

BMJ Open Schools preparedness for menstrual hygiene management: a descriptive cross-sectional study in the West Gonja Municipality, Savannah Region of Ghana

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To cite: Asumah MN, Abubakari A, Gariba A. Schools preparedness for menstrual hygiene management: a descriptive cross-sectional study in the West Gonja Municipality, Savannah Region of Ghana. *BMJ Open* 2022;**12**:e056526. doi:10.1136/bmjopen-2021-056526

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2021-056526>).

Received 17 August 2021
Accepted 07 March 2022



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ABSTRACT

Objective This study aimed to investigate schools' preparedness for menstrual hygiene management in the West Gonja Municipality of Ghana.

Design This was a cross-sectional study with a mixed-methods approach.

Setting Junior high schools in the West Gonja Municipality.

Participants Twenty-six schools were randomly selected, and 13 schoolgirls were purposively chosen for qualitative interviews.

Analysis of data The quantitative and qualitative data were analysed using Microsoft Excel and thematic content analysis, respectively. The transcriptions were printed out and read repeatedly to identify similar wordings, phrases, concept and meanings.

Outcomes Presence of menstrual hygiene facilities in basic schools.

Results Majority (69.2%) of the schools were poorly prepared towards menstrual hygiene management. Only 38.5% schools had water, most schools (61.5%) did not have waste bins, 30.8% of the schools had designated places for changing of menstrual materials. No school had menstrual hygiene materials available for emergency use. All participants acknowledged inadequate hygiene facilities in their schools. During menses, adolescent girls often absent themselves from school. Girls tend to be very inactive during their menstrual period for fear of embracement from their male counterparts. The following themes were obtained 'unavailability of hygiene material', 'involvement in class during menses' and 'absence from school'.

Conclusion Schools in West Gonja Municipality have inadequate menstrual hygiene management facilities that could be a major setback to the health and educational attainment of young girls. The Ministry of Sanitation and Water Resources should expand menstrual hygiene and its management to reach the West Gonja Municipality as part of the National Sanitation and Hygiene Strategy.

INTRODUCTION

Menstruation is a normal and common occurrence for women during their reproductive years, and it is accompanied by considerable physiological and mental changes.¹ Menarche is an indicator that a woman has reached

Strengths and limitations of this study

- To our knowledge, this study is the first to be conducted in the study setting.
- Inadequate menstrual hygiene management/water, sanitation and hygiene facilities in basic schools is a major setback to the health and educational attainment of young girls.
- The study used the mixed-method approach to provide more context to the quantitative data.
- The results cannot be generalised to the whole population because the current study focused on girls who were in the basic schools.

puberty.² According to the Joint Monitoring Programme for water supply and sanitation, effective menstrual hygiene management (MHM) entails 'women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for body washing as needed, and having access to facilities to dispose off used menstrual management materials'.³ MHM-friendly basic infrastructure, such as separated toilets, bathroom facilities, as well as water and soap for personal hygiene for female students and teachers is now included in World Vision's school water, sanitation and hygiene (WASH) programmes.⁴ This is because World Vision acknowledge the significant contribution of MHM friendly facilities in promoting equal access to education.

WASH accessibility is a vital prerequisite for establishing a safe school environment that provides equitable chances for higher educational attainment and health status.⁵ The Sustainable Development Goals (SDGs) (targets 4.a, 6.1, 6.2) highlight the significance of WASH in schools as important aspects of a 'safe, non-violent, inclusive and effective learning environment' and as part of 'universal'

WASH accessibility.⁶ Poor school hygiene has a significant impact on women, particularly pubertal girls, it creates an unfavourable school atmosphere for them.⁷ If not appropriately addressed, these issues created by poor hygiene in schools could continue to threaten the potential of girls and the achievement of numerous key targets of the SDGs.

Despite improved awareness of menstrual-related issues over decades,^{8,9} a greater multisectoral commitment is required to satisfy the demands of all persons who menstruate.¹⁰ Schoolgirls in marginalised or rural areas face the greatest challenges to MHM because most schools lack the required hygiene facilities, resources and information to effectively assist girls during menstrual period.⁴ Limited sanitary products, sociocultural influence on MHM, unsatisfactory water supply, insufficient WASH facilities, lack of information and confidential places for changing and washing at home or school are all persistent problems that have deleterious impact on learning, wellness and economic outcomes.¹¹ Over 50% of schools in low-income countries either do not have enough WASH facilities for women or they are mostly unclean.¹²

MHM presents numerous challenges and prospects to girl child education.^{13,14} Various studies provide evidence that school going girls are usually absent during their menstrual period due to inadequate facilities in schools, which have adverse implications on their lives and Ghana as a whole.^{15–18} In schools where these essential environments including waste dumping facilities are not available, girls experience discomfort while at school which affects learning.¹⁹

Over 260 schools in Ghana are benefiting from the World Bank initiative to provide sanitation infrastructure and hygiene education. The initiative was necessitated by the findings of a qualitative study, which revealed that inadequate WASH facilities, lack of sanitary products and undesirable cultural values and rules were limiting girls' attendance of school.²⁰

In Accra, Ghana, Sommer *et al*²¹ reported insufficient toilets and inadequate privacy measures in toilets in public schools. Up north, it was found that primary schools in the Zabzugu district did not have adequate WASH facilities while existing facilities are underused.²² These inadequate facilities result into poor practice of MHM in schools with its attendant problems including absenteeism. There is a global increase in girls' education with enhanced holding and grade advancement for girls in many countries.²³

Although inadequate hygiene facilities in schools are widely investigated,^{24–27} there is no such study in the newly created Savannah region. The essence of this study is to assess the basic schools' preparedness for MHM in the West Gonja Municipality (WGM).

MATERIALS AND METHODS

Study design

Descriptive cross-sectional study design was used with a mixed-methods approach. The schools' preparedness

levels were assessed quantitatively using observation check list while we sampled a small number of girls in each school for an in-depth interview to provide more context to the quantitative data.

Study setting

The study was conducted in the WGM. Damongo is the capital of the municipality as well as the regional capital of the newly created Savannah Region. Damongo is also the seat of the paramount chief of Gonja ('Yagbonwura'). The WGM was 'established in 2004 by a new legislative instrument (L.I.1775). It shares boundaries to the south with Central Gonja District, Bole and Sawla-Tuna-Kalba Districts to the west, Wa East District to the north-west and North Gonja District to the east'.²⁸ According to the 2010 Population and Housing Census (PHC), the total number of persons in the study area was 41 180, of which 20 681 (50.2%) were men and 20 499 (49.8%) were women with about 10 518 (25.5%) being adolescents. The municipality is blessed with a lot of tourist sites including the largest forest reserve in West Africa located in Mole, Laribanga, mystic stone and mosque.²⁸ The study setting was chosen because there are no available studies on the subject matter. As a new region, findings emanating from this study may influence the policy direction in making basic friendly to increase girl child enrolment in schools and to promote a hygienic environment in schools.

Sample size and sampling

Twenty-six schools were recruited for the quantitative arm of the study. The municipality has six circuits (cluster). To ensure that equal opportunity was given to all these circuits, the study used the stratified random sampling method. Number of schools were selected proportional to size. For each circuit, four schools were chosen at random. However, in the Damongo north and south circuit, five schools were chosen at random because they had more schools compared with the other circuits. For each circuit, two students were interviewed to elicit their experiences of menstrual hygiene practices in their respective schools. A total of 13 adolescent school-girls were purposively chosen with different background to produce qualitative data on hygiene facilities and its effect on the schoolgirl as this information was essential to support the quantitative results as point of saturation was reached after the 13th interview.

Data collection tools and techniques

Data were collected using an observational checklist and in-depth interviews.

Checklist was self-developed and used to assess the MHM preparedness in basic school. Using observations, the items on the checklist were looked out for in each school. The specific observations include; availability of water, soap and water for hand washing, boys share latrines with girls, absorbent material available in school, designated place for changing menses, designated place clean, is designated place accessible to all girls, waste bins

available for collection of refuse and are the waste bins emptied regularly. We also contacted the School Health Education Programme coordinator of each school, who took us to specific hygiene facilities for observation.

Thirteen in-depth interviews were conducted using an in-depth interview guide among schoolgirls within the municipality. This data collection methods permit for interviewers to clarify a respondent's feedback to increased credibility and confirmability. The interviews lasted between 20 min and 30 min. The students were made to choose a convenient place and time for the interview. This was to ensure that, the girls were focused and without distraction in the course of the interview. The interview guide was developed in accordance to the specific objectives of the study. Field note books and a recorder was used in collecting the qualitative data. Respondents body language was observed in their response to the questions. Based on the responses, the respondents were probed further to reveal more information. Most of the interviews were conducted at the schools except three, which the students opted to have at home. Permission was obtained from the participants to audio tape the interviews. The in-depth interviews were conducted along the study objectives which provided more detailed information to support the quantitative data generated by observations. The interviews were conducted by trained woman undergraduate nurses. The interviews were conducted in English and Gonja. Before the start of the interviews, the interviewers engaged participants to prolong the interview and understand the reflexivity of the respondents. This was essential to reduce interviewer and interviewee biases. After each section with the participants, the interview is played back to the participants to confirm her response. This was necessary to ensure that the interview is complete and carries the intention of the respondents. Thereafter a code is assigned to each recording at the end of a session to ensure anonymity. To ensure transferability, the interview was conducted with people with different background. Data were stored on a secured Google drive that were accessible to only authors. The interviews were transcribed verbatim. Data collection started in January 2020 and ended in March 2021.

Data processing and analysis

Quantitative data were analysed using Microsoft Excel. Descriptive statistics such as frequencies and percentages were generated and presented using tables and graphs. Ten observations were used to compute the school MHM preparedness (thus, low or high school preparedness towards MHM). The specific observations included; availability of water, soap and water for hand washing, boys share latrines with girls, absorbent material available in school, designated place for changing menses, designated place clean, is designated place accessible to all girls, waste bins available for collection of refuse and are the waste bins emptied regularly). Citing any of these items in a school was awarded a point and absence of any items was awarded 0. A total of 10 points was realised, thus if a

school had 5 and above points (thus 50% and above), it was described as high preparedness towards MHM while less than 5 (thus <50%) was classified as low preparedness towards MHM.

The qualitative data were scrutinised using the manual Thematic Content Analysis. The audio recordings were transcribed verbatim. The transcribed data were checked for accuracy and read severally to under the perspective of the participants. The transcribed data were coded individually by two of the researchers who then had several discussions to generate themes and subthemes based on the transcribed data. Heading of each theme was created then extracts and excerpts were used as quotes.

Informed consent

Permission was granted by the Director of Education for WGM and head of selected schools. Consent was sought from each participant before being included in the study. Subjects who did not give their consent were excluded from the study. Participants were made aware that the study was voluntary and they could withdraw at any point in time during the process if the need arises. There were no compensations for participants. Finally, all participants were made aware that, the findings of this study will be published.

RESULTS

Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of the study participants. Out of the 13 respondents, the minimum age was 13 years and the maximum age was

Table 1 Socio-demographic characteristics of girls		
Characteristic	Frequency	Per cent
Age		
≤15 years	7	53.8
>15 years	6	46.2
Class		
JHS 1	4	30.8
JHS 2	4	30.8
JHS 3	5	38.4
Area of residence		
Urban	6	46.2
Rural	7	53.8
Ethnicity		
Gonja	6	46.2
Dagaaba	3	23.0
Other	4	30.8
Religion		
Muslim	7	53.8
Christian	6	46.2

JHS, junior high school.

19 years. The mean age is 15.8 with a SD of 1.81 with the modal age of 15. Most (38.5%) respondents were in junior high school 3, 46.2% were Gonjas and 53.8% were Muslims (table 1).

Hygiene infrastructure in basic schools

The data show that only 30.8% of basic schools in the WGM are prepared towards MHM. Only 38.5% had a regular supply of water. Most of the schools (61.5%) had no hygiene facilities. Also, majority (92.3%) of the schools have no soap for regular hand washing. In 92.3% of the school, women and men had a separate washroom. It was also observed that no school had absorbent materials in stock for emergency use at the time of this study. About a third of the schools had designated place(s) for changing during menses. It was also observed that 38.5% of the schools have waste bins for collection of refuse (table 2).

Qualitative data

All the participants acknowledged inadequate hygiene facilities in schools including urinals, toilets and designated rooms for changing of absorbent materials. The absence of these facilities makes the menstruating girl uncomfortable with managing menstrual flow while at school. Privacy is not assured during menses, which tends to make them stay home during their menstrual flow, until the menses stops. By this, the contact hours and involvement in class activities are also affected greatly.

Availability of hygiene facilities in basic school

All participants were of the view that there are inadequate urinals and toilets, waste bins, absorbent materials for emergency use and a designated place for changing of pads in schools. As captured in the excerpt below:

...Our school has a urinal and toilet. They are separate facilities for each sex. Usually, during break time, some of us have to use the bush or else we would not get space and it would be time to go back to class ... (19 years old student)

Other students were of the view that although urinals and toilets are available in schools, they are not adequate. For example, a 14-year-old student has this to say:

... Though they are urinals and toilets, they are often not enough to serve us all... (14 years old student)

About six participants opined that there were no dustbins for disposal of the used absorbent material and so they just throw it away anyhow but others too are compelled to send the used absorbent home for disposal as captured in the excerpt below.

... for my menses, the flow in the first three (3) days are often very heavy. I sometimes change more than five (5) times in a day. Thus, in my school, even if you have your own sanitary pad, it becomes very difficult to dispose it. This is because there are no dustbins in the school. They have dug out pits for disposal of all refuses and close it up when it gets full. Unfortunately

Table 2 Menstrual hygiene infrastructure in basic schools of West Gonja Municipality

Variables	Categories	Frequency	Percentage
Is there water source available in school			
	Yes	10	38.50
	No	16	61.50
Type of water point			
	Borehole	8	30.8
	Well	2	7.7
	No source of water	16	61.5
Is the water point functional			
	No source of water	10	39.50
	Yes	16	61.50
Are there designed hygiene facilities (water point) clean			
	No	16	61.5
	Yes	10	38.5
Is your school under the WASH programme			
	No	20	76.9
	Yes	6	23.1
Is the soap regularly used for hand washing			
	No	24	92.3
	Yes	2	7.7
Is menstrual hygiene taught in any of the school's subjects			
	Yes	26	100
Do the boys share same latrines/urinals as the females			
	No	24	92.3
	Yes	2	7.7
School has designated place for changing			
	No	18	69.2
	Yes	8	30.8
The designated place is accessible during menses			
	No	24	92.3
	Yes	2	7.7
Waste bins available in the school			
	No	16	61.5
	Yes	10	38.5
Waste bin gets emptied regularly			
	Yes	10	38.5
Are there care takers for the sanitary facilities			
	No	26	100
Does the school or government pay for the cleaning			
	No	26	100
Does the school or government pay for repairs or cleaning			
	No	26	100
Is there any incinerator located in school premises			
	No	26	100
School preparedness for MHM practices (index)			

Continued

Table 2 Continued

Variables	Categories	Frequency	Percentage
	Low preparedness for MHM	18	69.2
	High preparedness for MHM	8	30.8

MHM, menstrual hygiene management; WASH, water, sanitation and hygiene.

for me, it's against our culture to dispose the sanitary pads anyhow. Due to this, sometimes you are compelled to carry your used menstrual materials back to the house for proper disposal... (16 years old student)

However, two students disclosed that they disposed their used sanitary pad in the school pits as illustrated in the excerpt below.

... They are no dustbins in the school, so some of us just wrap it in a black polythene bag and then dispose them off in the bush and sometimes in the pits dug out for refuse disposal... (18 years old students)

There are no designated places for girls who are experiencing their menstrual flow to change and the school do not have any absorbent materials for the girls for emergency use. The existing facilities such as urinals and toilets also lack gates with locks to ensure privacy. Most (eight) participants resort to bushes to change their absorbent material.

..., There is no space for us to change during menses. If you are aware of the menses, you have to prepare at home, so that when you see it, you would just go to the bush and change... (15 years old student)

...urinals and toilets do not have locks and so you can be there and someone would just come and enter. To avoid this embarrassment, you just have to go to the bush. For those of us who come unprepared for menses, we ask for permission to go home and change and return to school... (14 years old students)

... nobody gets menstrual hygiene material for us in case of emergency. When it happens, you alone would know how to get the cotton or pad to change. I do not know of any school in this area that provides absorbent material for her students for emergency use, so we are now used to this phenomenon... (15 years old student)

Absence from school activities

Due to inadequate hygiene facilities, some participants miss out some lessons when they are menstruating. For those whose homes are far from the school and those who have one uniform, they usually miss school activities during menses for up to 3 days each month.

... My home is far from school, so I am absent from school's activities during my menses for the rest of

the school periods. When I am done with the bleeding, I return to school.... (15 years old students)

... When you menstruate and come to school, you become very uncomfortable. So, during the first three days when the menstrual flow is heavy, I do not go to school.... (16 years old student)

The disciplinary measure in the school does not favour girls with one uniform. Some girls fear to be meted out with actions such as caning or any other punishment for contravening the rules (thus wearing 'improper' to school).

... It is not only those whose houses are far who absent themselves from school during menses. I am in this community and have only one uniform. Therefore, if my uniform is soiled, I cannot go and change and come back to school immediately. I have to wash and dry my uniform. I cannot use 'improper' in school; the teachers would cane me. Depending on the menstrual flow, I can even absent myself from school for more than 3 days to avoid any embarrassment... (15 years old student)

Involvement in class activities

Five participants said they are unable to participate in class activities when experiencing menstrual flow for fear that their male counterparts may make fun of them as explained by an 18 years old student below:

...I feel very uncomfortable when I am menstruating while in class. If the male counterparts see the flow (menstrual blood), they would tease you till you leave the class. They would block their noses, while passing unpalatable comments like the class is smelly as a result of the menstrual flow, Vodafone (signifying red; the colour of blood), etc... (18 years old student)

Four of the participants are not able to associate themselves and so isolate from the rest of their peers as illustrated in the excerpt below:

...When I am in my menses, I do not want to talk in class. I do not involve myself in activity such as playing with my peers for the fear that I may be exposed. (17 years old student)

Some of the teachers would require that you stand when you need to answer or ask a question. This lowers the self-confidence among the menstruating girls and prevents them from contributing in class as explained by a 19 years old student below:

...our teachers do not like you sitting while answering questions in class. This may further expose you if your uniform is already soiled. To prevent this, you may just choose to take permission and go home to avoid your teacher saying you do not respect. In addition, for me I do not want to even contribute or ask questions since that can expose you... (19 years old student)

DISCUSSION

The study aims at assessing schools' preparedness towards MHM in the WGM of the Savannah Region, Ghana. There is available literature on hygiene facilities in school, however, in the current settings there is no such studies to inform policy formulation. The study contributes to the understanding of the challenges menstruating school-girls encounter as a result of inadequate hygienic infrastructure. The study further established that majority of schools in the setting were not prepared towards MHM.

The study estimated an average of 6 toilets per school with a SD of 4 toilets and a maximum number of 14 toilets in a school. Considering the enrolment in each of the schools and using a ratio of 25 (girls) : 1 (toilet or urinal), the toilet facilities are considered inadequate. This is in line with Loughnan *et al.*,²⁹ who opined that, the inadequate or absence of access to washrooms (toilets or latrines) has made over half a billion women and girls unable to effectively manage their menstruation in privacy. Additionally, this study revealed that about 38.4% of the toilets/urinals were clean, this was further supported by the qualitative data. This is consistent with Daniels³⁰ who revealed that in Cambodia the hygiene facilities are not cleaned in latrine, cobwebs on the walls, filth and sand on the floors and no soap were often seen.

During the in-depth interviews most of the students said they have separate latrines/urinals for men and women in their schools. This is contrary to Montgomery *et al.*,³¹ who reported that most girls share urinals/toilets with boys. Wendland³² asserted that there is often not enough toilets or urinals for all pupils and no isolated toilets or urinal for girls and boys in schools. Where separate facilities exist in schools, they are mostly untidy or spasmodically provided with water and can lack decent doors to ensure privacy.^{27 33 34}

It is obvious in the current study that all schools had inadequate toilets and urinals. Some students interviewed revealed that due to the limited number of these facilities, they are sometimes forced to use the bush or other facilities designated for men and vice versa. This assertion confirms that although there are separate facilities (toilets and urinals), there are no strict regulations on the usage, so it is usually used based on convenience. It was observed that 38.5% of the schools in the district have unclean hygiene facilities. It was also revealed that, due to defective doors and inadequate toilets/urinals, most of the girls had to ask permission to go home to change their used pads or to wash their soiled dresses. They feared that, while in the toilet/urinals someone may enter without their permission. In Accra, Ghana, in particular, Sommer *et al.*,²¹ reported insufficient toilets and inadequate privacy measures in toilets at public schools. Similarly, in a study conducted in Egypt by El-Gilany, Badawi and El-Fedawy,³⁵ it was reported that toilets were seen to be completely absent or insufficient, with faulty doors or malfunctioning water supply and sewerage systems.

Availability of water source on school premises is important in ensuring that school children are able to

have easy access to water for hand washing and drinking³⁶ as well as to support menstrual hygiene practices.³⁷ This study revealed that the majority of schools 68.2% had no available source of water. A cross-sectional study conducted in Accra, Ghana, in some basic schools, revealed findings in line with the current study. For example, they showed that resources such as frequent water supply were lacking in basic schools.³⁸ Furthermore, the majority of schools in underdeveloped countries, especially in deprived communities, have very limited facilities including water supply.³⁹ However, a study by UNICEF in 2012 reported that 50% of schools in developing countries do not have access to safe water.⁴⁰ This is slightly lower than the 69.2% reported in this study. Moreover, another study in Mzuzu city, Malawi, showed that as high as 92% of girls had a reliable source of water in their schools,⁴¹ this is much higher than the 30.8% reported in this current study. Good MHM practice is hinged on an adequate hygiene infrastructure and hygienic water sources for cleaning and washing together with using suitable sanitary materials and facilities for changing during menstruation, especially during school periods.⁴² Where adequate water supply is limited, the storage of water in large underground tanks and other rubber tanks is crucial in schools. Schools that depend on rain harvested water or that have piped connections can benefit from the importance of these substantial water storage facilities.²²

The study further revealed that only 30.8% of schools had designated places for changing during menses. This finding is better (more) than the findings of studies in primary schools in Niger and Burkina Faso which showed that there were no MHM facilities in schools.⁴³ However, the current finding (30.8%) is slightly lower than the 33% of girls who do not have designated and isolated places for changing during menses in Malawi.⁴¹ Furthermore, United Nations and UNICEF report that one major factor accounting for the low enrolment of girls (1:5) in schools compared with boys (1:6) is the non-availability of hygiene amenities for girls attaining puberty.²² In a study among basic schoolgirls in Legon, Ghana, it was reported that government or public schools did not pay keen interest to the hygiene desires and needs of the menstruating girls with respect to the provision of satisfactory health education and the type of hygienic facilities accessible to students. Some do not have properly secluded lavatories to provide a sense of privacy to the menstruating girls' needs.³⁸

Almost all schools (92.3%) did not have soap for regular washing of hands. This finding is in line with similar studies^{38 44} which reported that there were no soaps in basic schools for hand washing in Ghana. The supply of menstrual sanitary materials together with making soap and water available promotes hygienic and healthier behaviours, while deficient or no access to these hygiene facilities feeds into girls not washing their hands and consequently practicing poor MHM in public school.^{45 46} The practice of proper hand washing could go a long way to prevent other diarrhoeal infections as well.⁴⁷⁻⁴⁹ The

absence of these facilities therefore exposes not only the girl child but the entire students to ailments.

Furthermore, it was revealed in this study that certain subjects taught in the schools had menstrual hygiene as part of the curriculum (ie, social studies, integrated science). It must be noted that pre-menstruation topics taught at the lower levels of education encompass the much-needed advancement of girl education. There is a global increase in girl's education in the community with enhanced holding and grade advancement for girls in many countries.²³ Despite the presence of MHM in the curriculum, it emerged that not all teachers had attended menstrual hygiene education workshop and that there are no MHM teaching materials available in schools. Most girls mentioned that some teachers were not open in discussing issues of menstruation in class and boys exhibit apprehension when the topic is being discussed. The teachers' shyness in relation to the topic impacts the girl child as they are unable to ask questions on menstruation for fear that they may be ridiculed.

It emerged from this study that girls tend to be very inactive during menses as a result of the behaviour their male counterparts exhibit towards them when they get know. This finding is related to a study carried out in India, which show that boys' attitudes towards menstruating girls scare them from participating in class.⁵⁰ A study showed that sanitary facilities, information and/or absorbent materials when absent or limited in a school, the menstruating girls find it very difficult to manage themselves and hence they may become distracted and unable to focus in class.²³ The net effect is that the girls may cease to contribute in class, detach themselves or become socially left out by peers. The discomfort may compel some to even skip school altogether.^{18 51 52} In relation to the above, some schoolgirls absent themselves from school during their periods. Various studies provide evidence that school going girls are usually absent during their menstrual period due to inadequate facilities in the schools, which have implication on their lives in future.^{2 15–17 51 53 54} These students absented themselves from school due to the inadequate menstrual hygiene facilities, fear of being embarrassed due to leakage of menstrual flow as reported by this study. This is in line with Arya and Ambily,⁵⁵ who reported that an increased rate of dropout in school is as a result of unhygienic toilets and lack of private space for girls in Kannur District, India.

Overall, only 38.2% of the schools can be described as prepared towards MHM. This means that more schools in the municipality do not have adequate toilets, urinals, designated places for changing absorbent materials and so on. By extension, schoolgirls are unable to practice good MHM. The consequences of limited hygiene facilities in schools are dire on the schoolgirl, especially those in the developing world^{44 56} because it leads to ailments, including reproductive tract infection, menstrual disorders and urinary tract infections⁵⁷ and may have a negative impact on the environment as it creates a waste problem if there are no proper management strategies at hand.⁵⁸

Poor menstrual hygiene infrastructure is not supportive to the attainment of education for all, reduction of child mortality and morbidity, gender fairness and equality and empowerment of all women (ie, SDG 3, 4 and 5).⁴⁴

The main challenge encountered during the field work of the study was the reluctance of some of the girls to participate in the current study even though they met the inclusion criteria. This may further highlight the level of sensitivity of the topic in this society. To mitigate such issues, trained woman undergraduate nurses were used to collect the data. This study also classified hygiene facilities in school using a self-developed checklist. Thus, our classifications are likely to differ from similar studies that used other criteria to measure school preparedness towards MHM. Finally, the respondents self-reported their menstrual hygiene behaviours, thus reporting bias cannot be ruled out, despite efforts to minimise it. Nevertheless, the study provided insight on school preparedness towards MHM in the setting.

CONCLUSION

The present study showed that majority of schools in WGM were not adequately prepared for MHM practice. This could be a major setback to the health and educational attainment of young girls in the municipality as well as the government efforts to realise the SDGs.

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Acknowledgements We are grateful to Mr. Zakari Ali of the London School of Hygiene & Tropical Medicine who provided useful language support. We also appreciate the support of Mr. Adam Salifu (Director of Education, West Gonja Municipality), Mr. Osman Noah Abdul Razak (School Health Education Programme Coordinator, Damongo) and all teachers in the municipality, for supporting and facilitating my data collection processes. In addition, we are indebted to the participants who voluntarily decided to share their experiences to enrich this research.

Contributors Conceptualisation: MNA, AA; Data collection: MNA; Data curative: MNA, AA, AG; Formal analysis: MNA, AA; Project supervision: AA, AG; Contributed to writing the manuscript—Original draft: MNA, AA; Review and editing: MNA, AA, AG. Guarantor: MNA. All authors proof read and approved the final version of the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained from parent(s)/guardian(s).

Ethics approval Ethical clearance was sought from the Committee on Human Research, Publications & Ethics, and Kwame Nkrumah University of Science and Technology (KNUST)—Komfo Anokye Teaching Hospital (KATH), Ghana with reference CHRPE/AP/199/20. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. The data used to support this study are available from the corresponding author upon request (nungbaso.asumah@uds.edu.gh).

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