

BREAKING THE STIGMA: MENSTRUAL HYGIENE PRACTICES AND THE ADOPTION OF REUSABLE SANITARY NAPKINS AMONG COLLEGE GOING GIRLS

Garima* and Dr. Chhaya Verma**

*Student and **Associate Professor (Mentor)

Department of Clothing and Textiles

Government Home Science College Chandigarh (India)

Abstract

Menstrual hygiene practices and consumer awareness of reusable sanitary napkins among college-going girls aged 18-25 of different colleges of Chandigarh were examined. A total of 500 students from seven educational institutions participated in the study, data was collected via a semi-structured questionnaire, with 60% responses online and 40% offline. Results showed mixed awareness and willingness to use reusable sanitary napkins. The main barriers for using reusable sanitary napkins were found to be hygiene, convenience, and cultural stigmas. The analysis indicated a potential market for reusable napkins, but highlighted the need for educational efforts to dispel misconceptions and promote their benefits. The study concludes that targeted awareness campaigns and accessible options could significantly improve adoption among college-going girls, enhancing menstrual hygiene practices and environmental sustainability. In contrast, reusable sanitary napkins, made from natural, breathable fabrics, offer a sustainable and healthier alternative. Promoting their use can lead to better health outcomes, increased confidence, and the breaking down of menstrual taboos, supporting young women in leading healthy and empowered lives.

Key words: Menstrual hygiene practices, reusable sanitary napkins, taboos.

Introduction

Menstruation, a natural and essential process marking the onset of a woman's reproductive years, often encounters societal taboos and misconceptions that can lead to stigma and inadequate hygiene practices. This research paper explores the menstrual hygiene practices, awareness, and perceptions surrounding reusable sanitary napkins among college-going girls aged 18 to 25. This particular age group is pivotal as these young women navigate the transition to adulthood, managing their menstrual health independently within new environments such as colleges or workplaces. Effective menstrual hygiene management (MHM), which includes access to clean menstrual products, proper sanitation facilities, and comprehensive education, is crucial for their health, dignity, and well-being. Despite advancements in menstrual products, significant barriers persist due to cultural taboos, economic constraints, and environmental concerns associated with disposable sanitary products. This study aims to assess current menstrual hygiene practices, investigate the impact of cultural restrictions, evaluate awareness levels, and identify barriers to the adoption of reusable sanitary napkins, thereby promoting sustainable and healthier menstrual practices among young women.

Aims and Objectives

- To assess menstrual hygiene practices among college-going girls aged 18-25, including types of menstrual products used and disposal methods.

- To investigate cultural restrictions during menstruation and their impact on hygiene practices.
- To assess awareness and factors influencing the choice of menstrual products, focusing on reusable sanitary napkins.
- To identify barriers of using reusable napkins and explore ways to promote sustainable menstrual hygiene among college girls.

Methodology

This study utilized a cross-sectional survey method to investigate menstrual hygiene practices, awareness of reusable sanitary napkins, and related taboos among college-going girls in Chandigarh. Over six months, data was collected from 500 participants across various educational institutions using a semi-structured questionnaire. Both quantitative and qualitative data were gathered, with the former including demographic details (age, education level, family income) and specific questions on menstrual hygiene practices and awareness, and the latter derived from open-ended questions allowing for elaboration on personal experiences and perceptions. Data collection was conducted through online (60%) and offline (40%) methods. The data was organized into a master chart, systematically coded, and analysed using arithmetic mean and percentage distribution to identify general trends and patterns. This mixed-methods approach enabled a comprehensive analysis, combining statistical trends with personal insights to highlight the diverse menstrual hygiene behaviours and awareness levels among the student population. The findings emphasize the need for improved menstrual hygiene education and policy initiatives to enhance menstrual health outcomes in urban settings.

The Limitation of the present study are

The study was limited to the age group of 18-to-25-year college-going girls of different colleges of Chandigarh.

Results & Discussion

The major findings of the present study are as follows:

Educational status

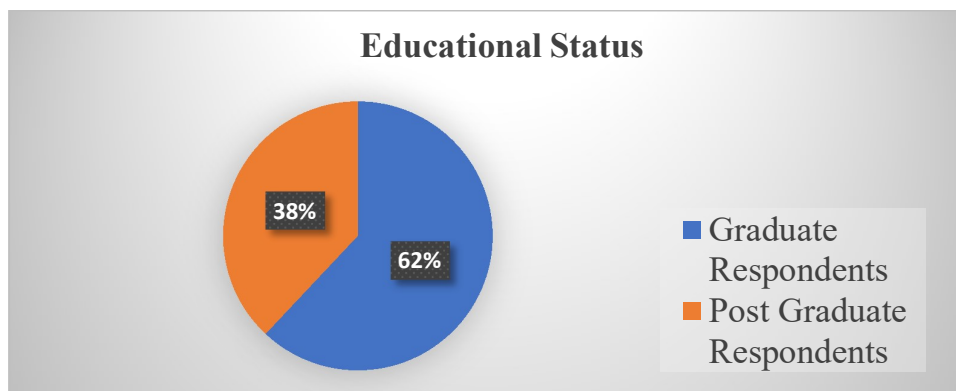


Figure No. 4.4 Educational status of respondents

- Through the study conducted on college-going girls from various colleges in Chandigarh, it was observed that 38% of the respondents were enrolled in postgraduate classes, while the remaining 62% were attending undergraduate classes. This breakdown highlights the distribution of students across different academic levels within the study population.

Age at onset of menarche

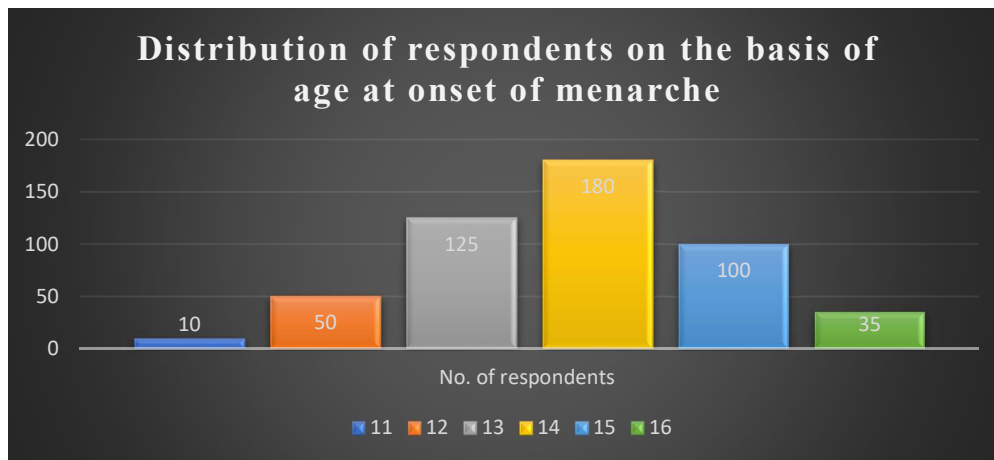


Figure No. 4.3 Distribution of respondents on the basis of age at menarche

- The average age at menarche was found to be 13.83 years. It was also observed that the highest percentage of respondents, 26.4%, were aged between 18 and 19 years. This was closely followed by 24.8% of respondents who fell within the age bracket of 22 to 23 years. Additionally, 16.4% of respondents were in the age group of 21 to 22 years. This age breakdown provides valuable insights into the demographics of the study participants.

Studies by Patavegar, Rigon (2012), Kumari (2012), Rajavelu (2017), Singh (2019), and Reddy (2019) reported the average age of menstruation onset ranging from 12.7 to 13.89 years. Dambhare (2012) found the mean age of menarche was 13.51 years in urban areas and slightly higher at 13.67 years in rural areas. These studies provide a comprehensive view of the typical age for the first menstrual period.

Annual income of family

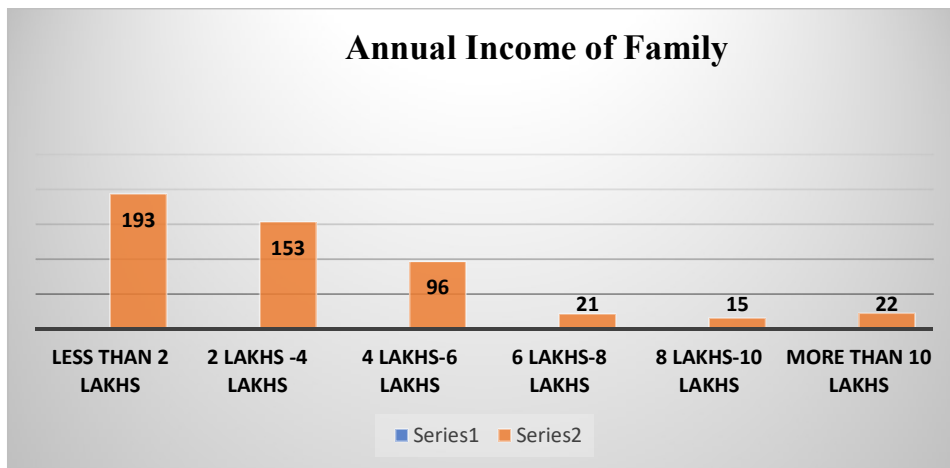


Figure no. 4.2 Distribution of respondents on the basis of family income status

- The analysis revealed that a significant portion of the college-going girls in Chandigarh come from lower-income families. The majority, 38.6%, have an annual family income of less than 2 lakhs INR, while the second-largest group, 30.6%, have an annual income between 2 lakh and 4 lakh INR.

Kaur and Kaur (2022) found that middle-class urban participants had easier access to affordable sanitary napkins, while Bhardwaj and Patkar (2004) noted that high prices limit their use to upper-income women, with low-income women relying on old textile rags.

Sources of information about menstrual cycle

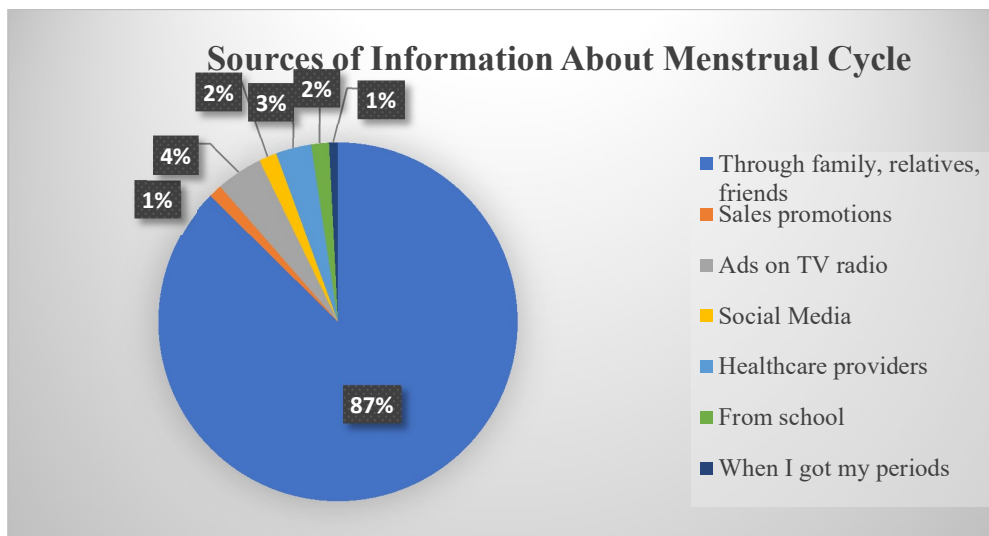


Figure no. 4.5 Distribution of respondents on the basis of sources of information about the menstrual cycle

- It was also found that the primary source of information about menstrual periods for the majority of respondents (87%) was friends, family, and relatives. This finding indicates that informal social networks play a significant role in disseminating knowledge about menstruation.

Bakshi (2020) found that 80% of girls had prior knowledge about menstruation, with 51.1% learning from their mothers. Similarly, Dambhare (2012) reported 75.58% discussed menstruation issues, primarily with mothers (38.15%). Kumari (2012) found that 76.7% of 847 adolescent girls had already experienced menarche.

Managing first period

- Data revealed that a substantial number of girls relied on maternal guidance for managing their first period, highlighting the crucial role mothers play during this milestone. Furthermore, the majority of respondents reported experiencing dysmenorrhea (moderate to severe pain caused by menstrual periods), indicating a prevalent challenge among young women during menstruation.

Bakshi (2020) found that 69.3% of participants reported menstrual issues, with dysmenorrhea and premenstrual symptoms causing absenteeism for 13.9%. Dambhare (2012) observed that 56.15% had dysmenorrhea and 56.16% experienced premenstrual syndrome. Rajavelu (2017) noted premenstrual symptoms in 41.5% and dysmenorrhea in 36.8% of girls. Nazeema (2017) reported 79% had dysmenorrhea, while Patavegar and Rigon (2012) found 76.1% had dysmenorrhea and 30.4% experienced body aches.

Menstrual Cycle Patterns

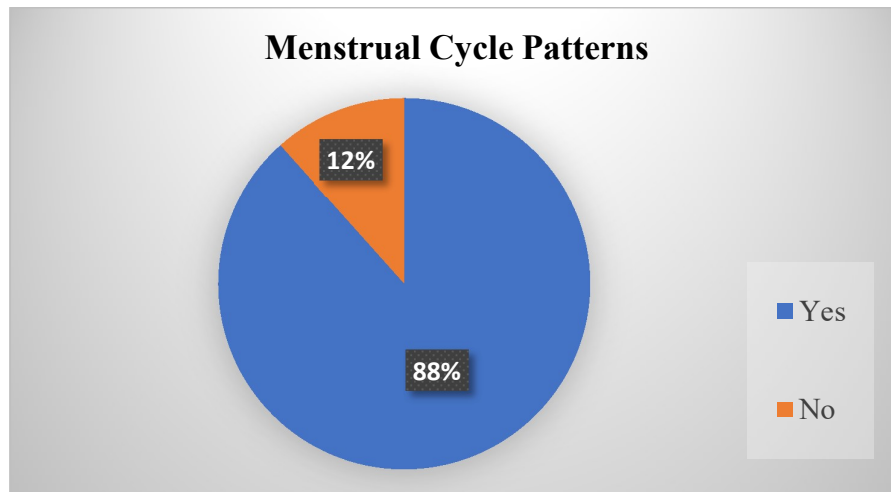


Figure No. 4.6 Menstrual Cycle Patterns

- The findings revealed that 88% of respondents reported regular menstrual cycles, while 12% experienced irregular periods. They discussed that the main contributing factors for irregular menstruation were PCOD, PCOS, stress, anxiety, hormonal imbalance, white discharge, eating disorders, heredity, weakness, anemia, and insufficient sleep.

Several studies have explored the prevalence and causes of irregular menstrual cycles. Ranjithkumar (2021) found untreated abdominal pain common, while Tarannum (2020) linked irregular cycles to weight, diet, exercise, stress, and sleep. Bakshi (2020), Singh (2019), and Rajavelu (2017) noted that few women sought medical help for menstrual issues. Deshpande et al. (2018) reported 18% of respondents had irregular periods, often linked to eating disorders, weight loss, and PCOS. Kumari (2012) and Nazeema (2017)

observed high rates of menstrual irregularities among adolescents, while Damhare (2012) highlighted a lack of awareness about menstrual health.

Awareness about the menstrual hygiene

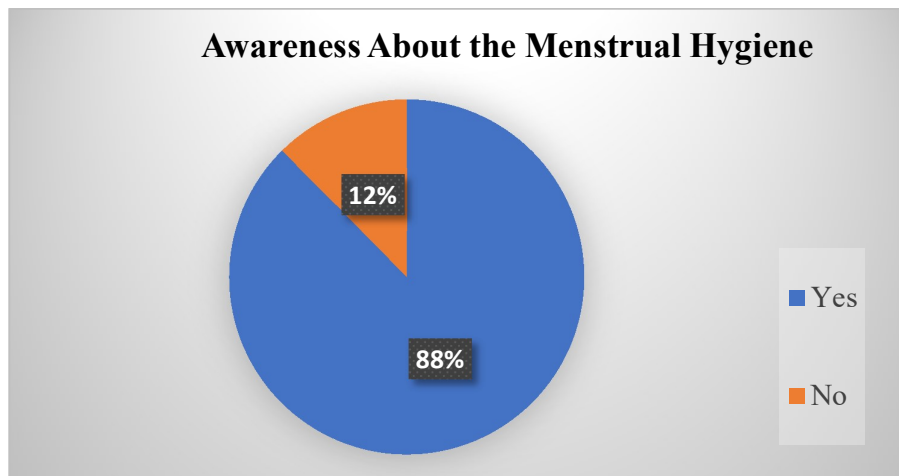


Figure no. 4.7 Distribution of respondents on the basis of sources of information about the menstrual hygiene.

- The data revealed that a significant majority of respondents, constituting 88.2%, indicated that they had received information about menstrual hygiene through programs in their communities or schools.

Ranjithkumar (2021) emphasized a lack of menstrual awareness among women, resulting in poor hygiene practices. In contrast, Mason and Nyothach (2019) found that schoolgirls aged 14-16 received menstrual cups or pads and were trained on hygiene and product usage by nurses.

Menstrual product used in the past

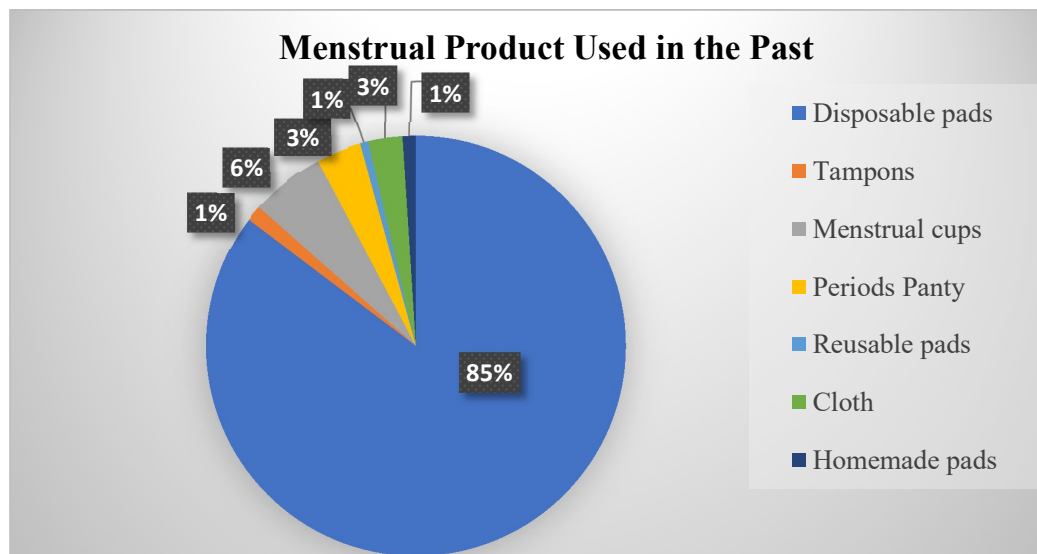


Figure no. 4.8 Distribution of respondents on the basis of menstrual product used in the past

- Disposable pads were found to be the most commonly used menstrual product among respondents, with 85.3% preferring them due to their wide accessibility, ease of use, and convenient disposal options. Menstrual cups were the second most popular choice, with 5.7% of respondents opting for this option.

Studies show a consistent preference for sanitary pads among menstruating individuals. Patavegar and Rigon (2012) found 82.8% of girls used pads, while Rajavelu (2017) and Sachdeva and Shruti (2017) reported 98% and 95.5% respectively. Despite this, Caitlin, Julie, and Douglass (2023) observed a growing interest in reusable menstrual products, with 37% using items like period knickers and menstrual cups. Mason and Nyothach (2019) found cup usage increased from 39% to 80% over 12 months. Although pads remain dominant, there is a shift toward sustainable menstrual products.

Sources of information about various brands of sanitary napkins

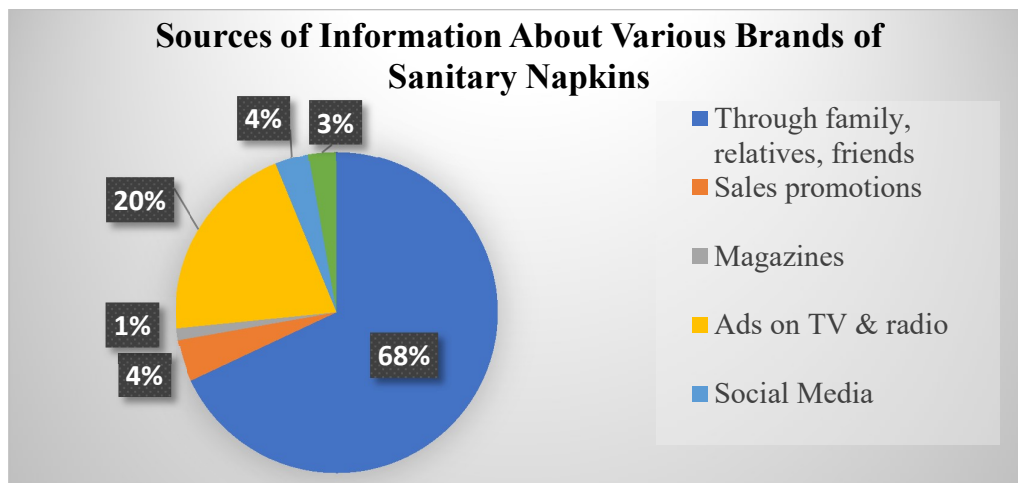


Figure. 4.9 Distribution of respondents on the basis of sources of information about various brands of sanitary napkins.

- The data revealed that the majority of respondents, comprising 68%, learned about sanitary napkin brands from family, relatives, and friends.

Bakshi (2020) discovered that 51.1% of participants identified their mothers as their main source of information, while Sachdeva and Shruti (2017) found that 56.9% of respondents considered their mothers to be their primary source of information, followed by 21.6% who cited friends

Purchasing Behavior of Sanitary Napkins

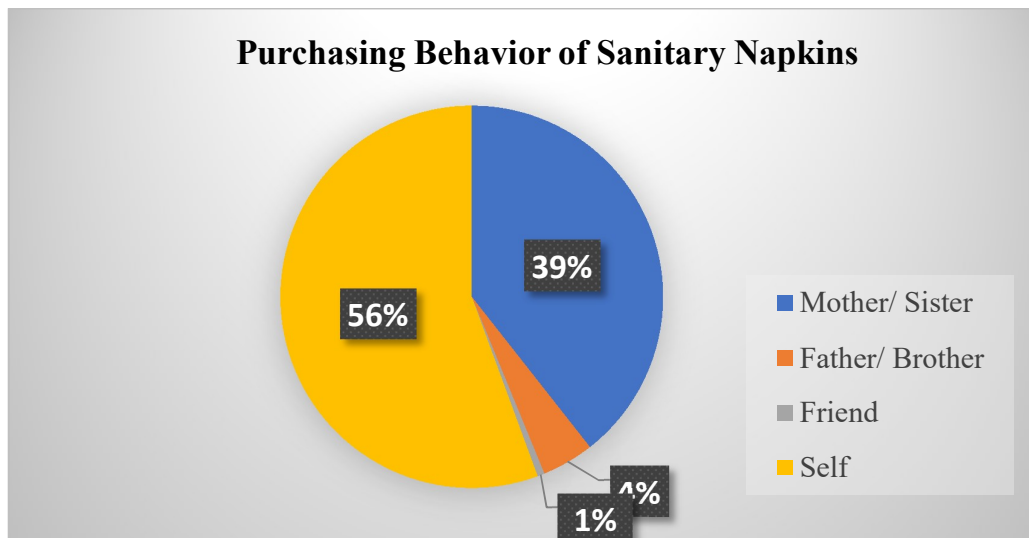


Figure. 4.10 Distribution of respondents on the basis of purchasing behaviour of sanitary napkins

- The data presented indicate that a significant portion of respondents, comprising 54.4%, take on the responsibility of purchasing sanitary napkins themselves. Additionally, 40.5% of respondents mentioned that their mothers and sisters are responsible for purchasing sanitary napkins.

Purchasing channels for sanitary napkins

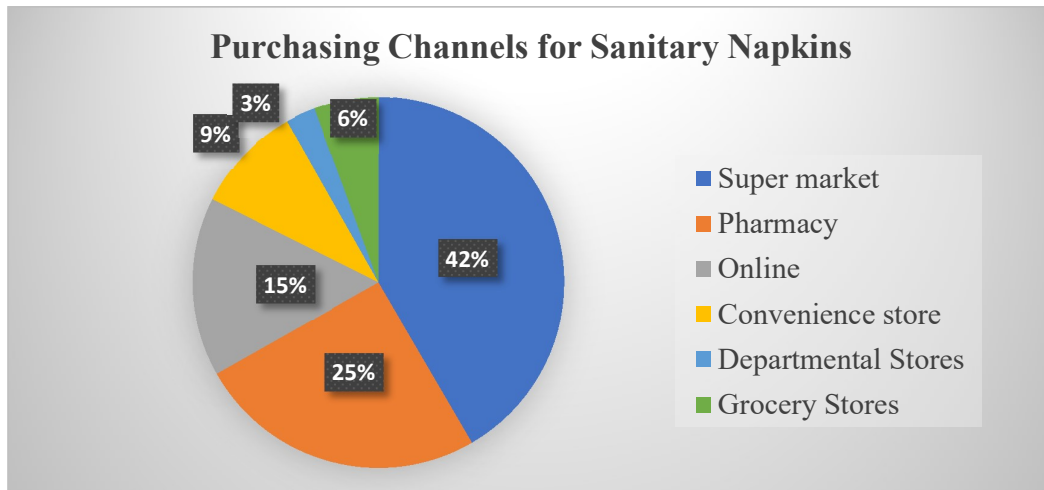


Figure no. 4.11 Distribution of respondents on the basis of Purchasing channels for sanitary napkins

- Most of the respondents, 42.9%, purchase sanitary napkins from supermarkets, while 26% obtain them from pharmacies.

Brand Preferences for Sanitary Napkins During Menstruation

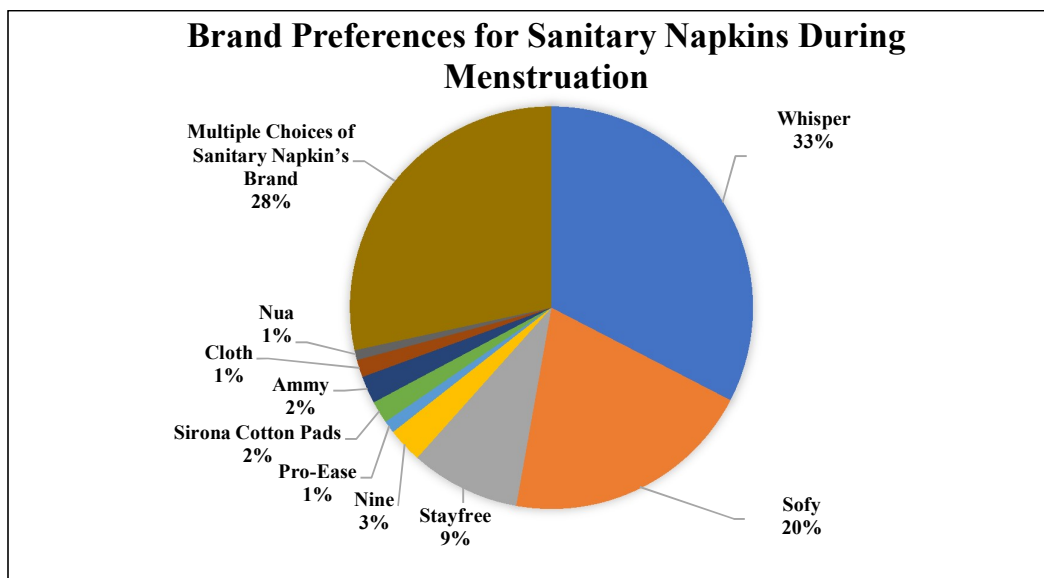


Figure no. 4.12 Distribution of respondents on the basis of Brand Preferences for Sanitary Napkins During Menstruation

- The majority of the respondents, accounting for 32.6%, preferred the Whisper brand of sanitary napkins, followed by 20.2% who choose Sofy. Additionally, 28.4% of respondents use a variety of sanitary napkin brands during their menstrual cycle.

Bakshi (2020) reported that excessive menstrual flow was experienced by 15.3% of the girls. Similarly, Tarannum (2020) found that 25.6% of girls reported heavy bleeding, while 18.7% experienced scanty bleeding.

Consistency in Sanitary Napkin Brand Purchases

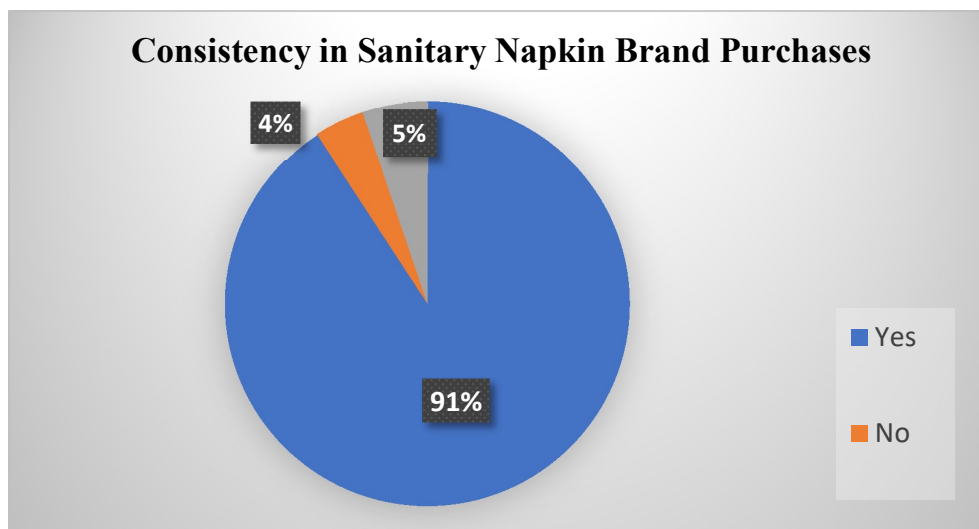


Figure no. 4.13 Distribution of respondents on the basis of Consistency in Sanitary Napkin Brand Purchases

- Majority of the respondents, 91%, have consistently used the same brand of sanitary napkins since they first got their period. However, several factors have prompted others

to switch brands, including low absorbency, rashes and itching from synthetic materials, thickness affecting comfort, unpleasant odors, and cost considerations.

Number of Sanitary Pads Used Per Menstrual Cycle

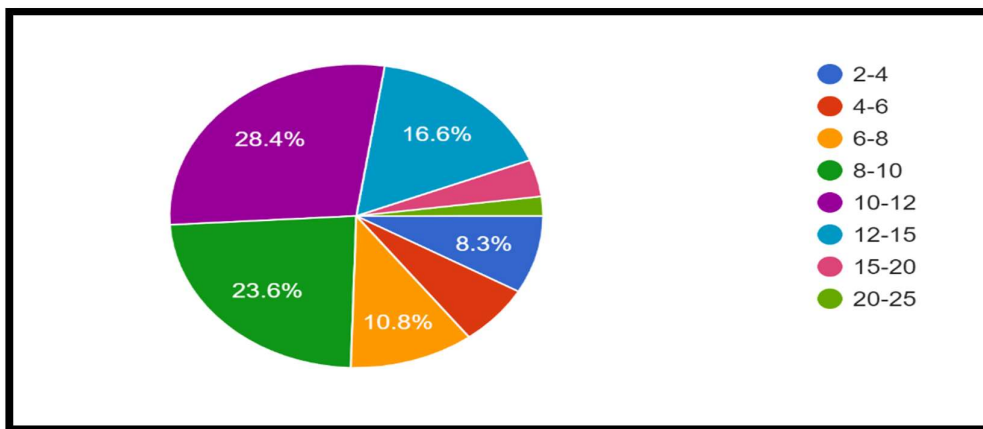


Figure no. 4.14 Distribution of respondents on the basis of number of sanitary pads used per menstrual cycle

- The majority (28.4%) of respondents use 10–12 sanitary pads for their entire menstrual cycle, followed by (23.6%)those who use 8–10 pads.

Average Daily Consumption of Sanitary Pads

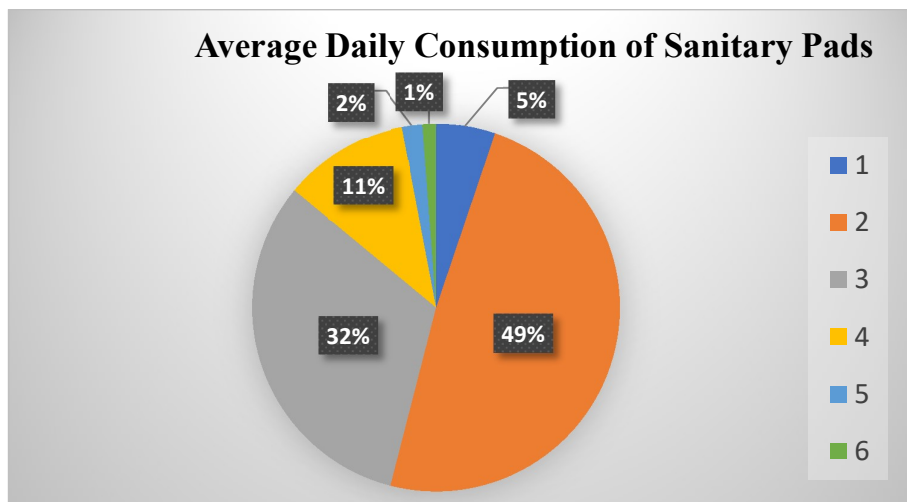


Figure no. 4.15 Distribution of respondents on the basis of average daily consumption of sanitary pads

- The majority of respondents, comprising 49%, use two sanitary pads during the daytime while menstruating, followed by 32% who use three pads. Additionally, 11% of the respondents used four pads daily.

Number of Sanitary Pads Used overnight

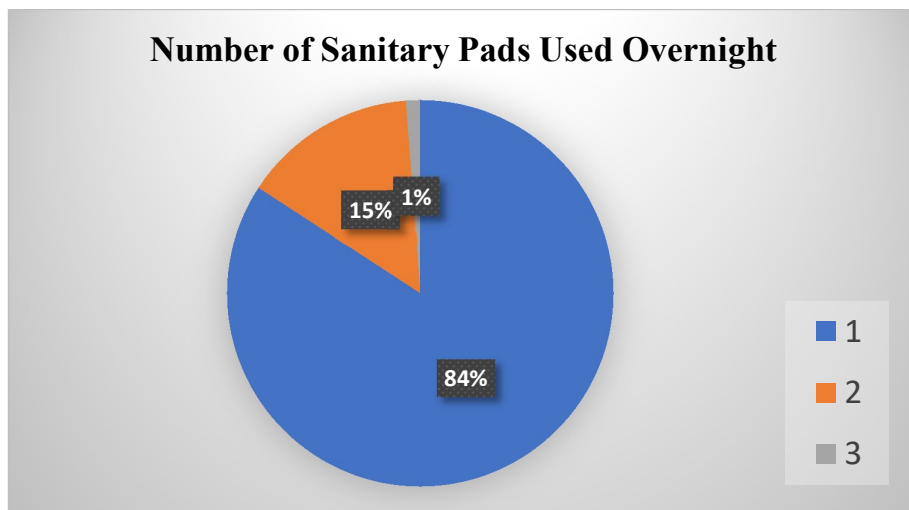


Figure no. 4.16 Distribution of respondents on the basis of the number of sanitary pads used overnight.

- The majority of respondents, comprising 84%, use one sanitary pad during the night while menstruating, while 15% of girls use two pads during that time.

Frequency of changing Sanitary Napkins

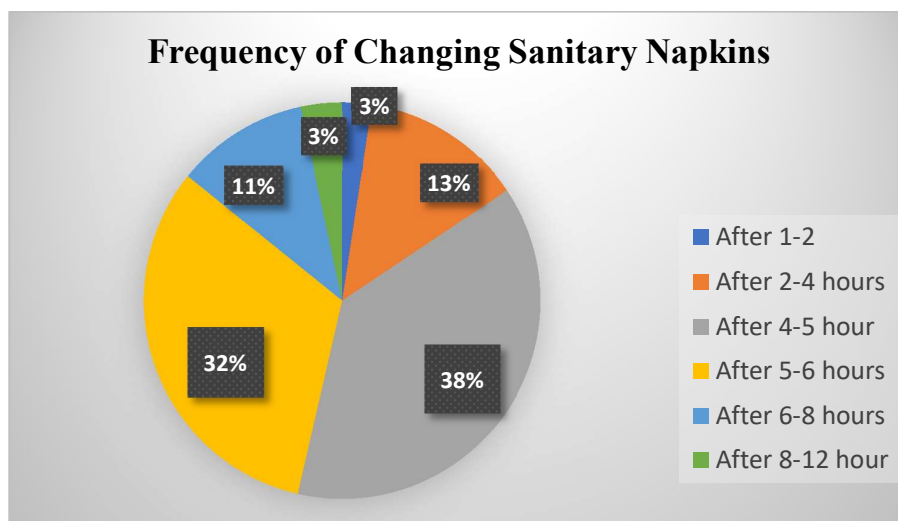


Figure no. 4.17 Distribution of respondents on the basis of frequency of changing sanitary napkins

- The majority of respondents, comprising 38%, replied that they change their sanitary pads, on an average, every 4-5 hours, followed by 32% who change them every 5-6 hours.

Ranjithkumar (2021) also discovered that 14% of the respondents did not change their sanitary napkins every 6 hours

Awareness of Harmful Effects of Plastic Sanitary Napkins

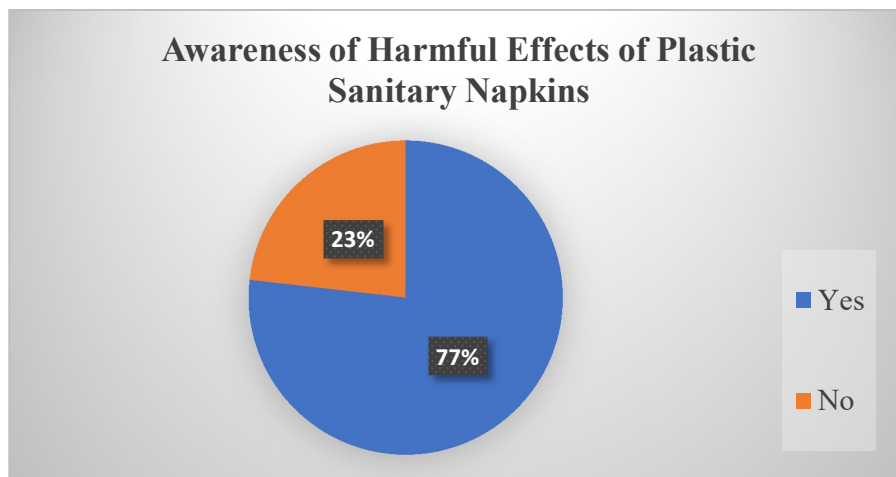


Figure no. 4.18 Distribution of respondents on the basis of awareness of harmful effects of plastic sanitary napkins

- A majority of the respondents, constituting 77%, were aware of the harm caused by sanitary pads made of synthetic fibers, while 23% were unaware of it.

Choudhary (2018) found that 61% of women are aware of the environmental impact of synthetic sanitary napkins, but only 32% know about organic options, and 28% find them easily accessible. Rai, Crimbly, and Aftab (2019) reported that many women are aware of the risks associated with menstrual pads and understand proper usage. These studies highlight varying levels of awareness regarding sanitary napkin alternatives and their environmental impact.

Access to Waste Disposal Facilities for Menstrual Hygiene Products

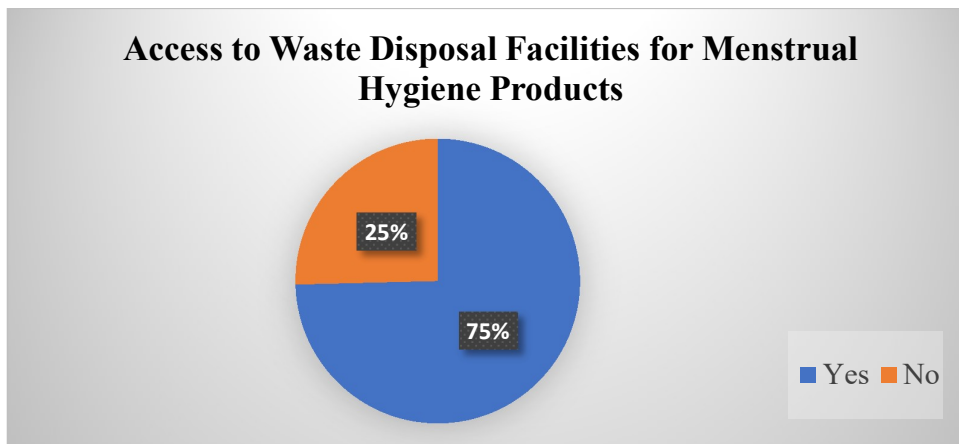


Figure no. 4.19 Distribution of respondents on the basis of access to waste disposal facilities for menstrual hygiene products

- It was found that proper waste disposal facilities are available in the area of 75% of the respondents, while 25% reported that proper waste disposal facilities are not available in their area.

Disposal Techniques for Used Menstrual Hygiene Products

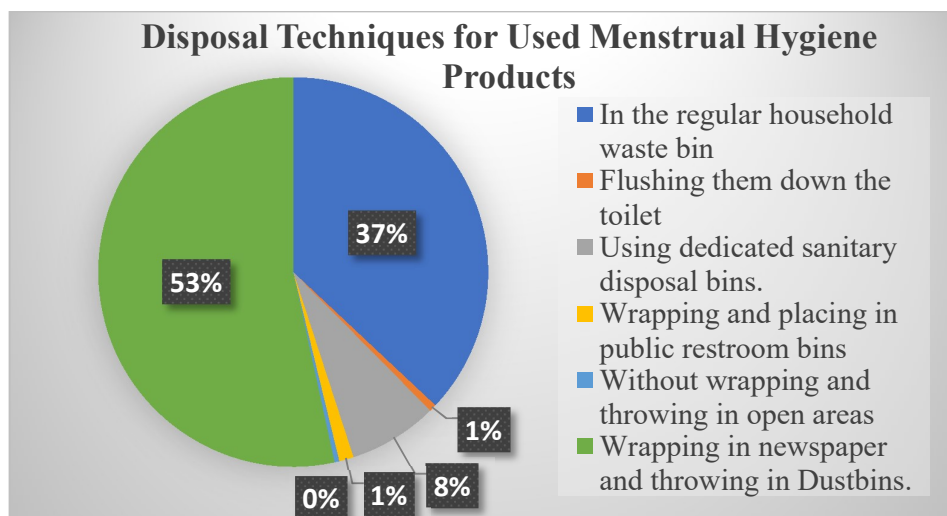


Figure no. 4.20 Distribution of respondents on the basis of disposal techniques used for menstrual hygiene products

- The majority of respondents, comprising 53%, dispose of sanitary napkins by wrapping them in newspapers and throwing them in dustbins. Conversely, 37% of respondents stated that they dispose of their sanitary napkins in regular household bins.

Tshomo, Gurung, and Shah (2021) also discovered that 24.1% of respondents described the absence of bins for disposal.

Preferences for Eco-Friendly, Skin-Friendly and Affordable Sanitary Napkins

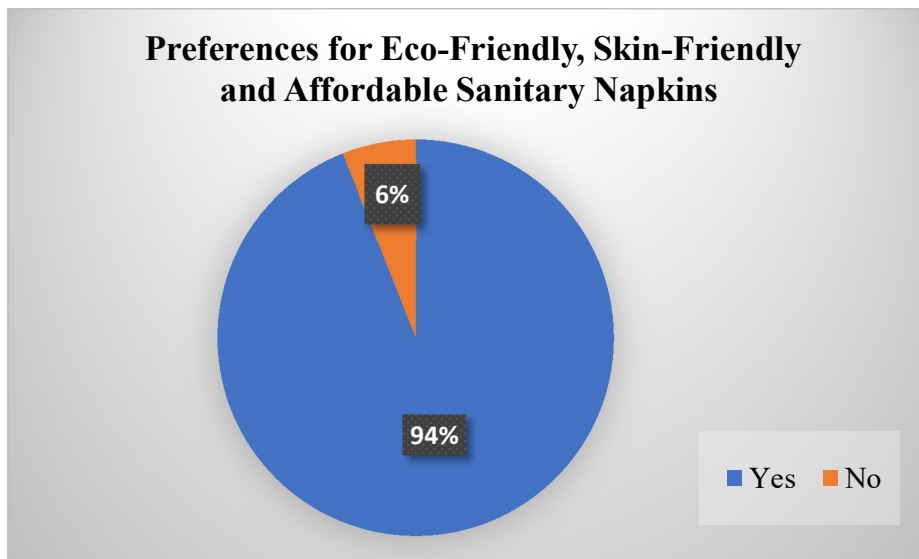


Figure no. 4.21 Distribution of Respondents' Preferences for Eco-Friendly, Skin-Friendly, and Affordable Sanitary Napkins

- It was found that only a small minority of respondents, comprising 6%, did not prioritize eco-friendly, skin-friendly, and affordable sanitary napkins. Conversely, the majority of respondents, accounting for 94%, still desired these qualities in their menstrual products.

Recent studies reveal that conventional plastic-based menstrual products are environmentally harmful. Research by Choudhary (2018) and Kumar & Parameshwar (2023) underscores this issue, while Agbaku (2020) suggests jute as a sustainable alternative. Findings by Junhua et al. (2020) show women’s willingness to switch to biodegradable options, and Petchimuthu & Durairaj (2019) have developed bio napkins using banana fiber and cotton, reflecting a growing shift towards eco-friendly menstrual products.

Awareness of Reusable Sanitary Napkins

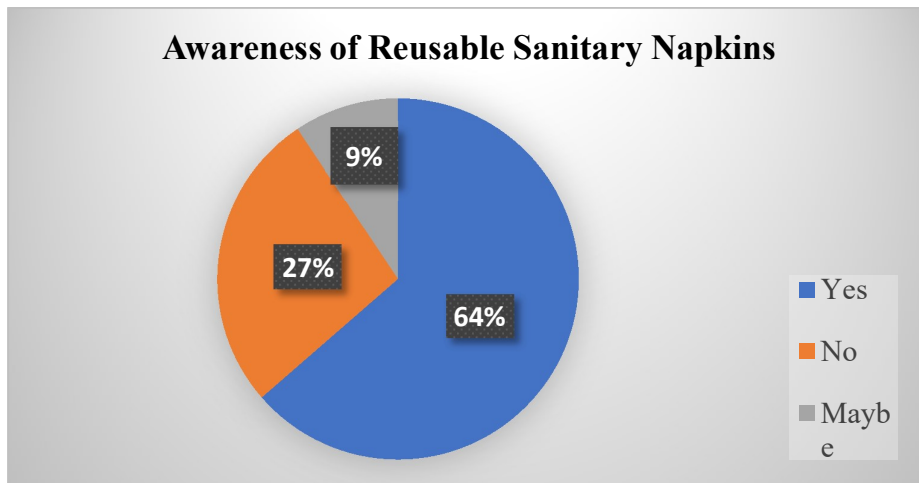


Figure no. 4.22 Distribution of respondents on the basis of Awareness of Reusable Sanitary Napkins

- It was found that 64% of respondents were aware of reusable sanitary napkins, while 27% were not familiar with this alternative option for menstrual hygiene products. Additionally, 9% of respondents were unsure about their awareness of reusable sanitary napkins.

Preferences for Reusable Sanitary Napkins

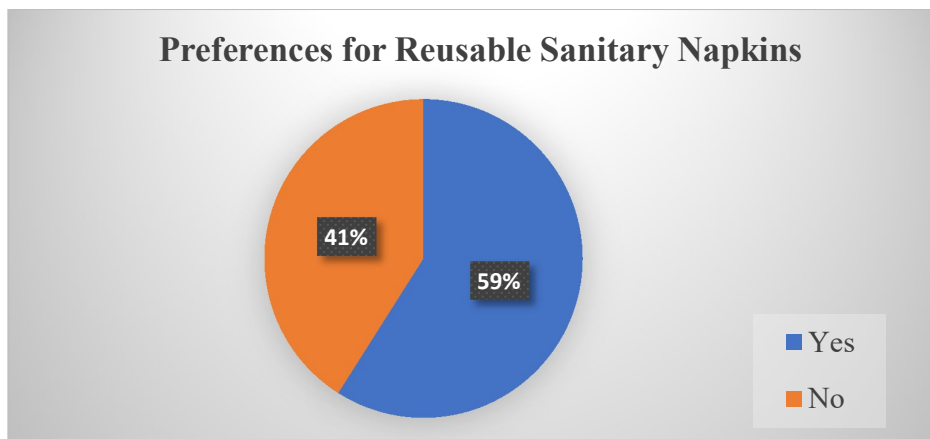


Figure no. 4.23 Distribution of respondents on the basis of Preferences for Reusable Sanitary Napkins

- The majority of the respondents, comprising 59%, expressed their preference for using reusable sanitary napkins. Conversely, 41% of the respondents stated that they were not interested in using this type of menstrual product.

Caitlin, Julie, and Douglass (2023) identified that better information, upfront costs, product availability, and challenges like washing are key factors influencing the use of reusable sanitary napkins, with environmental concerns being a major motivator. Anaba (2022) found that older women and those in lower wealth quintiles are more likely to use reusable materials. Julie, Catherine, and Scott (2016) reported that Ugandan schoolgirls preferred reusable pads over improvised methods. Overall, these studies underscore the importance of addressing barriers and promoting awareness to enhance the adoption of reusable menstrual products.

Experience with Reusable Menstrual Hygiene Products

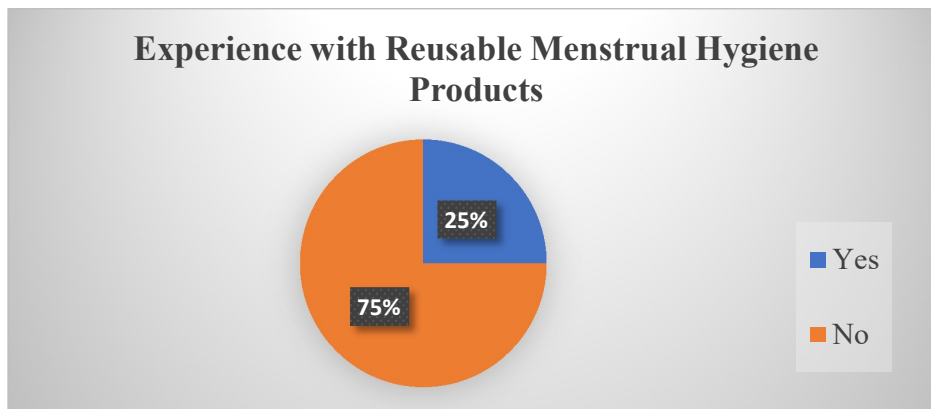


Figure no. 4.24 Distribution of respondents on the basis of Experience with Reusable Menstrual Hygiene Products

- The majority of respondents, accounting for 75% of the total, reported that they do not use reusable sanitary napkins. Conversely, 25% of respondents indicated that they have used reusable sanitary napkins.

Motivations for Experimenting with Reusable Sanitary Pads

- It was also observed that the responses highlighted a growing preference for reusable menstrual hygiene products among girls, driven by factors like comfort, affordability, and environmental sustainability.

Satisfaction with Reusable Sanitary Napkins

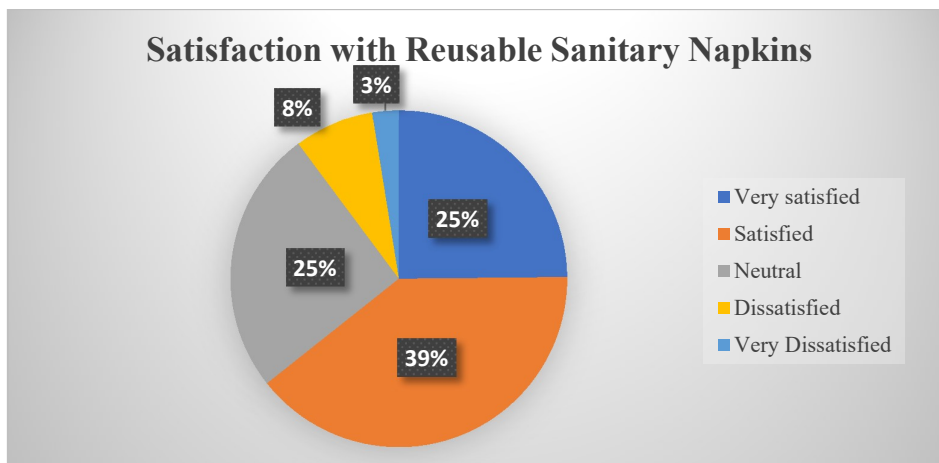


Figure no. 4.25 Distribution of respondents on the basis of the satisfaction with reusable sanitary napkins

- It was found that 39% of respondents stated they were satisfied with reusable sanitary napkins, while 25% reported being very satisfied with their current choice of reusable sanitary napkins. On the other hand, 8% of respondents were dissatisfied. This data is based on a sample size of 125 respondents.
- It was found that the respondents shed light on the diverse concerns and reservations that girls have regarding the adoption of reusable menstrual hygiene products. They

emphasize the necessity of addressing these concerns through education, awareness, and appropriate guidance to encourage the effective and comfortable use of such products.

Insights on the Safety, Economy, and Comfort of Usage

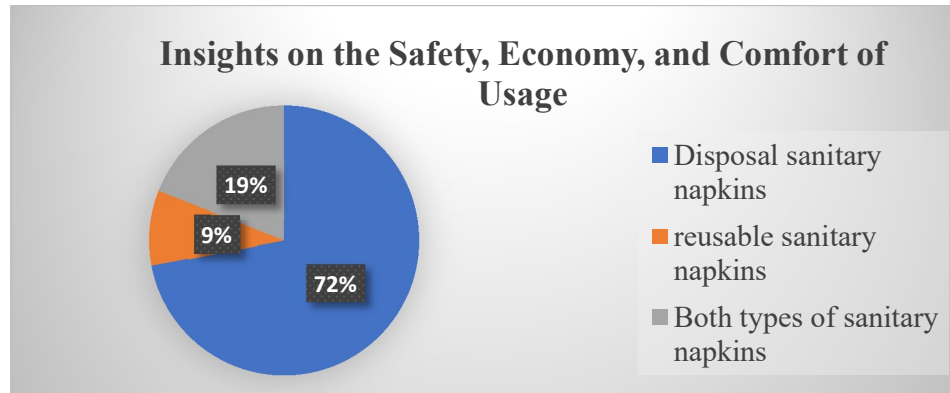


Figure no. 4.26 Distribution of respondents on the basis of information related to the safety, economical and comfortable in uses.

- Most of the respondents, comprising 75%, reported that they were using disposable sanitary napkins. Additionally, 17% stated that they used both disposable and reusable sanitary napkins, while only 8% reported using reusable sanitary napkins exclusively.

Perucha (2022) revealed that participants used a variety of products, with non-reusable options being the most prevalent, although over half utilized reusable products. Reusable products were perceived as more acceptable compared to non-reusable alternatives.

Expected improvements in menstrual hygiene facilities and education in the community

- It was found that improving menstrual hygiene facilities and education in the community is essential. This involves increasing access to affordable and high-quality menstrual hygiene products and implementing educational initiatives to raise awareness about menstrual health and hygiene practices among both girls and boys from a young age.

Mohammed (2020) identified obstacles faced by adolescent girls in accessing education due to inadequate menstrual hygiene management. The study proposed interventions to improve access to menstrual products, sanitation facilities, and address societal taboos. These measures aim to empower girls to manage menstruation effectively, ensuring regular school attendance and full engagement in education.

Status of discussion on menstrual health and hygiene in the community

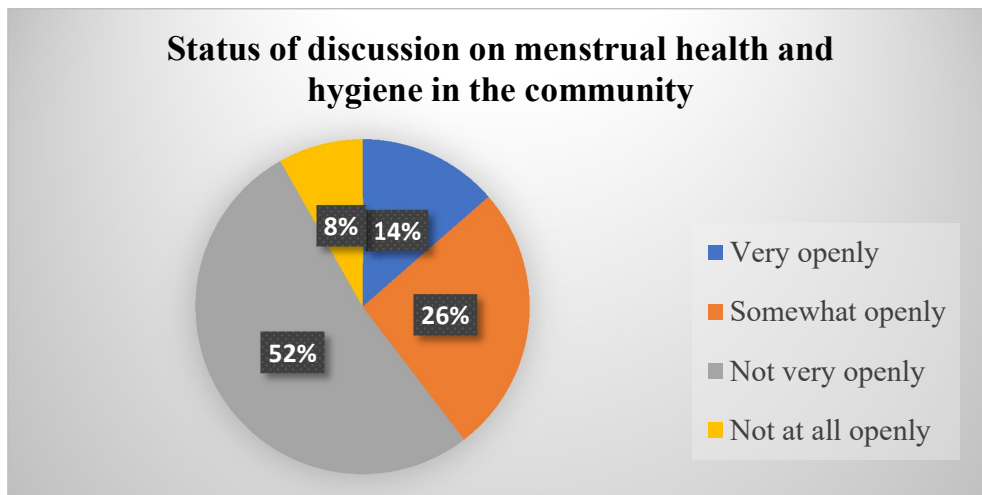


Figure no. 4.28 Distribution of respondents on the basis of Status of discussion on menstrual health and hygiene in the community

- The majority of the respondents, 52%, reported that the topic of menstrual health and hygiene is not very openly discussed in their community. Additionally, 26% said it is discussed somewhat openly, 14% admitted it is openly discussed, and 8% reported that conversations regarding menstruation are kept secret.

Social taboos or stigmas associated with menstruation

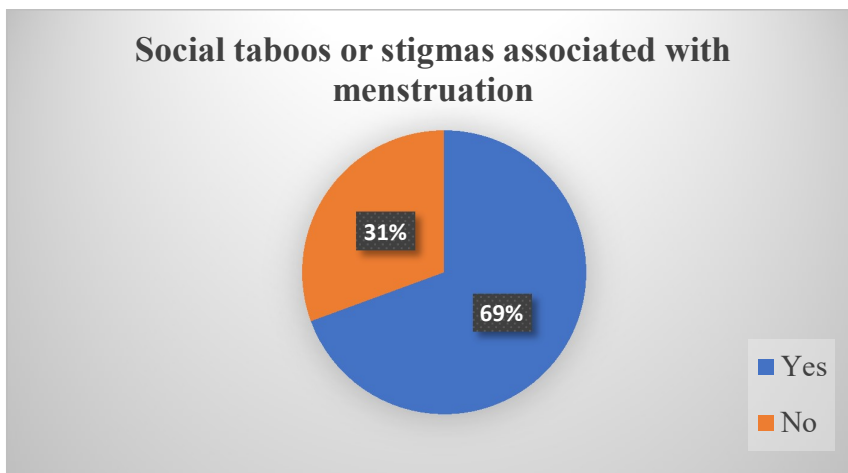


Figure no. 4.29 Distribution of respondents on the basis of social taboos or stigmas associated with menstruation.

- The majority of the respondents, 69%, reported that they were facing social taboos or stigmas associated with menstruation, while 31% stated that they have not faced any such taboos or stigmas.

Larkins and Rembeck (2022) highlighted the challenges faced by women and girls in managing menstrual health due to societal taboos and shame around menstruation. They emphasized the need to destigmatize menstruation and promote open dialogue to ensure that individuals can manage their menstrual health with dignity.

People's reactions while Buying Sanitary Napkins

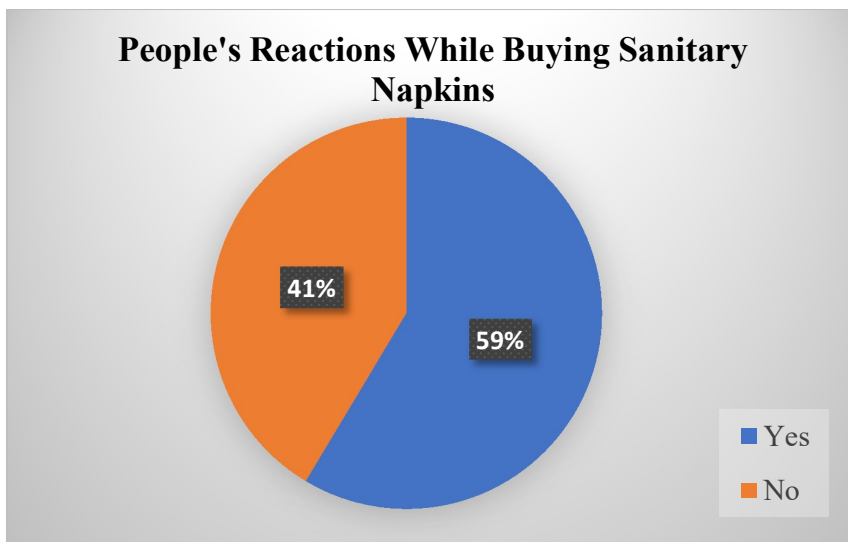


Figure no. 4.30 Distribution of respondents on the basis of people's reaction while buying sanitary napkins

- It was found that the majority of the respondents (59%) reported facing negative reactions from people around them while buying sanitary napkins. However, 41% of the respondents stated that they have not faced any such reactions while purchasing sanitary napkins.

Social Comfort and Discourse on Sanitary Napkin Usage

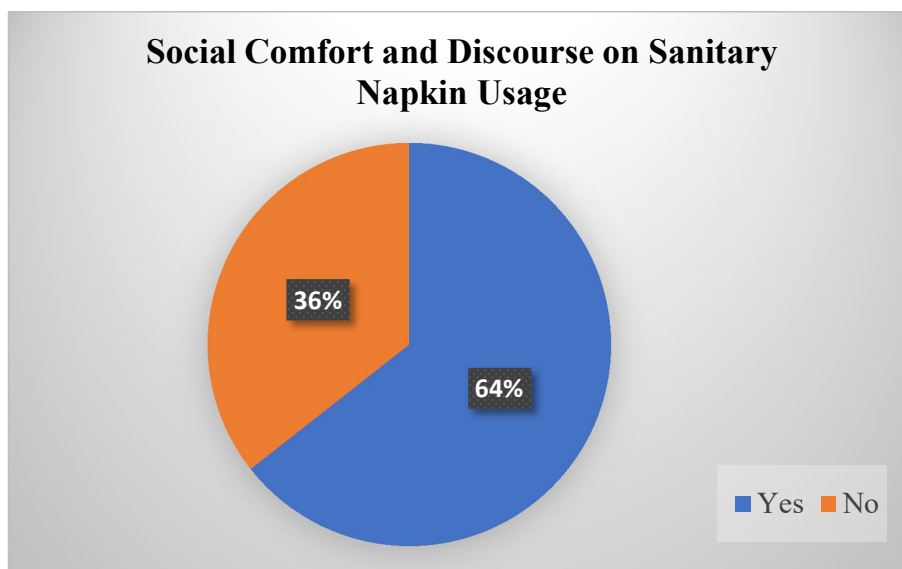


Figure no. 4.31 Distribution of respondents on the basis of social comfort and discourse on sanitary napkin usage

- It was found that the majority of respondents (64%) were comfortable discussing the use of sanitary napkins with others. However, 36% of respondents felt uncomfortable discussing their use with others.

Cultural practices or rituals regarding to menstruation

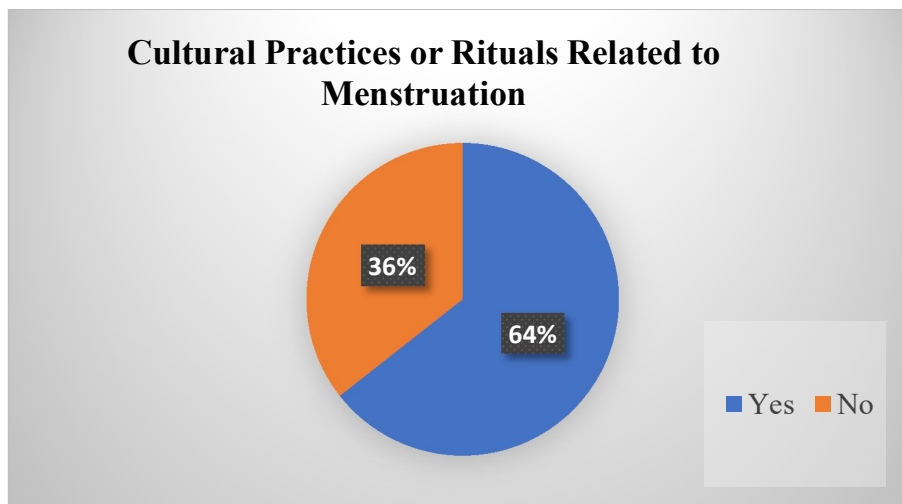


Figure no. 4.32 Distribution of respondents on the basis of cultural practices or rituals related to menstruation

- It was found that 64% of respondents acknowledged the presence of cultural practices or rituals related to menstruation in their community, while 36% did not report such practices.

Impact of Social Taboos on Menstrual Hygiene practices

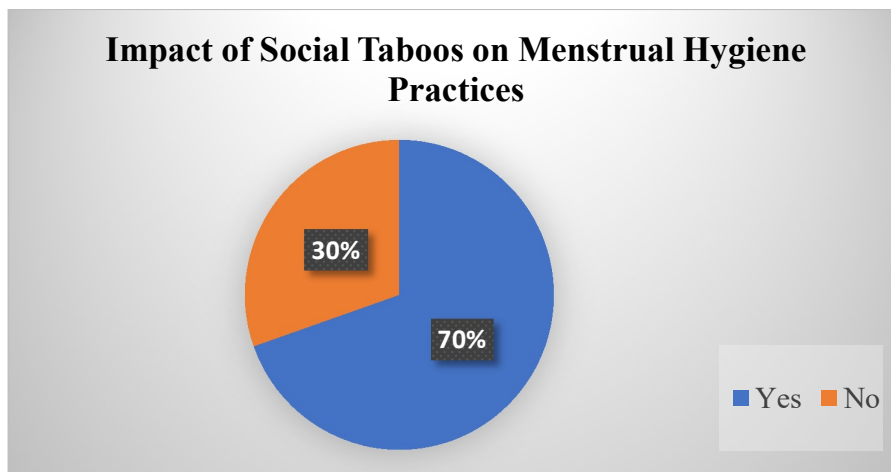


Figure no. 4.33 Distribution of respondents on the basis of impact of social taboos on menstrual hygiene practices

- The findings indicate that 70% of the respondents have personally felt the impact of social taboos on menstrual hygiene practices. Conversely, 30% of the respondents reported that they have not experienced any impact of social taboos on their menstrual hygiene practices.

Restrictions on Entering Temples During Menstruation by the community

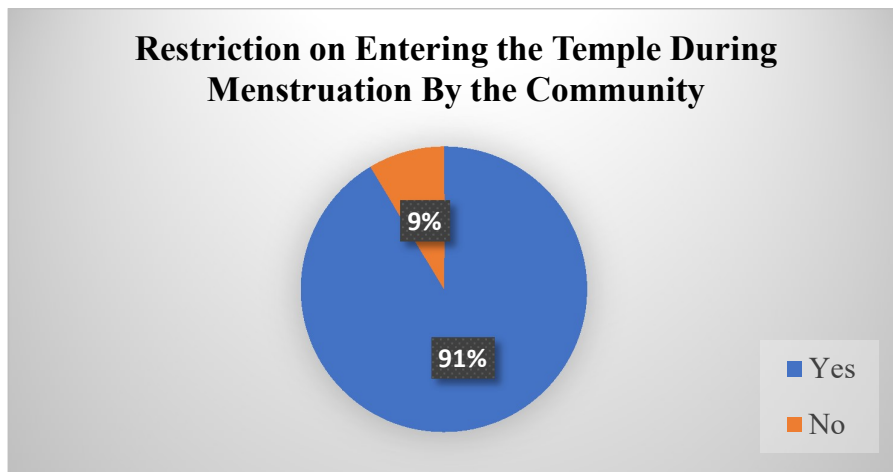


Figure no. 4.34 Distribution of respondents on the basis of restriction on entering the temple during menstruation by the community

- The findings indicated that the majority, i.e., 91% of the respondents, have personally faced restrictions when trying to enter a temple during menstruation. Conversely, only 9% of the respondents have not faced any restrictions when attempting to enter a temple during menstruation.

Tshomo, Gurung, and Shah (2021) also found that 35.1% of respondents agreed that women should not enter a shrine during menstruation. Similarly, Sachdeva and Shruti (2017) discovered that 47.7% of girls refrained from visiting holy places during their periods. These findings highlight the prevalent cultural restrictions and social taboos surrounding menstruation and temple entry

The Concept of Impurity: Menstruation in Cultural and Religious Contexts

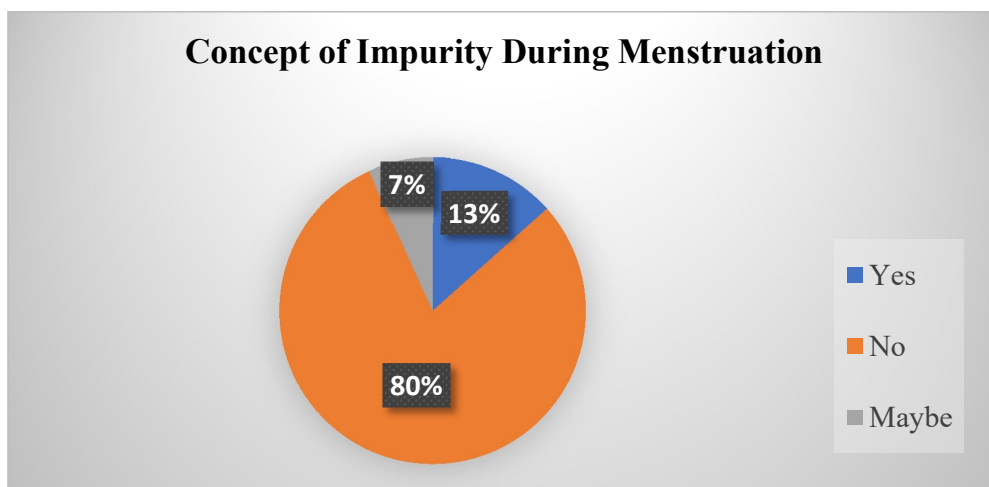


Figure no. 4.36 Distribution of respondents on the basis of concept of impurity during menstruation

- The majority of respondents (80%) believe that women do not become impure during menstruation. In contrast, 13% believe that women do become impure during this time, while 7% were unsure.

Menstruation and Kitchen Taboos: Examining Cultural Beliefs

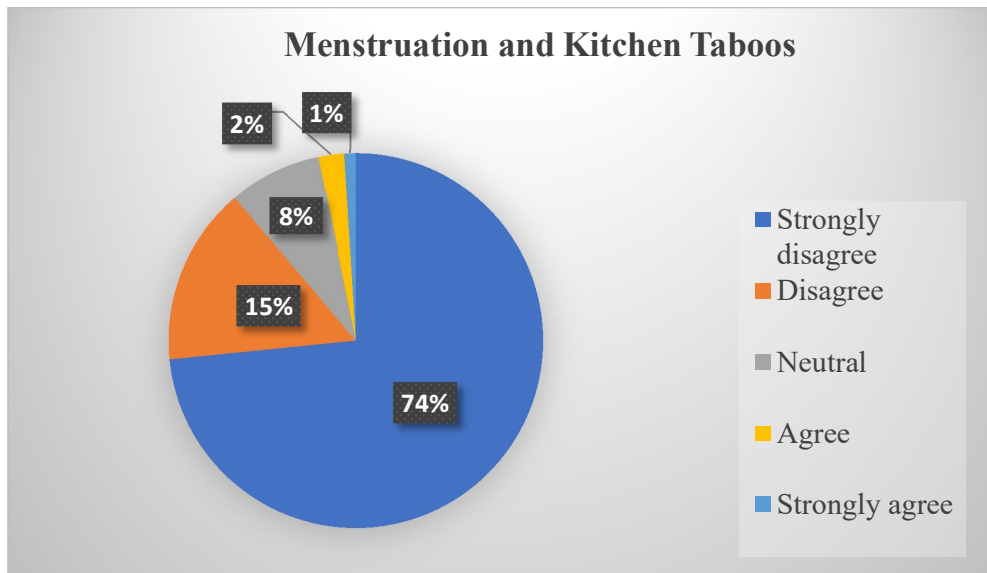


Figure no. 4.37 Distribution of respondents on the basis of Menstruation and Kitchen Taboos

- The survey results revealed a significant change from traditional beliefs about women's activities during menstruation. Specifically, 74% of respondents strongly disagree with the notion that women should refrain from kitchen duties during this time.

Cultural Perceptions: Understanding Menstrual Untouchability

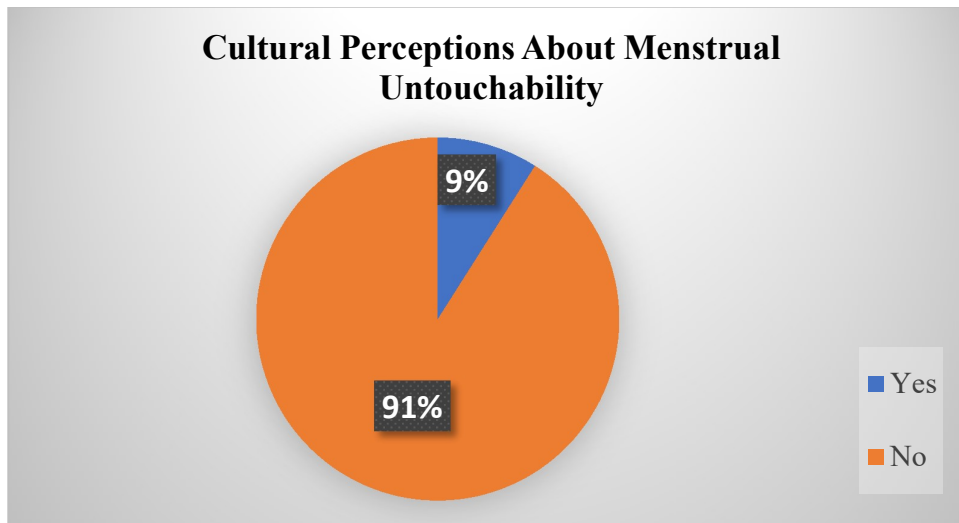


Figure no. 4.38 Distribution of respondents on the basis of Cultural Perceptions about Menstrual Untouchability

- The majority of respondents (91%) rejected the notion that women become untouchable during menstruation. Conversely, 9% of respondents believe that women are untouchable during this time.

Conclusion

The study on menstrual hygiene practices and awareness of reusable sanitary napkins among college-going girls in Chandigarh revealed critical insights into menstrual health management. It underscores the importance of proper hygiene practices to prevent health issues and highlights the benefits of reusable napkins, such as environmental sustainability and cost-effectiveness. Despite these benefits, cultural taboos and lack of awareness pose significant barriers to their adoption. Addressing these challenges through education and open discussions can empower young women, promote sustainable practices, and enhance their overall well-being and academic participation. The findings call for targeted interventions to increase awareness and acceptance of reusable menstrual products.

Bibliography

- Agbaku, C. A. et al. 2020 —Jute Plant- A bio-degradable material in making sanitary pad for sustainable development, International journal of scientific research and management. 8(6), pp: 162-170.
https://www.nugschina.org/portal/member_academics/academics_uploads/5b344db_a90dd1089cb5322ac6f861963.pdf
- Anaba, E. A., Udofia, E. A., Manu, A., Daniels, A. A., & Aryeetey, R. (2022). Use of reusable menstrual management materials and associated factors among women of reproductive age in Ghana: analysis of the 2017/18 Multiple Indicator Cluster Survey. *BMC Women's Health*, 22(1), 92.
- Bakshi, R., 2015. —Indicators of Maternal 'near Miss' Morbidity at Different Levels of Health Care in North India: A Pilot Study. Bangladesh Journal of Medical Science, Indicators of maternal 'near miss' morbidity at different levels of health care in North India: A pilot study | RAVLEEN BAKSHI - Academia.edu
- Bharadwaj, S., and Patkar, A., 2004. Menstrual hygiene and management in developing countries: Taking stock. *Junction Social*, 3(6), 1-20.
https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=%E2%80%A209Bharadwaj%2C+S.%2C+%26+Patkar%2C+A.%282004%29.+Menstrual+hygiene+and+management+in+developing+countries%3A+Taking+stock.+Junction+Social%2C+3%286%29%2C+1-20.&btnG=
- Chaudhary, J. and Bhattacharji, M. 2018. —A study on consumption pattern of sanitary napkin and environment degradation International Journal of Creative Research Thoughts. 6(2), pp: 580-587.<https://ijcrt.org/papers/IJCRT1892770.pdf>
- Deshpande, T. N., et al. 2018. "Menstrual hygiene among adolescent girls—A study from urban slum area." *Journal of family medicine and primary care*, 7(6), pp: 1439.
https://journals.lww.com/jfmpc/fulltext/2018/07060/Menstrual_hygiene_among_adolescent_girls_A_study.52.aspx

- Dharampal, G. Dambhare, D. G. et. Al. 2012. —Department of Community Medicine, Mahatma Gandhi Institute of Medical Sciences Wardha, Maharashtra, India Age at Menarche and Menstrual Cycle Pattern among School Adolescent Girls in Central India. *Global Journal of Health Science*, 4(1); pp: 105-111 (2) Age at Menarche and Menstrual Cycle Pattern among School Adolescent Girls in Central India | Dharampal Dambhare - Academia.edu
- Hennegan, J., Dolan, C., Wu, M., Scott, L., & Montgomery, P. (2016). Schoolgirls' experience and appraisal of menstrual absorbents in rural Uganda: a cross-sectional evaluation of reusable sanitary pads. *Reproductive Health*, 13, 1-12.
- Kaur, R. et. al. 2022. —Menstrual taboos and social restrictions affecting good menstrual hygiene management among reproductive age group female students| *International Journal of Community medicine and Public Health*, 9(2) <https://www.ijcmph.com/index.php/ijcmph/article/view/9227>
- Kumar, C. K. A. et. al. 2023. —A Comprehensive Review on Biodegradable Sanitary Napkins for Sustainable Menstrual Health and Environmental Hygiene| *Advance Pharmaceutical Journal* 8(5):119-127. https://www.researchgate.net/publication/377434968_A_Comprehensive_Review_of_Biodegradable_Sanitary_Napkins_for_Sustainable_Menstrual_Health_and_Environmental_Hygiene
- Kumari, R. 2012. —Age at menarche and menstrual problems among school-going adolescent girls of a North Indian district. *Journal of Basic and Clinical Reproductive Sciences*. (2) Age at menarche and menstrual problems among school-going adolescent girls of a North Indian district | Reema Kumari - Academia.edu
- Mason, L., Nyothach, E., Alexander, K., Odhiambo, F., Eleveld, A., Vulule, J., Rheingans, R., and Phillips-Howard, P. A. 2013. 'We keep it secret so no one should know'—A qualitative study to explore young schoolgirls attitudes and experiences with menstruation in rural western Kenya. *PLOS ONE*, 8(11), e79132. <https://doi.org/10.1371/journal.pone.0079132>
- Maulingin-Gumbaketi, E., Larkins, S., Whittaker, M., Rembeck, G., Gunnarsson, R., & Redman-MacLaren, M. (2022). Socio-cultural implications for women's menstrual health in the Pacific Island Countries and Territories (PICTs): a scoping review. *Reproductive health*, 19(1), 128.
- Medina-Perucha, L., López-Jiménez, T., Holst, A. S., Jacques-Aviñó, C., Munrós-Feliu, J., Martínez-Bueno, C., ... & Berenguera, A. (2022). Use and perceptions on reusable and non-reusable menstrual products in Spain: a mixed-methods study. *Plos one*, 17(3), e0265646.
- Mohammed, S., & Larsen-Reindorf, R. E. (2020). Menstrual knowledge, sociocultural restrictions, and barriers to menstrual hygiene management in Ghana: Evidence from a multi-method survey among adolescent schoolgirls and schoolboys. *Plos one*, 15(10), e0241106.

- Petchimuthu, P., Petchimuthu, R., Basha, S., Murugan, R., Ganapathy, H., & Durairaj, U. (2019). Production of cost effective, biodegradable, disposable feminine sanitary napkins using banana fibres. *Int. J. Eng. Adv. Technol*, 9, 789-791.
- Rai, N., Crimbly, F., Aftab, S., Baig, A., Fernandes, N., & Mahmood, S. U. (2019). An assessment of knowledge and practices relating to the usage of sanitary pads. *International Journal of Community Medicine and Public Health*, 6(4), 1411-1415.
- Rajavelu, S. 2017. —A Study on Menstrual Health in School Going Adolescent Girls from South India. *Journal of Evidence Based Medicine and Healthcare*. 4 (77), pp: 2349-2356, A Study on Menstrual Health in School Going Adolescent Girls from South India | Sripreethika Rajavelu - Academia.edu
- Ramsay, C., Hennegan, J., Douglass, C. H., Eddy, S., Head, A., & Lim, M. S. (2023). Reusable period products: use and perceptions among young people in Victoria, Australia. *BMC Women's Health*, 23(1), 102.
- Ranjithkumar, A., et al. 2021. —Menstrual Problems among Adolescent Girls and Female Youth in Tamil Nadu. *Women's Health Science Journal*, 5(1): 000153. (2) Menstrual Problems among Adolescent Girls and Female Youth in Tamil Nadu | RANJITHKUMAR A - Academia.edu
- Reddy, R. G. and Amogh, D. 2019. —Comparative study on existing knowledge on menstruation among adolescent girls in rural and urban community. *The Pharma Innovation Journal*. 8(5), pp: 344-346. (2) Comparative study on existing knowledge on menstruation among adolescent girls in rural and urban community | geetha reddy - Academia.edu
- Rigon, F. et al. 2012. —Menstrual Pattern and Menstrual Disorders among Adolescents: an Update of the Italian Data. *Italian Journal of Pediatrics* 38(1), pp: 38. (2) 131 MENSTRUAL PATTERN AND MENSTRUAL DISORDERS AMONG SCHOOL GOING ADOLESCENT GIRLS IN DELHI | bilkish patavegar - Academia.edu
- Sachdeva, S. and Sharma, S. 2017. —Knowledge about menstrual problems and menstrual hygiene practices among college going unmarried girls in Chandigarh, India. *Journal of Evidence-Based Medicine and Healthcare*, 4(67), pp:4019-4025 https://www.researchgate.net/publication/319866263_KNOWLEDGE_ABOUT_MENSTRUAL_PROBLEMS_AND_MENSTRUAL_HYGIENE_PRACTICES_AMONG_COLLEGE_GOING_UNMARRIED_GIRLS_IN_CHANDIGARH_INDIA
- Singh, M., Rajoura, O.P., Honnakamble, R.A. 2019. —Patterns and problems of menstruation among the adolescent school girls of Delhi: a cross-sectional study. *International Journal of Community Medicine and Public Health*; 6(6), pp:2595-9. (2) Patterns and problems of menstruation among the adolescent school girls of Delhi: a cross-sectional study | Raghavendra Honnakamble - Academia.edu
- Tarannum, F. 2020. —A Cross-Sectional Study on Menstrual Pattern Among Adolescent Girls in Aligarh. *National Journal of Community Medicine*. 11(5), pp:22-226. A

Cross-Sectional Study on Menstrual Pattern Among Adolescent Girls in Aligarh |
Farha Tarannum - Academia.edu

Tshomo, T., Gurung, M. S., Shah, S., Gil-Cuesta, J., Maes, P., Wangdi, R., & Tobden, J. (2021). Menstrual hygiene management—knowledge, attitudes, and practices among female college students in Bhutan. *Frontiers in Reproductive Health*, 3, 703978.