Menstrual Hygiene Management Challenges Among In-School Deaf Adolescents in Ghana

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Abstract

Background: Whiles challenges associated with menstrual hygiene management among adolescents are universal, some sub-populations, such as deaf girls, have peculiar challenges that requires special attention. Although there have been numerous studies on menstrual hygiene management among adolescents in the school setting in Ghana, the experiences of students with disabilities, particularly, deaf girls have not attracted adequate scholarly attention.

Objective: The objective of the study was to generate new empirical evidence on menstrual hygiene management challenges of deaf adolescent girls in the special schools for the deaf in Ghana. The overall objective was to obtain data that could be used to improve menstrual hygiene practices among the target population, and, to bridge the gap in the existing literature regarding menstrual hygiene management experiences of in-school adolescent deaf girls in Ghana.

Method: This study adopted a mixed method approach to investigate the menstrual hygiene management challenges of in-school deaf adolescent girls in Ghana. A total of 152 participants comprising 118 schoolgirls, 15 boys, seven school heads, six teachers, and six school housemothers from seven special schools were involved in the study.

Results: The findings identified five challenges facing the girls. These are inadequate access to sanitary pads, inappropriate school WASH facilities, health related problems, negative attitude of male colleagues, and academic related challenges.

Conclusion: The findings indicate that the quality of WASH facilities in the schools require improvement. We recommend that access to sanitary kits for underprivileged girls should be made a priority issue, boys and male teachers should be included in all menstrual hygiene management awareness programs, whiles the capacity of school housemothers on menstrual hygiene management should be enhanced. The study made important contributions to the existing literature on disability and menstrual health in Africa.

Background

According to the Ghana Health Service (GHS), about 95 percent of adolescent girls occasionally absent themselves from school as a result of menstrual related challenges such as lack of adequate school WASH facilities and cultural barriers (1). Even though there have been several studies on menstrual hygiene management (MHM) practices in the school setting, the menstrual experiences of students with disabilities have not been adequately researched. The objective of the study was to generate empirical evidence on MHM challenges of deaf adolescent girls in the special schools for the deaf in Ghana. The overall goal was to obtain new data that could be used to improve MHM practices among the target population, and also, bridge the gap in the existing literature regarding MHM experiences of in-school adolescent deaf girls in Ghana. To achieve these, the study responded to the following research questions: what kind of menstrual challenges do in-school deaf adolescent girls in Ghana encounter?

How do in-school deaf adolescent girls respond to their menstrual challenges? How do the menstrual challenges impact on the academic performance of in-school adolescent deaf girls in Ghana?

Overview of menstrual health management among schoolgirls

Several scholarly evidence indicate that although many schoolgirls in low and middle-income countries often have their menstruation in school, the school environments do not adequately provide the needed support the girls need to manage their menstruation. Limited knowledge on menstrual issues among schoolgirls, stigma, limited access to sanitary kits, unsuitable WASH facilities, and cultural barriers are some of the major factors inhibiting proper menstrual management among schoolgirls in low- and middle-income countries (2, 3, 4).

The lack of environment that provide adequate support, comfort, and privacy for schoolgirls during menstruation have dire consequences on their health, self-esteem as well as school attendance and academic performance (5, 6). Studies in several African countries, such as Niger, Cameroon, and Senegal (7), Nigeria (8), Uganda (9), Zambia, (10) and Ethiopia (11) have shown that inadequate access to information on menstrual issues, negative societal attitudes, and lack of access to sanitary kits impacted negatively on school attendance among girls. In Ghana, (12) also found that girls had more challenges managing their menstruation in school than at home and as result, they preferred to stay home during menstruation.

A number of studies have also revealed rural-urban disparities in menstrual hygiene practices and challenges among adolescent girl. For instance, it has been reported that the use of sanitary pads was higher among girls in urban Ethiopia than those in the rural areas of the country (2). Chandra-Mouli and Patel (2) further observed that, compared to their urban counterparts, girls in rural Kenya were more likely to reduce the number of times they showered during menstruation, due to inadequate access to water supply, a situation that has the potential to reduce school attendance. Blessings (13) similarly observed that, the quality of school WASH facilities was likely to enhance school attendance in urban areas than rural communities in Ghana.

Besides, (14, 15, 16) found that, in Ghana, not only did the family's socio-economic status played a major role in access to sanitary pads for girls, but also impacted on their level of knowledge on menstrual health. The aforementioned studies also indicated that inappropriate school WASH facilities, lack of regular supply of water, and socio-cultural barriers, such as, myths about menstruation, and lack of open discussions on menstrual issues, created menstrual barriers for girls.

Although studies involving girls with disabilities in special schools are scanty, stigma, discrimination, misconceptions about disability, inaccessible built environment, and lack of disability inclusive services are likely to make menstrual challenges more complicated for schoolgirls with disabilities (17, 18). Persons with disabilities constitute one of the most marginalized groups in the world. They are excluded

from many activities in society and face challenges accessing and using services on equal basis with their colleagues without disabilities.

In addition, information on menstrual hygiene is not often in accessible formats and the built environment, including WASH facilities are not accessible to persons with disabilities in many countries in low-middle income countries. For example, most facilities in many schools in low- and middle-income countries are not disability-friendly, do not provide adequate privacy, are unhygienic, with limited water supply and space for changing, washing, and drying or disposing of menstrual materials (18).

In many African countries, due to accessibility of the built environment, persons with mobility impairment such as wheelchair users are compelled to crawl in order to access WASH facilities, whiles information on proper MHM practices are not accessible to blind and deaf women and girls as well as those with intellectual disabilities (19, 18, 11). As a result, many girls with disabilities are unable to communicate their menstrual needs, when they need support. In some African countries, such as Uganda and Zambia, persons with disabilities are not even allowed to use public washrooms, due to stigma (20). This suggests that women and girls with disabilities in these countries would have difficulties managing their menstruation in a dignified manner.

There are also misconceptions about the sexuality of persons with disabilities. As a result many of them are excluded from education on sexual and reproductive health issues, including menstrual hygiene. These problems make it difficult for women and girls with disabilities to manage their menstruation. Even though a significant proportion of persons with disability rely on personal assistance, many caregivers are often unable to surmount their menstrual health challenges (21). For girls with severe learning disability, concerns over their capacity to properly manage their menses have compelled some parents to opt for medical interventions that temporarily or permanently suppress their menstruation (22). The consequences are that women and girls with disabilities are unable to exercise their human rights, such as their rights to education, health, sexuality, and reproduction.

The situation in Ghana is unlikely to be different for following reasons. First, negative attitude towards persons with disabilities is rife and deeply embedded in the cultural and social systems (23, 24). Since both menstruation and disability are stigmatized, adolescents with disabilities are likely to encounter more stigma when menstruating than those without disabilities (25). Secondly, inaccessible physical facilities and sexual and reproductive health services, including services on MHM, impacts negatively on the utilization of these services (15). This is particularly important for deaf and blind girls. For example, (26, 27) observed that, sexual and reproductive health information and services in Ghana are not customised to meeting the needs of deaf people, and they are unable to utilize them.

Thirdly, there are gaps in the coverage of disability in sexual and reproductive health policies. Mprah et al (28) observed that sexual and reproductive health needs of persons with disabilities in Ghana have not been adequately addressed in national health policies. The aforementioned issues necessitate the need for studies on menstruation and menstrual hygiene among adolescents with disabilities to generate data

that will provide insights into their MHM experiences for policy and programmatic interventions, hence this study.

Methodology

A mixed method, using in-depth interviews and questionnaires as the data collection methods, was used in this study. The qualitative data provided an in-depth exploration of MHM issues among adolescent deaf girls, whereas the quantitative data provided a broad understanding of the issues. The use of mixed method approach did not only facilitate the generation of comprehensive data on the perspectives of adolescent girls on MHM practices, but also minimized the potential methodological limitations associated with each of the two approaches.

Research participants, sampling techniques, and sample Size

The study was conducted in seven out of the 12 public basic schools for the deaf located in seven regions of Ghana. All the schools are boarding or residential schools, and pupils spend more time in schools than at home; they spend about nine months in school each year. Female caretakers, known as “housemothers,” are employed to take care of the pupils. The “housemother” act as “surrogate” mothers for the children who are responsible for assisting the children when they are in school. Although, each school is supposed to have about five “housemothers” to effectively handle the children, the maximum a school had at the time of the study was two “housemothers”.

The schools were purposively sampled, in order to have schools selected from all parts of the country: southern, northern, eastern, and western. Purposive sampling was also used to recruit respondents for the study. This is because it was considered the most appropriate for selecting respondents who had some experiences and knowledge related to the objectives of the study. The non-randomized selection of the participants was also meant to capture the perspectives of key informants, such as heads of the schools and the school housemothers. Overall, 152 respondents participated in the study. These included 133 students, comprising 118 girls and 15 boys (between the age of 10 and 26 years), seven school heads, six teachers, and six school *housemothers*. Previous studies have revealed that that male students exhibited negative attitudes towards girls who were menstruating (16). The inclusion of 15 boys was therefore meant to understand their perspectives on the topic.

Data collection

As mentioned above, questionnaires and in-depth interviews were used to collect the data from the participants. The in-depth interviews were conducted with the heads of the schools, teachers, the “housemothers”, and the male pupils. Different interview guides were used to collect data from each category of participants. The data obtained from the headmasters, teachers, and housemothers included MHM protocols of the school, how the schools supported the girls, details about school WASH facilities,

and waste management practices. The boys' opinion on menstruation and what support they could give to the girls during menstruation was sought.

All the interviews with deaf participants were video recorded while interviews with the hearing participants were audio recorded. The interviews were conducted by field assistants with high proficiency in Ghanaian Sign Language. Each interview took about one hour. We had a short meeting after each interview to debrief and to make adjustments that improved successive interviews. All 118 female pupils participated in the survey. Two female field assistants administered the questionnaires. The questionnaires elicited information on the girls' experiences, challenges they encountered, and the kind of support they received from the schools.

Data analysis

For the quantitative analysis, the coded data were entered into SPSS (version 22) software and the output generated. Descriptive statistics was used to classify and summarize the data. Tables and graphs were used to present the data. The analysis of the qualitative data involved transcription of the video and audio recordings into text format. To ensure accuracy, the transcription of the videos was done by only members of the research team who were proficient in the Ghanaian Sign Language.

Using the objectives of the study for guidance, the data were initially categorized into primary (descriptive) codes from which secondary (analytic) codes were delineated. Attention was paid to patterns, and trends, as well as similarities and differences in the responses of the participants. Similar responses were grouped together into broad categories, which were further merged to form themes. Direct quotations from the participants were used to support each theme.

Ethical consideration

In compliance with research ethics, administrative approval was obtained from the Special Education Division (SPEED) of the Ghana Education Service (GES), prior to the involvement of the schools. Measures were taken to ensure compliance with the principles of confidentiality, anonymity, privacy, and informed consent. For instance, all the research participants were adequately briefed about the objectives of the study while the consent of the research participants was sought prior to the recording of the interviews. Additionally, only research assistants who had proficiency in sign language were recruited. All identifiers were removed from the data to ensure anonymity of the participants.

Results

Demographic characteristics

Students constituted the highest proportion of the participants, and all of them were in primary and junior high schools. Among the students, those in primary level (between stage 2 and 6) constituted 33.2 percent, while those in Junior High school were 66.8 percent. In terms of ethnic composition, 57.9 percent

were ethnic Akans, forming the highest ethnic group in the study, whiles the Mole-Dagbani (0.8 percent) and the Ga-Adangbe (0.8 percent) ethnic groups were the least represented. Additionally, 94.7 of the participants were Christians, 3.8 percent Moslems, and 1.5 percent adherents of African traditional religion. It is significant to emphasize that the distribution of ethnic and religious composition of the study population was due to the choice of study locations. Table 1 has a summary of the demographic characteristics of the respondents.

Table 1
Summary of the demographic characteristics of the respondents (students).

Student Level of Education	**Frequency**	**Percent**
Primary	44	33
Pre-Junior High School	22	17
Junior High school	67	50
Total	**133**	**100**
Ethnicity	**Frequency**	**Percent**
Akan	77	57.9
Ewe	46	34.5
Guan	2	1.5
Mole-Dagbani	1	0.8
Ga-Adangbe	1	0.8
Other	6	4.5
Total	**133**	**100**
Religious Affiliation	**Frequency**	**Percent**
Christian	126	94.7
Moslem	5	3.8
Traditional religion	2	1.5
Total	**133**	**100.0**

Menstrual challenges

The study identified five challenges associated with menstruation among the girls in the seven schools: inadequate access to sanitary pads, attitude of male colleagues, access to appropriate WASH facilities, health related problems, and academic related challenges.

Inadequate sanitary materials

Lack of access to proper sanitary pads was the most cited menstrual challenge encountered by the girls. As shown in Fig. 1 below, even though the proportion that used disposal sanitary pad was relatively higher (74.2 percent), almost a quarter (24.8 percent) relied on unsuitable materials such as reused clothes, cotton and tissue papers. The quantitative findings did not indicate whether the girls who reported using pads did so always.

However, the qualitative data suggest that some of the girls had difficulty acquiring sanitary pads. It was revealed that some of the parents were poor and could not afford to buy sanitary materials, including pads and underwear for their children. “Some of the parents are poor, so they cannot afford to buy enough sanitary pads. They buy quantities that are not enough for an entire semester” (Housemother S1). Another housemother supported this view in the quote below:

My concern is with the things they will use on themselves during their menses, because some of their pants get old and parents can’t buy for them. They still use the same pants for menstruation which is bad. As a lady, you need to get separate pants for menstruation only because pants worn on menstrual days can’t be worn on normal days. You need not to wear the same pants used for menses on normal days. I think they do this because they lack pants but it still not advisable (Housemother J2).

From the above, it could be seen that some of the girls were unlikely to have constant supply of sanitary pads. So, they were probably improvising and were also not observing proper menstrual hygiene practices.

Attitude of male colleagues

Negative attitude of male colleagues was another challenge experienced by the girls. As shown in Fig. 2 below, 66.9 percent of the girls indicated that they were teased by their male colleagues during their menses. Furthermore, almost half (48.1 percent) of the girls did not feel comfortable sitting beside their male colleagues in class. 56.1 percent did not feel comfortable having their menses in school (see Fig. 3), whereas 22.6 percent felt embarrassed during menstruations, probably due to attitude of the boys.

The qualitative data corroborated the quantitative findings on attitude of male colleagues. For example, some of the participants indicated that they felt embarrassed because their male colleagues teased them, especially when they stained their dresses in class. Participants 33 remarked that, “some of the guys do tease us when we accidentally stain our dresses” whiles Participant 22 indicated that, “it [menstruation] makes us feel ashamed and uncomfortable to talk about menstrual issues when necessary.” These views was confirmed by one of the housemothers:

Normally, some sleep in their dorms rather than coming to school to avoid teasing from the boys. So, when I visit the dorm and see them on bed, I ask them why they are here, and they would tell me it their menses and they cannot go to school (Housemistress S2).

Inappropriate WASH facilities

Table 2 shows the respondents perception about the suitability of school WASH facilities. Overall, the WASH facilities in the schools did not seem to offer some of the girls the required privacy and comfort to manage their menstruation with dignity. For example, on whether the places where the girls changed their menstrual pads offered them privacy, 57.9 percent reported that the places provided privacy. Less than one-third of the respondents (25.6 percent) did not find the WASH facilities in the schools comfortable. This finding is somewhat consistent with their views on the privacy of the WASH facilities. Almost 70 percent of the respondents said they had hygienic environment to change their pads; only about 18 percent thought their places were not hygienic, which is somewhat inconsistent with their responses on the comfortability of the facilities.

Table 2
Perception of Suitability of School WASH Facilities

Nature of Perception	Frequency	Percentage
Facilities offered privacy for menses	68	57.9
Facilities did not guarantee privacy	33	27.8
Not sure	17	14.3
Total	**118**	**100**
Facilities was Clean	83	70
Facilities not clean	21	18
Not sure	14	12
Total	**118**	**100**
Comfortable using WASH facilities	88	74.4
Not comfortable using WASH facilities	30	25.6 %
Total	**133**	**100**

When asked about where they often changed their sanitary pads, 36.8 percent mentioned the dormitory, which was the most frequently used, whereas the nearby school forest (bush) was the least (3.0 percent) used. Figure 3 presents information on where the girls changed their pads. The girls' overall rating of the WASH facilities in the schools is presented in Fig. 4 (below). Only 24.1 percent of the girls thought that their WASH facilities were not convenient for menstrual hygiene practices whereas 35.3 percent reported that the facilities were appropriate for the management of menses, suggesting that less than half of the girls felt comfortable using the facilities.

The respondents' access to water and cleaning materials is summarized in Table 3. As shown in the table, more than three-quarters (77 percent) of the respondents said they had access to water. On the availability of detergents, 58 percent had access while 77 percent had access to other menstrual kits, such as anti-sceptics. This means that about one-third of the girls did not have access to water and other

cleaning materials. Responses of the heads of the schools and teachers, generally, supported the quantitative findings.

Table 3
Access to water and Detergents in School WASH facilities

	Frequency	Percentage
Access to water supply		
Yes	91	77
No	27	23
Total	**118**	**100**
Availability of Detergents		
Yes	68	58
No	50	42
Total	**118**	**100**
Access to other Menstrual kits		
Yes	91	77
No	27	23
Total	**118**	**100**

According to the teachers, all the schools had separate latrines/toilets and urinals for boys and girls, and most were partially cleaned. Most of the washrooms (toilets) had doors, but not all had good locks, though they provided privacy for girls. Also, most of the washrooms did not have regular water supply. The following quotes further elaborate on the nature of washrooms in the schools.

Yes, we have bathrooms, toilet and we also have water storage, but it is not adequate. We also have soaps, antiseptics and rubbish bins in the school. We also have some of these things at the dormitory, but we do not have some at their bathrooms and the toilet (Teacher H1)

The latrine and urinal are separate for girls and boys and they are all neat, private, and safe just that some are not in good shape and there is no changing room for girls during menses, but have to use the latrine to change, but there is no water in the latrines (Headmaster S2).

The preceding narratives from the teachers substantiate the perception of the girls and highlight the extent of deficits in the quality of the school WASH facilities.

Health-related challenges

The data indicated that, the girls experienced a wide range of health-related problems. The most reported heath concern was vaginal itching, as reported by 51.1 percent of the girls, whereas abdominal pain was the least (0.8 percent) reported health concern.

Responses from some of the “housemothers” and teachers supported findings from the quantitative data. For example, one of the housemothers (Participant, J1) said that, the girls developed infections due to improper menstrual management. A teacher supported this claim, and said, “some of the girls develop infections, vagina itching and quite a lot of them had candidiasis (Teacher J1).

Academic Challenges

The findings indicated that menstruation had negative academic related effects on the girls. More than one-third (36.1 percent) of girls reported that they absented themselves from classes due to menstrual inconveniences, while 43.5 percent had low concentration in class. As indicated by Table 4 (below), 58.5 percent of the girls reported that menstrual problems impacted negatively on their academic performance.

The qualitative findings corroborated the quantitative evidence on the effects of menstruation on the academic performance of the girls. Both the girls and the “housemothers” confirmed that menstruation had effects on school attendance and participation in school activities, as evident in the following quotes from one of the school housemothers and a student:

Usually, some of the girls sleep in their dorms rather than coming to school. So, when I visit the dorm and see them on bed, I ask them why they are here, and they would tell me it is because their menses. Some of the girls view their menstruation as sickness” (Personal Interview, Housemother S2).

Because of menstrual pains, I do feel feverish and uncomfortable staying in class. This does not allow me to concentrate in class. It is very easier for me to manage menstrual pains at home because there is always a family member to assist in case of a serious complication (Girl 28).

Table 4
Summary Description of Academic Related Challenges due to Menses

	Frequency	Percentage
Absence from Class due Menses		
Yes	42	36
No	76	64
Total	118	100
Low Concentration		
Yes	51	43.5
NO	67	56.5
Total	118	100
Low Academic Performance		
Yes	69	58.5
No	49	41.5
Total	133	100

The challenges girls encountered were expected, because as indicated in the literature review, previous studies in other developing regions showed that adolescent girls in developing countries were likely to experience such problems. However, the situation would likely be worse for deaf girls, who are often excluded from sex education programmes.

Discussion

The main objective of the study was to generate data that will provide an understanding of the MHM challenges of in-school deaf adolescent females in Ghana. Menstruation is a natural occurrence, which every female of reproductive age goes through. Maintaining menstrual hygiene during menstruation is fundamental to the dignity and well-being of women and girls. The importance of menstrual hygiene for girls can therefore not be overemphasised.

Good MHM involves having access to clean water, detergents, and clean absorbents that can be changed frequently (29). Likewise, girls and women must have access to WASH facilities that offer privacy, safety, comfort, and are physically accessible for use during menstruation. Access to spaces for drying and disposing of used menstrual materials and hygienically are equally relevant (14). The availability of the required menstrual materials and facilities provide an environment that supports girls to manage their menstruation with dignity and safety without discomfort or fear.

However, the findings from the study revealed that some of the girls in our study did not have access to adequate menstrual materials and suitable facilities to ensure that they are able to manage their menstruation. The limited access to appropriate facilities in the schools means that some of the girls may have to travel far from school discretely at odd times to privately change their menstrual materials, which may cause them to miss classes. The lack of good WASH facilities would also make it difficult for the girls to change their pads regularly. These findings are consistent with the existing literature on MHM among in-school girls in developing countries. It has been observed that although many schoolgirls in low and middle-income countries have their menstruation in school, the school environment does not often have facilities, such as, toilets, regular water supply, privacy, and/or supportive teachers to assist them during menstruation.

Without suitable WASH facilities, schoolgirls are often compelled to poorly manage their menstruations, compelling some to stay away from school (5, 30, 6). For example, a study in Ethiopia revealed that more than 80% of students did not change their menstrual materials in school and they preferred to do so at home, because of lack of water and suitable WASH facilities in the schools (31).

Similarly, girls may be absent from school or less attentive in class during menstruation if there are no WASH facilities or support from the school. In the western province in Zambia, (10) quoted a report by Maboshe Memorial Centre, which indicated that schoolgirls stayed at home during their periods. Similar findings have been reported in Ghana by Blessing (13). In a study to ascertain the menstrual hygiene practices among adolescents and the impact of menstruation on school attendance among adolescent schoolgirls in some rural areas in Ghana, Blessings discovered that the absence of private space for changing sanitary kits has forced some girls to be absent from school during menstruation. Asimah, Diabene and Wellington (12) also revealed that girls in schools had more limitations in managing their menstrual periods than those at home, although the authors acknowledged the impact of social barriers on menstrual hygiene practices at home.

The situation could be very frustrating for the deaf girls in our study because of communication barriers and the fact that they were in the boarding house and may have to use whatever facilities available to them. This observation corroborates that of (11, 17) who observed that stigma, communication issues, and lack of disability inclusive services make menstrual management challenges worse for schoolgirls with disabilities than those girls without disabilities.

The lack of access to sanitary pads among the girls in the study could compel some of the girls to resort to unsuitable alternatives, or unhygienic practices, which is probably the reason for the reported infections and other health-related problems among them. Unhygienic practices, including use of inappropriate menstrual materials during menstruation have been reported among girls in Africa and other low- and middle-income countries (2, 6). In a systematic review of the health and social effects of MHM conducted by Sumpter and Torondel (32), the authors identified an association between poor MHM and increased risk of reproductive tract infections in half of the papers that were reviewed. Poureslami and Osati-Ashtiani (33) also observed that poor menstrual hygiene can lead to menstrual-related stigma,

ill-health whiles (6, 5) reported that lack of menstrual materials compelled some girls to engage in poor MHM practices, exposing them to many health problems.

Contrary to our findings, some studies in Ghana discovered that, menstrual hygiene practices among girls in basic schools in urban settings were good. This has been attributed to the socio-economic status of urban dwellers, who used good disposable menstrual products (13). It is, however, worthy to note that although almost all the schools in our study are in the urban setting, the girls were in the boarding schools and they spend more time in school than at home. Their experiences in terms of menstrual hygiene practices are, therefore, likely to be different from those who managed their menses at home.

Limitation

The major limitation of the study is the use of purposive sampling technique. Although the study covered about three-quarters of the special deaf schools in Ghana, because respondents were not randomly sampled, there is a possibility of selection bias. As a result, generalization of the findings of the study should be done with caution. The applicability of recommendations may also be limited. However, the use of mixed methods, minimized this shortcoming.

Implications Of The Study

Findings of the study provided insights that could be used to improve menstrual hygiene practices among the target population. The findings reinforced the call to implement interventions in schools to ensure good menstrual hygiene practices among schoolgirls to enhance their psychological and educational outcomes (34).

Provision of free menstrual hygiene materials, such as sanitary pads and antiseptics to needy girls could be made a priority issue by the Ghana Health Service School Health Programme.

Although this will require a huge financial outlay, it is worthy course to undertake because it will contribute positively towards the well-being of the girls. Besides, the schools could solicit support from philanthropists, such as Non-Governmental Organizations, to provide free sanitary materials to the girls from poor homes. The special schools often receive donations from philanthropists, but these donations do not include menstrual materials because it is not often seen as a priority.

Also, since the girls spend most of their time in the residential schools, it will be apt for the “housemothers”, to be properly trained in MHM so that they can adequately support them to handle their menstruation effectively. The training could include awareness on deafness and deaf people’s sexual and reproductive health needs to improve their understanding about deaf people. This will enable the “housemother” to establish good relationship with the girls and be more responsive to their needs. This will also reduce the practice of the girls relying on their friends for information and support, which is often incorrect or inadequate.

It is equally important to emphasize that, there are a lot of misconceptions and misinformation about menstruation, which is rooted in the Ghanaian tradition. For instance, menstruation is considered unclean and not discussed openly in public (35, 19). This calls for intensive awareness creation on menstruation and MHM, especially among boys. Currently, men and boys are often excluded in programmes on menstruation and MHM. Hence, many of them have poor knowledge on menstrual issues.

As a result, even male teachers may find it difficult to talk about menstrual issues in class. Any programme on MHM in the schools should, therefore, include male students and teachers in order to nurture a change in their attitude towards menstruation. Indeed, males can be important agents of change and a source of support for girls, if included in MHM sensitization programs.

Conclusion

As noted in the introductory section, although there have been previous studies on MHM among schoolgirls in Ghana, studies involving in-school adolescent deaf girls are scanty. This study therefore makes relevant contributions to the existing academic works on the subject. The study has brought to light an important reproductive health issue facing one of the most vulnerable populations in Ghana. Students in special schools for the deaf encounter numerous challenges, such as lack of teachers, who can communicate in the sign language. Therefore, failure to devise innovative mechanisms to mitigate the menstrual challenges of the girls will have dire psychosocial and academic consequences on the girls, especially because the population of the schools is increasing without a corresponding increase in the number of caregivers and facilities in the schools.

Declarations

Ethics Approval and Consent to participate

In compliance with research ethics, and national regulatory framework for conducting research in the Special Schools for the Deaf, administrative approval with reference number SE/41/139 was obtained from the Special Education Division (SPEED) of the Ghana Education Service (GES). Measures were taken to ensure compliance with the principles of confidentiality, anonymity, privacy, and informed consent. All identifiers were removed from the data to ensure anonymity of the participants. We confirm that all methods were performed in accordance with the relevant guidelines and regulations for conducting research.

Consent for Publication

Not Applicable

Availability of Data and Materials

The data that support the findings of this study are available from GNAD but restrictions apply to the availability of these data, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of GNAD. Data could be made available by the third author, JD.

Competing Interest:

The authors declare that they have no competing interests.

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Author contributions

All authors contributed to the design of the study. WKP and ES were responsible for data collection, qualitative analysis and writing of the first draft of the manuscript. WKP supervised the project and edited the final manuscript. The JD conducted the quantitative analysis, and contributed to the final review of the manuscript. All authors contributed to the review of the first draft and approved the final manuscript.

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Authors' Information

WKP and ES are lecturers and researchers in disability studies at the Kwame Nkrumah University of Science and Technology, in Ghana. WKP holds a PhD in Disability Studies whiles, ES holds a PhD in Development Sociology. JD holds a Master Degree in Human Right Law and he is the executive Director of the GNAD.

Abbreviations

GHS: Ghana Health Service

GES: Ghana Education Service

GNAD: Ghana National Association of the Deaf

MHM: Menstrual Hygiene Management

SPEED: Special Education Division

SPSS: Statistical Package for the Social Sciences

WASH: Water Sanitation and Hygiene

References

1. Ghana Health Service. Adolescent Health Policy and Strategy. https://www.afro.who.int/publications/adolescent-health-service-policy-and-strategy-2016-2020. Accessed 16 December 2020.
2. Chandra-Mouli V, Patel SV. Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low-and middle-income countries. Reproductive health. 2017 Dec; 14(1):1–6.
3. Sultan S, Sahu DS. Knowledge, attitude and practices about menstruation and related problems in adolescent girls. Int J Reprod Contracept Obstet Gynecol. 2017 Dec;6 (12):5235-40.Kumar & Srivastava; 2011).
4. Kumar A, Srivastava K. Cultural and social practices regarding menstruation among adolescent girls. Social work in public health. 2011 Sep 15;26(6):594–604.
5. Freeman MC, Greene LE, Dreibelbis R, Saboori S, Muga R, Brumback B, Rheingans R. Assessing the impact of a school-based water treatment, hygiene and sanitation programme on pupil absence in Nyanza Province, Kenya: a cluster-randomized trial. Tropical medicine & international health. 2012 Mar; 17 (3):380–91.
6. Khan A, Mupuwaliywa M. Providing Out-of-School Girls with Skills: A Review of the Global Evidence.
7. Aidara R, Mbaye MG. Practice Note: Menstrual Hygiene Management—Breaking Taboos and Supporting Policy Change in West and Central Africa. The Palgrave Handbook of Critical Menstruation Studies. 2020:529 – 37.
8. Chinyama J, Chipungu J, Rudd C, Mwale M, Verstraete L, Sikamo C, Mutale W, Chilengi R, Sharma A. Menstrual hygiene management in rural schools of Zambia: a descriptive study of knowledge, experiences and challenges faced by schoolgirls. BMC public health. 2019 Dec;19(1):1–0
9. Miiro G, Rutakumwa R, Nakiyingi-Miiro J, Nakuya K, Musoke S, Namakula J, Francis S, Torondel B, Gibson LJ, Ross DA, Weiss HA. Menstrual health and school absenteeism among adolescent girls in Uganda (MENISCUS): a feasibility study. BMC women's health. 2018 Dec; 18 (1):1–3.
10. Verma. R. Lack of access to sanitary products, privacy drives girls away from schools in Zambia. 2019. The Planet Meltdown
11. Mahmoud SF, Ibrahim ME. Effectiveness of Educational Sessions on Reproductive Health among Blind and Deaf Students at Zagazig City. American Journal of Nursing Research. 2020 Feb 9;8 (2):245–53.
12. Asimah SA, Diabene PY, Wellington SN. Menstrual hygiene management in Ghana: Understanding the socio-cultural, economic, political factors, challenges and opportunities. In Proceedings of the 40th WEDC International Conference, Loughborough, UK 2017 Jul (pp. 24–28).

13. Blessing EM. *Menstrual hygiene management among basic school girls in Legon, Accra. 2016* (Doctoral dissertation, University of Ghana).
14. Mohammed S, Larsen-Reindorf RE. Menstrual knowledge, sociocultural restrictions, and barriers to menstrual hygiene management in Ghana: Evidence from a multi-method survey among adolescent schoolgirls and schoolboys. Plos one. 2020 Oct 22;15(10):e0241106.
15. Tiiga IS. Access to sexual and reproductive health services by persons with disabilities: a case study of the Garu–Tempane district of Ghana. 2018 (Doctoral dissertation).
16. Sommer, M., Ackatia-Armah, N., Connolly, S. and Smiles, D., 2015. A comparison of the menstruation and education experiences of girls in Tanzania, Ghana, Cambodia and Ethiopia. Compare: A Journal of Comparative and International Education, 45(4), pp.589–609.
17. Ariantini NS, Kurniati DP, Duarsa DP. Needs for Reproductive Health Education for Deaf Students in Singaraja District, Bali Province. Indonesian Journal of Health Research. 2019 Aug 30;2(2):75–83.
18. Sommer M. Putting menstrual hygiene management on to the school water and sanitation agenda. Waterlines. 2010 Oct 1:268–78.
19. House S, Mahon T, Cavill S. Menstrual hygiene matters: a resource for improving menstrual hygiene around the world. Reproductive Health Matters. 2013 May 1;21(41):257-9.
20. Wilbur J, Jones H, Gosling L, Groce N, Challenger E. Undoing inequity: inclusive water, sanitation and hygiene programmes that deliver for all in Uganda and Zambia. In Proceedings of the 36th WEDC International Conference, Nakuru, Kenya 2013 Jul (pp. 1–5).
21. Chou YC, Lu ZY. Caring for a daughter with intellectual disabilities in managing menstruation: a mother's perspective. Journal of Intellectual and Developmental Disability. 2012 Mar 1;37(1):1 – 0.
22. Albanese A, Hopper NW. Suppression of menstruation in adolescents with severe learning disabilities. Archives of disease in childhood. 2007 Jul 1;92 (7):629 – 32.
23. Kassah AK. Disabled people and begging justifications in Accra-Ghana. Disability & Society. 2008;23(2):163–70
24. Slikker J. Attitudes towards people with disabilities in Ghana. VSO Ghana. 2009.
25. Wilbur J, Torondel B, Hameed S, Mahon T, Kuper H. Systematic review of menstrual hygiene management requirements, its barriers and strategies for disabled people. PloS one. 2019 Feb 6;14(2):e0210974.
26. Mprah WK. Sources and use of sexual and reproductive health information among deaf people in Ghana. IJDS: Indonesian Journal of Disability Studies. 2014 Jul 10;1(1).
27. Mprah WK. Perceptions about barriers to sexual and reproductive health information and services among deaf people in Ghana. Disability, CBR & Inclusive Development. 2013 Nov 6; 24(3):21–36.
28. Kwadwo W, Anafi P, Sekyere FO. Does disability matter? Disability in sexual and reproductive health policies and research in Ghana. International quarterly of community health education. 2014 Dec; 35(1):21–35.

29. Education P. Menstrual Hygiene Management—UNESCO Digital Library. United Nations Educational, Scientific and Cultural Organization: Paris, France. 2014.
30. World Health Organization, UNICEF. Progress on sanitation and drinking-water. World Health Organization; 2013.
31. Grant M, Lloyd C, Mensch B. Menstruation and school absenteeism: evidence from rural Malawi. Comparative education review. 2013 May 1;57(2):260 – 84.
32. Sumpter C, Torondel B. A systematic review of the health and social effects of menstrual hygiene management. PloS one. 2013 Apr 26;8(4):e62004.
33. Poureslami M, Osati-Ashtiani F. Assessing knowledge, attitudes, and behaviour of adolescent girls in suburban districts of Tehran about dysmenorrhea and menstrual hygiene. Journal of International Women's Studies. 2002;3(2):51–61.
34. Sinden J, Sahin M, Francois C. WASH in Schools for Girls: Voices from the Field—Advocacy and Capacity Building for Menstrual Hygiene Management through WASH in Schools Programmes. UNICEF: New York, NY, USA. 2015.
35. Yagnik AS. Knowledge (K), attitude (a), and practice (P) of women and men about menstruation and menstrual practices in Ahmedabad, India: implications for health communication campaigns and interventions (Doctoral dissertation, Bowling Green State University).

Figures

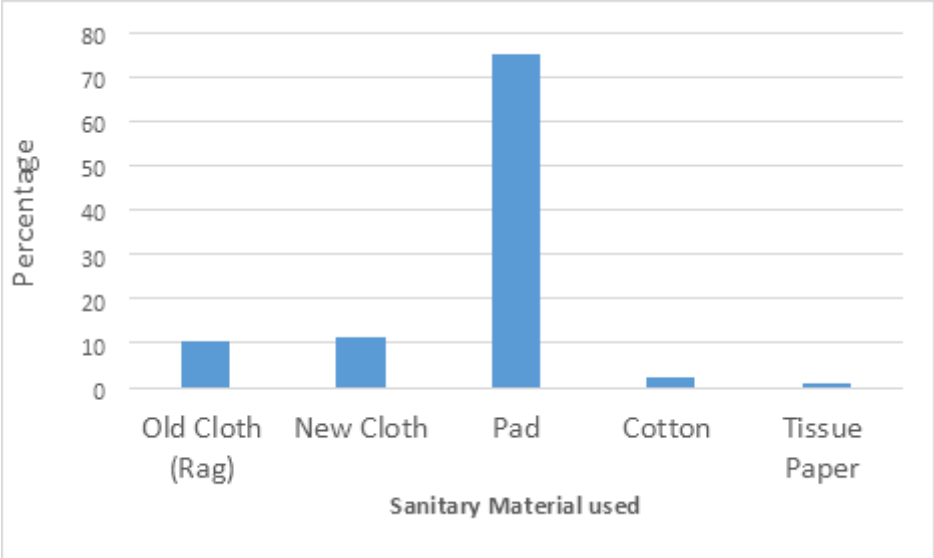

Figure 1

Kinds of Sanitary materials used by the participants.

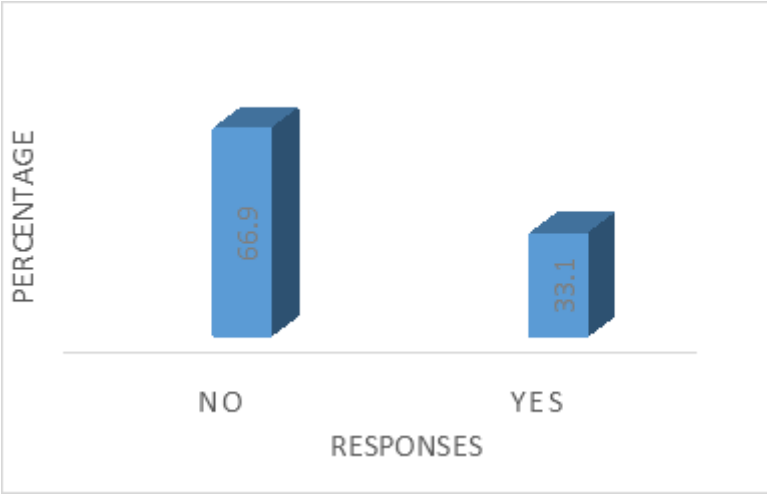

Figure 2

Percentage of respondents who experienced teasing during menses.

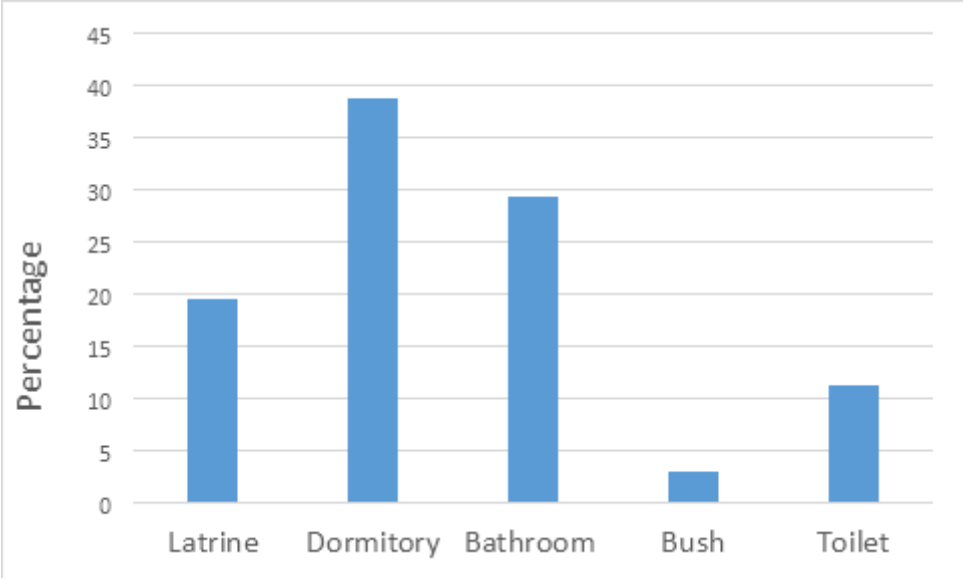

Figure 3

Places where the girls change their sanitary pads

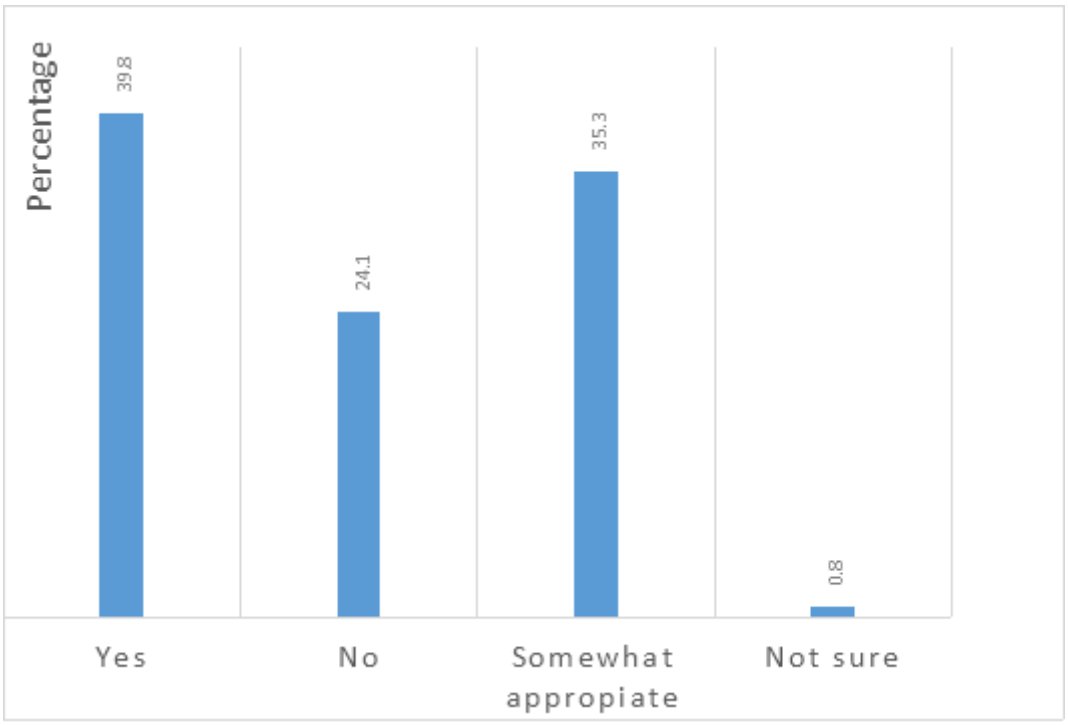

Figure 4

Perception on appropriateness of school WASH facilities.