

Is menstrual hygiene and management an issue for adolescent school girls?

A comparative study of four schools in different settings of Nepal



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WaterAid's mission is to overcome poverty by enabling the world's poorest people to gain access to safe water, sanitation and hygiene education.

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Executive summary

Menstrual hygiene and management is an issue that is insufficiently acknowledged and has not received adequate attention in the reproductive health and Water, Sanitation and Hygiene (WASH) sectors in developing countries including Nepal and its relationship with and impact on achieving many Millennium Development Goals (MDGs) is rarely acknowledged. Studies that make the issue visible to the concerned policymakers and inform practical actions are very much warranted. This small scale study was undertaken with the objective of determining the prevailing knowledge and experiences of menstrual hygiene and management, and their implications, among adolescent school girls in rural and urban settings of Nepal.

This is a descriptive cross-sectional study in which mixed methods (quantitative and qualitative) were applied. Data was collected from 204 adolescent school girls from four government secondary schools, one in each of Dhading, Morang, Lalitpur and Kathmandu districts, using self-administered structured close-ended questionnaires, focus group discussions (FGD), and semi-structured in-depth interviews. Four main recurrent themes have been identified in the analysis: a) knowledge and beliefs b) experiences during menstruation c) seclusion, exclusion and absenteeism and d) hygiene practices.

The large majority of survey respondents (92%) had known about menstruation before their menarche, particularly from

mothers (51%) or sisters (41%). However, the information provided was mainly about the use of cloth and the practice of rituals and restrictions constructed around the polluting effect of menstruation. Abdominal pain is the most common medical problem experienced by the survey respondents (85%). Mental stress is also common, particularly due to constant worry that others may know about their menstruation. Seclusion and exclusion practices were widespread, particularly among Bahun, Chhetri and Newar caste groups. About 89% of the survey respondents practice some form of restriction or exclusion, the commonest one being abstaining from religious activities (68%). The socio-cultural reasons are based on concepts of "pollution" surrounding the menstruation. Survey showed that about half of the respondents (53%) had been absent in school at least once due to menstruation. Many girls though physically present in the school, were unable to perform well due to poor concentration and attention resulting from the constant worry. Lack of privacy for cleaning and washing (41%) was the major reason identified by survey respondent for being absent during menstruation. This is usually because of lack of water or due to minor issues, such as missing door locks, even when infrastructure of toilet is present.

Most of the survey respondents (66%) used re-usable cloths to absorb menstrual flow during menstruation, the use being

significantly higher among rural than urban school girls. The use of old piece of cloth was significantly higher among rural girls. Not knowing about its availability (41%) and high cost (38%) are the major reasons, as perceived by the survey respondents, for girls not using disposable single-use sanitary pads. The low cost and ease of availability of rag cloth was seen to be the mostly commonly used by girls in both rural and urban settings, however many of them preferred sanitary pads. The participating girls wash their genitals on an average two to three times a day during menstruation. However, this may be difficult in school due to poor facility for cleaning and washing or disposing absorbent cloth. Only around half of the respondents have toilet with adequate privacy at home (55%) and about two-fifth have at school (42%). On average the girls change the absorbent material between 2 to 3 times in a day and use one re-useable cloth for 3 cycles. Disposal of used cloths and napkins was a challenge in both urban and rural schools.

Restrictions during menstruation that limit daily activities and routine are widely practiced. These manifest from beliefs that a woman during her menstruation is ritually dangerous, which can result in them spoiling food and plants, biological and social processes. Abnormal physical conditions, particularly dysmenorrhoea and excessive bleeding, as well as the mental stress during menstruation affects the daily lives and routines of adolescent schoolgirls to a varying degree, particularly the quality of presence at school in terms of attention and concentration in curricular activities.

Further, lack of small things required for maintaining basic hygiene during menstruation, like privacy, water supply and waste disposal compound the situation.

Conscious efforts need to be made to address lack of privacy, which is an important determinant for proper practice of menstrual hygiene and also school attendance. In most cases this may mean managing the resources thoughtfully and problem-solving as the situation arises - small measures that can really help to provide supportive environment for menstrual hygiene both at home and in the school. Realizing the needs and interest to use sanitary pads, innovative ways have to be identified for making pads available and affordable to school girls belonging to all segments of society. It is clear that the reproductive health implications of menstruation and its management, and its effect on quality of life permeating school and other social activities are many for the adolescent school girls. These invariably call for all stakeholders to urgently address entrenched and incorrect menstrual perceptions, and enable proper hygiene practices amongst this segment of the population. There is a significant need for organizations working in the Reproductive Health and Water, Sanitation and Hygiene (WASH) sectors to work concertedly towards developing appropriate policy and adequate actions on the hitherto neglected issue of menstrual hygiene and management.

Key words: Menstruation, Hygiene, Adolescent Girls, Water, Sanitation

Background

Nepal, being a signatory to the Delhi Declaration 2008: "Sanitation for Dignity and Health", in the Third South Asian Conference on Sanitation (SACOSAN), needs to make major efforts to ensure that "the special needs of women (e.g. menstrual hygiene management) are integrated in planning, implementation, monitoring and measurement of (sanitation) programme outcomes" (The Delhi Declaration, SACOSAN-III 2008). Although often not acknowledged, it is clear that measure to adequately address menstrual hygiene and management will directly contribute to MDG-7 on environmental sustainability. Additionally, due to its indirect effects on school absenteeism and gender discrepancy, poor menstrual hygiene and management may seriously hamper the realization of MDG-2 on universal education and MDG-3 on gender equality and women empowerment (Ten, 2007). However, the attention on this issue is far from sufficient. Even the literature on gender mainstreaming in sanitation sector is silent on the issues of menstrual management. The objective of many environmental health programmes in Nepal, like in most developing countries, is to reduce morbidity and mortality caused by exposure to agents of disease and exacerbated by environmental hazards. Priority areas include water supply and sanitation, solid waste management and hygiene education (Bhardwaj & Patkar, 2004). Better excreta disposal facilities benefit men, women,

girls and boys. They offer privacy, convenience and safety. But most sanitation programmes necessarily do not mention the special needs of women and adolescent girls who use latrines to manage menstruation. It's a need that has been excluded from latrine design/ construction as well as hygiene education packages. Even reproductive and preventive health programmes in developing countries like Nepal often do not address the issue and moreover they focus mainly on the reproductive functions of married women.

Menstruation, though a natural process, has often been dealt with secrecy in many parts of Nepal. Hence, knowledge and information about reproductive functioning and reproductive health problems amongst the adolescent is poor (Adhikari, 2007). A great deal of women's and girls' scant knowledge is informed by peers and female family members. A study of Indian women shows that young girls are generally told nothing about menstruation until their first experience (Narayan et al, 2001). Several traditional norms and beliefs, socio-economic conditions and physical infrastructure can and do influence the practices related to menstruation. For example, a Hindu Nepali woman abstains from worship, cooking and stays away from her family as her touch is considered impure during this time. Women and girls in poor countries can't afford sanitary pads or tampons,

which would normally be changed around two to four times a day during menstruation. Instead, the vast majority of women and girls in Nepal use rags, usually torn from old saris. Rags are washed quickly inside the latrine or in public bath early in the morning and used several times. There is no private place to change and clean the rags and often no safe water and soap to wash them properly. The gender unfriendly schools and infrastructure, and lack of adequate menstrual protection alternatives and / or clean, safe and private sanitation facilities for female girls and teachers, undermine the right of privacy, which results in a fundamental infringement of the human rights of female students and teachers (Ten, 2007). Even in the homes, a culture of shame forces women to find well-hidden places to dry the rags. These places are often damp, dark and unhealthy. Rags that are unclean can cause urinary, vaginal and perineal infection. Very often serious infections are left untreated and may sometimes lead to potentially fatal toxic shock syndrome.

Literature review indicates that the practices coupled with poor knowledge is responsible for a significant proportion of school absenteeism, seclusion from social activities, illness and infection associated with female reproductive health of school going adolescents in developing countries. Expectedly, the scenario is common in Nepal. Though many of the health programmes have taken significant steps

forward, particularly as they ensured community participation in developing sustainable and effective hygiene and sanitation programme, usually these have failed to include the issues related to menstrual hygiene and management. This exclusion is undoubtedly due to the prevailing culture of shame, which creates silence and inability of young girls to articulate demand.

Above all, studies documenting such situation in Nepal are lacking. The types and frequency of problems related to menstruation among adolescent girls and the effect of these problems on daily lives might be different in Nepal and implications may vary. In the current situation, where there is an absence of menstrual hygiene and management issues in the policy debate, and hence in investments and actions (Bhardwaj & Patkar, 2004), studies that garner support, confidence and an enabling environment in order to make the voices on this issue is very much warranted - particularly to make the issue visible to concerned policymakers and to inform practical actions.

Menstrual hygiene and management is yet to be integrated effectively in overall hygiene promotion interventions in Nepal. Evidences from the field are imperative to emphasize the issues. Hence this small scale descriptive cross-sectional study was commissioned by WaterAid Nepal with the objectives given below.

Objective

The broad objective of this study is to determine the prevailing knowledge and experiences of menstrual hygiene and management, focusing on the implications in the daily lives and routines, among adolescent school girls in rural and urban setting of Nepal

Specific objectives

- To assess the prevailing knowledge and sources of information of adolescent school girls about menstrual hygiene and management,
- To elaborate the experiences and factors that determine the prevailing practices of adolescent school girls vis-à-vis menstrual hygiene and management,
- To identify issues and challenges faced (including health) by adolescent school girls due to their menstruation, and
- To propose specific measures to improve menstrual hygiene knowledge and management

Methodology

The research was carried in between December 2008 and February 2009.

Study site and population

The study was conducted in four districts of Nepal - Dhading, Morang, Lalitpur and Kathmandu. The districts were selected purposively - to represent different terrains as well as rural-urban areas of the country,

and also to keep it within WaterAid's programme implementation area. Dhading is a hill District, Morang a Terai District, and Lalitpur and Kathmandu are within the wider Kathmandu valley. The study unit was one government secondary school in each of these four districts. The schools in Dhading, Morang and Lalitpur were in rural area and the one in Kathmandu was in the urban context. The study population was 204 adolescent girls studying in grade 8, 9 or 10 at the time of study. Girls of these three classes who attended the school on the day of survey and were willing to participate in the study were included. Girls from those classes who had not yet had menarche were excluded.

Study design, techniques and tools

This was a descriptive cross-sectional study in which mixed methods (quantitative as well qualitative) were applied. A self-administered structured close-ended questionnaire survey (quantitative), and focus group discussions (FGD), and semi-structured in-depth interviews (qualitative) were applied to collect the information. The tools, survey questionnaire and guide checklist for FGD and in-depth interview were first prepared in English and then translated into Nepali. All three tools were pre-tested in a school in Kathmandu valley and revised accordingly before using it for the study population.

Data collection

Data collection was carried out at the school site during school hours with due verbal consent from respective school Principals. The self administered survey

was carried out in a classroom without the presence of male students or teachers. Female member(s) from the research team explained the purpose of the study and method of completing the questionnaire and took verbal affirmation from the respondents to participate in the study. The survey was conducted with a total of 204 respondents. An FGD was conducted in each of the four schools with nine to thirteen articulate and willing girls, who were selected out of the survey respondents with the help of teachers. FGD was carried out with a total of forty-seven girls. Semi-structured in-depth interviews were carried out with one or two girls in each of the four schools. A total of five girls who have had some noteworthy experience of school absenteeism or other problems due to their menstruation were selected with the help of teachers for the interview. To make the respondents feel at ease and express freely on the little discussed issue of menstrual practices, only female member(s) were involved to conduct FGD and interviews.

Data analysis

Quantitative data from the survey was analyzed using SPSS 12.0 software. Descriptive statistics were generated to show the socio-demographic characteristics as well as the distribution of knowledge and practices regarding menstrual hygiene and management. Cross-tabulation and Chi-square tests were run to see the association between some socio-demographic variables with knowledge or practice variables. Qualitative data were gathered through in-

depth interviews and four focus group discussions in order to gain an understanding of the patterns and practices around menstruation. Influencing factors to menstruation management and health seeking behavior were also explored. Data from FGD and in-depth interview was transcribed verbatim from the audio record in Nepali and translated later into English. The data was then analyzed manually; based on recurrent themes and patterns.

Ethical considerations

Rights, anonymity and confidentiality of the respondents were respected in all phases of the study. Informed verbal consent with the respective school's Principal and the respondents were taken before data collection. Through verbal consent process, the type and purpose of the survey, discussion or interview; issues of anonymity and confidentiality; voluntary participation and freedom to discontinue the interview/discussion at any stage; and absence of any known risk or benefit for participating in the study was explained beforehand. Photo and audio records were made with due verbal permission from the respondents. To preserve anonymity, all findings are presented without ascribing names or identifiable personal description.

Limitations

The selection of study units and respondents was purposive and may not reflect the population distribution of the geographical terrains covered. So, the findings of this study should not be generalized, however the key issues identified from the community will be an assets for management of menstrual hygiene. The language was a barrier, particularly in Terai as most students there were not well versed in Nepali language. The survey questionnaires were in Nepali and many respondents had difficulty understanding parts of it. The researcher team had to explain with the help of female teacher, who acted as translator.

Results

The findings obtained through different methods and tools used in the study have been organized and presented in this section under four main themes arising from the quantitative and qualitative data. The main themes are:

- Knowledge and beliefs
- Experiences during menstruation
- Seclusion, exclusion and absenteeism
- Hygiene Practices

Socio-demographic characteristics of respondents

The study was carried out with adolescent girls studying in government secondary schools. A total of 204 girls participated in the survey, and out of them 47 participated in the FGD and 5 in the in-depth interview. Out of 204 respondents, 42% are from Kathmandu, 15% from Lalitpur, 22% from Dhading and 21% from Morang.

The age of the respondents ranges from 12 to 20 years, with mean age being 16 years. Only 2 (1%) of the respondents are married. Caste/ ethnicity-wise most of the respondents belong to upper caste group (45%) and disadvantaged Janajati (38%). Large majority of the respondents are Hindu by religion (84%), followed by Buddhist (13%). The occupation of the parents of majority of the respondents is agricultural activities (father's - 53%, mother's - 61%).

Geographically, 57% of the respondents are from the valley (Kathmandu and Lalitpur), 22% from hill (Dhading) and 21% from Terai (Morang). Of them 58% are from rural locality (Lalitpur, Dhading and Morang) and 42% from urban (Kathmandu). The respondents had attained menarche between 10 and 16 years, the mean age of menarche being 13.3 years.

Knowledge and beliefs

The survey indicates that about 92% of the participants had heard about menstruation before their menarche (figure-1). However, FGD reveals a more intricate pattern. Young girls shared that they were not told anything specific about menstruation, especially the physiological basis - e.g. where the menstrual flow comes from - until their first personal experience of it. Majority of the girls were not prepared in any way for their first menstruation. Girls described the onset of menarche as a shocking or fearful event. Information was mainly provided about the use of cloth, the practice of rituals in the form of restrictions on their movements and behavior, and cautions about behavior towards males and, of course, the possible effects of her "polluting touch" and the equally polluting potential of the menstrual cloth.

FIGURE 1: Distribution of knowledge about menstruation before menarche (n = 204)

Knowledge: About menstruation before first menstruation

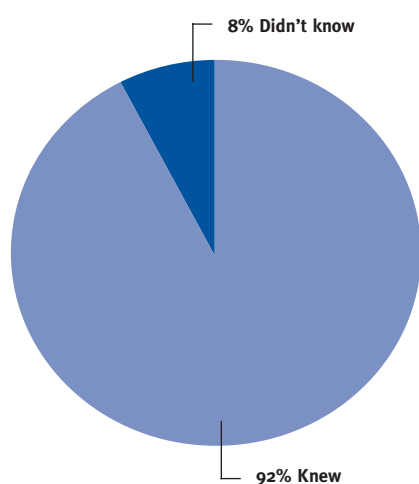


TABLE 1: Source of knowledge related to menstruation (n = 204)

| Source of information | Menstruation before menarche (%)* | Menstrual Hygiene(%)* |
|-----------------------|-----------------------------------|-----------------------|
| Mother | 51.0 | 58.8 |
| Sister | 40.7 | 38.7 |
| Other relatives | 9.8 | 6.9 |
| Teacher | 17.2 | 20.6 |
| Friends | 36.3 | 32.8 |
| Radio/TV | 16.7 | 27.0 |
| Newspaper | 7.4 | 10.8 |
| Textbook | 16.2 | 25.0 |
| Others | 1.0 | 2.5 |

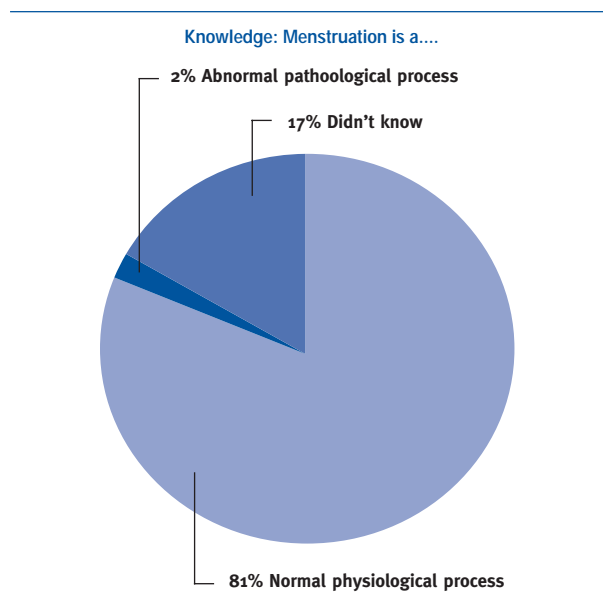
*Total may add to more than 100% due to multiple responses.

As shown in the table 1, the survey identified that mother (51%), sisters (41%) and friends (36%) are the main source of information about menstruation before menarche. The result is fairly consistent with the source of information about menstrual hygiene and management. Only about one-fifth respondents mentioned that they learnt about these issues from teachers. However, many respondents in FGD expressed that the teachers usually avoided teaching lessons related to reproductive health. A respondent from Lalitpur exemplified it by quoting what her teacher had said:

"This topic need not be taught, you can self study at home. It's like knowing to go to toilet with slippers/shoes."

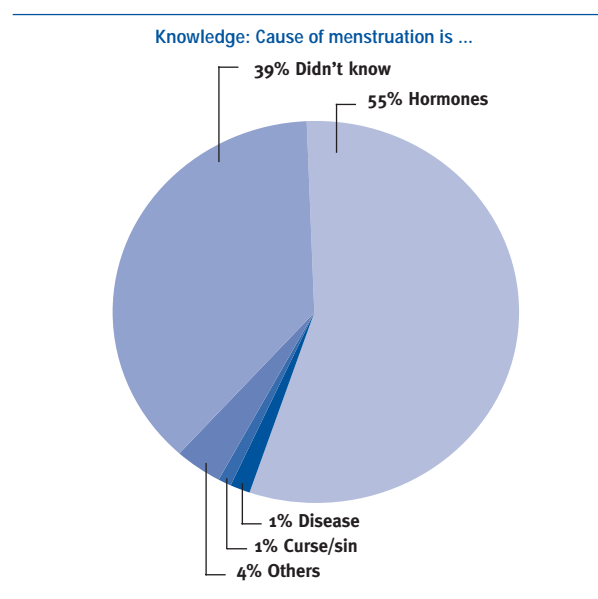
When asked who do they feel comfortable with talking openly about menstruation, more than half said with friends/peers (55%), followed by mother (47%) and sister (40%). Only 3% mentioned teachers.

FIGURE 2: Distribution of knowledge about menstrual process (n = 204)



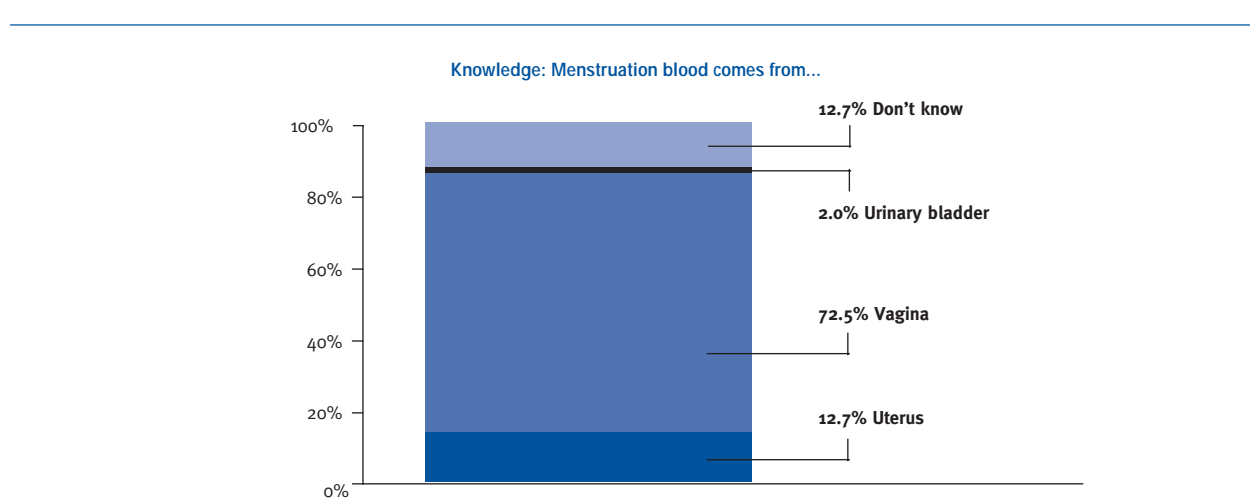
In the survey, 81% recognized menstruation as normal physiological process (figure 2), only little more than half (55%) recognized the cause of menstruation to be hormones (figure 3). Very few respondents (2%) mentioned disease or curse/sin as the cause

FIGURE 3: Distribution of knowledge about cause of menstruation (n = 204)



of menstruation. The findings of the FGD are also in the similar lines. In the survey, majority of the respondents (73%) identified vagina, and only 13% identified uterus, as where the menstrual blood comes from (figure 4).

FIGURE 4: Distribution of knowledge of where menstrual blood comes from (n = 204)



Experience during menstruation

Pain and more

About 90% of the survey respondents mentioned experiencing some kind of abnormal physical condition during the last menstrual episode (figure-5). Abdominal pain or discomfort is the commonest medical problem experienced by the respondents. Only 85% reported abdominal pain, followed by excessive bleeding (8%) and breast pain (5%) (figure 6).

From the FGD it is evident that participants sought out both pharmacological and non-pharmacological interventions, Pharmacological interventions included taking pain-killers and visiting health workers. Participants also visited traditional healers and tried various alternative medicines including ayurveda. Some girls shared their experiences with healthcare providers which they did not find positive or encouraging - some of them were told that they need uterus removal, that they will be never be able to bear children or that their problems with menstruation will fade away once they were married. Case Study 1 given below highlights the consequences of excessive bleeding during menstruation for a schoolgirl.

In the FGD, many girls shared that in addition to these physical symptoms they feel mentally stressed now and then during menstruation. They become very cautious about their mobility especially in

FIGURE 5: Distribution of experience of abnormal physical condition during last menstruation (n = 204)

Experience: Abnormal physical condition in last menstruation

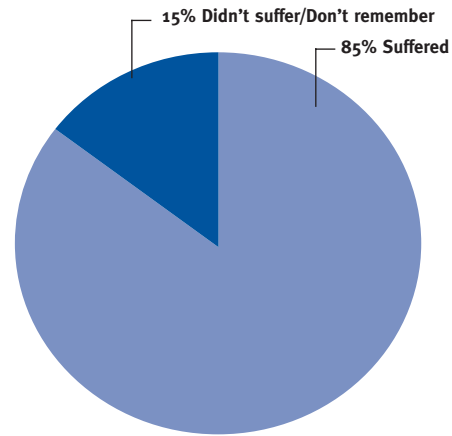
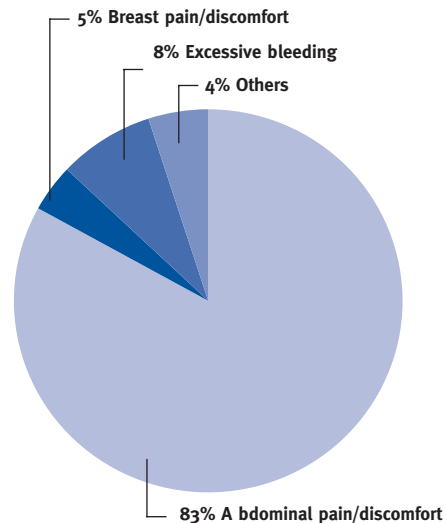


FIGURE 6: Distribution of type of abnormal physical condition in last menstruation (n = 185)

Experience: Type of abnormal physical condition suffered



the classroom. They take a lot of care when they stand, sit and walk - all due to the fear of accidental blood stain in the uniform or the place where they sit on. FGD participants in Dhading consistently shared the effects of the pain on regular

studies and specifically during exams and this is expressed through one of the participants' view -

"Menstruation badly affects studies. The school does not give lesson notes.

Students are expected to develop their own notes and hence when a student misses a class it can affect them a lot. We cannot miss the exams - but even when we come for the exams the excruciating pain can blank us out"

Case Study- 1

Miss A is 19 year old studying in class ten and she had attained menarche at 15. She currently has lower than average body weight and is suffering from anemia. Miss A comes from religious minority and follows Islam faith. During her last menstruation, she suffered heavy bleeding for continuous six days and this has been consistent for the last two years. According to Miss A "menstruation is a disease". It has affected her life tremendously. It was not always like this. Since her menarche, "things and life were ok" at least for the next 2 consecutive years – it has been only for last two years that experience with menstruation has been very bad.

Menstruation has affected her wellbeing both physically and mentally. Physically, she has suffered due to heavy bleeding, loss of appetite and loss of weight resulting into a sense of lethargy, which in turn influences her volition to be physically active and support mother in household chores. Mentally, it has been the constant fear of the associated pain, discomfort and the effects associated with menstruation – academic performance and especially getting through class ten. She shared that as a class ten student with looming Iron Gate SLC exams she has had sleepless nights over the possible pain perpetuated by her menstruation and thought of not being able to make it through her class ten along with her peers. Her worst fear became exactly true when she had to forego her school exams once because of menstruation. According to her, she fainted in the classroom in the midst of the exams and then had to discontinue all her forthcoming exams. Miss A along with her mother has tried many places and people to bring relief to her situation. She has been to many faith-healers, sought alternative medicine from east to west, but of no avail. It has cost the family money, time and energy. The faith-healers claim that evil spirit has cast an eye on her that has made her weak and her "body shrink".

In all these excruciating times, "Mother" has been a pillar of support and she feels, it would have helped her more if only she knew where she could rightly go to a place or person, where she might be informed about the cause of her sufferings and means to relieve it. There are not many long wish lists, but places and people who can make her life less painful and "disease-free".

Practices of seclusion, exclusion and absenteeism

Seclusion and exclusion

In the FGD, most of the girls expressed that first menstruation is often traumatic and very negative experience. Culturally girls of *Bahun*, *Chhetri* and *Newar* caste groups are put in seclusion in special place in one's own or relatives' house (usually kept dark) where they are confined for seven to 11 days. During this seclusion they are not allowed to see sun and male relatives (brothers and father).

Both survey and FGD findings clearly indicate that there are still large number of traditional beliefs and restrictions surrounding menstruation. Only 11% of the survey respondents mentioned not practicing any form of restriction or exclusion (*table 2*), and this was not significantly different amongst rural and urban respondents. It was evident in the FGD that restrictions and other traditional beliefs and practices affecting adolescent girls are stronger in *Bahun*, *Chhetri* and

Newar caste groups. The commonest restriction practiced by the survey respondents is abstaining from religious activities (68%), which are followed by abstaining from cooking (46%) as well as not touching the male family members (24%) (*table 2*). The socio-cultural beliefs behind are based on concepts of "pollution" surrounding the conditions of menstruation and usually mothers imparted these beliefs to the girls as important know how related to the practices during menstruation. This is evident in what a class IX participant from Dhading said –

"A woman is ritually impure during menstruation and anyone or anything she touches becomes impure as well. It is usually the mothers who enforce these restrictions"

It was stressed in all four FGD that fathers and brothers are increasingly becoming lenient in these matters. A girl from Dhading in FGD reflected how girls turn to their fathers for rescue particularly when they are not provided with enough warm clothes during winter, thinking that it will "pollute" the clothes –

"During winter it is very difficult, we have to sleep alone, and there is not enough warm clothes at night. Many times I have to ask father for quilt."

Some of the common beliefs reinforced were that pickles go bad, seeds become sterile, plants will wither – they might wilt when touched by a menstruating person.

TABLE 2: Restrictions practiced during menstruation (n = 204)

| Restriction | Percent* |
|---------------------------------|----------|
| None | 10.8 |
| Don't attend religious function | 67.6 |
| Don't go to school | 3.4 |
| Don't cook | 46.1 |
| Don't do household work | 20.6 |
| Don't touch males | 23.5 |
| Don't play | 9.8 |
| Don't eat certain food | 13.2 |
| Sleep separately | 28.4 |

* Total may add to more than 100% due to multiple responses.

Even under Islamic law, a menstruating woman is not allowed to pray or fast nor is she allowed to touch the Koran. The girls are relieved from exclusion only after a purification ritual. One interesting not-to-do activity during menstruation was shared by one of the FGD participant from Kathmandu –

“I was told that ‘Dashain/Tihar’ will be obstructed if one sees herself in the mirror during menstruation. I did it and guess what – the following Dashain was obstructed; I had my menstruation during Dashain. Yes, now this has happened to me. I think it is true and now I don’t see mirror anymore during menstruation.”

Despite these enforced superstitious restrictions, encouragingly one pattern has been observed consistently in all four FGD. Amidst all these restrictions girls, both in urban and rural areas are challenging these rituals in one way or other either through reflection or straight away defying it in their ways. A girl from Dhading shared –

“I grew up being told of what to do and what not to do. I know of what I am supposed to do ...but then when no one is around I do everything that I am not supposed to... I touch water, I touch food in the kitchen, I enter every room... I have also touched many fruit trees and none of them have wilted so I think it is not true.”

Absenteeism

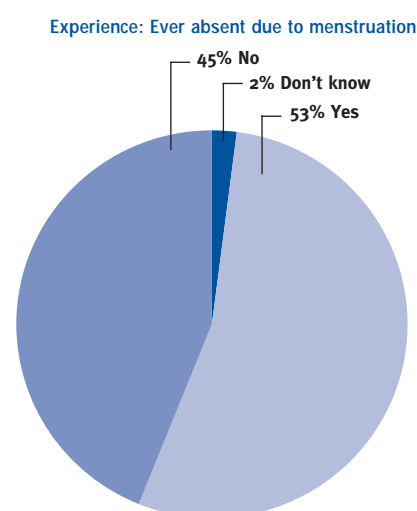
Half of the survey respondents (53%) mentioned being ever absent due to menstruation (*figure 7*). However, many

girls in the FGD shared that though physically present in the school they performed poorly in terms of concentration and attention. This was particularly due to constant worry that boys might figure out about their status by their movements and facial expressions. Many also expressed feeling exhausted and weak during menstruation. Another major worry expressed by the girls was having their menstruation coinciding with exams as they would not get adequate time and opportunity to clean and change timely. A girl of class IX from Lalitpur shared her utter despair by stating:

“I wish I did not have to have this menstruation! But I know this is not possible.”

Among reasons highlighted by survey respondents for being absent in school during menstruation, lack of privacy for

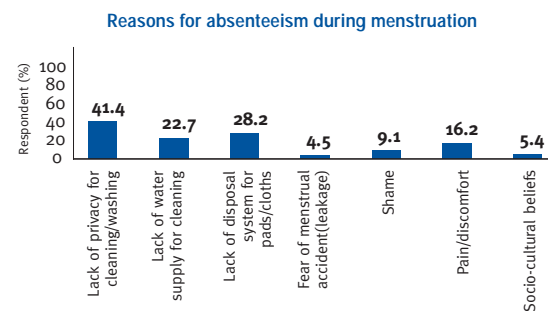
FIGURE 7: Distribution by experience of absenteeism due to menstruation (n = 204)



cleaning/ washing (41%) ranks high followed by lack of availability of disposal system (28%) and water supply (23%). Pain/discomfort was also mentioned by 16% (figure 8). With regards to privacy girls noted in the FGD that even if infrastructure of toilet is present, in many instances basic lock system is missing or not functioning. So they usually go in pairs by taking turns to go to the toilet and wait on each other. The following quotes from FGD in Kathmandu and Lalitpur aptly summarize the challenges of a girl during her menstruation when she attends school which lacks basic infrastructural amenities and also the recurrent effect on attendance:

"In our school there is no water facility in the toilet - it is so difficult.., sometimes I have to miss schools. The water supply is outside the bathroom. There is only one tap. We have to carry water to the toilet.

FIGURE 8: Distribution of reasons for school absenteeism during menstruation (n = 107)*



Also there is no arrangement of disposing the cloth. Sometime the used cloth has to be disposed off in the toilet-pan."

"Some days we bleed heavily, and we need to change clothes at least 2 or 3 times during the school hours. There is no place to change and dispose the cloth – there is question of putting back those used cloth in our pockets. So we just bunk classes when we have to change the clothes."

Case Study 2

Miss B is a 16 year old Chettri girl studying in class nine. She had her first menstruation when she was 15. Her menstruation is regular except that she has experiences of heavy bleeding on 2nd and 3rd day of her menstruation. Similar to many experiences shared by girls of her age, she has had a frightening first experience with menstruation. Gradually, she got to know about menstruation and its management through her mother and sister-in-law.

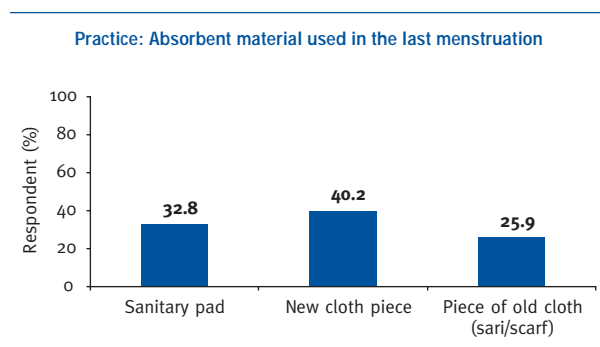
At home, she experiences several restrictions of what she can do and what she cannot do. She is not allowed to participate in puja and most of her daily activities are confined to outdoor. Her mother even suggests that during menstruation she avoid the road which passes through temple. She claims that she does not heed to her mother's suggestions but restricts herself from performing puja. At home, she is fortunate enough to have some privacy – the family has their private toilet with water supply. It is in the bathroom that she manages to change the cloth used for menstruation, to clean and take shower. However, unfortunately this is not possible in school, as the school environment is not very conducive – when she has menstruation she usually misses classes. She misses her classes especially during the 2nd or 3rd day because that is when she bleeds heavily and needs to regularly change the pad. The school has a lavatory but lacks basic amenities. The door even does not have a latch, neither is there a water supply. She has to carry water from the tap outside and there have been occasions when the bucket to transport water from the tap to the lavatory was missing. To avoid all these inconveniences and difficulties, she prefers to stay at home and continue missing classes. She expresses that if basic amenities were ensured such as a bucket, a lock system at the toilet door, and water, managing menstruation at school would be much easier and she need not miss her classes.

Hygiene practices

Absorbent material

Of the survey respondents, 17% used single use material only, 40% used re-usable cloths only and 35% used both types during last menstruation. Regarding the actual material used, 33% used disposable sanitary pad, 40% used new cloth whereas as about a fourth (26%) used old piece of cloth from sari or scarf (figure 9). The use of sanitary pad is higher among girls in urban schools (50%) in comparison to rural (19%), and the use of old piece of cloth was higher among rural (35%) than urban (14%). This difference is significant on chi-square test with p value less than 0.05 (table 3).

FIGURE 9: Distribution by absorbent material used in last menstruation (n = 174)



In the survey 41% of the respondents perceived that many may not know about the availability of the single-use disposable sanitary pad resulting into its non-use. Many also reported high cost (39%), no easy availability (33%) and difficulty of disposal (24%) as the other reasons for not using such pads (figure 10). This finding is also consistent with the FGD findings.

In the FGD it was clearly identified that the family income affects the use or the non-use of sanitary pads. The low cost and ease of availability of rag cloth make it the indispensable choice for the girls in both rural and urban, more in the former. Some girls in the FGD explicitly mentioned that they prefer cloths to pad for use during menstruation because it is cheap and can be reused as well. However, many participants made it clear that if they had the option to choose between sanitary pads and rag cloth they would want to use the sanitary pad, like one FGD participant from Morang highlighted:

“If I had an option to choose between sanitary pad and rag cloth (piece of cloth from sari or other cloth)... of course, I would choose the sanitary pad.”

FIGURE 10: Distribution of perceived reasons for girls not using single-use sanitary pads (n = 204)*

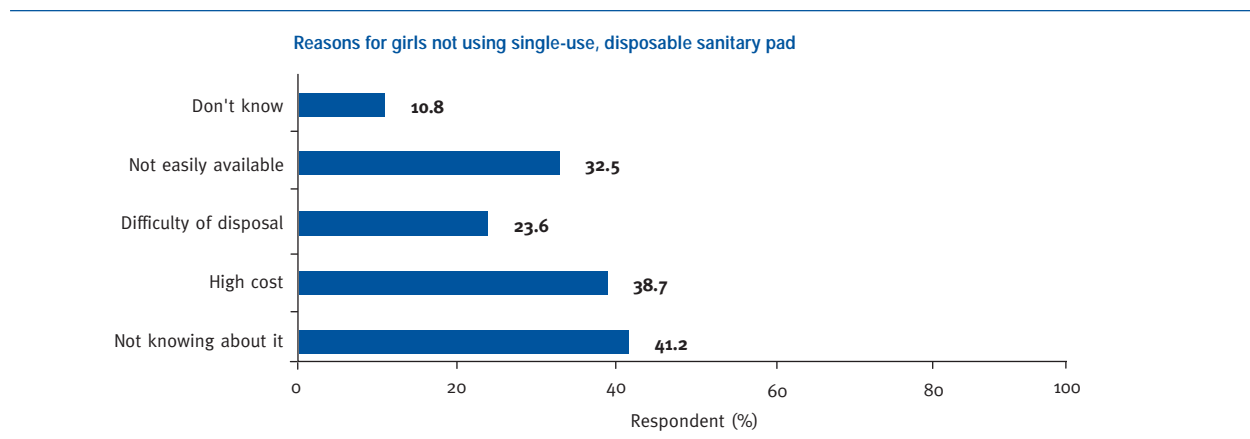


TABLE 3: Cross tabulation of type of absorbent material used among rural and urban respondents (n = 174)

| | | Types of absorbent material | | |
|--------|-------|-----------------------------|-----------------|--------------------|
| | | Sanitary pad | New cloth piece | Piece of old cloth |
| Rural- | Rural | 18 (19%) | 42 (44%) | 34 (35%) |
| Urban | Urban | 39 (50%) | 28 (36%) | 11 (14%) |

$\chi^2 = 22.7$, p value = .000 (p value $\leq .05$ is significant.)

These girls would prefer pad because the cloth is thick and causes discomfort, especially during summer. As one participant from Dhading shared –

“Cloth is ok during winter, however during summer it is very uncomfortable. It rubs against the skin and becomes smelly.”

Sanitary pad on the other hand is seen as easy to use and easy to carry as well. However, because they cannot afford sanitary pad always, most of them usually use cloth material when staying at home and use sanitary pad only when they need to go out.

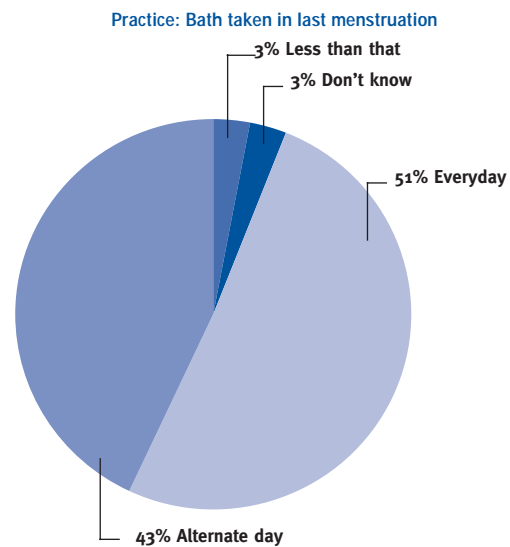
Cleaning and changing

Hygiene practices were found to be not so satisfactory. In the survey, only half of the respondents (51%) mentioned having

TABLE 4: Frequency related to menstrual hygiene

| Absorbent use & cleaning (average frequency) | Minimum | Maximum | Mean |
|--|---------|---------|------|
| Change of absorbent in last menstruation | 1 | 9 | 2.7 |
| Cleaning of genitalia in last menstruation | 1 | 10 | 3.1 |
| Cycles of use of a re-useable cloth | 1 | 12 | 3.2 |

FIGURE 11: Distribution by practice of bath taken in last menstruation (n = 204)



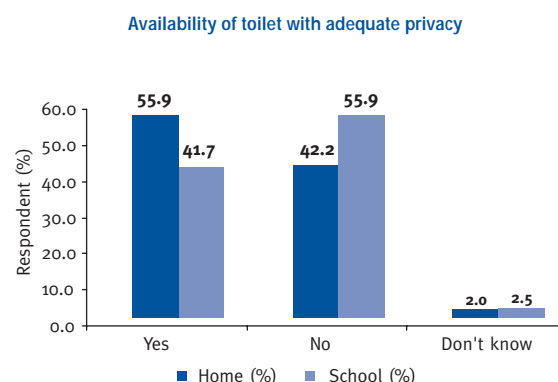
taken bath everyday, and about two-fifth (43%) on alternate days, during their last menstruation. In the FGD, however, most of the girls told that it is difficult to take bath daily in winter and usually take bath on alternate days while in summer they do so daily. Many respondents mentioned that, even if not on other days, they usually take bath on the third or fourth day of menstruation as a purifying ritual. Most participants in FGD told that they wash their genitals with water only when they go to toilet. Many of them were confused whether soap could be used or not. Most of them told that they wash their genitals two to three times a day; some told that they wash every time when they go to toilet. Survey also revealed that on an average, the girls clean their genitals three times a day during menstruation (table 4). However, girls particularly in urban school said that they refrain from going to toilet when they are at school

TABLE 5: Cross tabulation of availability of toilet at home with adequate privacy among rural and urban respondents (n = 204)

| | | Availability of toilet at home with privacy | |
|-------------|-------|---|----------|
| | | Yes | No |
| Rural-Urban | Rural | 55 (46%) | 61 (51%) |
| | Urban | 59 (69%) | 25 (29%) |

because it is not well managed for cleaning and washing or disposing absorbent cloth – particularly due to the problems of lock, lack of water and disposal facility. More than half of the survey respondents (56%) mentioned that they had access to a toilet with adequate privacy at home and only about two-fifth (42%) mentioned having access to this service at school (figure 12). On cross-tabulation, clear differences are seen between rural and urban respondents and statistical data show that these differences are significant (p value less than 0.05). The survey shows that on average the girls change the absorbent material between 2 to 3 (2.7) times in a day (table 4), which was also confirmed in the FGD. The survey finding that on an average one re-useable

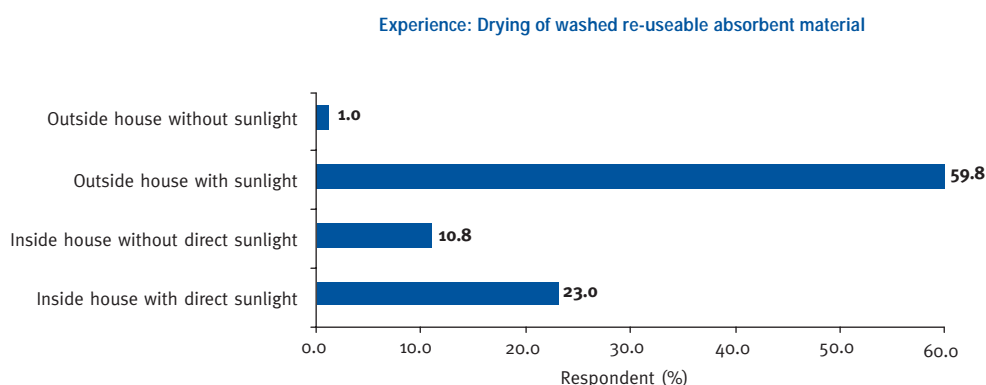
FIGURE 12: Distribution by availability of toilet with adequate privacy at home & school (n = 204)



cloth is used for 3 cycles (table 4) also coincides with what most participants in FGD shared – they reuse a single cloth for two to three menstrual cycles. However, the girls clarified that the number of times of use also depends on the nature of blood stain on the cloth – if the stain is strong they don't use it again.

In survey majority of the respondents (59%) indicated that they dried their washed re-useable absorbent material (cloth) outside the house and under sunlight (figure 13). However, participants

TABLE 13: Distribution by practice of drying washed re-useable absorbent material (n = 193)



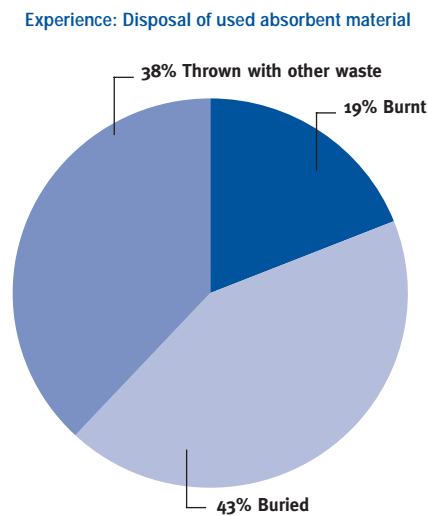
in the FGD clarified that even if they dry their cloth outside it is usually in a separate place which can not be noticed easily by others and many of them still continue to put over a thin piece of another cloth so that others cannot notice. This practice is unanimously voiced by most of the FGD participants in Dhading. The girls jointly voiced giggling:

"Yes, we dry the cloth under the sunlight. But most of the time we place it under some clothes. When we do it directly then it is in a "kolte" (slanted) place - so no one can see it."

Disposal of absorbent material

In the survey, nearly 43% of the respondents reported that for disposal they bury their absorbent material, 35% throw with other waste and 19% burnt the material (*figure 14*). FGD revealed that in rural areas where there is no garbage collection system girls even dumped it in the stream. Disposal of used cloths and napkins was a challenge in both urban and rural schools. Many FGD participants said that they wrap it

FIGURE 14: Distribution by practice of disposing single-use absorbent material (n = 136)



and carry it home with them either to throw it with other waste or to burn it. Some also mentioned flushing it in their home and school toilets. Some of the girls have even disposed it in school toilets, at times causing the toilet to clog. A FGD participant from Morang informed that:

"In our school there is no specific place to dump the cloth, wish there was a dustbin. Many times we just throw it in the toilet pan."

Discussion

Given the findings in the study and reflecting on the objective of the study, it is clear that menstrual hygiene and management is an issue for adolescent school girls both in rural and urban settings. In this section, factors that directly or indirectly influence menstrual hygiene and management have been identified for discussion.

Knowledge about menstruation that large majority of girls participating in this study had before attaining menarche, and later too, was not correct. Their perceptions were heavily influenced by socio-cultural beliefs and symbolisms. Mothers have been identified as an important source of information on menstruation for the adolescent girls, as also shown by some other studies to a varying degree (Dasgupta and Sarkar, 2008; El-Gilany et al, 2005). However, information on menstruation given by mothers is often incomplete and incorrect, usually being based on cultural myths, and therefore probably perpetuating negative and distorted perceptions and practices of menstruation (Adinma and Adinma, 2008). In view of the little information that the girls are equipped with, usually from mothers, family members and peers, it is not surprising that only about one in ten of the participating girls knew correctly that the menstrual blood came from uterus. This already reflects that teachers do not sufficiently impart the knowledge, and seemingly girls themselves also do not

make a self effort to learn, even though such basic anatomical issues are part of their school curriculum. School teachers' hesitation in conducting the health classes and provide reproductive health information including menstruation confidently is evident in this study – which can be said to mirror the lack of skills and attitude of teachers to handle sensitive topics. It was clear that the level of awareness on menstruation amongst the respondents, though secondary school students, reflect that the majority still does not have right information to make decisions, and to take appropriate steps in terms of managing menstruation and related problems.

Practice of ritual seclusion particularly at or before the attainment of menarche has been identified in this study. Though the practice of sleeping in separate room was found in this study, seclusion in menstrual huts during each menstrual period as practiced by some groups or in some areas of Ethiopia, Nigeria and Nepal (Ten, 2007) was not evident. As observed by the researchers, the practice, called *chhaupadi*, in which menstruating females have to sleep in such menstrual huts (called *chhaupadi goth*) that are often unhealthy and dangerous is common in far-western region of Nepal. None of the schools studied was from this region.

Nine out of ten girls in the study observed at least one or the other restrictions during

menstruation, which is consistent with a study done in India where 86% practiced some form of restriction (Dasgupta and Sarkar, 2008). Such restrictions, though varied, are practiced across the groups of different religion and culture – including Hindu, Muslims, Christians and Jews – and in most cases are related to the “impurity” of the females during menstruation (Ten, 2007). Restrictions symbolize a woman’s ritually dangerous status (Narayan et al, 2001) that, as fuelled by myths, misconceptions, superstitions and taboos, is believed to have the potential to spoil food, plant, biological and social processes as exemplified by the respondents of this study. All pervasive the phenomenon of restrictions may be, however it was encouraging to note in this study the changing attitude of the adolescent schoolgirls in terms of challenging the restrictions that limit their daily lives and routines.

Dysmenorrhoea manifesting as abdominal pain or discomfort has been found as the commonest medical problem, the finding being consistent with some other studies (Adinma and Adinma, 2008; Narayan et al, 2001). The abnormal physical condition during menstruation not only affects their daily lives and routines to a varying degree, it also makes the girls try different remedial measures from self medication to visiting different types of health providers. As is evident in the study, girls many times do go through negative experiences with health worker in terms of the response and advice they provide, and this clearly highlights on the need for sensitivity on the part of the health workers to provide

friendly health services taking into account the needs of this group of population.

One in two girls in this study reported having been absent from school due to a cause related to menstruation. More than physical absence during menstruation, this study pointed out an important aspect that can affect school performance equally – the quality of presence at school, particularly the attention and concentration in the curricular activities. This facet of the implications of menstruation on school girls could not be found in the literature referred to in this study. Lack of small things required for maintaining the menstrual hygiene, like privacy, water supply and waste disposal, have been found as major reasons for absenteeism, though abnormal physical conditions (pain, discomfort, heavy bleeding) are also one. Lack of privacy has been pointed out by other studies also as a major problem (El-Gilany et al, 2005) and there’s conclusive evidence that girls’ attendance at school is increased through improved sanitation (Bhardwaj and Patkar, 2004).

Three out of four girls in this study used re-usable clothes as menstrual absorbent. This figure is comparable with other studies in Nepal (Adhikari et al, 2007) and India (Narayan et al, 2001; Dasgupta and Sarkar, 2008) where large majority of the participants used re-usable cloth. The study clearly pointed out that the lack of information about disposable sanitary pad, its high cost and limited availability are the main reasons for school girls not using them. Similar observation that poverty,

high cost of disposable sanitary pads and to some extent ignorance dissuaded the adolescent girls from using the menstrual absorbents available in the market was made in an Indian study (Dasgupta and Sarkar, 2008). The use of sanitary pads was found to be significantly higher among urban school girls, whereas the use of old cloth was significantly high among rural, which is consistent with an Egyptian study which found the correlation between rural residence and low socio-economic class with the use of unsanitary absorbents (El-Gilany et al, 2005). It's evident in this study that those who knew about the sanitary pads are likely to use them instead of cloth if they could access and afford it. The disposable pads usually have better absorption, are meant for single use and, hence are considered sanitary. However, with the cloths there is a tendency towards reuse and have the potential of harbouring infection agents that can cause pelvic infections. However, this study didn't delve much into the aspect of infections. Proper washing and drying of re-used cloth does minimize the chance of infection, but it was explicit in the study that the drying practices were not optimal as they had to hide the cloth from others view.

The frequency of cleaning the genitalia and changing absorbent material about three times a day in average has been

quite similar to the findings of an Egyptian study where the frequency was 2.5 times a day (El-Gilany et al, 2005). Each woman decides for herself what is comfortable but for optimal hygiene menstrual absorbent should be changed at least three to five times a day, and more frequent may be necessary (Salem and Setty 2006). The cleaning should also be at least equal to the number of times the pad is changed. Though the practice of cleaning and changing sounds fairly okay, girls have pointed out that at school this is not always possible. Fortunately, all the schools in which the study was undertaken had provision of toilet, which is not the case across most of Nepal, but small issue like a broken lock or lack of tap or a bucket to carry water did result in poor hygiene and in some cases school absenteeism as well. The problem of not having toilet with adequate privacy for managing menstrual hygiene also existed for many participant girls at home. Environmental impact of menstrual hygiene in the form of a growing waste problem has been noted (Ten, 2007). In that line, the problem of properly disposing the menstrual absorbent, mainly due to the lack of proper or no garbage collection system, both at school and home was evident in this study too – at times causing problems like clogging of toilet and polluting the local environment like streams in villages.

Recommendations and conclusion

The study has highlighted the needs of the adolescents to have accurate and adequate information about menstruation and its appropriate management. Formal as well as informal channels of communication, such as mothers and peers, need to be emphasized for the delivery of such information – particularly linking instructions on menstrual hygiene to an expanded programme of health education in schools and in tandem with more informal means of dissemination channels. In view of the vital role of the mothers, it is utmost important that the mothers be armed with the correct and appropriate information on reproductive health, to give to their growing girl child on a 'dose-related' continuous basis. It is also essential for the teachers, who may not have necessary skills to impart reproductive health education including menstrual hygiene to their student, to be given requisite skills – usually through workshops or training.

Conscious efforts need to be made to address lack of privacy, which is an important determinant for proper practice of menstrual hygiene and also school attendance. The efforts does not always mean large investments in infrastructures, but in many instances it suffices with

attention given to minute issues of basic sanitation infrastructures like toilet, water supply and waste management. It is just about managing the resources thoughtfully and problem-solving as the situation arises. Such small measures can definitely provide supportive environment for menstrual hygiene both at home and in the school. The interesting aspect highlighted by the school girls regarding the quality of attendance in school suggests that further studies are needed to explore more at the qualitative aspects of the effect on the daily activities around menstruation, particularly school attendance.

Realizing the needs and interest to use sanitary pads, innovative ways have to be identified for making the pads available and affordable to school girls belonging to all segments of society. Minimal effort has gone into the production and social marketing of low-cost napkins in developing countries (Bhardwaj and Patkar, 2004). However the example of BRAC, one of the world's largest NGOs, in manufacturing and retailing low-cost sanitary pads through extensive network of social mobilizers in Bangladesh and similar examples in Tamil Nadu do point out a doable solution in similar settings like ours.

Additionally, the use of locally produced sanitary pads stimulates local economy too.

The reproductive health implications of menstruation and its management, and its effect on quality of life permeating school and other social activities are many for the adolescent school girls. These invariably call for an urgent address by all stakeholders – family, school, community, civil society, and service providers to entrench correct menstrual perceptions and enable proper hygiene practices amongst this segment of the population. In Nepal, all organizations, state and non-state, working on reproductive health as well as on water, sanitation and hygiene should work concertedly towards appropriate policy and adequate actions on hitherto neglected issue of menstrual hygiene and management to achieve “Sanitation for Dignity and Health” for all women (The

Delhi Declaration, SACOSAN-III 2008). This essentially will contribute to the attainment of some MDG, particularly 2, 3 and 7.

In conclusion, it can be said that among the adolescent school girls both in urban and rural areas, menstrual knowledge and perceptions are poor and practices often not optimal for proper hygiene. Often ignored issues of privacy affect the hygienic practices and daily lives, particularly school attendance, of the adolescent girls. The know-how, availability and affordability of sanitary products to manage menstruation are far from satisfactory. Schools, home, society and organizations of reproductive health as well as water, sanitation and hygiene sectors need to make an effort towards making menstrual hygiene and management better for adolescent population.

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Glimpses of the study



Responding to interviewers



Interaction with student after survey





Briefing about the study



Focus group discussion



Individual questionnaire survey

Is menstrual hygiene and management an issue for adolescent school girls?

This study was undertaken with the objective of determining the prevailing knowledge and experiences of menstrual hygiene and management, and their implications, among adolescent school girls in rural and urban settings of Nepal.



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