# Knowledge and Attitude on Menstrual Hygiene among Adolescent Girls Studying in Secondary Level in Public Schools of Chitwan District, Nepal

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### **Research Article**

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#### **Abstract**

**Background:** Menstruation is an important biological and reproductive health indicator, although it is taboo in many cultures. Millions of girls lack a basic understanding of menstrual hygiene because of limited access to information. Unhygienic menstrual practice has a tremendous impact on reproductive health. To safeguard their reproductive health and rights, women and girls need to be well educated about menstrual hygiene.

**Objective:** The objectives of this study were to determine the level of knowledge among adolescent girls regarding menstrual hygiene and the relationship between that knowledge and socio-demographic characteristics.

**Methodology:** A descriptive cross-sectional study was conducted among 330 adolescent girls of grades 8 and 9 in different public schools of Bharatpur Metropolitan City, Chitwan. Systematic random sampling was used to select sample units. A self-administered questionnaire was used to obtain the information and the data were analyzed through SPSS.

Results: Though 99% of the adolescent girls have heard about menstrual hygiene, only 77.3% have good knowledge. The major source of information was the mother (54%) and sisters. The findings indicated that 84% of adolescent girls have good knowledge of keeping clothes clean, 76% have good knowledge of bathing, and 63% have good knowledge of using an absorbent during their period. Girls between the ages of 16 to 19 years were more knowledgeable (79%) than those under 16 years. Girls from nuclear families were more knowledgeable (80%) than girls from joint families. Adolescent girls from higher monthly income families have better knowledge of menstrual hygiene. Daughters of parents with higher secondary education have better knowledge (93%), adolescent girls with housewives' mothers have better knowledge (81%), and adolescent girls with farmers as fathers have better knowledge (82%). Almost all adolescent girls were strongly agreed on the menstrual hygiene. They have a positive attitude toward menstrual hygiene

**Recommendation:** Menstrual hygiene should be covered in seventh-grade texts. Radio, television, and social media should all be used to disseminate reliable information.

**Keywords:** Adolescent; Menstruation-Hygiene; Knowledge; Attitude



### **Abbreviation**

NFCC: Nepal Fertility Care Center.

#### Introduction

Menstruation is a natural biological process and an important indicator of reproductive health; however, in numerous cultures, it is regarded as something negative, shameful, or unclean. The ongoing silence surrounding menstruation, coupled with restricted access to information both at home and in educational institutions, leads to millions of women and girls possessing minimal understanding of the changes occurring in their bodies during menstruation and how to manage it [1]. Approximately 52% of the female population falls within the reproductive age group, with the majority experiencing menstruation on a monthly basis. A significant number of these individuals lack access to clean and safe sanitary products, as well as to private and hygienic spaces for changing menstrual cloths or pads and for washing. Society often expects menstruation to be discreet and unnoticeable, and at times, menstruating women and girls are also expected to remain unnoticed and unheard. Countless girls and women face limitations in their everyday lives solely because they are menstruating [2].

In various cultures, it is conveyed to women and girls that during their menstrual cycle, they should refrain from bathing (or they risk becoming infertile), touching a cow (or it may become infertile), gazing into a mirror (or it might lose its brightness), or handling a plant (or it could perish) [3].

The relationship between socio-economic status, menstrual hygiene practices, and reproductive tract infections is evident. Currently, millions of women are experiencing RTIs and their associated complications, and frequently, the infection is passed on to the children of the expectant mother [4]. Women and girls of reproductive age require access to clean, soft, and absorbent sanitary products, which can ultimately safeguard their health [5].

The absence of suitable, comfortable, and cost-effective materials for managing menstrual hygiene, along with insufficient waste disposal and inadequate toilet facilities at school, caused leakage and the visibility of menstrual blood to become a significant source of stress for girls. As a result, girls refrained from changing their sanitary products at school due to the unsanitary conditions of the toilet facilities and the lack of privacy. Consequently, girls chose to endure the discomfort of using thick cloth, which limited their mobility, and opted to use their friends' toilets instead of the school toilets [6]. Unhygienic menstrual practices can affect the health of the girls, and there is an increased vulnerability

to reproductive tract infections and pelvic inflammatory diseases and other complications [7].

Adolescent girls represent a vulnerable demographic, not only due to their social standing but also concerning their health. In this context, menstruation is perceived as unclean or dirty within society [8]. The topic of menstrual hygiene is insufficiently recognized and has not been given the appropriate level of attention [9]. Proper hygienic practices, including the utilization of sanitary pads and thorough washing of the genital regions, are crucial during the menstrual period. Women and girls of reproductive age require access to clean and soft absorbent sanitary products, which ultimately safeguard their health against various infections [10]. The repercussions of reproductive tract infections (RTIs) are grave and can lead to a considerable adverse effect on a woman's health, encompassing chronic pelvic pain, dysmenorrhea (painful menstruation), and in extreme instances, infertility. Reproductive tract infections, which have emerged as a quiet epidemic that ravages the lives of women, are intricately linked to inadequate menstrual hygiene [8,11]. The typical risk factors associated with vaginal infections encompass pregnancy as well as inadequate hygiene practices, which include both perineal and menstrual hygiene [12].

Research conducted in Africa has revealed that the prevalence of sanitary pad usage among Tanzanian women is as low as 18%, with the majority resorting to cloth or toilet paper for menstrual hygiene [13]. Research conducted on Nigerian schoolgirls has revealed that between 31 and 56% utilize toilet paper or cloth to manage their menstrual blood, rather than using menstrual pads [14,15]. The majority of girls in Ethiopia face the risk of developing genitourinary tract infections as a result of poor hygiene practices during their menstrual period, which can result in additional complications if not addressed [16].

Each day, approximately 290,000 women and adolescent girls in Nepal experience menstruation [17]. Nepal, where the average age of menarche is 13.5 years, menstruation is often viewed as unclean and associated with shame. The 2011 Nepal Demographic and Health Survey indicated that among the top ten sexual and reproductive health issues identified by teenage girls, seven were related to menstruation. Many of these girls expressed concerns regarding the reasons behind physical changes, what constitutes as 'normal,' and the implications of puberty. This lack of understanding is further highlighted by the fact that nearly 25% of teenage girls reported having 'no idea' about their menarche before it occurred, and only 36% acknowledged that menstruation is a monthly cycle characterized by blood flow from the vagina lasting 4-5 days [18].

Although the majority of teenagers recognize certain physical transformations that take place during puberty, merely fifty percent of adolescent females have engaged in conversations about puberty with individuals at home or in an educational setting [19]. Studies in different parts of the country show that adolescent girls have varying levels of knowledge regarding menstruation before menarche. 38% of women and girls in Chhaupadi-practicing VDCs and only 24% from Chhaupadi-free VDCs in the far western districts of Achham, Bajura, and Kailalistern region had heard about menstruation before menarche [20].

Numerous adolescent girls in Nepal do not have access to hygienic sanitary products. Approximately three out of four adolescent girls rely on reusable cloths during their menstrual periods [21]. The utilization of sanitary pads by adolescent girls in urban regions is significantly greater than that of their counterparts in rural areas, with a prevalence of 50% in urban settings compared to 19% in rural ones. Conversely, the employment of old pieces of cloth is more common among rural adolescent girls, with a rate of 35%, as opposed to only 14% in urban areas [22].

The primary factors preventing adolescent girls from utilizing sanitary napkins include insufficient information regarding their use, elevated costs, and restricted availability [23]. Approximately 40 to 60% of teenage girls dry their reusable pads in direct sunlight outdoors, whereas others opt to dry their reusable sanitary pads in shaded areas due to the fear of being teased by boys and men if they are seen [24]. Approximately 40 to 60% of teenage girls dry their reusable pads in direct sunlight outdoors, whereas others opt to dry their reusable sanitary pads in shaded areas due to the fear of being teased by boys and men if they are seen [25].

A study conducted in Doti district in Nepal reported that 676.4% of adolescent girls had fair knowledge and 26.4% of adolescent girls had good knowledge on menstrual hygiene. This study showed that half of the adolescent girls had a positive attitude towards menstrual hygiene management [26].

A similar study conducted in Morang District of Nepal showed that 83.3% of adolescent girls shared that menstruation is a physiological process where whereas only 33.3% of adolescent girls used sanitary pads during menstruation [27].

The absence of affordable sanitary products and facilities is frequently exacerbated by cultural perceptions that regard menstruation as shameful or unclean. Consequently, numerous women and girls find themselves marginalized from various facets of social and cultural life, including participation in religious activities. Research indicates that

nine out of ten girls encounter some form of limitation during their menstrual periods. Thus, this research aims to evaluate the understanding of menstrual hygiene among high school girls in central Nepal.

The data gathered from this investigation will be utilized by policymakers and stakeholders to gauge the level of awareness regarding menstrual hygiene, to disseminate information about menstruation and menstrual hygiene to high school girls within the study region.

### **Objective**

The objective of the study was to assess the knowledge of menstrual hygiene among adolescent girls studying in grade 8 and 9 in the public school of Chitwan district, Nepal.

### Methodology

### **Study Design and Study Population**

A descriptive cross-sectional study was conducted among 330 adolescent girls studying in grades 8 and 9 in the public schools in Bharatpur Metropolitan City of Chitwan district of Nepal from 2018-2019. The Sample Size was calculated by using the N=  $(z^2 pq)/d^2$  formula. Where, confidence interval was 95% and the allowable error limit was 5%. The prevalence of knowledge on menstrual hygiene in Nepal was 70% [28].

### **Sampling Method**

Study sites were selected by using the systematic random sampling method and respondents were selected purposively who were studying in secondary level (grades 8 and 9) in the selected schools.

### **Data Collection and Analysis**

Data was collected by self-administered questionnaires. Written consent was taken from each respondent. Data analysis was conducted by using SPSS version 21.0. A Likert Scale was used to measure the attitude of adolescent girls towards menstrual hygiene.

### Ethical Approval and Consent of the Participants

Ethical approval was taken from the ethical board of the North South University, Dhaka, Bangladesh. Approval was taken from the respective Metropolitan City and schools. Written consent was taken from the study participants.

#### **Results**

### **Socio-Demographic Characteristics**

| Socio-demographic variables   | Frequency (n=330)                   | Percentage (%) |
|-------------------------------|-------------------------------------|----------------|
| Gra                           | de of the respondents               |                |
| Grade 8                       | 152                                 | 46.1           |
| Grade 9                       | 178                                 | 53.9           |
| Relig                         | gion of the respondents             |                |
| Hindu                         | 269                                 | 81.5           |
| Buddhist                      | 37                                  | 11.2           |
| Christian                     | 17                                  | 5.2            |
| Muslim                        | 4                                   | 1.2            |
| Others                        | 3                                   | 0.9            |
| Cas                           | ste of the respondents              |                |
| Brahman/Chhetri               | 101                                 | 30.6           |
| Magar                         | 24                                  | 7.3            |
| Gurung                        | 23                                  | 7              |
| Newar                         | 17                                  | 5.2            |
| Dalit                         | 94                                  | 28.5           |
| Tharu                         | 70                                  | 21.2           |
| Muslim                        | 1                                   | 0.3            |
| Type of                       | family of the respondents           |                |
| Nuclear                       | 177                                 | 53.6           |
| Joint                         | 152                                 | 46.1           |
| Extended                      | 1                                   | 0.3            |
| Education statu               | s of the fathers of the respondents |                |
| Illiterate                    | 54                                  | 16.4           |
| Primary                       | 94                                  | 28.5           |
| Secondary                     | 144                                 | 43.6           |
| Proficiency certificate level | 27                                  | 8.2            |
| Bachelor and above            | 11                                  | 3.3            |
| Education Status              | s of the mothers of the respondents |                |
| Illiterate                    | 86                                  | 26.1           |
| Primary                       | 120                                 | 36.4           |
| Secondary                     | 109                                 | 33             |
| Proficiency certificate level | 14                                  | 4.2            |
| Bachelor and above            | 1                                   | 0.3            |
|                               | f the mother of the respondents     |                |
| Housewife                     | 122                                 | 37             |
| Agriculture                   | 120                                 | 36.4           |
| Business                      | 52                                  | 15.8           |
| Government job                | 7                                   | 2.1            |

| I/NGOs job                                      | 2                                | 0.6  |  |  |
|---|----------------------------------|------|--|--|
| Private job                                     | 14                               | 4.2  |  |  |
| Sessional migrants                              | 7                                | 2.1  |  |  |
| Teacher   | 1                                | 0.3  |  |  |
| Others  | 5                                | 1.5  |  |  |
| Occupation                                      | of the father of the respondents |      |  |  |
| Agriculture                                     | 108                              | 32.7 |  |  |
| Business  | 63                               | 19.1 |  |  |
| Cottage Industry                                | 21                               | 6.4  |  |  |
| Government job                                  | 23                               | 7    |  |  |
| I/NGO job                                       | 16                               | 4.8  |  |  |
| Private job                                     | 18                               | 5.5  |  |  |
| Seasonal migrant                                | 71                               | 21.5 |  |  |
| Teacher   | 2                                | 0.6  |  |  |
| Others  | 8                                | 2.4  |  |  |
| Monthly income of the family of the respondents |                                  |      |  |  |
| <10000 rupees                                   | 82                               | 24.8 |  |  |
| 10000-15000 rupees                              | 141                              | 42.7 |  |  |
| 16000-50000 rupees                              | 75                               | 22.7 |  |  |
| >50,000 rupees                                  | 32                               | 9.7  |  |  |

**Table 1:** Socio-demographic status of the respondents.

The mean age of the respondent was 15 years. The minimum age was 11 years, and the maximum age was 19 years. The mean age of the menarche was 12.68 years. The minimum age of menarche was 10 years, and the maximum age was 16 years. 38.2 percent of respondents were in the age group of 10-15 years, and 61.8 percent were from 16-19 years. Out of 330 respondents, 53.9 percent were from grade nine and the remaining were from grade eight. 81.5 percent were Hindu, and 11.2 percent were Buddhist. Most of the respondents (30.6%) were Brahmin/Chhetri, and 28.5 percent were Dalit. 53.6 percent of respondents were from the nuclear family. The fathers of 43.6 percent of respondents

had secondary education and 16.4 percent were illiterate. 33 percent mothers of the respondents had secondary education, and 26 percent were illiterate. 37 percent of the mothers of the respondents were housewives and 36.4 percent mothers' occupations were agriculture, followed by business and jobs. The occupation of 32.7 percent of the fathers of the respondents was agriculture and 21.5 percent were seasonal migrants following business and private jobs. The monthly income of the family of 42.7 percent respondents was 11000-15000 Nepali rupees, 9.7 percent was more than 50,000 Nepali rupees and 24.8 percent was less than 10,000 Nepali rupees (Table 1).

| Variables                                 | Frequency (n=330) | Percentage (%) |  |  |
|---|-------------------|----------------|--|--|
| Perception of the process of menstruation |                   |                |  |  |
| Physiological Process                     | 204               | 61.8           |  |  |
| Pathological Process                      | 26                | 7.9            |  |  |
| Curse of God                              | 10                | 3              |  |  |
| Don't Know                                | 90                | 27.3           |  |  |
| Knowledge of the menstrual interval       |                   |                |  |  |
| 28 days                                   | 187               | 56.4           |  |  |
| 20 days                                   | 38                | 11.5           |  |  |

| 28-35 days   | 86            | 26.4 |  |
|--|---------------|------|--|
| >35 days   | 19            | 5.8  |  |
| Heard about Menstruation before Menarche                 |               |      |  |
| Yes  | 306           | 92.7 |  |
| No   | 24            | 7.3  |  |
| Menarche Experien  | ce            |      |  |
| Frightened   | 189           | 57.3 |  |
| Confusing  | 111           | 33.6 |  |
| Expectant  | 30            | 9.1  |  |
| Perception of Personal H                                 | lygiene       |      |  |
| The ideal thing to absorb during the menstruation period | 208           | 63   |  |
| Ideal time to change absorbent                           | 134           | 40.6 |  |
| Bathing during the menstruation period                   | 250           | 75.8 |  |
| Clean clothes are used during the menstruation period    | 277           | 83.9 |  |
| Menstrual blood is unhygienic                            | 285           | 86.4 |  |
| Source of Information on Mens                            | trual Hygiene |      |  |
| Mother   | 179           | 53.9 |  |
| Sister   | 56            | 16.7 |  |
| School/Classroom   | 56            | 16.7 |  |
| Friends  | 21            | 6.1  |  |
| Books  | 15            | 4.2  |  |
| TV/Radio   | 3             | 0.9  |  |
|  |               | -    |  |

**Table 2:** Perception and Source of Information on Menstrual Hygiene.

Around 62 percent of respondents perceived it as a physiological process. 27 percent had no idea of menstruation, around 8 percent of respondents said that menstruation is a pathological process, and 3 percent said that it is the curse of god. Only 56 percent of respondents correctly responded that the menstrual interval (28 days). The remaining had no proper knowledge of the menstrual interval. More than 90 percent of respondents had heard about menarche. Only 9 percent of respondents had experienced menstruation as expected, 57.3 percent were frightened, and 33.6 percent were confused.

63 percent of respondents had good knowledge on the ideal thing of absorb. Only 40.6 percent of respondents had

good knowledge on the ideal time to change absorbent. 75.8 percent of respondents had good knowledge on bathing during menstruation. Around 84 percent respondents had good knowledge on clean clothes during menstruation. 86.4 percent respondents perceived on menstrual blood as unhygienic (Tables 2 & 3).

Mothers of the respondents were the main source of information on menstrual hygiene. 53.9 percent of respondents' source of information was their mothers, followed by 16.7 percent sisters, 16.7 percent school and classroom. Below than 1 percent source of information was TV/radio.

| Variables      | Good Knowledge (%) | Poor Knowledge (%) |  |
|----------------|--------------------|--------------------|--|
| Age group      |                    |                    |  |
| 10-14 years    | 74.6               | 25.4               |  |
| 15-19 years    | 78.9               | 21.1               |  |
| Studying Grade |                    |                    |  |

| Grade 8          | 74.6                                 | 25.9    |
|------------------|--------------------------------------|---------|
| Grade 9          | 76.4                                 | 23.6    |
|                  | Religion                             |         |
| Hindu            | 78.1                                 | 21.9    |
| Bouddha          | 70.3                                 | 29.7    |
| Others           | 79.2                                 | 20.8    |
|                  | Caste                                |         |
| Brahman/Chhetri  | 77.2                                 | 22.8    |
| Janajati         | 73.9                                 | 26.1    |
| Dalit            | 82.1                                 | 17.9    |
|                  | Type of Family                       |         |
| Nuclear          | 80.2                                 | 19.8    |
| Joint            | 73.9                                 | 26.1    |
|                  | Living house                         |         |
| Own              | 78.5                                 | 21.5    |
| Rental           | 72.9                                 | 27.1    |
|                  | Monthly income of the Family (Nepali | Rupees) |
| <10,000          | 69.5                                 | 30.5    |
| 10,000-25,000    | 78.7                                 | 21.3    |
| 26,000-50,000    | 84                                   | 16      |
| >50,000          | 75                                   | 25      |
|                  | Education Status of Mother           |         |
| Illiterate       | 81.4                                 | 18.6    |
| Primary          | 73.3                                 | 26.7    |
| Secondary        | 76.1                                 | 23.9    |
| Higher Secondary | 93.3                                 | 6.7     |
|                  | Education Status of Father           |         |
| Illiterate       | 81.5                                 | 18.5    |
| Primary          | 76.3                                 | 23.7    |
| Secondary        | 75                                   | 25      |
| Higher Secondary | 82.1                                 | 17.9    |
|                  | Occupation of Mother                 |         |
| Housewife        | 81.1                                 | 18.9    |
| Agriculture      | 75.8                                 | 24.2    |
| Business         | 76.4                                 | 23.2    |
| Jobs             | 75                                   | 25      |
| Seasonal Migrant | 57.1                                 | 42.9    |
| Others           | 66.7                                 | 33.3    |
|                  | Occupation of Father                 |         |
| Agriculture      | 82.4                                 | 17.6    |
| Business         | 71.4                                 | 28.6    |

| Jobs             | 23.7 | 26.3 |
|------------------|------|------|
| Seasonal Migrant | 78.9 | 21.1 |
| Others           | 80   | 20   |

**Table 3:** Knowledge on Menstrual Hygiene of the Respondents.

Five comprehensive questions were asked on menstrual hygiene. Those who correctly answered three or more questions were categorized as having good knowledge, and those who correctly answered fewer than three questions were categorized poor knowledge. Only 77.3 percent had good knowledge of menstrual hygiene. The 15-19 years of age group had 78.9 percent good knowledge, and the 10-15 years of age group had only 74.6 percent good knowledge. Adolescent girls studying in grade 9 had more knowledge (79% good knowledge) on menstrual hygiene in comparison with those studying in grade 8. Adolescent girls from the Hindu religion had better knowledge (78.1%), followed by Buddhist (70.3%) and others, and adolescent girls from the Dalit cast had better knowledge (82.1%). Adolescent girls from the nuclear family had better knowledge (80.2%) than

joint family (73.9%). Those adolescent girls who had their own house had more knowledge on menstrual hygiene (78.5%) than those whose residence was a rental house (72.9%). The study showed that the higher the monthly income of the family, the better the knowledge on menstrual hygiene of adolescent girls (84%). The adolescent girls whose mothers' education level was higher secondary and above had better knowledge (93.3%), and those whose father's education level was secondary and higher secondary and above had better knowledge (82.1%) than illiterate, primary, and secondary level education of the parents. Adolescent girls whose mothers' occupation was agriculture had better knowledge of menstrual hygiene (81.1%), followed by business (76.4%), agriculture (75.8%), and jobs (75%) (Table 4).

| Questions | Total | Strongly Agree (%) | Agree (%) | Disagree (%) | Strongly Disagree (%) | Total |
|-----------|-------|--------------------|-----------|--------------|-----------------------|-------|
| Q1        | 330   | 85                 | 15        | 0            | 0                     | 100   |
| Q2        | 330   | 26                 | 27        | 29           | 18                    | 100   |
| Q3        | 330   | 85                 | 12        | 1            | 2                     | 100   |
| Q4        | 330   | 74                 | 18        | 5            | 3                     | 100   |
| Q5        | 330   | 49                 | 21        | 14           | 16                    | 100   |
| Q6        | 329   | 42                 | 18        | 21           | 20                    | 100   |
| Q7        | 330   | 50                 | 22        | 14           | 14                    | 100   |
| Q8        | 328   | 69                 | 17        | 7            | 7                     | 100   |
| Q9        | 330   | 81                 | 17        | 2            | 1                     | 100   |
| Q10       | 330   | 88                 | 11        | 1            | 0                     | 100   |

**Table 4:** Attitude on Menstrual Hygiene (by Likert Scale).

### **Questions:**

- Q1: Use absorbent materials during menstruation
- Q2: Use a commercially made sanitary pad as an absorbent material during menstruation
  - Q3: Clean clothes with soap and water
  - Q4: Dry clothes in sunlight
  - Q5: Dispose of used sanitary pads in a dustbin
  - Q6: Burn clothes or pads used in menstruation
  - Q7: Use paper to dispose of the pads by wrapping
  - Q8: Take a bath daily with soap during menstruation
  - Q9: Clean external genitalia during menstruation
- $Q10: Clean \ external \ genitalia \ with \ water \ and \ soap \ during \ menstruation$

The attitude of adolescent girls towards menstrual hygiene was measured by using a Likert Scale. Ten questions were self-administered by the respondents as strongly agreed, agreed, disagreed, or strongly disagreed. 85 percent adolescent girls were strongly agreed to use absorbent materials during menstruation, 29 percent were disagreed to use commercially made sanitary pad as absorbent material during menstruation, 85 percent strongly agreed to clean clothes with soap and water, 74 percent strongly agreed to dry clothes in sunlight, only 49 percent strongly agreed to dispose used sanitary pads in dustbin, 20 percent strongly disagree to burn clothes or pads used during menstruation, only 50 percent strongly agreed to sue paper to dispose the pads in by wrapping, 7 percent strongly disagree to take bath

daily with soap during menstruation, 81 percent strongly agreed to clean external genitalia during menstruation and 88 percent strongly agreed to clean external genitalia with water and soap during menstruation.

#### **Discussion**

A research study carried out in Nagaon, Barpeta District, Assam indicates that 91.76% of adolescents were aware that menstruation is a natural process. Approximately 27.65% of the participants in the study were unaware of the reasons behind menstruation [29]. The current research indicated that approximately 62 percent of participants viewed menstruation as a physiological process. Meanwhile, 27 percent were unaware of what menstruation entails, about 8 percent of respondents classified menstruation as a pathological process, and 3 percent referred to it as a curse from God. A study conducted in 2007 examined 150 adolescent girls aged 13 to 15 in the Chitwan district, revealing that merely 41% of those surveyed possessed sufficient knowledge regarding menstruation [30]. Mothers serve as the primary source of information and support during menstruation, with sisters and female friends following closely behind [31]. Most teenage girls report feeling more at ease discussing menstruation with their mothers, sisters, and friends rather than with their teachers at school, who are often male, particularly in rural regions of Nepal. So that the mothers of the adolescent girls should be more aware of menstrual hygiene. National menstrual hygiene policies and guidelines should be revised to engage mothers of adolescent girls to reduce the cultural and social taboos on menstrual hygiene. Menstrual hygiene should be included in the informal education to raise awareness of menstrual hygiene management among adolescent girls. The guidance offered to adolescent girls mainly focuses on clothing selections, adherence to rituals, the concept of (cultural) pollution, and cautions about engaging with men and boys. Nevertheless, there is a significant lack of accurate and scientific information related to menstrual physiology and hygiene [32]. Many teenage girls view their educators as an important resource for information about menstruation; nevertheless, girls often express that teachers fail to offer guidance on sexual and reproductive health. Rather, they propose that students ought to learn on their own at home [33]. This study reflected that the mothers of the respondents were the main source of information on menstrual hygiene. 53.9 percent of respondents' source of information was their mothers, followed by 16.7 percent sisters, 16.7.

A research study carried out in Ethiopia revealed that while the majority (92%) of students knew about menstruation before menarche, their use of sanitary napkins was notably low at 37.6 percent. Furthermore, a considerable percentage, 62.4 percent, resorted to using rags

and scraps of cloth [34]. Eleven percent of girls in Ethiopia replace their menstrual cloths once daily [35]. This study showed that more than 90 percent of respondents had heard about menarche. Only 9% of respondents had experienced menstruation as expected, 57.3 percent were frightened, and 33.6 percent were confused.

The findings of this study are similar to the different studies conducted in Nepal. In a survey conducted among 204 adolescent girls in Morang, Dhading, Kathmandu, and Lalitpur, it was found that 92 percent had prior knowledge of menstruation before experiencing menarche; however, most of them reported feeling unprepared for their initial period [36]. In a similar vein, 67 percent of girls residing in the Sunsari district [37], 26.9 percent in the Udayapur district, and 36.9 percent in the Sindhuli district [38]. Prior to menarche, individuals had been informed about menstruation. In this research, 77.3 percent demonstrated a strong understanding of menstrual hygiene. The 15-19 years of age group had 78.9 percent good knowledge, and the 10-15 years of age group had only 74.6 percent good knowledge. 85 percent of adolescent girls strongly agreed to use absorbent materials during menstruation, 29 percent disagreed to use commercially made sanitary pads as absorbent material during menstruation, 85 percent strongly agreed to clean clothes with soap and water, 74 percent strongly agreed to dry clothes in sunlight, and only 49 percent strongly agreed to dispose used sanitary pads in dustbin.

#### Conclusion

This study concluded that adolescent girls aged 16-19 years had better knowledge than those aged 10-15 years. Adolescent girls studying in grade 8 had better knowledge than those studying in grade 9. Adolescent girls who belong to the Hindu religion had better knowledge than those from other religions. Adolescent girls from a nuclear family had better knowledge than those from a joint and extended family. The adolescent girls whose parents had higher secondary and above education level had better knowledge of menstrual hygiene than those girls whose parents' education level was below the secondary level. Adolescent girls whose mothers' occupation was housewife had better knowledge of menstrual hygiene, followed by business, agriculture, and jobs. Almost all adolescent girls were strongly agreed on the importance of menstrual hygiene. They have a positive attitude toward menstrual hygiene.

### **Limitations of the Study**

The study was conducted in a limited school of the Bharatpur Metropolitan City in the Chitwan District within a short period. This covers the limited geographical area of the district. The data were self-reported, and the reporting

was on the spot.

#### Recommendations

Based on the findings of this study the menstrual Hygiene topics should be included in the textbook from grade seven, social media like Facebook, Twitter should be used to disseminate knowledge on menstrual hygiene, girls education interventions should be more focused, sanitary pads should be freely available in schools, harmful practices like isolation during menstruation should be eliminated by strongly implementing the law, school health programs on menstrual hygiene should be implemented, different I/NGOs/CBOs should be mobilized for raising awareness on menstrual hygiene. Operational research or an interventional study should be conducted in the future to know the practice of menstrual hygiene.

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