

## Exploring Menstrual Hygiene: A Comprehensive Study of Knowledge, Perceptions, and Practices among Higher Secondary Girl Students at Baneshwor Multiple Campus, Kathmandu, Nepal (2023)

Labanya Devi Ghimire

Associate Professor

Baneshwor Multiple Campus, Shantinagar, Kathmandu, Nepal

[labanyaghimire@gmail.com](mailto:labanyaghimire@gmail.com)

<https://orcid.org/0009-0002-7584-784X>

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### Abstract

**Introduction:** Even though menstruation is a natural process, adolescent girls face various challenges including lack of knowledge, misperceptions, taboos and restrictions related to practices. The school and college environment can play a greater role in alleviating these issues by creating favorable conditions for dignified menstruation to girl students.

**Objective:** The objective of this study is to assess the knowledge, perceptions and practices regarding menstrual hygiene among higher secondary girl students of the Baneshwor Multiple Campus (BMC) in Kathmandu, Nepal.

**Methods:** A descriptive cross-sectional study was conducted using a self-administered semi-structured questionnaire collecting data from 106 higher secondary girl students. Descriptive statistics like frequency, percentage, mean and standard deviation were used in data analysis.

**Results:** All 106 girl students answered the normal monthly bleeding as the meaning of menstruation while the majority (98.1%) answered the normal body process as the cause of menstruation. Majority respondents (88.7%) reported to have knowledge about *Chhapaudi* but some (12.3%) still considered it as a legal tradition. Large majority of the girl students still followed menstrual restrictions with visiting temple (83%) and attending religious events (61.3%) being most common. Two-third students (65.1%) were unable to focus on study in campus when menstruating. Majority of students (71.7%) used disposable sanitary pads during their last menstruation but more than two-third (69.8%) reported of not being able to change it as often as liked in campus. Nearly half of girl students (43.45%) missed campus due to

menstruation in the last three months with main reasons cited as pain, fear of leakage and tiredness. While half of students (49.1%) affirmed of sanitary materials being provided by campus management but only one-third (33%) of them reported it to be adequate.

**Conclusion:** Knowledge regarding the meaning and cause of menstruation was nearly universal among higher secondary girl students of BMC. Some regarded the curse of god as the cause of menstruation and *Chaupadi* as a legal tradition while majority still followed menstrual restrictions one or other types, suggesting the need to raise awareness for breaking taboos and stigma surrounding menstruation. Supply of disposable sanitary pads was reported to be inadequate and one-third were unable to focus on study in campus during menstruation, suggesting improved supply of materials and menstruation-friendly environment in campus.

**Keywords:** Adolescent girls, menarche, menstrual practices

## **Introduction**

Menstruation is a normal biological process experienced by millions of women and girls around the world each month. Menarche signifies the start of a female's reproductive years and often marks her transition to full adult female status within a society (Kuhlmann et al., 2017). The United Nations defines adequate menstrual hygiene management as 'women and adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials (Sommer & Sahin, 2013).

Even though menstruation is a natural process; the misconceptions, myths, malpractices, taboos, cultural restrictions and various challenges associated with it is perpetuating the substantial barriers in achieving adequate menstrual hygiene management among girls and women particularly in low income countries (Kuhlmann et al., 2017; Sommer & Sahin, 2013). Globally, up to 20% of girls miss school and 10% drop out entirely due to menstruation period (Hussein et al., 2022).

Studies done in Ethiopia reveal that only half of the adolescent girls had safe menstrual hygiene practices, one in four girls missing one or more school days during menstruation, and challenges faced by them found to be compounded by societal myths, stigmas and discriminatory social norms surrounding menstruation and suggesting the necessity of girls' preparedness for menarche by fostering supportive environment at schools, family and community level (Sahiledengle et al., 2022; Tegegne & Mtike, 2014). Similarly, a study done by Chothe et al (2014) in India reports of low level of knowledge, various misconceptions and taboos relating to menstruation practices, and frequent study absenteeism among adolescent girls.

Inadequate menstrual hygiene knowledge and practices as well as misperceptions among school/college going girls has long been a neglected issue in low income countries (LICs) including Nepal, which adversely affect their dignity, self-esteem, learning opportunities, health and overall development (Kuhlmann et al., 2017; Sommer & Sahin, 2013; Mason et al., 2015). Socio-cultural interpretations of menstruation being 'impure or polluting or unholy' is persistent in Nepal, which adds to significant barriers for girl students during menstruation

negatively influencing their study opportunities and undermining gender equality and empowerment (Morrison et al., 2016).

A national survey of adolescent school girls conducted in 2019 reports that the barriers for good menstrual hygiene are commonly prevalent in Nepalese society due to lack of adequate knowledge and misperceptions regarding menstrual hygiene among adolescent girls students with almost half of adolescent girls experiencing high menstrual stress and 26.7% of them missing school due to menstruation (Dhimal et al., 2020). The survey also pointed out the need for addressing the gaps and challenges that are hindering menstrual health and hygiene at home, school and community. Other studies done in the country also conform of adolescent girls facing various challenges including inadequacy of knowledge, misperceptions, and practice related taboos regarding menstrual hygiene (Adhikari et al., 2007; WaterAid, 2009; Khanal, 2019).

The school/college environment can play a greater role by creating favorable conditions for dignified menstruation, which include improvement of physical environment as well as provision of accurate and programmatic information for adolescent girls (Morrison et al., 2016). This will help adolescent girls to develop right knowledge, perception and practices towards issues related to menstruation hygiene and, thereby, positively impact their learning and development as well as foster women's empowerment and gender equality in society (Tegegne & Mtike, 2014).

In the absence of such study done among adolescent girl students of Baneshwor Multiple Campus (BMC) yet, this study was done with the objective to assess the knowledge, perceptions and practices regarding menstrual hygiene among higher secondary adolescent girl students of the campus. Findings from this study is expected to inform the Campus Administration and Student Welfare Committee for adopting appropriate strategies to facilitate girl students' well-being regarding menstrual hygiene, safe menstrual practices and improved reproductive health in future.

## **Research Materials and Methods**

A descriptive cross-sectional study was conducted in January-February 2023 among higher secondary girl students of Baneshwor Multiple Campus (BMC), a community college in Kathmandu that enrolls students of diverse background from all over Nepal. The study site was selected based on researcher's convenience and familiarity of the institution. Census method was employed to collect data from all girls studying in higher secondary level who already had menarche and provided consent. A self-administered semi-structured questionnaire developed in Nepali language was used for collecting primary data.

The questionnaire was adapted from a national survey carried out by Nepal Health Research Council (Dhimal et al., 2020) and a study done by UNICEF Nepal Country Office (Morrison et al., 2016) on menstrual health and hygiene among school adolescents. The reliability and validity of the tool was further ensured through literature review and consultation with a public health expert having long experience in this field.

Ethical approval for study was obtained from the Research Committee of BMC. Informed consent was obtained from each study participant. Confidentiality and anonymity of the

respondents was maintained. Students' break time and/or vacant slots were utilized for completing the survey. Students who were absent or could not be reached despite three attempts were excluded from the study.

Data from completed questionnaires were entered into KoboToolbox (<https://kf.kobotoolbox.org/>) and then transferred to Microsoft Word. Descriptive statistics like frequency, percentage, mean and standard deviation were used in data analysis.

## Results

A total of 110 higher secondary girl students from all three streams participated in the study but data from 106 completed surveys only were included in analysis. Descriptive statistics were generated to show the socio-demographic characteristics as well as the distribution of knowledge, perception and practices regarding menstrual health and hygiene of students.

### Socio-demographic characteristics of higher secondary girl students

Out of 106 girl respondents, 48 (45.3%) were from Grade XI, 58 (54.7%) were from Grade XII, 100 (94.3%) were adolescents of age between 15-19 years and 6 were youth of age between 20-22 years. The mean age of respondents was 17.36 years with Standard Deviation  $\pm 1.35$  and the median age 17 years. Among 106 respondents, 74 (69.81%) were from urban area, 41 (38.7%) were of Brahmin/Chhetri ethnicity, 91 (85.9%) followed Hindu religion, 105 (99.1%) never married and 77 (72.6%) answered agriculture as main source of their family income, (Table 1).

**Table 1: Socio-demographic characteristics of higher secondary girl students of BMC, Kathmandu, 2023 (N=106)**

Variables	N	%
<b>Grade</b>		
XI	48	54.72
XII	58	45.28
<b>Completed age (years)</b>		
15-19	100	94.34%
20-22	6	5.66%
Mean Age 17.36 years SD $\pm 1.35$		
<b>Place of Resident</b>		
Rural	32	30.19
Urban	74	69.81
<b>Ethnicity</b>		
Hill dalit	3	2.83
Terai dalit	2	1.89
Hill janajati	39	36.79
Terai janajati	11	10.38
Madhesi	8	7.55
Brahmin/Chhetri	41	38.68
Others	2	1.89
<b>Religion</b>		
Hindu	91	85.85
Buddhist	12	11.32
Christian	3	2.83

<b>Current Marital Status</b>		
Never Married	105	99.06
Married	1	0.94
<b>Main source of family income</b>		
Agriculture	77	72.64
Business	16	15.09
Service	11	10.38
Others	2	1.88

### Knowledge on menstrual hygiene among higher secondary girl students

All 106 respondents answered the normal monthly bleeding as meaning of menstruation, 77 (72.6%) answered 12-14 years as the normal age of menarche, 104 (98.1%) answered the normal body process as cause of menstruation and 58 (45.3%) answered 3-5 days as the normal duration of menstrual cycle. Likewise, 95 (89.6%) respondents got information about menstruation before menarche from their mothers and 88 (83%) respondents ever took a class on menstruation. Among 94 (88.7%) respondents having knowledge about *Chhaupadi*, 75 (70.7%) answered it as illegal tradition, 13 (12.7%) answered it as legal and 6 (5.7%) didn't know about it, (Table 2).

**Table 2: Knowledge on menstrual hygiene among higher secondary girl students of BMC, Kathmandu, 2023 (N=106)**

Variables	N	%
<b>Causes of menstruation</b>		
Body process	104	98.11
Curse of god	2	1.89
<b>Normal age for Menarche</b>		
8-10 years	5	4.72
10-12 years	24	22.64
12-14 years	77	72.64
<b>Normal duration of menstrual flow in one cycle</b>		
2-3 days	30	28.3
3-5 days	48	45.28
5-7 days	27	25.47
>7 days	1	0.94
<b>Source of information about menstruation before menarche*</b>		
Mother	95	89.62
Older sister	45	42.45
Female cousin or relative	2	1.89
Friend	46	43.4
Teacher	31	29.25
Book/Health magazine	10	9.43
Health worker/FCHV	9	8.49
Radio/TV/Internet	14	13.21
<b>Ever received a class on SRH and menstruation</b>		
Yes	88	83.02
No	18	16.98
<b>Knowledge about <i>Chhaupadi</i></b>		
Yes	94	88.68
No	12	11.32
<b>If 'Yes', Knowledge about legality of <i>Chhaupadi</i> (n=94)</b>		
Legal	13	12.26

Illegal	75	70.75
Don't know	6	5.66

\*multiple response

### Perceptions regarding menstrual hygiene among higher secondary girl students

Among 106 respondents, 83 (78.3%) believed the normal healthy process, 20 (18.9%) believed the bad blood being shed and 2 (1.9%) believed the internal bleeding as causes of menstruation at first episode. Whereas 89 (84%) respondents believed the normal healthy process and the remaining 17 (16%) believed the bad blood being shed as causes of menstruation now. Likewise, 48 (45.3%) respondents felt being scared, 43 (40.6%) felt ok, 12 (11.3%) worried about managing it, and only 3 (2.8%) worried of something wrong with them. Even if there were no obligation, all of them would still follow one or more restrictions with visiting temple (83%) and attending religious events (61.3%) being the two most common ones. Similarly, 69 (65.1%) respondents expressed that they were not able to focus on study and 51 (48.1%) feared of being teased at campus while menstruating, (Table 3).

**Table 3: Perceptions regarding menstrual hygiene among higher secondary girl students of BMC, Kathmandu, 2023 (N=106)**

Variables	N	%
<b>Beliefs regarding cause of menstruation (at First Episode)</b>		
Normal healthy process	83	78.3
Bad blood being shed	20	18.87
Internal bleeding	2	1.89
Don't know	1	0.94
<b>Beliefs regarding cause of menstruation at present (NOW)</b>		
Normal healthy process	89	83.96
Bad blood being shed	17	16.04
<b>Feeling at first menstruation</b>		
Scared	48	45.28
OK as I knew it was a normal process	43	40.57
Worried about how to manage it	12	11.32
Worried that something was wrong	3	2.83
<b>Would still avoid doing things even if there were no obligation*</b>		
Visiting to temple	88	83.02
Attending religious occasion	65	61.32
Entering kitchen/cooking food	18	16.98
Touching male family members	16	15.09
Lifting heavy loads	14	13.21
Touch plants/seeds	9	8.49
Eating any foods/drink	7	6.6
Going outside as during normal time	4	3.77
Sleeping the same bed as others	3	2.83
Others	6	5.66
<b>Ability to focus on study in campus when menstruating</b>		
Yes	69	65.09
No	37	34.91
<b>Worrying about being teased in campus when menstruating</b>		
Yes	51	48.11
No	55	51.89

\*multiple response



### Practices of menstrual hygiene among higher secondary girl students

Among 106 respondents, 71.7% used disposable sanitary pads followed by cloths (21.7%), reusable sanitary pads (12.3%), underwear only (3.8%), cotton wool (2.8%) and toilet paper (0.9%) during their last menstruation. Likewise, 58 (54.7%) respondents changed sanitary materials 3 times or more during their last menstruation whereas only 1 (0.9%) never did so. While 32 (30.2%) respondents were able to change sanitary materials as often as they liked at campus while 74 (69.8%) were unable to do so. Among 74 respondents who were unable to do so cited the reasons as toilet facilities not being clean (22), lack of private place (16), no place for disposal (15), not having enough materials to change (13), lack of water (3) and others (2) respectively.

During the last menstruation, 80 (75.4%) buried sanitary materials in rubbish pit and 76 (71.7%) drank hot water for managing menstrual pain. Likewise, 44 (41.5%) respondents missed campus up to 5 days, 2 (1.9%) missed >15 days and 60 (56.6%) didn't miss any day due to menstruation in last three months. The reasons cited for missing campus were pain (37), leakage fear (5), tiredness (3) and family advice (1), (Table 4).

**Table 4: Practice of menstrual hygiene among higher secondary girl students of BMC, Kathmandu, 2023 (N=106)**

Variables	N	%
<b>Materials used to manage the last menstruation*</b>		
Disposable sanitary pads	76	71.7
Cloths	23	21.7
Reusable sanitary pads	13	12.26
Under wear only	4	3.77
Cotton wool	3	2.83
Toilet paper	1	0.94
<b>Frequency of changing sanitary materials during last menstruation</b>		
Never	1	0.94
Once	9	8.49
Twice	38	35.85
Three times or more	58	54.72
<b>Ability to change menstrual materials as often as would like at campus</b>		
Yes	32	30.19
No	74	69.81
<b>If 'No' (N=74), Reasons for not changing materials as often at campus</b>		
Toilet facilities not clean	22	20.75
No private place available	16	15.09
No place for disposal	15	14.15
Didn't have enough materials to change	13	12.26
Water not available	6	5.66
Others	2	1.89
<b>Place of disposal of sanitary materials used in last menstruation*</b>		
Bury them in rubbish pit	80	75.47
Burn them	16	15.09
Put them in toilet/flush them	8	7.55
Throw them in gutter	2	1.89
Others	8	7.55
<b>Missing campus for whole day due to menstruation in last 3 months</b>		
Not at all	60	56.6
1-5 days	44	41.51
>15 days	2	1.89

<b>Main reason of missing campus due to menstruation in last 3 months (N=46)</b>		
Pain of any kind	37	34.91
Heavy bleeding leading to fear of leakage	5	4.72
Tiredness	3	2.83
Family advise not to go to campus	1	0.94
<b>Frequency of changing menstrual materials in a day at campus during last period</b>		
Never it's not necessary	86	81.13
1-2 times	18	16.98
3-4 times	2	1.89
<b>Campus management providing sanitary materials for use in campus</b>		
Yes	52	49.06
No	36	33.96
Don't know	18	16.98
<b>Adequacy of the materials provided by the campus administration</b>		
Yes	36	33.96
No	37	34.91
Don't know	19	17.92

\*multiple response

During the last menstruation, 86 (81.1%) respondents didn't had to change menstrual materials at campus while 18 changed it 1-2 times and 2 (1.9%) changed it 3-4 times a day. Likewise, 52 (49.1%) affirmed, 36 (33%) negated and 18 (16%) were unaware about the campus management providing sanitary materials for use at campus. Regarding adequacy of sanitary materials provided by campus, 36 (33%) affirmed, 37 (34.9%) negated and 19 (17.9%) were unaware of it, (Table 4).

On open-ended question regarding what should campus management do to improve menstrual health and hygiene of girls students, 104 (98.11%) provided their opinion with major points being creating girl-friendly environment, providing educational sessions, improving supply of sanitary materials for use in campus.

## Discussion

Majority (94.3%) of respondents in this study were in age between 15 to 19 years with mean age of 17.36 years as this study was conducted among the higher secondary level girl students. Knowledge regarding meaning of menstruation as normal monthly bleeding was found universal among the respondents of this study. This finding was higher than that shown by a study done in Nepal (96.1%), much higher than that shown by a study done in India (68.2%) and also shown by an Ethiopian study (76.9%) (Karki et.al, 2018; Khatoon et al., 2023; Hussain, MG., 2020). This difference may have occurred because study was done among late adolescents studying in capital city with better exposure to information and education. Nearly 3/4<sup>th</sup> (72.6%) of respondents in this study answered 12-14 years as the normal age for menarche while about 1/4<sup>th</sup> (22.6%) answered 10-12 years as the normal age for menarche. However, a study from India contrasted these values by showing lower proportion (30.8%) of students answering 12-14 years as the normal age for menarche but a higher proportion (40.6%) answering <12 years as the normal age for menarche (Khatoon et al., 2023).

Large majority (98.1%) of respondents in this study stated the normal body process as the causes of menstruation, which was found to be much higher than that reported by other studies done in Nepal (93.3% and 57%), India (68.2%) and Ethiopia (76.9%) (Karki et al., 2018;



Morrison et al., 2016; Khatoon et al., 2023; Hussain, 2020). Only a small number of respondents (1.9%) in this study stated that menstruation is caused due to the curse of god. This finding was slightly higher (1.4%) than a study from Nepal (Karki et al., 2018) but much lower (18%) than that of a study from India (Khatoon et al., 2023) and Ethiopia (3.6%) (Hussain, 2020). Such differences may have occurred due to differences in age as well as educational level of respondents of this study.

In this study, mothers (89.6%) were the primary source of information about menstruation followed by elder sisters (42.4%), friends (29.3%) and media (13.2%) respectively. These findings were supported by similar other studies done in Nepal as well as in India (Karki et al., 2018; Khatoon et al., 2023). Large majority (88.7%) of respondents in this study were found to have knowledge about *Chhapaudi*. Among those having knowledge on *Chhapaudi*, seven out of ten (70.7%) stated it to be illegal, nearly one out of eight (12.3%) stated it to be legal and one out of twenty (5.7%) could not state its legality. These findings were higher than that reported by a survey from Nepal that showed 59.2% of respondents stating it to be illegal and 10% stating it to be legal (Dhimal et al., 2020).

About four out of five (78.3%) respondents in this study believed the normal healthy process as the main cause of menstruation at the first episode whereas more respondents (83.9%) believed so at present. Nearly one out of five (18.8%) believed the bad blood being shed as the next important cause of menstruation at first episode but about one out of six (16%) believed so at present. These findings matched with the national survey done in Nepal (Dhimal et al., 2020) in which majority of adolescent school girls believed the normal healthy process followed by the bad blood being shed as the two major reasons causing menstruation. However, these findings contradicted with another study from Nepal (Morrison et al., 2016) in which nearly 2/3<sup>rd</sup> of adolescent school girls (57-66%) had no idea about the cause of menstruation at first episode. Less than half (45.3%) of the respondents in this study felt scared at first menstrual episode. This finding was much lower than that shown by one study from Nepal (Morrison et al., 2016) but was little higher than that shown (36%) by the national survey of Nepal (Dhimal et al., 2020) as well as that reported (33.6%) by a study from India (Khatoon et al., 2023). Respondents' varying age, educational level and size among these studies may have resulted into such differences.

All 106 respondents in this study answered that even if there were no obligation they would still follow one or more restrictions related to menstruation with major ones being visiting temples (83%) and attending the religious events (61.3%) respectively. These findings resonated with studies done in Nepal (Dhimal et al., 2020; Morrison et al., 2016) as well as that done in India which reported very few young women allowed to participate in religious activities during menstruation (McCammon et al., 2020; Kaur et al., 2018). Likewise, two-third (65.09%) of respondents in this study expressed that they were not able to focus on study in campus while menstruating. Such findings were also reported by studies from Nepal and Bangladesh (Morrison et al., 2016; Ghimire, 2020; Alam et al., 2022). Almost half of the respondents in this study worried of being teased during menstruation especially by boys, which was also reported by several studies from Nepal, India, Bangladesh and Tanzania (Morrison et al., 2016; Kaur et al., 2018; Rizwana et al., 2023; Benshaul et al., 2020). This might be due to deep rooted gender bias and stigma attached to menstruation being common across different cultures and countries.

Regarding the practice of menstruation, more than 2/3<sup>rd</sup> (71.7%) respondents of this study used disposable sanitary pads during their last menstruation. This finding was much higher than that shown by studies from Nepal, Bangladesh and Ethiopia (51.2%, 43% and 35.4% respectively) (Dhimal et al., 2020; BSB, 2020 and Tegegne & Sisay, 2014). Likewise, only about 1/10<sup>th</sup> (12.3%) of respondents in this study used reusable sanitary pads whereas the national survey of Nepal showed it to be much higher at 37.7% (Dhimal et al., 2020). Variation in sample size and socio-economic condition of respondents across these studies may have caused such variations.

Likewise, more than half (54.7%) of the respondents in this study changed sanitary materials 3 times or more during their last menstruation. This finding was little higher (42.6%) than that shown by the national survey from Nepal (Morrison et al., 2020), much lower (63.3%) than that shown by another study from Nepal (Karki et al., 2018) but close to that reported (56.4%) by a study from Ethiopia (Hussain, 2020). Only about a third (30.2%) of participants had ability to change sanitary materials as often as they liked at campus but a higher proportion (55.2%) of respondents answered so in a study of Nepal (Morrison et al., 2020). More than 2/3<sup>rd</sup> (69.9%) of respondents cited lack of clean toilet, private place, disposal site, materials and water as reasons for not being able to do so at campus. This may have resulted due to difference in sample size, educational level and cultural context of study participants.

Burning (75.4%) and burying (15.1%) were reported as two major modes of disposal of used sanitary materials in this study, which were also shown by the national survey done in Nepal (Dhimal et al., 2020). Seven out of ten (71.7%) respondents in this study drank hot water and one out of seven (14.1%) tied cloths around stomach for managing menstrual pain while others adopted measures like using medicines, using hot bags and doing nothing despite having pain. Similar findings were reported by a recent study from Nepal (Wilber et al., 2021). This may be due to commonness in traditions of using various alternative remedies in Nepalese societies.

Less than half (41.5%) of respondents in this study missed classes in campus up to 5 days in the last three months due to menstruation. This finding was much higher than that shown (26.7% and 27.5% respectively) by studies from Nepal and Ghana (Morrison et al., 2016; Kumbeni et al., 2021); slightly lower than that shown (54.5%) by an Ethiopian study (Tegegne & Sisay, 2014) and very similar to that reported (40%) by a study done in India (Vashisht et al., 2018). Pain of any kind, fear of leakage and tiredness were cited as main reasons for missing campus in this study, which were similar with other studies done in Nepal (Morrison et al., 2016; Shrestha, et al., 2022) and India (Vashisht et al., 2018).

For managing the sudden onset of menstruation while in campus, nearly half (46.2%) of respondents used menstrual materials brought along with them, 1/5<sup>th</sup> (20.7%) went to nearby shop to buy materials, nearly 1/5<sup>th</sup> (17.9%) asked their teachers, 1/15<sup>th</sup> (6.6%) turned to their friends for sanitary materials and 1/20<sup>th</sup> (5.7%) went home for changing and didn't come back for class. Similar findings were also reported by a recent study from Nepal (Shrestha, et al., 2022). Findings indicating large proportion of students managing on their own the menstrual onset in campus suggested for strengthening the current supply of sanitary pads by campus to girl students. This could exert positive impact in averting absenteeism of girl students, which is also supported by another study from Nepal (Shrestha, et al., 2022).

About half of the girls (49.1%) participating in this study affirmed, one-third (33.9%) of them denied of while 1/6<sup>th</sup> (16.9%) of them didn't know about the campus management providing sanitary materials to students for use at campus. Only about 1/3<sup>rd</sup> (34%) of respondents reported that the sanitary materials provided by the campus was adequate. Out of 106, 104 students responded to the open-ended question on measures campus management should take for improving menstrual health and hygiene of girl students. Major points highlighted in their response by them were Provision of clean toilets with adequate water and soap, private place for changing pads, dustbins for disposing pads, adequate supply of sanitary materials, separate window for obtaining sanitary materials, sick room with health worker, sessions on menstrual hygiene, and frequent teacher-student interactions were the major points raised by them.

### **Limitations**

This study was done among the higher secondary adolescent girl students of one community campus in Kathmandu and data was collected from those students who attended campus during data collection period. Thus, the study findings may have limitation for generalization to all higher secondary educational settings. Furthermore, the descriptive cross-sectional design of this study limits the inferences for causal relationship between variables of this study.

### **Conclusion**

Higher secondary girl students' knowledge on meaning of menstruation was universal but some still regard the curse of god as the cause. Mothers were the primary source of information in pre-and post-menstruation. One out of six students never received any class on sexual reproductive health and menstruation, and one out of eight still considered *Chhaupadi* to be legal suggesting the need for raising their awareness on menstrual health and hygiene.

Though majority perceived menstruation as the normal healthy process, they would still observe restrictions such as going to temples and religious events even in absence of any obligation. One third of students couldn't focus on study in campus and about half feared of being teased during menstrual period. This showed the need for breaking taboos and stigma around menstruation.

Though two-third of students used disposable sanitary pads during their last menstruation, they were unable to change it at campus as often as liked for reasons such as inadequate sanitary materials, unclean toilet facility and lack of private place. Nearly half of them missed campus in last three months due to menstruation related issues such as pain, fear of leakage and tiredness. This suggested the need improved menstrual health and hygiene environment in campus.

Likewise, only half of the students had had knowledge about campus providing sanitary materials and only one third of them reported it as adequate. This implied the need for improved supply of sanitary materials by campus administration in future.

**Recommendations to Campus management:**

This study suggested that campus administration should raise students' awareness on menstrual health and hygiene to help breaking taboos and stigma surrounding menstruation through education and awareness to both girl and boy students. Moreover, the study also suggested that campus administration should foster girl-friendly environment for promoting dignified menstruation in future through improved supply of adequate sanitary materials along with provision of cleaner toilets, appropriate changing place and disposal bins.

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**Conflict of interests:** None.

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