

Research Article

Factors influencing period poverty among female adolescent students in public secondary schools in EDE North, Osun State

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Abstract

Background: Period poverty, which includes a lack of access to menstrual products, can lead to poor menstrual hygiene by wearing pads or tampons for too long to manage what they have, absorbing menstrual blood with newspapers or dirty clothes, and not washing or washing the vagina with dirty water these unhealthy practices can lead to things like fungal infection, bacterial infection, yeast infection and Urinary Tract Infections (UTIs). Period poverty is a serious issue in Nigeria but is overlooked and understudied. The study assessed the level of period poverty among the respondents and the factors influencing period poverty.

Methods: This study adopted a descriptive design to describe the factors associated with period poverty among public secondary school students in Ede, Osun state. A multistage sampling technique was used for the study. Descriptive and bivariate statistics were used to analyze the quantitative data, and the level of significance was $\alpha_{0.05}$.

Results: The mean age was 14.2 ± 3.8 years. 29.8% were from JSS1, 25.3% were from JSS2, 25.0% were from SSS1, and 19.9% were from SSS2. Results revealed that the majority 79.5% experienced intense period poverty, 14.1% were rated average, and 6.4% experienced less intense period poverty. 72.4% had personal factors that can influence period poverty, while 27.6% had personal factors that might not influence period poverty. 70.6% gave responses that show the school having conditions that can contribute to period poverty while 29.4% gave responses that show the school having conditions that would not contribute to period poverty. 76.6% had background factors that could influence Period Poverty, while 23.4% had background factors that might not influence period poverty.

Conclusion: Curbing these factors that influence (increase) the rate of period poverty would reduce its effects.

Abbreviations

UTIs: Urinary Tract Infections; GEM: Global Education Monitoring; UNESCO: United Nations Educational, Scientific and Cultural Organization; IBM: International Business Machines Corporation; SPSS: Statistical Package for the Social Sciences

Introduction

One of the natural occurrences in a woman's life is menstruation. The average woman starts her period between

10 - 15 years old and every 28 days, a female's period lasts 3-7 days on average which means 468 periods over 39 years/2,340 days of menstruating/over 7 years of her life [1].

For such an important stage of a woman's life, she should have access to everything she needs (information, materials, and resources) to manage herself during this period, regrettably, this is not the case. More than 1.2 billion women lack access to elementary amenities during their periods. Period poverty has been linked to problems that women experience during menstruation [2,3].

Period poverty can be described as inadequate accessibility to menstrual hygiene management, amenities, supplies, and information including but not limited to sanitary products, washing facilities, and waste management [4]. In addition, lack of access to menstrual products means that it can lead to poor menstrual hygiene, for instance, wearing pads or tampons for too long to manage what they have, absorbing menstrual blood with newspapers or dirty clothes, and not washing or washing the vagina with dirty water. Bad menstrual hygiene practices are not limited to these. There are others but these unhealthy practices can lead to things like fungal infections, bacterial infections, yeast infections, and Urinary Tract Infections (UTIs). These complications can lead to things like childlessness, other illness complications (UTIs can lead to sepsis), and even death [4,5].

According to the 2020 Global Education Monitoring (GEM) report [5], menstruation in developing countries such as Sub-Saharan Africa, are more likely to use make-shift pads which involve using materials like pieces of old clothes, cotton wool, paper or leaves to make a temporary absorbent for menstrual blood instead of using more regular menstruation items like disposable or reusable pads, tampons, etc.

According to a 2014 UNESCO [5] research, in Sub-Saharan Africa, for every ten females, one missed school because of their menstrual cycle. According to some estimates, this can account for up to 20% of a school year. When girls start menstruating, many of them drop out of school. Should 20% of a year's school days be missed by young women owing to a lack of facilities, information, or sanitary products? [6]. Period poverty is a global issue and affects Nigerians [7] but it is overlooked and understudied as realized during our research. This study will bring to light the challenges faced by adolescent school girls due to period poverty.

This study will serve as a baseline for other studies on period poverty. Due to the findings from our study, adolescent girls in secondary schools will get more attention concerning the issues they have with their periods which will lead to a reduction in the stigma of menstruation, subsidy in menstrual products, and information on how to handle periods hygienically. It is envisaged that findings from the study will be a pointer to some adolescent reproductive health needs in Osun State, and will also provide the foundation for policymakers to make a rational decision on improving adolescent reproductive health in Nigeria as we intend to publish this study. The findings from this study will also reduce the rate of Urinary Tract Infections and other infections caused by poor hygiene during menstruation as people would come to realize from the findings of this study that this topic needs more attention and might come to the rescue of these school children which will, in turn, lead to good menstrual hygiene practices since they would have the right information and materials for menstruation. It is also possible that this study will contribute to a change of policy like a subsidy on a particular brand of pads for people who cannot afford it. The study, therefore, assessed factors influencing period poverty among female adolescent students in public secondary schools in Ede North, Osun State, Nigeria.

Methods

Study setting and design

This study was conducted in four selected public secondary schools in Ede North, Osun state. The public secondary schools are CAC grammar school, Baptist high school, Timi Agbale grammar school, and Mapo-aogun comprehensive high school.

This study adopted a descriptive cross-sectional study design to describe the factors influencing period poverty among female adolescents in public secondary schools in Ede North, Osun state.

Target population

The study population comprised female adolescent students attending public secondary schools in Ede North LGA, Osun state.

Sample size determination

The sample size for the factors influencing period poverty was calculated using the Leslie Kish formula with the following assumptions 95% CI, 5% margin of error, 10% for attrition rate, and 25% for the estimated prevalence of Nigerian women affected by period poverty in a page released by Rodriguez in 2021 [6], the calculated sample size was 317.

Sampling technique

Multistage sampling was adopted for selection. Four schools were selected by a simple random sampling technique by balloting. In the selected schools, questionnaires were distributed to the schools proportionately according to the number of girls they have in the schools. A simple stratified method was used by giving the same arm the questionnaires to fill throughout the different classes. The arm was selected by balloting. Respondents were selected using random sampling techniques in the arm selected.

Data collection

The data for this research was collected quantitatively with the use of carefully designed and structured questionnaires written by the researchers in English Language to elicit information from the respondents of the questionnaires which aided the research. It contained 5 sections: Section A: socio demographic characteristics, Section B: assessment of the level of period poverty, Section C: personal factors that can contribute to period poverty, Section D: school factors that can contribute to period poverty and Section E: background factors that can contribute to period poverty. The instrument was subjected to face validity. The reliability test was conducted using Cronbach's alpha with an intra-class coefficient value of 0.73 making it reliable.

Variables

The factors influencing period poverty are the outcome of the different variables computed from items related to period poverty. The socio-demographic variables (age, tribe, religion,

school, class, father's occupation and mother's occupation), variables on the level of period poverty (how often they use sanitary pads, how often they change their menstrual absorbent, how often they are talked to on menstrual hygiene, how often they have access to clean, running water, how often they have privacy during their periods, how often they have access to quality disposable waste bin during menstruation and how often they have access to clean toilets and bathrooms during their periods), most used absorbents (sanitary pads, tampons, menstrual cups, tissue paper, cloth/pieces of cloth and nothing), personal factors (Sanitary products are not available, sanitary products are not affordable, keeping to oneself regarding menstruation and having access to menstrual supplies), school factors (Lectured on menstrual hygiene in school, access to clean running water in school, no suitable waste bin for disposing sanitary products in school, school toilet being unclean and not private enough for girls menstruating) and background factors (Menstrual hygiene discussed or taught in the family, mother being educated and having a tradition that restricts whoever is menstruating in the family to use or eat some things).

Data analysis

IBM (International Business Machines Corporation) SPSS (Statistical Package for the Social Sciences) version 25 software was used for the analysis of the data.

Data generated for the study were analyzed by descriptive statistical techniques such as frequency counts and percentages using tables and charts to express derived results. Each correct response under categorical variables of two levels attracted one point, whereas any wrong answer or no response attracted no mark. The hypothesis was tested using Chi-square at a 0.05 level of significance.

Ethical consideration

A letter of approval was gotten from the Department of Public health, Adeleke University, Ede Osun state. The purpose and scope of the study were explained to the respondents before they filled out the questionnaire. Consent was sought from the principals of the schools the study was carried out and they were told to tell the students to inform their parents about the study. Consent was also sought from the respondents before they filled out the questionnaire. It was also made clear to the respondents that they were free to withdraw from the study at any point.

Results

Socio-demographic characteristics of respondents

On age, 15.4% were 10–11 years old, 21.2% were 12–13 years old, 25% were 14–15 years old, 23.1% were 16–17 years old, while only 15.4% were 18–19 years old with the mean age of 14.2 ± 3.8 . Of the tribe, majorities (91.1%) were Yoruba, 6.1% were Igbo, 2.2% were Hausa and others were 0.6%. For religion, below half (46.5%) practice Christianity, while above half (53.5%) practice Islam. For class, 29.8% were from JSS1, 25.3% were from JSS2, 25.0% were from SSS1, and 19.9% were from SSS2. On school, 31.1% were from Timi Agbale, 32.4% were from

C.A.C., 21.8% were from B.H.S. and 14.7% were from Mapo-aogun. For father's occupation, 25.3% were Traders, 27.6% were civil servants, and 36.2% were self-employed, while 0.1% was Private firm employee. In the mother's occupation, 71.2% were Traders, 12.8% were civil servants, 9.9% were self-employed, and 6.1% were Private firm employees (Table 1).

Table 1: Frequency Distribution of Respondents by Demographic Characteristics

Items	Frequency	Percentage
Age		
10-11 years	48	15.4
12-13 years	66	21.2
14-15 years	78	25
16-17 years	72	23.1
18-19 years	48	15.4
Total	312	100.0
Tribe		
Yoruba	284	91.1
Igbo	19	6.1
Hausa	7	2.2
Others	2	0.6
Total	312	100.0
Religion		
Christianity	145	46.5
Islam	167	53.5
Total	312	100.0
Class		
JSS 1	78	29.8
JSS 2	62	25.3
JSS 3	0	0
SSS 1	93	25.0
SSS 2	79	19.9
SSS 3	0	0
Total	312	100.0
School		
Timi Agbale	97	31.1
C.A.C	101	32.4
B.H.S	68	21.8
Mapo aogun	46	14.7
Father's occupation		
Trader	79	25.3
Civil servant	86	27.6
Self-employed	113	36.2
Private firm employee	34	0.1
Total	312	100.0
Mother's occupation		
Trader	222	71.2
Civil servant	40	12.8
Self-employed	31	9.9
Private firm employee	19	6.1
Total	312	100.0



Level of period poverty

The result shows that 26 (8.3%) of the respondents most times use sanitary pads as absorbents during monthly menstruation, 32 (10.3%) use it sometimes, 151 (48.4%) rarely use it and 103 (33.0%) never. Also, 242 (77.6%) of the respondents change their absorbents most times during menstruation, 33 (10.6%) change it sometimes, 15 (4.8%) rarely do that, and 22 (7.0%) never do that. More so, 47 (15.1%) said adults talk to them about menstrual hygiene most times, 57 (18.3%) said it happens sometimes, 105 (33.7%) said it happens rarely and 103 (33.0%) said it never happens. More results revealed that 67 (21.5%) most times have access to clean running water during monthly menstruation, 91 (29.2%) have access to it sometimes, 118 (37.8%) rarely have access, and 36 (11.5%) never. Also, 51 (16.3%) most times access clean toilet and bathroom during monthly menstruation, 79 (25.3%) sometimes, 107 (34.3%) rarely, and 75 (24.0%) never. 82 (26.3%) most times have secured privacy during monthly menstruation, 117 (37.5%) sometimes, 67 (21.5%) rarely, while 46 (14.7%) never. 12 (3.8%) have access to quality disposable waste bins during monthly menstruation most times, 28 (9.0%) do sometimes, 16 (5.1%) rarely, and 256 (82.1%) never (Table 2).

Most used absorbent

Table 3 presents the Frequency distribution of respondents by most used absorbents. Results revealed that for their most used absorbents, 46 (14.7%) frequently use sanitary pads, 0 (0%) use Tampons, 0 (0%) use Menstrual cup, 176 (62.8%) frequently use cloth/rags, 64 (20.5%) use tissue paper, while 26 (16.7%) use nothing.

Figure 1 above the present level of period poverty. Results revealed that the majority 79.5% experienced intense period poverty, 14.1% were rated average, and 6.4% experienced less intense period poverty.

Personal factors influencing period poverty

Table 4 below presents the frequency distribution of respondents by personal factors influencing period poverty.

Results revealed that 72 (23.1%) respondents attested that sanitary pads are not available. 44 (14.1%) held that the claim is partially true while 196 (62.8%) refused the claim.

Furthermore, 213(68.3%) respondents agreed that sanitary products are not affordable for them, 65(20.9%) held that the statement is partially true while 34(10.8%) refused that sanitary products are not affordable for them.

Also, 222(71.1%) agreed that they like keeping to themselves regarding menstruation, 66(21.2%) agreed partially while 24(7.7%) stated that the statement is false for them.

More results revealed 101(32.4%) admitted that they have access to menstrual supply, 138(44.3%) agreed partially while 73(23.3%) refused that they do.

Figure 2 above presents personal factors influencing period poverty. Results revealed that the majority (72.4%) had personal factors that can influence period poverty, while 27.6% had personal factors that might not influence period poverty.

School factors influencing period poverty

Table 4 below presents the frequency distribution of respondents by school factors influencing period poverty.

Results revealed that 257(82.4%) held that school toilet is not private enough for girls menstruating, 16 (5.2%) partially agreed, and 39 (12.4%) declined.

More so, 52 (16.6%) held that they have access to clean running water in school, a few 16 (5.1%) partially agreed, while a higher percent 244 (78.3%) held a contrary view

Also, 57.1% held that there is no privacy for girls menstruating, a few (6.4%) were undecided and 36.5% declined.

More so, the majority 264(84.6%) held that there is no suitable waste bin for disposing of sanitary products in their school 31(9.9%) partially agreed, while 17(5.5%) held a contrary view.

Also, more than half – 197 (63.1%) agreed that they had been lectured on menstrual hygiene in their school, 4 (1.3%) partially agreed and 111 (35.6%) disagreed Table 5.

Figure 3 above presents school factors influencing period poverty. Results revealed that the majority (70.6%) gave responses that show the school having conditions that can contribute to period poverty. while 29.4% gave responses that

Table 2: Level of period poverty.

VARIABLES	MT	ST	R	N	TOTAL
How often do you use sanitary pads as absorbent during monthly menstruation	26 (8.3%)	32 (10.2%)	151 (48.3%)	103 (33.0%)	312 (100%)
How often do you change your absorbent during menstruation	242 (77.6%)	33 (10.6%)	15 (4.8%)	22 (7.0%)	312 (100%)
How often do adults talk to you about Menstrual hygiene	47 (15.1%)	57 (18.3%)	105 (33.7%)	103 (33.0%)	312 (100%)
How often do you have access to clean running water during monthly menstruation	67 (21.5%)	91 (29.2%)	118 (37.8%)	36 (11.5%)	312 (100%)
How often do you have access to clean toilet and bathroom during monthly menstruation	51 (16.3%)	79 (25.3%)	107 (34.3%)	75 (24.0%)	312 (100%)
How often do you have your privacy secured during monthly menstruation	82 (26.3%)	117 (37.5%)	67 (21.5%)	46 (14.7%)	312 (100%)
How often do you have access to a quality disposable waste bin during monthly menstruation	12 (3.8%)	28 (9.0%)	16 (5.1%)	256 (82.1%)	312 (100%)

*MT: Most Times; ST: Sometimes; R: Rarely; N: Never.



show the school having conditions that would not contribute to period poverty.

Background factors influencing period poverty

Table 6 below presents the frequency distribution of respondents by background factors influencing period poverty.

Results revealed, that the majority 246 (78.8%) agreed that no one has ever discussed or taught them menstrual hygiene in my family, while a few, 66 (21.2%) out rightly declined.

Also, a majority (71.5%) held that their Mother isn't educated, while a few (28.5%) declined.

More results show that the majority (83.7%) affirmed that, they have a tradition that restricts whoever menstruating in our family to use or eat some things and a few (16.3%) refuted.

Figure 4 below presents background factors influencing period poverty. Results revealed that the majority (76.6%) had background factors that could influence period poverty, while 23.4% had background factors that might not influence period poverty.

Table 4: Frequency distribution of respondents by Personal factors influencing period poverty.

Variables	T	P	F
Sanitary products are not available	72(23.1%)	44(14.1%)	196(62.8%)
Sanitary products are not affordable for me	213(68.3%)	65(20.9%)	34(10.8%)
I like keeping to myself regarding menstruation, I don't like discussing issues about menstruation with people (adults)	222(71.1%)	66(21.2%)	24(7.7%)
I have access to menstrual supplies (like tissues, laundry soaps, clean underwear, etc.)	101(32.4%)	138(44.3%)	73(23.3%)

* T: True; P: Partially true/false; F: False

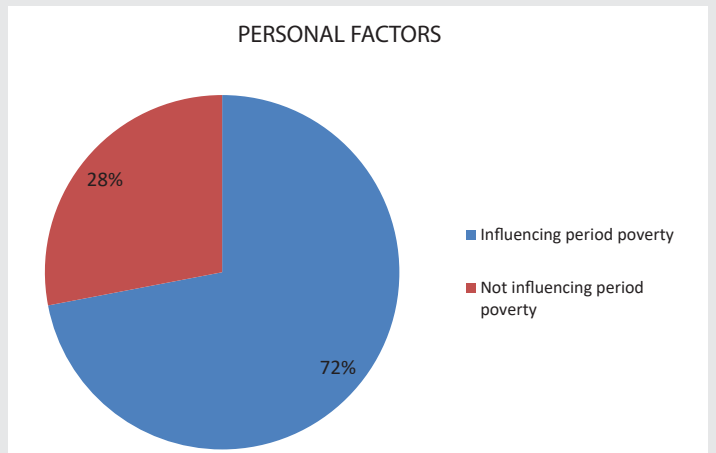


Figure 2: Overall personal factors influencing/not influencing period poverty.

Table 3: Most used absorbent.

Variables	Frequency	Percentage (%)
Sanitary pads		
Yes	46	14.7%
No	266	85.3%
Tampons		
Yes	0	0%
No	312	100%
Menstrual cups		
Yes	0	0%
No	312	100%
Tissue paper		
Yes	64	20.5%
No	248	79.5%
Cloth/pieces of cloth		
Yes	176	62.8%
No	136	37.2%
Nothing		
Yes	26	16.7%
No	286	83.3%

Table 5: Frequency distribution of respondents by School Factors.

Variables	T	P	F	TOTAL
I have been lectured on menstrual hygiene in my school	197(63.1%)	4(1.3%)	111(35.6%)	312 (100%)
I have access to clean running water in my school	52(16.6%)	16(5.1%)	244(78.3%)	312 (100%)
There is no suitable waste bin for disposing of sanitary products in my school	264(84.6%)	31(9.9%)	17(5.5%)	312 (100%)
The school toilet is unclean and not suitable for use	257(82.4%)	16(5.2%)	39(12.4%)	312 (100%)
School toilet is not private enough for girls menstruating	226(72.5%)	58(18.6%)	28(8.9%)	312 (100%)

* T: True; P: Partially true/false; F: False

Contributing factors to period poverty

Personal factors - There is a significant association between personal factors and period poverty among female adolescents attending public secondary schools in Ede North Osun State [$\chi^2 = 9.853$; $DF = 2$; $p = 0.017$].

School factors - There is a significant association between school factors and period poverty among female adolescents attending public secondary schools in Ede North Osun State [$\chi^2 = 16.612$; $DF = 4$; $p = 0.002$].

Background factors - There is a significant association between background factors and period poverty among female adolescents attending public secondary schools in Ede North Osun State [$\chi^2 = 15.385$; $DF = 2$; $p = 0.001$].

LEVEL OF PERIOD POVERTY

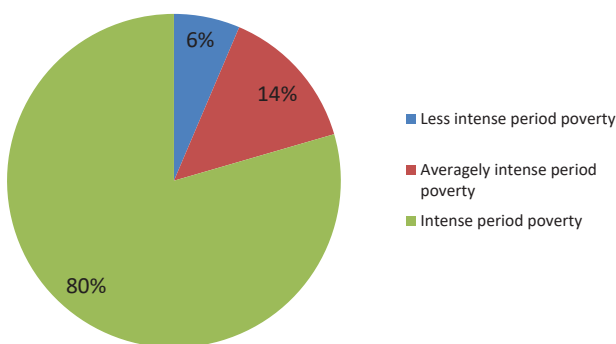


Figure 1: Overall level of period poverty.

SCHOOL FACTORS

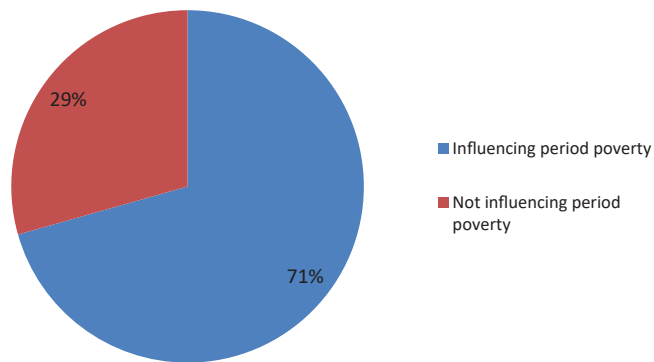


Figure 3: Overall school factors influencing/not influencing period poverty.

Table 6: Frequency distribution of respondents by background factors influencing period poverty.

Variables	Frequency	Percentage
Menstrual hygiene was discussed or taught in my family		
Yes	66	21.2%
No	246	78.8%
Mother is educated		
Yes	89	28.5%
No	223	71.5%
We have a tradition that restricts whoever menstruating in our family to use or eat some things		
Yes	261	83.7%
No	51	16.3%

BACKGROUND FACTORS

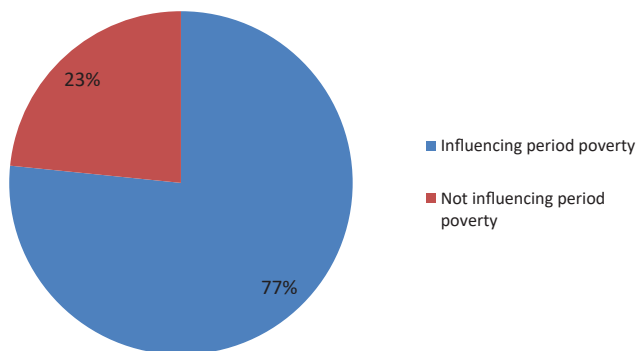


Figure 4: Overall background factors influencing/not influencing period poverty.

Discussion

Level of period poverty

From the result of the just concluded study, the mean age was 14.2 ± 3.8 years; this was not in tandem with the study conducted in the United States which reflected the mean age of 20.6 years [8].

The study revealed that most respondents have an intense period of poverty. A study involving college-aged menstruating individuals reported that 14.2% had experienced period poverty in the past year and an additional 10% experienced it

every month [9]. However, this was not in line with the just concluded study. The difference in the location/region could be responsible for the disparities in both studies.

Lahme, Stern & Cooper [10] held that menstrual hygiene education is one of the indicators of period poverty and 15.1% of the respondents agreed that adults talk to them about menstrual hygiene most time. Although 63.1% agreed that they had been lectured on menstrual hygiene in their school, 71.1% agreed that they like keeping to themselves regarding menstruation and don't like discussing issues about menstruation with people, so it is safe to say that if the issue is not brought up for conversation, opening up for most people according to just concluded the study, would be difficult which might require an adult to bring up the conversation and probe to see if they have questions.

More results revealed that cloths/pieces of cloth are the most used absorbent among other absorbents listed leading with 62.8% similar to a study [11,12] which stated that 82.2% of the population in the community use pieces of cloth as an absorbent while the use of sanitary pad was 66.2%. This result also finds reason with a study [13,14] that found that the majority 14.7% of adolescent girls across schools lack access to the sanitary pad as sanitary pads came in as the least absorbent to have.

Personal factors influencing period poverty

Findings also revealed that the majority of the respondents have personal factors that are associated with period poverty. This study is evidence that a significant part of the study population doesn't and partially have access to menstrual supplies like tissue and cannot afford sanitary products such as pads, tampons, and menstrual cups as a majority - 68.3% said that they cannot afford sanitary pad finding corroborate with the study conducted in rural Kenya [15] who stated that the high price of the item, the country's difficult economy, and society's neglect of the girl child are all elements contributing to the problem of period poverty, according to the report.

School factors influencing period poverty

As regards school factors, although above average 63.1% attested that they have been taught menstrual hygiene (a vital part of period poverty), findings also revealed that school facilities are non-satisfactory for girls during their period. The implication is that most of the available facilities across schools in the study area do not support menstrual hygiene. This is evident in that, the majority agreed that the school environment isn't private enough during their periods, there's hardly access to clean running water, the school toilet is unclean and not suitable for use and there is no suitable waste bin for disposing of sanitary pads. Findings are in line with Mahajan [16] who found that lack of access to adequate WASH (Water, Sanitation, and hygiene) facilities often results in a period of poverty.

Background factors influencing period poverty

Findings also revealed that most of the respondents have



background factors associated with period poverty. This was evident in the study, most respondents affirmed that no one in their family has discussed or taught them menstrual hygiene in their family. The implication is that most respondents learned about menstruation from outside the home. The probable reason is that; most mothers are not educated as shown in the findings. This is supported by Lahme, Stern & Cooper 2018 [17] who found that girls suffer from poor menstrual hygiene, which originates from a lack of knowledge, culture, and tradition. Menstrual hygiene is closely linked to period poverty as period poverty includes a lack of knowledge of good menstrual practices [18]. Findings are also in line with [19,20] who found that education, the rural-urban divide, and infrastructural limitations of the family are major contributors to period poverty.

Limitations

The JSS 3 and SSS 3 students were not available due to their exams and tutorials so we couldn't get their responses. Also, some government schools were used in Ede North, Osun state. This implies that the finding is limited to being generalized within government secondary schools.

Conclusion

In conclusion, period poverty is one of the paramount issues affecting adolescent females. Personal factors like sanitary pads being accessible and affordable etc. contribute to the increase of period poverty including school factors like the school facilities not being period-friendly as period poverty is anything that does not allow a woman to handle her period with dignity. Background factors which include socio-cultural norms the individual grew up with should allow adolescent girls to see menstruation as a normal event. Period poverty is a contributing factor to things such as embarrassment, loneliness, urinary tract infections, and depression including missing school attendance, curbing factors (personal, school and background factors) that influence (increase) the rate of period poverty would reduce these effects.

Declarations

Data availability: The data collected and analyzed during the current study are available from the corresponding author upon reasonable request.

Ethical approval: The study proposal was approved by the Institution (Adeleke University) Scientific and Research Ethical Committee.

Authors' contributions

OO, EUA, OG, AAV, OOC, and ATF was responsible for study conception, EUA, OG, AAV, OOC, and ATF were responsible for data gathering, analysis, and interpretation and OO was responsible for manuscript drafting for publication.

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