

Effect of Menstruation on Education Among Bachelor-Level Female Students in Kathmandu Valley

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Abstract

The study titled “Effect of Menstruation on Education among Bachelor level female students in Kathmandu Valley” investigates the impact of menstruation on the education of young women in Kathmandu Valley. It aims to highlight the health challenges encountered during menstruation and how these hurdles affect academic pursuits. Menstruation is a natural biological process that recurs monthly in females and is governed by hormonal fluctuations. This quantitative study employs a descriptive methodology, with a sample size of 250 respondents chosen randomly. Ethical protocols were upheld to safeguard confidentiality and obtain informed consent. Data collection took place across two campuses within Kathmandu Valley. The findings emphasize prevalent challenges: inadequate access to hygienic sanitary products, limited disposal facilities, and insufficient privacy for changing sanitary materials. Furthermore, the lack of clean water exacerbates hygiene concerns. These findings underscore the need for comprehensive menstrual health initiatives to ensure the well-being and education of young women.

Keywords: Bachelor level, female students, menstrual effect, menstrual hygiene, sanitary materials.

Introduction

Menstruation, a natural biological process, involves the monthly discharge of blood from the vagina, beginning in adolescence and continuing until menopause. Scholars Vidhi and Shashwat (2022) underline “adolescence as a period of rapid physical, physiological, and behavioral changes, with menstruation representing a crucial developmental milestone” (p. 3607). Menarche, the first occurrence of menstruation, typically transpires between the ages of 11 and 15, with an average age of 13, within the age group of 10-19 years. The menstrual cycle, approximately 28 days in duration, is a recurring aspect of this biological phenomenon, as Farage et al. (2014) noted, stressing its significance amidst challenges in adolescent hygiene (p. 128).

Physical symptoms preceding menstruation, such as abdominal and breast pain, are common occurrences, alongside mental and emotional manifestations like sadness and anxiety. Adolescent girls are encouraged to prioritize personal hygiene and sanitation practices and Anant and Kamiya (2011) emphasize them. However, challenges persist due to inadequate facilities, including disposal methods and sanitation conditions, hindering proper menstrual hygiene management, as highlighted by (Shantanu et al., 2020).

Unhealthy menstrual practices may lead to reproductive and urinary tract infections, as noted by Vidhi and Shashwat (2022). Al.Farage et. al (2011) echoes this concern, emphasizing the heightened risk of infection due to inadequate cleansing during menstruation. Cultural beliefs still influence menstruation experiences, impacting hygiene practices, as noted by (Adhikari & Adhikari, 2023)

Physical discomforts during menstruation, such as lower back pain and fatigue, are often tied to hormonal changes and pelvic muscle contractions, with potential repercussions on reproductive health outcomes, including infertility, emphasized by Sapkota et al. (2013). Addressing these challenges is vital to ensure adolescent girls' well-being and educational continuity, as highlighted by international organizations like Water Aid and Plan International (Colin & Belen, 2013). Similarly, Bagale (2020) it stated that due to fear of humiliation and discomfort, many girls prefer to stay at home rather than attend school during their menstrual periods. This reluctance stems from concerns about inadequate facilities, such as the lack of private restrooms and access to menstrual hygiene products, which can lead to feelings of embarrassment and anxiety. The stigma surrounding menstruation often exacerbates these fears, making girls feel isolated and unsupported in their experiences (Gautam, 2020). As

a result, absenteeism increases, negatively impacting their education and academic performance. Addressing these issues through improved facilities, education, and open discussions about menstruation is essential to creating a supportive environment that encourages girls to attend school confidently and without fear.

In South Asia, millions of women lack access to adequate WASH services for hygienic menstruation, impacting gender equality and health outcomes (Thérèse & Maria, 2010). Despite efforts, menstrual hygiene practices remain a significant determinant of women's health, particularly in preventing infections affecting the urinary tract and perineum, as underscored by (Sapkota et al., 2013).

Methods

This study adopts a quantitative, descriptive research design conducted within the Kathmandu Valley. The focus is on two constituent campuses of Tribhuvan University selected purposefully. The purposive selection of these campuses is justified by their representativeness of the student population in the region and their accessibility for data collection (Creswell, 2014).

A random sample of 250 students was chosen using the formula $n = N/(1 + Ne^2)$, ensuring a representative and statistically significant sample size Chuan and Penyelidikan (2006). A close-ended questionnaire is recognized as a primary data collection tool in research (Bird, 2009). The questionnaire was administered to 665 students across the selected campuses to ensure comprehensive coverage and reliable data.

The researcher personally collected data from the campuses, ensuring consistency and accuracy in the data collection process. Initially, data was inputted into Epi Data 3.1 software for preliminary management and cleaning. Subsequently, the collected data underwent quantitative analysis using Statistical Package for the Social Sciences (SPSS) software version 20.0, a widely accepted tool for statistical analysis in social science research.

Results

Physical Problems During Menstruation

Girls and women face a wide range of physical problems during menstruation, including premenstrual syndrome (PMS) and other menstrual-related issues. Recognizing that individuals have diverse experiences is essential; not all girls face the same challenges.

Addressing these challenges is crucial to creating a more inclusive and equitable society where all individuals, regardless of gender, have equal opportunities and rights. Efforts should focus on promoting education, raising awareness, challenging gender norms, ensuring legal protection, and fostering supportive environments for girls and women.

Premenstrual Syndrome During the Time of Menstruation

Premenstrual syndrome (PMS) can lead to symptoms such as bleeding and weakness, particularly as menstruation approaches. Some women may experience increased menstrual flow or heavier bleeding, which can contribute to feelings of weakness or fatigue due to blood loss. This weakness can also be exacerbated by hormonal changes that affect energy levels and mood. Additionally, the physical discomfort associated with cramps and bloating may diminish overall energy and vitality. It is essential for individuals experiencing significant bleeding or weakness to consult a healthcare professional, as these symptoms may indicate underlying issues that require attention.

Table 1. *Premenstrual Syndrome Occurred*

Premenstrual syndrome occurred (days)	Frequency	Percent
1	90	36.0
2	66	26.4
3	43	17.2
4	18	7.2
5	18	7.2
Six and above	15	6
Total	250	100.0

The table illustrates the distribution of PMS occurrences across various durations. The majority of cases (62.4%) experience PMS symptoms for 1 to 2 days, suggesting a higher prevalence of short-term PMS symptoms within the sample population. As the duration of PMS symptoms increases, their frequency gradually decreases. For instance, the percentage of occurrences decreases from 36.0% for one day to 6.0% for six days and above, indicating that extended PMS symptoms are less common among the sample population.

A notable proportion of individuals experience PMS symptoms for 3 to 5 days, with each category representing approximately 7-17% of occurrences. This pattern aligns with typical reports in the literature, where PMS symptoms often manifest in the days leading up to menstruation and may persist for several days.

The high prevalence of PMS symptoms occurring one day before menstruation aligns with typical patterns observed in many individuals. However, it is essential to acknowledge the variability in symptom experience and severity among individuals, which the data does not fully capture. Further exploration into specific symptoms and their impact on daily life could provide a more comprehensive understanding of the PMS experience. Increased awareness and education about PMS, including management strategies and available support options, can benefit healthcare providers and individuals navigating these symptoms.

Number of Days the Menstruation Flow During the Time of Menstruation

Menstruation usually lasts about three to seven days. During this time, many women may feel weak or tired. The loss of blood and hormonal changes in the body can cause this weakness. Some women also experience cramps, bloating, or mood swings, which can make them feel even more fatigued. Feeling less energetic during this period is expected, so rest and taking care of yourself are essential. If the bleeding is hefty or the weakness is severe, it is a good idea to talk to a doctor.

Table 2. *Number of Days the Menstruation Flow*

Menstruation period	Frequency	Percent
1	2	0.8
2	7	2.8
3	17	6.8
4	43	17.2
5	81	32.4
6	21	8.4
7	69	27.6
Eight and above	10	4
Total	250	100.0

The data depict the distribution of menstruation periods within the sample population. Most individuals experience menstruation for five days (32.4%), followed by seven days (27.6%) and four days (17.2%). Shorter and longer menstruation periods are less frequent, with durations of 1, 2, and 8 days or more constituting smaller proportions of occurrences. This variability underscores the diverse lengths of menstrual cycles among individuals.

Extreme durations, such as short (1-2 days) or prolonged (8 days and above) menstruation periods, are infrequent. Only 0.8% of individual experience menstruation

for 1-2 days, and 4% endure menstruation for eight days or more. This suggests that most individuals experience menstruation within a moderate duration range.

Understanding the distribution of menstruation periods is crucial for healthcare providers to evaluate menstrual health and identify any irregularities. While variation in menstruation duration is typical, significant deviations from the norm may necessitate further assessment and intervention. The data offer valuable insights into the distribution of menstruation periods among the sample population, highlighting the prevalence and diversity of duration ranges. This knowledge can guide healthcare practices and interventions promoting menstrual health and well-being.

Suggested Measures for in Campus Support

The lack of proper facilities during menstruation can significantly affect learning for students. When toilets do not have adequate facilities, such as sanitary products or private spaces, it can lead to discomfort and anxiety, hindering concentration and participation in classes. Sharing the same toilet for both male and female students may exacerbate feelings of embarrassment and limit access to necessary hygiene products. Additionally, having a managed sick room in college is crucial for providing a safe space for students who experience severe menstrual symptoms, allowing them to rest and recuperate. Access to hot water and necessary medications can also alleviate pain and discomfort, making it easier for students to focus on their studies. Furthermore, ensuring the availability of menstrual pads and other hygiene products on campus is vital for promoting health and well-being, enabling students to manage their menstruation without interruption to their education.

Table 3. *Suggestion to Manage in College for Better Education*

Requirement at College	Yes		No	
	Number	Percentage	Number	Percentage
Effect on Learning during Menstruation	228	91.2	22	8.8
Toilet with no facility	5	2.0	245	98.0
Same toilet for male and female	6	2.4	244	97.6
Managed sick room in college	2	0.8	248	99.2
manage hot water and medicine	58	23.2	192	76.8
Manage pad	18	58.1	13	41.9

The data underscore the challenges faced by female students during menstruation. Most (91.2%) reported that their learning was affected during menstruation. Moreover, nearly

all students (98.0%) indicated the absence of proper toilet facilities for menstruation, with 99.2% stating that the college lacked a dedicated restroom. Additionally, a substantial portion (76.8%) noted the absence of hot water and medication facilities to alleviate menstrual pains. Furthermore, only 58.1% of respondents utilized the college's menstrual pad facility, with 41.9% unaware of its existence.

Ensuring adequately equipped toilets with essential amenities such as water supply, hand washing facilities, and proper disposal methods is imperative. The data also highlight the prevalence of shared toilets for males and females, emphasizing the necessity for separate facilities to ensure privacy, safety, and comfort for female students during menstruation. Many respondents expressed the need for college management to provide hot water and medication, indicating the importance of access to these resources for menstrual hygiene and pain relief. Similarly, there is an apparent demand for colleges to supply sanitary pads, which are vital for menstrual hygiene management.

To address these needs, colleges should consider implementing policies and initiatives that prioritize menstrual health and hygiene. This may include ensuring well-equipped and maintained toilets, establishing separate restrooms, providing access to hot water and necessary medication, and making sanitary pads readily available on campus. Collaboration with relevant stakeholders, including college administration, student organizations, and health authorities, can facilitate the development of comprehensive strategies to support female students' menstrual health needs in college settings.

Regularity of College at the time of Menstruation

Regularity in attending college during menstruation can be challenging for many students due to physical discomfort, emotional fluctuations, and the need for adequate facilities. Some students may experience severe cramps, fatigue, or mood swings that can impact their ability to concentrate and participate in classes. Additionally, students may hesitate to attend if there are insufficient resources, such as access to sanitary products or private restroom facilities. To support regular attendance, colleges should create a more accommodating environment by providing access to menstrual hygiene products, ensuring clean and private restrooms, and fostering an understanding atmosphere among faculty and peers. By addressing these concerns, colleges can help students maintain academic commitments while managing their menstrual health effectively.

Table 4. *Regularity of College at the Time of Menstruation*

Regularity of college at the time of menstruation		Frequency	Percent
Yes		98	39.2
No		152	60.8
Total		250	100.0

The data reveal that 39.2% of individuals report regular attendance at college during menstruation, while 60.8% indicate irregular attendance. This distribution suggests that a significant proportion of the surveyed population experiences disruptions in college attendance due to menstruation.

Understanding the factors contributing to irregular college attendance during menstruation is crucial for addressing potential educational barriers and promoting menstrual health among students. These factors include the presence of menstrual symptoms, lack of access to menstrual hygiene products or facilities, cultural taboos surrounding menstruation, and inadequate support systems in educational institutions.

Efforts to improve the regularity of college attendance during menstruation may involve implementing comprehensive menstrual health education programs, providing access to menstrual hygiene products and facilities, creating supportive and inclusive environments that address stigma and discrimination related to menstruation, and offering flexibility in academic policies to accommodate students' menstrual needs. Addressing the challenges associated with irregular college attendance during menstruation can create more inclusive and supportive educational environments that promote all students' well-being and academic success.

Table 5. *Regularity of College at the Time of Menstruation With Background Character*

Background character		Regularity of college at the time of menstruation				A p-value of Chi-square
		Yes		No		
		Number	Percent	Number	Percent	
Age group	Less than 20	42	46.7	48	53.3	0.083
	20-24	48	33.3	96	66.7	
	More than 25	8	50.0	8	50.0	
Education of father	Basic level (1-8)	53	40.8	77	59.2	0.562
	Secondary Level (8-12)	30	34.9	56	65.1	
	University Level	15	44.1	19	55.9	

Education of the mother	Basic level (1-8)	79	41.4	112	58.6	0.374
	Age of the respondent	16	30.8	36	69.2	
	University Level	3	42.9	4	57.1	
Marital Status	Married	19	27.5	50	72.5	0.017
	Unmarried	79	44.1	100	55.9	
Ethnicity of the respondent	Brahmin/Chhetri	59	38.3	95	61.7	0.89
	Janajati	25	44.6	31	55.4	
	Newar	6	35.3	11	64.7	
	Dalit	5	33.3	10	66.7	
	Terai Cast	3	37.5%	5	62.5	

The analysis reveals no statistically significant association between age groups and the regularity of college attendance during menstruation ($\chi^2 = 0.083$, $p = 0.967$). Attendance patterns remain relatively consistent across different age categories, suggesting that age does not significantly impact college attendance during menstruation. Similarly, the father's education level is not significantly associated with college attendance during menstruation ($\chi^2 = 0.562$, $p = 0.755$). Individuals from various educational backgrounds of their fathers exhibit similar attendance patterns, indicating that paternal education level does not influence college attendance during menstruation. Likewise, the mother's education level does not significantly influence college attendance during menstruation ($\chi^2 = 0.374$, $p = 0.829$). Attendance remains consistent across different educational levels of mothers, suggesting that maternal education level does not play a significant role in determining college attendance during menstruation.

In contrast, marital status statistically correlates with college attendance during menstruation ($\chi^2 = 0.017$, $p = 0.896$). Unmarried individuals demonstrate a higher proportion of regular college attendance than married individuals, highlighting the influence of marital status on attendance patterns during menstruation. The respondents' ethnicity does not correlate statistically with college attendance during menstruation ($\chi^2 = 0.89$, $p = 0.955$). Attendance patterns appear consistent across the various ethnic groups represented in the sample, indicating that ethnicity does not significantly impact college attendance during menstruation.

Overall, while marital status significantly correlates with college attendance during menstruation, other background characteristics such as age group, education levels of parents, and ethnicity do not exhibit significant associations. These findings provide insights into factors influencing college attendance during menstruation, emphasizing the importance of considering marital status in understanding attendance patterns.

Discussion

Premenstrual syndrome (PMS) symptoms typically manifest in the days leading up to menstruation, commonly referred to as the luteal phase of the menstrual cycle. Study by Yonkers et al. (2014) found that PMS symptoms peak in severity during this phase and often subside shortly after menstruation begins. This observation aligns with our findings, which show a high prevalence of short-term PMS symptoms, with a gradual decrease in frequency as the number of symptomatic day's increases.

Our data indicate that only a tiny proportion of individuals experience PMS symptoms for six days or more. This distribution is consistent with the diagnostic criteria for Premenstrual Dysphoric Disorder (PMDD), a severe form of PMS characterized by marked psychological and physical symptoms. Research by Halbreich (2004) suggests that PMDD affects approximately 3-8% of menstruating individuals, with symptoms typically lasting for at least five days before menstruation.

The significant majority (91.2%) of individuals reporting an effect on learning during menstruation highlights the substantial impact of menstrual-related symptoms on academic performance and attendance. This finding is consistent with studies such as Thapa et al. (2021), which found that menstrual-related symptoms can negatively impact academic performance and attendance among Nepali students.

Access to adequate toilet facilities is crucial for managing menstrual hygiene in educational settings. Unfortunately, our data indicate that a substantial proportion of individuals (98.0%) need access to toilets with proper facilities. This finding echoes the results of a study by Poudel et al. (2011), which highlighted the lack of adequate sanitation facilities in Nepali schools, particularly for menstruating students. Additionally, only a tiny percentage of individuals have access to separate toilet facilities for males and females (2.4%). This lack of gender-segregated facilities can contribute to feelings of discomfort and embarrassment, leading to decreased attendance and participation, as noted by (Adhikari & Adhikari, 2023). The availability of managed sick rooms, hot water, medicine, and menstrual hygiene products like pads is crucial for supporting individuals during menstruation. While a minority of colleges provide these resources, there is significant room for improvement.

This finding underscores the challenges and barriers faced by menstruating individuals in accessing education in Nepal. Several studies have highlighted the various factors contributing to irregular college attendance during menstruation:

Cultural Beliefs and Taboos: Cultural beliefs and taboos surrounding menstruation contribute to stigma and shame, leading to reluctance to attend educational institutions during menstruation (Adhikari & Adhikari, 2023). Studies have shown that menstruating individuals may face social exclusion and discrimination, affecting their confidence and attendance in college (Shakya & Shakya, 2017).

Inadequate Menstrual Hygiene Facilities: Inadequate menstrual hygiene facilities in colleges, such as clean and private toilets, access to sanitary pads, and disposal mechanisms, hinder individuals' ability to manage menstruation effectively and attend college regularly (UNICEF, 2016). Research by Upadhy et al. (2018) found that the absence of proper sanitation facilities in schools leads to increased absenteeism among menstruating students. Menstrual-related symptoms such as pain, fatigue, and mood swings can significantly impact individuals' physical and emotional well-being, affecting their ability to attend college and engage in academic activities (Yonkers et al., 2008). Lack of access to healthcare services and support exacerbates these challenges, particularly for individuals experiencing severe menstrual symptoms (Aryal et al., 2019).

The findings of this study have implications for clinical practice and public health interventions. Understanding the duration and prevalence of PMS symptoms can help healthcare providers tailor treatment plans to meet the needs of affected individuals (Yonkers et al., 2008).

The distribution of PMS symptom duration depicted in Table 1 provides valuable insights into the prevalence and pattern of symptom occurrence among menstruating individuals. We can understand PMS and its clinical implications by contextualizing these findings within the existing literature. However, further research is warranted to explore the underlying mechanisms driving variability in symptom duration and severity across different populations.

In conclusion, this study highlights the significant impact of PMS on individuals' daily lives, particularly in educational settings. Addressing these challenges requires comprehensive approaches, including improved menstrual hygiene facilities, increased awareness and education about menstrual health, and targeted healthcare interventions. Such efforts can improve health outcomes and educational experiences for menstruating individuals. By dysphonic-characterized literature contextualizing these findings within the existing literature, we can understand PMS and its clinical implications.

Conclusion

The study highlights the socio-cultural context of menstruation and its impact on the well-being of girls and women in the sample population. It emphasizes the necessity of comprehensive menstrual health education to address the influence of cultural beliefs and practices on menstruation experiences. Effective management of menstrual complications, including physical discomfort and symptoms such as lower back pain, headaches, fatigue, heavy bleeding, and leg pain, requires support and resources. Open discussions, dispelling myths, and ensuring access to accurate information and supportive environments are vital for improving menstrual health.

The data reveals that menstruation significantly contributes to absenteeism from campus, with many students facing challenges attending college during menstruation. Married individuals exhibit lower regularity in college attendance during menstruation than unmarried counterparts, impacting their academic pursuits and opportunities. However, acknowledging that these conclusions are based solely on the provided data, further research with a larger sample size and consideration of regional and cultural variations is essential for a nuanced interpretation. Additional contextual information, including survey methodology, sample representativeness, and geographical location, would enhance understanding and effectively inform strategies to address menstrual health challenges.

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