

# ASSESSING AWARENESS AND WILLINGNESS TO ADOPT SUSTAINABLE MENSTRUAL PRODUCTS AMONG BACHELOR STUDENTS IN KATHMANDU

Natasha Shakya<sup>1,2</sup> and Suveckshya Shah<sup>3</sup>

## Abstract

Sustainable menstrual health is vital for environmental and personal well-being but remains under-prioritized in Nepal. This study assesses awareness and willingness to adopt sustainable menstrual products among bachelor's level women students in Kathmandu Metropolitan City (KMC), using the Theory of Planned Behavior. A survey was conducted among 150 students from six different institutions (three private and three community). Findings suggested that although there is a high level of awareness regarding sustainable menstrual products, there is also a comparatively high level of desire to adopt them. While a significant relationship was found between awareness and willingness to adopt sustainable menstrual products, awareness alone does not fully explain the decision to switch. Factors such as accessibility, affordability, cultural beliefs, and social acceptance also play a crucial role in shaping adoption behavior. The study highlights the need for focused interventions, such as awareness campaigns, affordability plans, educational programs and peer engagement to promote sustainable menstrual practices among youth.

**Keywords :** Sustainable menstrual health, awareness, willingness to adopt, Kathmandu, menstrual products

## 1. Background

Menstrual health is a crucial but often overlooked component of women's well-being and environmental sustainability. Menstruation being a universal biological experience, the choice of menstrual products varies widely. Due to increased market availability and urbanization, the majority of menstruating women and girls in Nepal use disposable sanitary pads. These products, while convenient, are largely non-biodegradable and contribute to substantial environmental waste. According to World Bank Group (2022), each menstruating individual generates up to 150 kg of menstrual waste annually, much of which ends up in rivers or landfills in Kathmandu due to poor waste management. Reports indicate that approximately 3,000 tons of menstrual waste are generated in Nepal each year, with only 5% being properly disposed of (Bajracharya, 2021).

Aside from the environmental consequences, disposable products may also contain harmful chemical substances such as phthalates and volatile organic compounds (VOCs), which are linked to illnesses like cancer, infertility, and hormone irregularities. Despite these risks, awareness and access to sustainable alternatives like menstrual cups and reusable pads remain limited in

Nepal. Even when women are aware, they are hesitant to make the transition.

In rural areas of Nepal, traditional practices like Chaupadi add another layer of vulnerability for menstruating women. Women are often forced into isolation, living in unhygienic conditions, which increases their risk of infection. It's interesting to note that the use of menstruation cups in some cultures has helped to reduce these negative behaviours. The menstrual cup, which is more unnoticed and lasting, allows women to maintain cleanliness without having to isolate themselves. It has empowered women by offering a more sustainable and private alternative to traditional ways. As a result, menstrual cups have helped to transform cultural habits while also providing a safer, more sustainable alternative, thereby improving overall health outcomes (Capper, 2018).

Colleges and universities present an ideal setting to raise awareness about eco-friendly menstrual products since bachelor's level students are capable of making informed decisions regarding their health and sustainability practices. Educating these young people about sustainable menstrual products allows them to adopt practices that promote both environmental responsibility and personal

1. Graduate, Bachelor of Development Finance, National College, Batch 2020-2024  
2. Recipient of Kaushila Foundation Research Grant 2024  
3. Public Health Expert

wellness. As young adults who can make their own decisions, they are well-positioned to promote change and impact future generations. Despite the benefits, sustainable menstrual products are underutilized, primarily due to lack of awareness, social stigma, and misconceptions. This study seeks to assess their awareness and willingness to adopt sustainable menstrual products and identify barriers to adoption. The general objective of the research is to assess the awareness and willingness to adopt sustainable menstrual products among bachelor level women of Kathmandu Metropolitan City. The specific objectives are a) Evaluate the level of awareness about sustainable menstrual products, such as menstrual cups, reusable pads, and biodegradable products. b) Identify key barriers that prevent the adoption of sustainable menstrual practices.

## 2. Hypothesis

The hypotheses for this research are as follows:

- Null Hypothesis ( $H_0$ ): There is no significant relationship between awareness of sustainable menstrual products and willingness to adopt them among bachelor level women in Kathmandu Metropolitan City.
- Alternative Hypothesis ( $H_1$ ): There is a significant relationship between awareness of sustainable menstrual products and willingness to adopt them among bachelor level women in Kathmandu Metropolitan City.

## 3. Methodology

This study employed a descriptive and analytical research design to assess the awareness and willingness to adopt sustainable menstrual products among bachelor's level women students in Kathmandu Metropolitan City. A quantitative approach was used, with structured surveys serving as the primary data collection tool. The survey targeted 150 female students across six colleges (three private and three community), gathering information on socio-demographics, menstrual practices, and students' willingness to switch to eco-friendly products.

Data collection occurred from January 4 to January 22, 2025, using both online (Google Forms) and in-person methods. A non-random, convenience sampling method was employed, with 25 students from each institution participating. The questionnaire was divided into four sections: demographic details, menstrual practices and awareness, willingness to transition, and factors influencing adoption.

The data were analyzed using descriptive statistics and regression analysis to identify relationships between awareness, willingness, and influencing factors. Ethical considerations included obtaining informed consent, ensuring confidentiality, and voluntary participation.

The theoretical foundation of this study is based on both behavioural change theories and environmental health frameworks. Ajzen's Theory of Planned Behaviour (TPB) is one of the main ideas employed in this study. According to TPB, three primary elements influence human behaviour: attitudes towards the behaviour, subjective standards, and perceived behavioural control (Ajzen, 2005). According to this theory, an individual's decision to engage in a specific behaviour (for example, using sustainable menstrual products) is influenced by their attitudes (beliefs about the consequences of the behaviour), subjective norms (social pressure or expectations), and perceived control behavior.

## 4. Results and Discussion

### 4.1 Descriptive Analysis

The majority of the participants (79.33%) were young women between the ages of 20 and 25. A lesser proportion (16%) were under 20, while only 4.67% were above 25. The group was evenly split between private and community colleges, with each accounting for 50% of the responses, resulting in broad representation.

The majority were in their third and fourth years (44.67% and 30% respectively) as senior students can make informed decisions about their health and sustainability habits. In terms of employment, more than half of respondents (58%) were unemployed, indicating a financial reliance on family or other support. Those who were employed (25.33%) were mostly engaged in part-time jobs.

### 4.2 Awareness of Sustainable Menstrual Products

The majority of respondents i.e. 70.7% were aware of sustainable menstrual products. Both private and public/community college students show high general awareness of sustainable menstrual products, with most being somewhat familiar. Private college students have more in-depth knowledge, with more students being very familiar. Public/community college students have a broader but less detailed awareness, with more students being somewhat familiar. A small number of students in both groups are not familiar with sustainable menstrual products.

The survey's findings show that people's knowledge of the many kinds of sustainable menstruation products varies. The most well-known product was the menstrual cup, which 109 (72.7%) of the participants knew about. Reusable pads came next, as 73 (48.7%) of the participants knew about them. Participants' familiarity with biodegradable pads and tampons was lower, with 37 (24.7%) and 24 (16%) being aware of these products, respectively. Menstrual discs were the least familiar, with only 11 (7.3%) individuals understanding them, whereas

85 (56.7%) participants knew about period panties. Seven participants (4.7%) said they were unfamiliar with any of the sustainable menstrual products.

### 4.3 Willingness to Adopt Sustainable Menstrual Products

60% of participants expressed a clear willingness to adopt sustainable menstrual products, indicating a strong interest in making the switch to these eco-friendly options. 38% of participants were uncertain or open to the idea, saying "maybe," which suggests they might need more information, education, or support before making a decision. Only 2% of respondents explicitly declined, indicating minimal resistance to the adoption of sustainable menstrual products among the group. This data shows that while the majority of participants are either willing or open to adopting these products, there remains a small portion that needs further encouragement or convincing. Both groups are highly willing to adopt sustainable menstrual products, with public/community college students showing a slightly stronger commitment. However, private college students are slightly more open to trying but have a slightly higher number of students who are uncertain or not interested.

### 4.4 Barriers to Adoption of Sustainable Menstrual Products

The key barriers identified to adopting sustainable menstrual products, included preference for disposable products, discomfort, high cost, lack of awareness and limited availability. 14.7% had already made the switch to sustainable menstrual products. Many respondents expressed concerns about accessibility and affordability, making it difficult for them to transition to sustainable options.

One participant said, "Although having used the biodegradable pad and tampons, I cannot afford it every now and then. Thus, I am not able to stick to it." This highlighted the financial barrier that some students face, and another participant said, "Haven't really found them in the easily accessible area," suggesting that accessibility and availability also play a part in the decision-making process. A private college participant shared, "Not convenient to use in public toilets," expressing a concern about the usefulness of sustainable menstrual products sometimes. These barriers keep students from fully adopting sustainable menstrual products even though they are willing to switch.

## 4.5 . Relationship between Awareness and Willingness to adopt Sustainable Menstrual Products

Table 1: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.397a	0.158	0.152	0.78575

a. Predictors: (Constant), Awareness\_Score

Interpretation: The p-value (0.000) confirms a statistically significant relationship between awareness and willingness to adopt sustainable menstrual products, but awareness alone explains only 15.8% of the variation, indicating that awareness contributes to the model but other factors may also influence willingness.

## 4.6 Hypothesis Testing

Table 2: Hypothesis

	Hypothesis	Sig.	Results	Gradient (Beta)
H1	Awareness and Willingness	0.000	Accept	0.397

Interpretation: The hypothesis was tested using regression analysis. The significance value of 0.000 indicates a statistically significant relationship between awareness and willingness to adopt sustainable menstrual products. The beta value ( $\beta = 0.397$ ) suggests a moderate positive association. Hence, H<sub>1</sub> is accepted, which implies that awareness has a positive impact on the willingness of individuals to adopt these products.

## 5 Conclusion:

This study reveals that while awareness of sustainable menstrual products among bachelor-level women in Kathmandu Metropolitan City is relatively high, willingness to adopt them is influenced by more than just knowledge. The research also confirmed a statistically significant relationship between awareness and willingness to adopt sustainable menstrual products, supporting the alternative hypothesis. However, awareness alone does not fully explain adoption behavior, highlighting the need to address additional influencing factors.

By identifying key barriers and highlighting students' readiness to switch to sustainable alternatives, this study contributes to a better understanding of how young women perceive menstrual sustainability. The findings suggest that targeted awareness programs, affordability measures, and improved accessibility could enhance the adoption of eco-friendly menstrual practices among youth in Nepal.

## References

- ACT Government. (2020, October 14). Retrieved from Menstrual products and sustainability: <https://www.cityservices.act.gov.au/recyclopaedia/factsheets/menstrual-products>
- Adhikari, S. U. (2024). Menstrual Hygiene and Sanitation Practices Among Female College Students in Surkhet. JOL, 01-07.
- Ajzen, I. (2005). Attitudes, Personality and Behavior (Second ed.). Open University Press.
- AWHS. (2023, May). Menstrual hygiene products: pads and tampons are the go-to choice. From Harvard T.H. Chan: <https://www.hsph.harvard.edu/applewomenshealthstudy/updates/menstrualhygieneproducts/#>
- Bajracharya, N. (2021, June 4). Pad pollution: How Nepal successfully adopted the use of sanitary pads but failed in disposal. From onlinekhabar: <https://english.onlinekhabar.com/nepal-pad-pollution-alternatives.html>
- Bency, O. J. (2024). A Qualitative Analysis of Sustainable Menstrual. International Journal for Multidisciplinary Research, 6(2), 01-05.
- Capper, S. (2018, March 10). Menstrual cups are helping Nepal's girls avoid the deadly Chhaupadi ritual. Retrieved from NEWS: <https://www.abc.net.au/news/2018-03-10/chhaupadi-nepal-menstrual-cup-revolution/9531814>
- Dayal, A. (2019, September 24). Why is it important to maintain menstrual hygiene. Retrieved from CK Birla Hospital: <https://www.ckbhospital.com/blogs/why-is-it-important-to-maintain-menstrual-hygiene/>
- Duamru, B. (2023, July 28). Breaking the Cycle: A Plastic-Free Menstrual Hygiene Revolution in Lumbini, Nepal. From BreakFreeFromPlastic: <https://www.breakfreefromplastic.org/2023/07/28/breaking-the-cycle-heca360/#:~:text=To%20address%20the%20above%20issues,in%20the%20Lumbini%20Cultural%20Municipality>
- Duca, D. L., & Liera, C. (2023, October 9). Q&A: Understanding the environmental impacts of menstrual health and hygiene practices. From SEI: <https://www.sei.org/features/qa-understanding-the-environmental-impacts-of-menstrual-health-and-hygiene-practices/>
- Holland, K. (2022, August 15). Menstruation: Facts, Statistics, and You. Retrieved from Healthline: <https://www.healthline.com/health/facts-statistics-menstruation>
- Jain, A., Kotian, H., Agrawal, N., & Swarna, S. (2024). IJCM\_382A: Awareness regarding use of menstrual cups among female college students in Mangalore. Indian Journal of Community Medicine.
- John Hopkins Medicine. (2024, August 29). Menstrual Cycle: An Overview: <https://www.hopkinsmedicine.org/health/wellness-and-prevention/menstrual-cycle-an-overview>
- Joseph, J., Elangovan, N., & Sundaravel, E. (2022). Attitude of urban women towards sustainable sanitary products: A study in Bengaluru. Prayukti - Journal of Management Applications, 2(1), 01-10.
- Kunwar, S., & Shah, S. (2023). Perception on Menstrual Cup among Menstruating Students of Kathmandu University. Samriddhi Journal of Development Studies.
- Mulepati, S., Koirala, S., Bhandari, S., Budhathoki, B., Bhele, R. L., & Thapa, M. (2024). Awareness and Utilization of Menstrual Cup among Adolescent Nursing Students of a Selected College. Journal of KIST Medical College.
- Peberdy, E., Jones, A., & Green, D. S. (2019, January). A Study into Public Awareness of the Environmental Impact of Menstrual Products and Product Choice. From ResearchGate: [https://www.researchgate.net/publication/330462591\\_A\\_Study\\_into\\_Public\\_Awareness\\_of\\_the\\_Environmental\\_Impact\\_of\\_Menstrual\\_Products\\_and\\_Product\\_Choice](https://www.researchgate.net/publication/330462591_A_Study_into_Public_Awareness_of_the_Environmental_Impact_of_Menstrual_Products_and_Product_Choice)
- Pokhrel, D., Bhattarai, S., Emgard, M., Schickfus, M. v., Forsberg, B. C., & Biermann, O. (2021). Acceptability and feasibility of using vaginal menstrual cups among schoolgirls in rural Nepal: a qualitative pilot study. Retrieved from <https://reproductive-health-journal.biomedcentral.com/counter/pdf/10.1186/s12978-020-01036-0.pdf>
- PTI. (2022, November 22). High amounts of harmful chemicals found in sanitary napkins : Study. From mint: <https://www.livemint.com/news/sanitary-pads-in-india-contain-cancer-infertility-causing-chemicals-study-11669126591992.html>
- Sadownik, A. R. (2023, August 25). Bronfenbrenner: Ecology of Human Development in Ecology of Collaboration. From Springer Link: [https://link.springer.com/chapter/10.1007/978-3-031-38762-3\\_4](https://link.springer.com/chapter/10.1007/978-3-031-38762-3_4)
- The Women's Organization. (2024, January). Retrieved from The History of Period Products: From Censorship to Autonomy: <https://www.thewomensorganisation.org.uk/the->

history-of-period-products/#:~:text=In%20ancient%20civilizations%2C%20women%20devised,American%20women%20used%20buffalo%20skin.

UNICEF. (n.d.). Menstrual hygiene products. From UNICEF: <https://www.unicef.org/supply/menstrual-hygiene-products>

Upadhya, S., & Adhikari, A. (2023). Menstruation Hygiene Practices Among Girl Students in Kathmandu Valley. Pragyaratna.

Weissman, A. (2024, August 16). Period Piece: Menstruation's Hidden History. Retrieved from History Colorado: <https://www.historycolorado.org/story/2024/08/16/period-piece-menstruations-hidden-history>

World Bank Group. (2022, May 12). Menstrual Health and Hygiene. From World Bank Group: <https://www.worldbank.org/en/topic/water/brief/menstrual-health-and-hygiene>