still linked to menstruation. Menstruation is still a mother-daughter secret in many families today and is not freely debated (Thakur *et al.,* 2014). Personal preference, cultural tolerance, economic standing, and availability in the local market influence the absorbent used to treat menstrual bleeding, such as reusable cloth pads, menstrual cups, toilet paper or tissues, disposable sanitary pads, and tampons (Igwe *et al.,* 2020). Individuals' socioeconomic Levels, personal preferences, local customs, beliefs, and the availability of sanitation and water facilities all influence hygiene practices during menstruation.

Management methods are frequently unsanitary and inconvenient, especially in rural environments. Cultural taboos, superstitious beliefs, and myths surrounding menstruation replace helpful information for a growing youngster (Onyegegbu, 2011).

Women's hygiene precautions are vital during menstruation because they increase their susceptibility to certain reproductive tract infections (RTIs). Unhygienic menstrual practices are a crucial cause of women's infections and contribute notably to the country's excessive rate of RTIs (Dayal, 2019). Even though adolescence is a normal stage of development, many adolescents lack experience, knowledge, and comfort with reproductive and sexual health services and information compared to adults (Ramachandra *et al.,* 2016). Menstrual hygiene is a concern that each woman and girl must pay attention to at some point. However, there needs to be more understanding of the menstrual cycle, the psychological and physical changes accompanying adolescence, and the essential requirements for menstrual management (Juyal *et al.,* 2012). Females require extra information and attention during their menstrual cycle due to its effect on their psychological and physical health and the pain that comes with it (Ali, 2021). Inadequate awareness of menstrual hygiene management can result in various health issues involving the urinary and reproductive tracts (Van Ejik *et al*., 2016). Despite increased global and local attention to menstrual hygiene and its effects on women, considerable knowledge gaps still exist (Sommer & Sahin, 2013).

Menstruation has a higher impact on educational quality than other characteristics of development and puberty since it includes both a learning component and factors influenced by the school environment and infrastructure. Considering Ede town, where the research was conducted, as a rural place with few parents struggling to provide for the family, this study examined the knowledge and Practice of menstrual hygiene among secondary school girls in Ede South local government.

Methods

Study Design, Period, and Setting

This study adopted a descriptive cross-sectional study design and was conducted between January 2022 and June 2022 among adolescent girls who have attained menarche between the ages of 10-19. This study was conducted in three selected secondary schools in Ede South Local Government Area (LGA), Ede, Osun State, Nigeria (Ede High School, Agboran School of Science, and Baptist High School).

Sampling Size and Sampling Method

Fisher's formula was used to estimate the required sample size. The p-value of 74% (prevalence of knowledge about menstruation from a previous study conducted) gotten from a previous study conducted by Aluko *et al.,* 2014, 95% confidence interval (CI), and a 5% margin of error. With the additional 10% attrition rate, the total sample size was 330. A multi-stage sampling technique was used for the sampling method. The first stage involves listing all the public secondary schools in Ede South local government, of which three were randomly selected using the simple random balloting technique. Then, selected schools were stratified randomly, and proportionate sampling was employed to justify the sample size per school. Respondents were selected using a systematic random sampling technique using a class roaster after considering arms in selected schools.

Data Collection Instrument

Data were obtained using a study tool carefully designed and involving a self-structured

Table 1: Proportionate Table

School	Population	Proportion	Sample Size (Approx.)
Ede High School	687	687/1878*330	121
Agboran School of Science	825	825/1878*330	145
Baptist High School	366	366/1878*330	64
Total	1878		330

questionnaire developed by the researchers to elicit information to meet the set criteria for the study. It comprised three sections: Section A: sociodemographic characteristics, Section B: knowledge of menstrual hygiene; and Section C: practice of menstrual hygiene. The instrument was subjected to facial validity. For consistency, a pretest was conducted using 10% (33) of the anticipated sample size.

Data Analysis

The data collected was sorted, coded, and checked for errors and completeness. Statistical Product and Service Solutions (SPSS 20) software was used for analysis. The data analysis was summarised using descriptive statistics for socio-demographics. in order to assess the female students' Level of menstrual hygiene knowledge, knowledge questions were scaled, scored, and categorised to the best midline, such that 0–5 was coded for poor knowledge and 6–10 as good knowledge. All correct answers were coded as 1, and all wrong answers were coded as 0. Practice 1 was coded for the correct answers to respondents who chose: disposable sanitary pads, changing absorbent twice, cleaning their genitals, using water and soap, having their bath more than twice, disposing of absorbent by burning, burying, in the toilet and dustbin, wrapping it in a plastic bag or nylon, and washing their hands after using the toilet were considered to practice safe menstrual hygiene, and others were coded 0 for wrong answers to be classified as poor menstrual hygiene. Bivariate analysis was done to determine the significant associations between the variables, and the significance level was considered at P –values of 0.05.

Results

Sociodemographic Characteristics

The study sample size was 330, but the total response rate was 97.3% (321). Results show that 5.6% were 12–13 years old, over a fifth (22.4%) were 14–15 years old, the majority were 16–18 years old, and about a tenth (9.3%) were 19 years old. A fifth (20.6%) of the respondents were Christians, while the majority (79.4%) practiced Islam. Most (96.3%) respondents were Yoruba, 9% were Igbo and Hausa, respectively, and 1.9% belonged to another ethnic group. Per the family size, over a fifth (22.4%) were 2-4, below half (44.9%) were 4-6, and about a third (32.7%) were six or above in size. The respondent's class distribution revealed that 1.9% were from JSS 1, 7.5% were from JSS 2, 8.4% were from JSS 3, 18.7% were from SSS 1, 23.4% were from SSS 2, and 40.2% were from SSS 3. On respondents' mothers' levels of education, 6.5% had primary education, 51.4% had secondary education, 33.6% had tertiary education, and 8.4% had no formal education. As per the age of the respondents at menarche, 4.7% had theirs at 12 years, 48.6% had theirs at 13 years, 29.0% had theirs at 14 years, and 17.7% had theirs at 15 years.

Knowledge of menstrual hygiene

Results show that the majority (85.0%) have heard about menstruation before menarche, while only 15% have not. Out of those who have heard about it, the majority (79.1%) got their information from their mothers, 16.5% from teachers, 1.1% from friends, and 3.3% from other sources. Only 3.7% said menstruation occurs due to a curse, most (91.6%) said hormones cause menstruation, and 4.6% said menstruation is due to infection. Also, 2.8% held that; menstrual blood comes from the bladder, 14.0% said it is from the abdomen, the majority said it is from the uterus, and 9.3% chose others. Only 2.8% do not know that menstruation occurs monthly, while the majority (97.2%) do. More so, only 2.8% need to learn that, during menstruation, personal hygiene is essential. In comparison, the majority (97.2%) knew, 4.7% said cloth is appropriate for use during menses,

Table 1: Frequency distribution of respondents by demographic characteristics

Variables	Frequency	Percentage (%)
Age		
12-13years	18	5.6
14-15years	72	22.4
16-18years	201	62.6
19years	30	9.3
Religion		
Christianity	66	20.6
Islam	255	79.4
Tribe		
Yoruba	309	96.3
Igbo	3	.9
Hausa	3	.9
Others	6	1.9
Size of family		
2-4	72	22.4
4-6	144	44.9
6 and above	105	32.7
Class		
JSS 1	6	1.9
JSS 2	24	7.5
JSS 3	27	8.4
SS 1	60	18.7
SS 2	75	23.4
SS 3	129	40.2
Level of education of the mother	21	6.5
Primary	165	51.4
Secondary	108	33.6
Tertiary	27	8.4
None		
At what age did you attain menarche?		
12 years	15	4.7
13 years	156	48.6
14 years	93	29.0
15 years	57	17.7

Table 2: Frequency distribution of respondents by knowledge of menstrual hygiene

Items	Option	Frequency	Percentage (%)
Have you heard of menstruation before menarche?	No	48	15.0
	Yes	273	85.0
If yes, from whom or where?	Mother	216	79.1
	Teacher	45	16.5
	Friends	3	1.1
	Others	9	3.3
What causes menstruation?	Curse	12	3.7
	hormones	294	91.6
	infection	15	4.6
What organ does menstrual blood come from?	Bladder	9	2.8
	abdomen	45	14.0
	uterus	237	73.8
	others	30	9.3
Does menstruation occur monthly?	No	9	2.8
	Yes	312	97.2
During menstruation, is personal hygiene important?	No	9	2.8
	Yes	312	97.2
What absorbent is appropriate to be used for menstruation?	Cloth	15	4.7
	Cotton wool	18	5.6
	Sanitary pad	288	89.7
Does poor menstrual hygiene predispose one to infection?	No	21	6.5
	Yes	300	93.5
What is the average duration of a menstrual period?	2-3 days	21	6.5
	2-4 days	30	9.3
	2-5 days	228	71.0
	2-6 days	24	7.5
	7days & above	18	5.6
Is there a foul odour during menstruation?	No	81	25.2
	Yes	240	74.8
Is menstruation in early adolescence normal?	No	51	15.9
	Yes	270	84.1
What is the normal age range for starting menstruation?	10-11years	24	7.5
	10-12 years	36	11.2
	10-13years	60	18.7
	10-14years	69	21.5
	10-15years	72	22.4
	15years	60	18.7

5.6% said cotton wool is appropriate, and the majority (89.7%) said a sanitary pad is appropriate. Also, 6.5% disbelieve that poor menstrual hygiene predisposes one to infection, while the majority (93.5%) believe. 6.5% knew that the average

duration of menses was 2-3 days, and 9.3% knew it was 2-4 days. The majority (71.0%) said 2–5 days, and 7.5% said 2–6 days. More specifically, the majority (74.8%) said yes, while a quarter (25.2%) objected to the odour during menstruation. Also, 15.9% denied that menses in early adolescents are expected, while the majority (84.1%) said yes. 7.5% said the average age range for starting menstruation is 10–11 years, 11.2% believe it is 10–12 years, 18.7% said it is 10–13 years, 21.5% held that, it is 10–14 years; 18.7% said it is 10-15 years; and 18.7% believe it is above 15 years.

Results revealed that 10.3% had poor knowledge, while the majority (89.7%) had good knowledge.

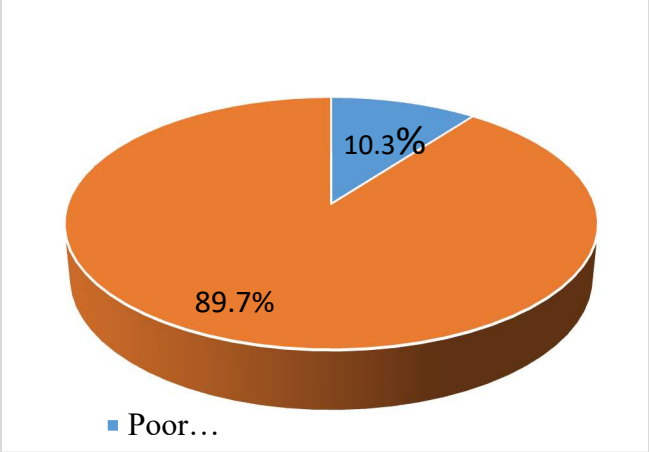

Figure 1: Overall Knowledge of menstrual hygiene

The Practice of menstrual hygiene

Results show that the majority (89.7%) use disposable sanitary pads, 8.4% use a napkin or cloth, and 0.9% use cotton and a menstrual cup, respectively. Also, most changed their absorbent twice daily, and 29.9% changed it three times. In comparison, 8.4% changed it more than three times. Almost all respondents (97.2%) clean their external genitalia during menstruation, while 2.8% do not. Also, out of those that clean it, 13.1% clean it using water and soap, 35.5% use water and antiseptic, while 51.4% clean water and antiseptic using water only. More so, 6.5% never take their bath in a day during menstruation; a majority (76.6%) take it once, while 16.8% take it two times or more. Results show that over a quarter (26.2%) burn their used menstrual absorbent, 4.7% throw it inside the dustbin, a majority (60.7%) dispose of it in a latrine or toilet, and 8.4% bury it. Also, 4.7% uses paper wrap to dispose of used absorbent; a majority (72.0%) uses plastic bag/nylon, while 23.3% do not. More so, 2.8% do not wash their hands after visiting the toilet during menstruation, while 97.2% wash.

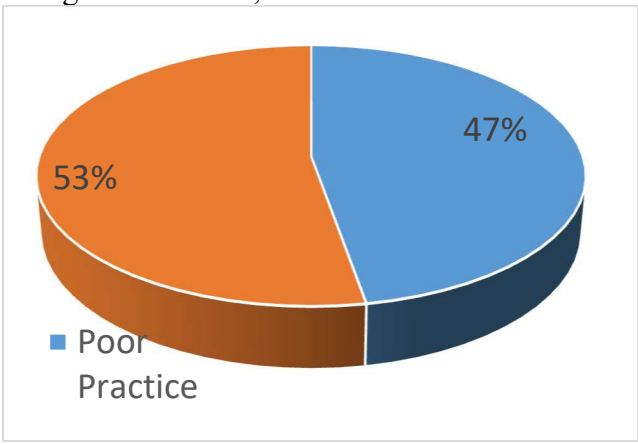

Figure 2: Overall Practice of menstrual hygiene

47.0% had a poor practice of menstrual hygiene, while the majority (53.0%) had a good practice.

Association between sociodemographic and the Practice of menstrual hygiene

Results shows that, Tribe [X= 12.105; p-value= .007]; Class[X= 18.392; p-value= .002] and age at menarche [X= 23.364; p-value= .005] do have significant association with practice menstrual hygiene. However, Age [X= 1.289; p-value= .732], Religion [X= .765; p-value= .408], size of family [X= .399; p-value= .819], and Level of education of mother [X= 1.340; p-value< .058] do not have a significant association with the Practice of menstrual hygiene.

Association between knowledge and menstrual hygiene practice

Table 4.5 presents the association between knowledge and menstrual hygiene practice during menstruation. Results show a significant association between knowledge and menstrual hygiene practice ($\chi^2 = 5.874^a$; df=1; p= 0.017). The implication is that the hypothesis that there is no significant association between knowledge and menstrual hygiene practice was rejected, while the alternative was upheld. This is an indication that there is a significant association between knowledge and menstrual hygiene practice.

Discussion

The majority (62.6%) of the respondent in this study were between the ages of 16 and 18, in contrast to Aluko *et al.* (2014), who conducted a study in Ile Ife, Nigeria, with most of the respondents (59.51%) being between the ages of 14 and 16. Having adequate knowledge of menstrual hygiene is critical to improve the Practice and prevent reproductive illness. According to The overall findings on knowledge, most respondents have good knowledge about menstruation hygiene (89.7%). The result is consistent with a study conducted in Ogun state, Nigeria, by Ilusanmi *et al.* (2021), in which the majority of the participants (57.2%) had good knowledge, and a study conducted in Oyo, Nigeria, by Fehintola *et al.,* (2017), in which the majority (59.51%) of the participants also had good knowledge. The study also contradicts the findings

Table 3: Frequency distribution of Respondents by Practice of menstrual hygiene

Variables	Option	Frequency	Percentage
What absorbent do you use for menstruation?	Disposable sanitary pads	288	89.7
	napkin or cloth	27	8.4
	cotton	3	0.9
	menstrual cup	3	0.9
During menstruation, how often do you change your absorbent daily?	Twice	198	61.7
	thrice	96	29.9
	more than thrice	27	8.4
Do you clean your external genitals during menstruation?	No	9	2.8
If yes, what do you clean your external genitals with during menstruation?	Yes, water and soap	312	97.2
	water and antiseptic	42	13.1
	water only	114	35.5
	Never	165	51.4
How many times do you take your bath in a day during menstruation?	once	21	6.5
	more than twice	246	76.6
How do you dispose of your used menstrual hygiene absorbent?	burning	54	16.8
	dustbin	84	26.2
	latrine or toilet	15	4.7
	burying	195	60.7
What type of pad wrap do you use for disposal?	paper	27	8.4
	plastic bag/nylon	15	4.7
	not wrapped	231	72.0
Do you wash your hands after using the toilet?	No	75	23.3
	Yes	9	2.8
		312	97.2

Table 4: Association between sociodemographic characteristics and Practice of menstrual hygiene

Variables	Option	Knowledge		X	P-value
		Poor	Good		
Age	12-13years	9	9	1.289	.732
	14-15years	30	42		
	16-18years	98	103		
	19years	13	17		
Religion	Christianity	34	32	.765	.408
	Islam	116	139		
Tribe	Yoruba	144	165	12.105[a]	.007*
	Igbo	3	0		
	Hausa	3	0		
	Others	0	6		
Size of family	2-4	32	40	.399	.819
	4-6	70	74		
	6 and above	48	57		
Class	JSS 1	0	6	18.392[a]	.002*
	JSS 2	13	11		
	JSS 3	9	18		
	SS 1	24	36		
	SS 2	48	27		
	SS 3	56	73		
Level of education of the mother	Primary	12	9	1..340	.058
	Secondary	69	96		
	Tertiary	52	56		
	None	14	10		
At what age did you attain menarche?	12 years	3	12	23.364[a]	.005*
	13 years	44	112		
	14 years	27	66		
	15 years	19	38		

Table 5: Association between Knowledge and menstrual hygiene practice during menstruation

	Categories	Knowledge		χ^2	p-value
		Poor	Good		
Menstrual hygiene practice	Poor	22	11	5.874[a]	.017*
	Good	128	160		

Of Belayneh & Mekuriaw (2019), which indicated that 68.3 % (540) of adolescent school girls in southern Ethiopia had poor knowledge and menstrual hygiene practices, which contradicts this finding. The respondents may know well because menstruation and menstrual hygiene are in school curricula or information obtained through social media.

Before menarche, a girl's knowledge of menstruation and menstrual hygiene is determined by whether she received any information and the content of that information. Most of the girls in this study (85.0%) were aware of menstruation before menarche, and mothers were the primary source of information (79.1%). This is similar to a study conducted by Azor (2014), who reported that 497 (87.0%) of the respondents knew before menarche, and Fehintola *et al.* (2017), who discovered that 96.42 % knew before menarche, with mothers being the primary source of information (41.83%). According to this study on the educational status of mothers, the majority of them are literate (85%), implying that they have a basic understanding of menstruation. This may have made them realise how important it is to teach their daughters about menstruation and menstrual hygiene.

Furthermore, growing adolescent girls are close to their mothers, typically the closest confidantes and "teachers" of most growing adolescent girls in the setting. Most respondents in this study were aware that the uterus is the source of menstrual blood (73.8%). This is in contrast to a study conducted by Sarkar *et al.* (2017), who reported that most respondents needed better knowledge of the urinary tract as the source of menstrual blood (56.7%).

It is critical to uphold good hygiene during menstruation to avoid infection. The majority of the participants in this study (53.0%) had good menstrual hygiene practices, but this contradicts a study conducted in southern Ethiopia by Belayneh & Mekuriaw (2019), which found that the majority (60.3%) of the participants had poor menstrual hygiene practices. This may be due to the perceived benefit of practising good menstrual hygiene. Any behaviour that brings about a positive effect is likely to be repeated. The majority (89.7%) of the participants use sanitary pads, which is consistent with a study conducted by Garba *et al.* (2018) in Kano, Nigeria, which found that the majority of the participants (92.2 %) use sanitary pads. This conclusion could be explained by the fact that more information regarding menstrual hygiene and the best absorbents to use during menstruation is now available through social media networks and school curricula. In this study, a higher number (67.1%) of participants changed their menstrual absorbent twice daily, compared to Dahal (2018) Kathmandu Valley Nepal, where a higher percentage (41.1%) of the population changed their menstrual absorbent three times daily. During periods, 76.6% of the girls in this study took a bath once daily. Another study conducted in Uttarakhand by Juyal *et al.* (2012) contradicts these findings, reporting that 64% of the girls bathe regularly during their periods. During their menstrual period, 97.2% of adolescent girls wash their genitalia, with the majority (51.4%) using simply water, which is healthy. Due to unawareness, others (48.6%) may have used water, soap, or antiseptic.

The majority of adolescents disposed of absorbents in latrines or toilets (60.7%), by burning (26.2%), or in dustbins (26.2%), according to this study (4.7%). According to a study conducted by Nnennaya *et al.* (2021) in Taraba, Nigeria, the majority of adolescents disposed of used absorbents in latrines or toilets (34.7%), by burning (27.3%) or in dustbins (25.6%). In Imo state, Nigeria, according to Duru *et al.* (2021), burning was the most common form of disposal in 51%, followed by disposal in a refuse dump and a pit latrine in 26% and 15.4%, respectively.

There is a significant association between knowledge and menstrual hygiene practice ($p= 0.017$), according to the findings. The idea is that the more knowledge you have, the better your menstrual hygiene practice will be. This could be because, as adolescents, the responses are still likely to be supervised and tutored, even regarding menstruation. The findings are consistent with those of Nnennaya *et al.* (2021), who discovered that knowledge was significantly related to good menstrual hygiene practice ($p =0.001$).

More findings revealed that Ethnicity, Class, and age at menarche are significantly associated with the Practice of menstrual hygiene. The plausible reason for this is revealed in each adolescent girl's

different class level. The higher the class attained, the more knowledge obtained, which affects Practice. The finding does not corroborate Bhusal (2020), which revealed that socio-demographic characteristics such as family size and level of parent's educational status were significantly associated with menstrual hygiene practices.

Conclusions

A higher percentage of adolescent school girls had good knowledge and good practices regarding menstrual hygiene. There is a significant association between their knowledge and menstrual hygiene practice. This implies that a similar study should be conducted in other states to be able to compare and contrast and also to create awareness and educate adolescent girls on the importance of good menstrual hygiene practices.

Funding

No funding was obtained for this research

Ethical Consideration

Ethical approval was obtained from the Ethics and Research Committee of Adeleke University, Ede, before the commencement of the study. A authorisation letter was submitted to the schools seeking permission to perform the study. Teachers provided informed consent on behalf of the students, and students who agreed to partake in the research provided assent. The purpose and the benefits of the study were explained to the participants. The participants were informed that the participation is voluntary and they are free to decline or stop at any time. Information accessed was treated with strict confidentiality.

Competing interests

The authors declare no competing interests.

References

Ali, R. (2021). Assessment of Female students' Knowledge toward Menstrual Hygiene at College of Nursing, University of Kufa, Iraq. 9, 160-172.

Aluko, O., Oluya, M., Olaleye, O., Olajuyin, A., Olabintan, T. &^ Oloruntoba-Oju, O. (2014). Knowledge and menstrual hygiene practices among adolescents in senior secondary schools in Ile Ife, south-western Nigeria. *Journal of Water, Sanitation and Hygiene for Development.*

Azor, U. (2014). Knowledge And Management of Menstruation and Menstrual Problems Among Urban And Rural Secondary School Girls In Enugu East Local Government Area.

Belayneh, Z., and Mekuriaw, B. (2019). Knowledge and menstrual hygiene practice among adolescent school girls in southern Ethiopia: a cross-sectional study. *BMC Public Health*.

Bhusal, C. K. (2020). Practice of Menstrual Hygiene and Associated Factors among Adolescent School Girls in Dang District, Nepal. Advances in preventive medicine.

Dahal, M. (2018). Knowledge and Practice on menstrual hygiene among adolescent girls of selected slums in Kathmandu valley. Journal of Patan Academy of Health Sciences.

Dayal, A. (2019). Why is it important to maintain menstrual hygiene. *Ck Birla Hospital.*

Diorgu, F.C. & Diorgu, A.O. (2019). Practices of Menstrual Sanitary Care among Post Primary School Girls in Nigeria. *Research in Health Science*. 4(2), 78

Duru, C. O., Ikeanyi, E. M., & Merenu, I. (2021). Knowledge and Practice of menstrual hygiene among adolescent school girls in Umunna, Imo State, Southeast Nigeria: implications for parents, healthcare providers and policy makers. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology.* 10(2), 458-465

Fehintola, F. O, Fehintola, A.O, Aremu, A.O, Idowu, A., Ogunlaja, O. A., & Ogunlaja, I. P. (2017).Assessment of Knowledge, attitude and Practice about menstruation and menstrual hygiene among secondary high school girls in Ogbomoso, Oyo state, Nigeria.*International Journal of Reproduction, Contraception, Obstetrics and Gynecology.* 6, 5.

Garba I., Rabiu A., & Abubakar I. (2018). Menstrual hygiene among adolescent school girls in Kano. *Tropical Journal Obstetrics Gynaecology.* 35, 153-157

Hamal, M., and Susma, K. (2014). Hygiene, health problems and socio-cultural practices: what

school girls do during menstruation. *International Journal of Health Science and Research*. 4(4), 28-33

Igwe, C.N., Amadi, A.N., Onwuzulike, N.M., Ozims, S.J., Amadi, C.O., Achigbu, K.I., Azuamah, Y.C., & Okereke, E.E. (2020). Menstrual Hygiene Management Practices among Undergraduates of Imo State, Nigeria. *International Journal of Science and Healthcare Research.* 5 (4), 415-422.

Ilusanmi, O. S. & Aluko, J. O., (2021). Knowledge and Practice of Menstrual Hygiene among Adolescent School Girls in Secondary Schools, Ijebu -Ode Local Government, Ogun State, Nigeria. *Journal of Research in Humanities and Social Science,* 9, 67-73.

Juyal, R., Kandpal, S., Semwal, J. and Negi, K. (2012). Practices of menstrual hygiene among adolescent girls in a District of Uttarakhand. Indian Journal of Community Health 24, 124-128

Nnennaya, E. U., Atinge, S., Dogara, S. P. & Ubandoma, R. J. (2021). Menstrual hygiene management among adolescent school girls in Taraba State, Nigeria. *African Health Sciences,* 21 (2), 842–851.

Onyegegbu, N. (2011). Menstruation and menstrual hygiene among women and young females in rural eastern Nigeria. *Journal of the Science Teachers Association of Nigeria*.

Ramachandra, K., Gilyaru, S., Eregowda, A. & Yathiraja, S. (2016). A study on knowledge and practices regarding menstrual hygiene among urban adolescent girls. *International Journal of Contemporary Pediatrics.* 3, 142-145

Sommer, M., & Sahin, M. (2013). Overcoming the taboo: advancing the global agenda for menstrual hygiene management for schoolgirls. *American journal of public health*. 103(9), 1556–1559.

Thakur, H., Aronsson, A., Bansode, S., StalsbyLundborg, C., Dalvie, S. & Faxelid, E. (2014). Knowledge, Practices, and Restrictions Related to Menstruation among Young Women from Low Socioeconomic Community in Mumbai, India. *Frontiers in public health,* 2, 72.

Van Eijk, A.M., Sivakami,M., Thakkar,M.B., Bauman, A., Laserson,K.F., Susanne Coates,S., Phillips-Howard, P. A.,(2016), Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis, British Medical Journal, 6, 1-12.

Vaughn, J. (2013). A Review of Menstruation Hygiene Management among schoolgirls in Sub-Saharan Africa.