

**Menstrual Hygiene Practices in Nepal's
Raji Community: A Social Work
Assessment**

**Radhika Paneru¹, Khagendra Prasad Adhikari²
& Tara Adhikari³**

¹Ph.D Scholar, Department of Social Work, Tribhuvan University, Kirtipur
(Nepal) E-mail:<radhika.paneru@mu.edu.np>
ORCID ID: <https://orcid.org/0009-0009-8654-3113>.

²Assistant Professor, Graduate School of Humanities and Social Sciences,
Mid-West University, Surkhet (Nepal) E-mail:<khagendra.adhikari@
mu.edu.np> ORCID ID: <https://orcid.org/0009-0003-4473-2262>

³Master in Adult Health Nursing, Institute of Medicine, Tribhuvan University,
Kathmandu (Nepal) E-mail:<staradh12@gmail.com>

Abstract

Menstrual hygiene practices remain a neglected and stigmatized issue, particularly among endangered, marginalized and indigenous communities in Nepal, such as the Raji, who face systemic challenges including poverty, marginalization, and limited access to health and sanitation services. This paper explores the use of menstrual materials, the availability of hygiene facilities and disposal practices and its impact on environment. The study also assesses the role of socio-cultural beliefs in shaping menstrual hygiene practices. A cross-sectional descriptive study was conducted among 43 Raji households in Nepal using a census approach. Data were collected through structured interviews and direct observations to assess menstrual material use, hygiene facilities, disposal practices, and cultural taboos. Descriptive and bivariate analyses were performed using SPSS. Ethical protocols, including informed consent and confidentiality, were strictly followed. The study revealed a strong preference for disposable pads among Raji women and girls, with limited privacy and hygiene facilities, persistent cultural taboos, and most disposed of pads unsafely in rivers. Education level was significantly associated with disposable pad use, and older women reported greater privacy during menstrual changes; however, further research with larger samples is needed to confirm these findings. Raji women face challenges in menstrual hygiene due to poor facilities, cultural taboos, and unsafe disposal. Disposable pads are preferred, but education and infrastructure gaps remain. Social work should promote WASH improvements and education to empower women and girls and improve menstrual health.

Keywords

Menstrual hygiene, Raji, Vulnerable, Women.

Centre For Studies of National Development, Meerut

Editorial Office : D-59, Shastri Nagar, Meerut - 250 004 (INDIA)
Ph. : 0121-2763765, +91-9997771669, +91-9412200765

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1. Background of the Study

Menstruation is a natural biological process by approximately 1.8 billion people across the world who menstruates. However, many of them face significant challenges in managing their menstrual materials, menstrual hygiene safely and disposal practices. According to the World Bank (2021), at least 500 million women and girls globally lack access to adequate facilities for managing their menstrual health. According to the World Bank (2021), at least 500 million women and girls globally lack access to sufficient facilities for managing their menstruation management. Further, the use and choice of menstrual materials included sanitary pads, reusable cloths, tampons, or menstrual cups depend on affordability, availability, cultural beliefs, and access to menstrual health education. In many marginalized communities, women and girls use unhygienic alternatives such as rags, newspapers, or even leaves (Mantsebo, 2021) due to period poverty surrounding menstruation (Michel *et al.*, 2022). Use of unhygienic materials can increase the risk of reproductive tract infections and other health issues.

Menstrual hygiene facilities such as sufficient water, sanitation and hygiene materials are critical for menstrual hygiene practices. Therefore, to better understand service delivery challenges for vulnerable and marginalized groups emphasized the five normative dimensions of the human rights to water and sanitation: access, availability, quality, acceptability, and affordability to enhance menstruation-related challenges (Ezbakhe, Giné-Garriga, & Pérez-Foguet, 2019). Another often overlooked aspect is the disposal of used menstrual materials. Improper disposal methods such as flushing pads down toilets, open burning, throw in river/stream, throwing in open spaces are widespread and create significant health and environmental risk. A study by WaterAid (2018) discovered that more than 70% of women in some regions disposed of used products improperly according to lack of access to safe disposal methods like incinerators or sanitary bins.

Socio-cultural norms can limit girls' access to public spaces and reduce their confidence to seek essential information about menstrual hygiene. Therefore, menstrual education should be viewed not just as a concern for girls, but as a vital issue for the whole community (Kpodo *et al.*, 2022). Cultural taboos, lack of awareness, and inadequate government support continue to perpetuate poor menstrual hygiene practices (Wyckoff, 2024). Many women and girls are forced to manage their periods in silence (Rothchild & Piya, 2020), without adequate

menstrual knowledge, hygiene facilities and disposal practices. Therefore, yet it stigmatized subject among indigenous communities in Nepal. The Raji community classified as an endangered indigenous group by the government of Nepal faces unique challenges due to poverty, social exclusion, and limited access to services. Thus, this study seek to identify used the menstrual material, the availability of menstrual hygiene facilities and disposal practices and environmental impact. Further, to assess the cultural beliefs and taboos during menstruation and suggest social work intervention to improve menstruation hygiene practices of Raji's girls and women.

2. Review of Previous Studies

Menstrual material refers to disposable sanitary pads, reusable pads, tampons, and menstrual cups. These are the menstrual sanitation tools devices (Warashinta, Astari & Merdikawati, 2021). Similarly, Sommer *et al.* (2015) includes managing menstrual bleeding hygienically and comfortably such as reusable cloth pads, disposal sanitary pads, tampons, menstrual cups, period underwear and natural substances like leaves and ash locally absorbent materials in resource limited communities. Access of menstrual facilities, availabilities of materials, economic status, and cultural factors are influential factors to choice for menstruation management. Access to safe and sound and appropriate menstrual hygiene products include safe, private and clean changing space, soap and clean water to wash hands and materials, and proper disposal mechanisms for used material, are crucial for advancing menstrual health, preventing infections, and maintaining dignity across menstruation (UNICEF, 2019).

These materials are used to handle discharged blood and disposed of appropriately to maintain hygiene and reduce environmental impact. In a marginalized community, girls and women are facing more challenges of insufficient menstrual material, lack of hygiene facilities, and a proper disposal mechanism that brings environmental problems (Cohn & Blumberg, 2020). Kaur *et al.* (2018) reveal that to address the disposal issue, emphasis should be placed on using reusable sanitary or cloth pads. Girls and women should be informed of the repercussions of dumping menstrual products openly or flushing them in toilets. Menstrual waste disposal must be user-centered and integrated into WASH programs, not treated in isolation. Designs should reflect socio-cultural norms (e.g., taboos, product handling), product availability and quality, and existing sanitation infrastructure (Elledge *et al.*, 2018). Therefore, alongside access to menstrual materials and hygiene facilities, safe disposal options are a key aspect to comprehensive understanding menstrual hygiene management.

The study by Ibaishwa and Achakpa (2016), found that culture influence significantly to menstrual hygiene management among marginalized women and adolescent girls as well as significant different educated and uneducated marginalized women and adolescent girls on menstruation hygiene management.

3. Methodology

This study employed a cross-sectional descriptive research design to investigate the use of menstrual materials, hygiene facilities, and disposal practices among the Raji community, an indigenous and marginalized group in Nepal. The research focused on collecting household-level data to understand the current state of menstrual hygiene facilities in the community. A total of 43 households from the Raji community were included in the study. Since the population size was small and manageable, the census method was used to include all households. This ensured comprehensive coverage and avoided selection bias.

Structured questionnaires were developed as the primary tool for data collection. Both closed- and open-ended questions were included, covering areas such as types of menstrual materials used, availability and use of hygiene facilities, methods of disposal, cultural taboos and related socio-demographic information. The researcher conducted self-interviews with respondents from each household to ensure clarity and accuracy. This method was particularly helpful to explain questions when needed and to build trust with the participants, especially considering possible literacy or language barriers.

The researchers observed field directly to gain deeper insights into the real-life practices, environmental conditions, the availability of hygiene facilities such as toilets, water sources, and drying spaces for reusable cloths, as well as common disposal method of the respondents. These observations supported confirm the self-reported data and added context to the responses. Following data collection, all responses were coded and entered into SPSS for analysis. Descriptive statistical tools such as frequencies, percentages, bivariate analysis such as cross-tabulations and chi-square tests were used to examine the relationship between variables, such as availability of menstrual material according to age, Menstrual knowledge according to age and education & Chi-square test the use of disposal sanitary pad and education.

Ethical considerations were strictly followed throughout the study. Verbal informed consent was obtained from each respondent after clearly explaining the purpose and voluntary nature of the study. All participants were assured of confidentiality and anonymity, and they were informed of their right to withdraw from the study at any time without any consequences.

4. Data Presentation and Analysis

The following table depicts demographic information of Raji's sampled girls and women:

Table-1: Demographic Information of Raji's Girls and Women

Variables	Frequency	Percentage
Age in Completed Years		
14-24	18	41.9
25-34	16	37.2

35-44	8	18
45-54	1	2.3
Occupation		
Student	12	27.9
Agriculture	25	58.1
Housewife	5	11.6
Shopkeeper	1	2.3
Educational Level		
1-8	10	23.3
9-12	25	58.1
No formal education	8	18.6
Class (in terms of economic status)		
Low	22	51.2
Medium	21	48.8
Marital Status		
Single	17	39.5
Married	26	60.5

Source: Field Survey, 2026.

The demographic profile indicates a predominantly young population, with a large proportion of individuals in the younger age groups. Occupational patterns suggest a largely rural setting, as agriculture emerges as the primary livelihood, alongside a notable presence of students. Educational attainment reflects moderate progress, with many individuals having reached secondary-level schooling, though a segment of the population remains without formal education. Socioeconomic conditions appear to be concentrated within the lower and middle strata, with a slight inclination toward economically weaker sections.

Despite significant educational attainment among many individuals, the limited occupational diversity suggests a critical need for skill improvement, vocational training, and delayed access to non-agricultural employment opportunities. Overall, the findings point out that the community's human resource potential-particularly that of younger, more educated women-remains under-utilized. Targeted interventions focusing on education, livelihood development, and women's empowerment are essential to harness this untapped potential.

Table-2: Use of Menstrual Materials during Periods

Categories	Reusable Sanitary Pad	Disposal Sanitary Pad	Cloths	Homemade Materials
Never	88.4 (38)	16.3 (7)	20.9 (9)	93.0 (40)
Rarely	4.7 (2)	11.6 (5)	7.0 (3)	—

Sometimes	2.3 (1)	18.6 (8)	37.2 (16)	7.0 (3)
Often	2.3 (1)	9.3 (4)	14.0 (6)	—
Always	2.3 (1)	44.2 (19)	20.9 (9)	—
Total	100 (43)	100.0 (43)	100.0 (43)	100.0 (43)

Source: Field Survey, 2026; Actual figures are shown in parentheses.

The analysis of menstrual hygiene product usage among respondents reveals that disposable sanitary pads are the most frequently used, but it is not available sufficiently in the community level and nominal respondent reported never using the sanitary pad. In contrast, reusable sanitary pads and homemade materials are largely unused. Cloth demonstrates a more varied usage pattern, with more than one-third using it sometimes and one-fifth always, suggesting continued reliance on traditional methods. The data indicate a strong preference for disposable products, likely due to their convenience and availability, while low usage of reusable and homemade options may reflect barriers related to accessibility, awareness, or cultural acceptability.

Table-3: Access to Private Place to Manage Changing Pads

Access	Frequency	Percentage
Yes	26	60.5
No	17	39.5
Total	43	100

Source: Field Survey, 2026.

The data show that majority respondents have access to a private space, while few respondents do not have the private place. This means that nearly 2 out of every 5 women lack a private place, which can have significant implications for their privacy, safety, mental well-being, and ability to manage changing pads, which helps promote dignity and privacy in managing menstrual blood. The absence of a private space is particularly concerning to gender equity, as it may limit women's autonomy and freedom in managing menstrual blood. Ensuring access to private spaces could play a crucial role in improving menstrual health and wellbeing during menstruation of girls and women.

Table-4: Availability of Menstrual Material according to Age Group

Age Group	Availability of Menstrual Material			Total
	Yes	No	Sometimes	
14-24 years	44.4 (8)	27.8 (5)	27.8 (5)	100.0 (18)
25-34 years	50.0 (8)	12.5 (2)	37.5 (6)	100.0 (16)

35-44 years	50.0 (4)	12.5 (1)	37.5 (3)	100.0 (8)
45-54 years	—	100 (1)	—	100.0 (1)
Total	46.5 (20)	20.9 (9)	32.6 (14)	100.0 (43)

Source: Field Survey, 2026; Actual figures are shown in parentheses.

The cross-tabulation of age and availability of menstrual materials highlights notable variations across different age groups among the respondents. Access appears more constrained among younger women, particularly those in the 14-24 age group, where consistent availability is relatively limited and irregular access is more common. A similar pattern is observed among those aged 25-34, with only a portion reporting regular availability and others experiencing occasional or no access. In contrast, women in the 35-44 age group demonstrate comparatively better access, indicating some improvement with increasing age. The lone respondent in the oldest age category reported a complete lack of access.

Overall, the findings suggest that consistent availability of menstrual materials remains insufficient for a significant section of the population, with younger women being particularly disadvantaged. This pattern points to underlying inequalities in menstrual health access and underscores the need for targeted interventions to ensure reliable and equitable availability of menstrual products, especially among women in the younger age groups.

Table-5: Frequency of Challenges of Menstrual Facilities

Challenges	Frequency of Challenges				
	Never	Rarely	Some-times	Often	Always
No access to clean water	16	3	11	5	8
No access to soap	17	1	11	4	10
No place to wash or dry reusable materials	25	1	5	5	7
No disposal bin or proper wash system	20	3	5	1	14
Dirty or unsafe toilet	8	2	13	5	14
Embarrassment or fear being seen	23	4	3	8	5
Facilities are too far from home	25	4	3	8	3
Limited time to manage menstruation	23	5	5	7	3
Others	39	0	0	3	1

Source: Field Survey, 2026.

Table-5 indicates that Raji girls and women face multiple, interconnected challenges related to menstrual hygiene management. Access to essential resources such as clean water and soap is not consistently ensured, with many respondents experiencing periodic difficulties. In addition, facilities for washing and drying reusable materials, as well as safe disposal mechanisms, remain inadequate for a considerable segment, reflecting gaps in basic WASH infrastructure.

Beyond these material constraints, emotional and social barriers are also evident, as feelings of embarrassment and fear of being seen continue to shape menstrual practices, pointing to the persistence of stigma within the community. Although issues such as unsafe sanitation facilities or long distances to access them are less frequently reported, challenges related to time constraints and lack of privacy still significantly affect menstrual management. Taken together, these findings underscore the need for comprehensive interventions that combine improvements in WASH infrastructure with increased awareness and sensitization around menstrual health and dignity.

Table-6: Use of Cleaning Material to Wash Hand and Reusable Menstrual Materials

Categories	Use of Cleaning Material				
	Water only	Water & soap	water & sand	Ash & water	Traditional method
Never	37.2 (16)	9.3 (4)	93.0 (40)	95.3 (41)	95.0 (41)
Rarely	18.6 (8)	9.3 (4)	—	2.3 (1)	2.3 (1)
Sometimes	9.3 (4)	2.3 (1)	—	2.3 (1)	2.3 (1)
Always	34.9 (15)	79.1 (34)	7.0 (3)	—	—
Total	100.0 (43)	100.0 (43)	100.0 (43)	100.0 (43)	100.0 (43)

Source: Field Survey, 2026; Actual figures are shown in parentheses.

The data indicate a clear preference for hygienic cleansing practices among respondents, with the combined use of water and soap emerging as the most consistently adopted method for menstrual hygiene. In contrast, reliance on water alone appears less consistent, suggesting that it is often used as a secondary option when soap is unavailable. The use of less hygienic or traditional alternatives—such as water with sand, ash with water, or other customary practices—remains negligible and largely absent from regular behaviour. Overall, these patterns reflect a positive shift toward safer and more hygienic menstrual practices within the community. This trend may be indicative of improved access to basic resources as well as growing awareness regarding menstrual health and hygiene.

Table-7: Disposal Practices used for Menstrual Materials

Disposal Practices	Frequency	Percentage
Burn them	1	2.2
Bury them	8	17.4
Throw them in open space	2	4.3
Throw them in river/steam	28	60.9
Put them in dustbin	2	4.3
Others	5	10.9
Total	46	100.0

Source: Field Survey, 2026.

The data on disposal practices indicate that the predominant method among respondents is the disposal of used menstrual materials in rivers or streams, raising serious environmental and public health concerns. A smaller segment resorts to burying the materials, which, although more discreet, may still carry ecological risks depending on the conditions of disposal. Safer and more hygienic options—such as burning under controlled conditions or using designated dustbins—are reported only rarely. Additionally, some respondents dispose of materials in open spaces or rely on other unspecified methods, reflecting inconsistency and potential safety risks in current practices.

Overall, these patterns highlight significant gaps in both awareness and infrastructure related to menstrual waste management. The findings underscore the urgent need for targeted interventions that promote safe, hygienic, and environmentally sustainable disposal practices through improved facilities and community-level sensitization.

Table-8: Knowledge about Menstrual Materials and Disposal Practices

Categories	Frequency	Percentage
Knowledge about Menstrual Materials		
Yes	34	79.1
No	9	20.9
Knowledge about Disposal Practices		
Yes	26	60.5
No	17	39.5

Source: Field Survey, 2026.

The data on menstrual materials and disposal practices among Raji girls and women point to a mixed scenario of progress alongside persistent gaps in menstrual health awareness. A substantial proportion of respondents demonstrate familiarity with menstrual materials, indicating a growing level of awareness regarding options for menstrual management. However, this awareness does not extend equally to safe disposal practices, where a noticeable gap remains in knowledge and understanding.

This disparity becomes particularly concerning in light of earlier findings that reflect the continued use of environmentally unsafe disposal methods, such as discarding materials in rivers or open spaces. Taken together, the results suggest that while general awareness about menstruation is improving, there is a pressing need for focused education on safe and hygienic disposal practices. Strengthening such awareness, alongside the provision of appropriate facilities, is essential for safeguarding both personal health and environmental sustainability.

Table-9: Knowledge about Menstrual Materials according to Age Group

Age Group	Knowledge		Total
	Yes	No	
14-24 years	13	5	18
25-34 years	14	2	16
35-44 years	7	1	8
45-54 years	0	1	1
Total	34	9	43

Source: Field Survey, 2026.

The data indicate that awareness of menstrual materials is generally high across most age groups, with a clear majority of respondents reporting familiarity with available options. Awareness appears comparatively lower among younger respondents in the 14–24 age group, while women in the 25–34 and 35–44 age categories demonstrate relatively higher and more consistent levels of knowledge. The lone respondent in the oldest age group reported a lack of awareness, though this observation remains limited due to the small sample size.

Overall, the findings point to a broadly encouraging level of awareness, particularly among women in the middle age groups. However, the comparatively lower awareness among younger respondents highlights the need for targeted menstrual health education initiatives, especially for adolescents and young adults, to ensure more uniform knowledge across all age groups.

Table-10: Knowledge about Menstrual Materials according to Educational Level

Educational Level	Knowledge		Total
	Yes	No	
Grades 1-8	70.0 (7)	30.0 (3)	100.0 (10)
Grades 9-12	80.0 (20)	20.0 (5)	100.0 (25)
No formal education	87.0 (7)	12.5 (1)	100.0 (8)
Total	79.1 (34)	20.9 (9)	100.0 (43)

Source: Field Survey, 2026; Actual figures are shown in parentheses.

The analysis indicates a generally high level of awareness about menstrual materials across all educational categories. Even among respondents without formal education, awareness remains notably strong, while those with primary and secondary education also demonstrate comparable levels of knowledge. Although there is a slight tendency for awareness to improve with higher levels of education, the differences are not particularly pronounced, suggesting that knowledge is relatively widespread irrespective of formal schooling. These findings imply that, in addition to formal education, informal channels—such as community interactions, peer networks, and media exposure—may play a crucial role in disseminating information on menstrual hygiene. This highlights the importance of strengthening both formal and community-based approaches to ensure comprehensive and sustained awareness.

Table-11: Knowledge about Disposal of Menstrual Materials according to Education

Educational Level	Knowledge		Total
	Yes	No	
1-8	30.0 (3)	70.0 (7)	100.0 (10)
9-12	72.0 (18)	28.0 (7)	100.0 (25)
No formal education	62.5 (5)	37.5 (3)	100.0 (8)
Total	60.5 (26)	39.5 (17)	100.0 (43)

Source: Field Survey, 2026; Actual figures are shown in parentheses.

The data suggest a positive association between educational attainment and knowledge of appropriate menstrual waste disposal practices. Awareness appears relatively limited among respondents with primary-level education, while those with secondary education demonstrate a considerably higher level of understanding. Respondents without formal education show a moderate level of awareness, indicating that knowledge is not entirely dependent on formal schooling. Overall, a clear majority of respondents report some understanding of proper disposal practices, though gaps remain across educational groups. These findings highlight the role of education in shaping awareness of menstrual waste management and underscore the importance of integrating menstrual hygiene education into school curricula, alongside strengthening community-based outreach initiatives to ensure broader and more consistent dissemination of information.

Frequency of cultural restriction during menstruation among sampled Raji's Girls and Women are depicted in the table-12 on next page. The data highlight the continued influence of deeply rooted traditional norms and taboos. The most stringent restrictions are associated with religious practices and sacred spaces, where women are consistently prohibited from entering temples or participating in

worship-related activities. Limitations also extend to the domestic sphere, with restrictions on sleeping arrangements and access to spaces such as the kitchen and kitchen garden, reflecting the perception of menstruation as impure within household settings.

Table-12: Frequency of Cultural Restriction during Menstruation among Raji's Girls and Women

Restriction	Frequency				
	Never	Rarely	Some-times	Often	Always
To enter kitchen	34	0	1	0	8
To enter worshipping room	12	0	0	0	31
To participate cultural and social function	25	3	7	1	7
To enter kitchen garden	26	0	2	2	13
To sleep bedroom	29	0	0	0	14
To go to temple	7	1	0	0	35
To eat dairy food	20	4	6	4	9
To go to water resources	28	1	5	1	8
To go to school	35	1	4	0	3
Others	39	0	3	0	1

Source: Field Survey, 2026.

Although fewer restrictions are reported in areas such as education and public participation, some respondents still experience occasional exclusion from school and social or cultural events. Dietary restrictions, particularly concerning the consumption of certain foods like dairy products, also persist for a segment of the population. Overall, these patterns indicate that, despite increasing awareness about menstruation, cultural and religious taboos continue to shape women's daily lives, constraining their mobility, autonomy, and participation. Addressing these challenges requires culturally sensitive interventions that combine education, community dialogue, and sustained engagement to reduce stigma and promote greater acceptance and empowerment.

Table-13: Chi-Square Test of Independence Between Education and Use of Disposal Pad (N=43)

Test	χ^2	df	
Pearson Chi-Square	17.765 ^a	8	0.023
Likelihood Ratio	19.613	8	0.012
Linear-by-Linear Association	1.119	1	0.29

Note. < .05 is statistically significant.

^a. 14 cells (93.3%) had expected count less than 5.

The minimum expected count was 0.74.

The Chi-square test results suggest a statistically significant association between education level and the use of disposal pads, as indicated by both the Pearson Chi-square and Likelihood Ratio statistics, which meet the conventional threshold for significance. However, the Linear-by-Linear Association test does not demonstrate a significant linear trend, implying that the relationship between the variables may not follow a consistent directional pattern across categories.

Despite the observed significance, the robustness of these findings is limited by violations of key test assumptions. A substantial proportion of cells have low expected frequencies, which compromises the reliability of the Chi-square estimates. As a result, the interpretation of this association should be approached with caution. To obtain more reliable results, alternative approaches—such as applying Fisher’s Exact Test or consolidating categories to improve cell distribution—would be more appropriate for accurate statistical inference.

Table-14: Symmetric Measures of Association Between Age and Changing Privacy

Measure	Value	SE ^a	T ^b	-value
Pearson’s R	0.32	0.079	2.164	.036 ^c
Spearman Correlation	0.346	0.084	2.361	.023 ^c

Note: N=43. SE=Asymptotic Standard Error^a. *t*-values use asymptotic SE assuming the null hypothesis^b. -values are based on normal approximation^c. Significant at <.05.

The symmetric measures reveal a moderate positive association between age and access to privacy for changing menstrual materials. Both Pearson’s correlation and Spearman’s rank correlation indicate statistically significant relationships, suggesting the presence of both linear and monotonic patterns within the data. These findings imply that with increasing age, respondents are more likely to report better access to private spaces for managing menstruation. Overall, the results point to a meaningful relationship between the variables within the sample, indicating that age may play a role in shaping access to menstrual hygiene-related privacy.

Table-15: Symmetric Measures of Association Between Age and Changing Behaviour of Menstrual Materials in Period

Measure	Value	SE ^a	T ^b	-value
Pearson’s R	.199	.138	1.302	.200 ^c
Spearman Correlation	.176	.146	1.145	.259 ^c

Note: N=43. SE=Asymptotic Standard Error^a. *t*-values use asymptotic SE assuming the null hypothesis^b. -values are based on normal approximation^c. Significant at <.05.

The symmetric measures indicate a weak positive association between age and the changing behaviour of menstrual materials during menstruation. However, the relationship is not statistically significant, as reflected in both Pearson’s and

Spearman's correlation tests. This suggests the absence of a meaningful linear or monotonic relationship between the variables within the sample. Accordingly, any observed association is likely attributable to random variation rather than a consistent or systematic pattern, indicating that age does not play a significant role in influencing changing practices in this context.

Table-16: Symmetric Measures of Association Between Marital Status and Changing Behaviour of Menstrual Materials

Measure	Value	SE ^a	T ^b	-value
Pearson's R	.232	.145	1.529	.134 ^c
Spearman Correlation	.232	.145	1.529	.134 ^c

Note: N=43. SE=Asymptotic Standard Error^a. *t*-values use asymptotic SE assuming the null hypothesis^b. -values are based on normal approximation^c. Significant at <.05.

The symmetric measures suggest a weak to moderate positive association between marital status and the changing behaviour of menstrual materials. However, this relationship is not statistically significant, indicating that the observed pattern may be attributable to chance rather than a consistent underlying relationship. Thus, within this sample, there is insufficient evidence to support a meaningful linear or monotonic association between marital status and menstrual material changing practices.

5. Discussion

The study reveals a clear preference for disposable sanitary pads among Raji girls and women, reflecting a broader shift toward modern menstrual products driven by perceived convenience and accessibility. This pattern is consistent with the findings of Das *et al.* (2015), who observed a similar reliance on disposable pads in rural India. In contrast, the minimal use of reusable pads and homemade alternatives points to barriers such as cultural stigma, limited awareness, and concerns regarding acceptability—factors also emphasized by McMahon *et al.* (2011). Although overall awareness of menstrual materials appears relatively high, younger respondents demonstrate comparatively lower levels of knowledge, indicating gaps in adolescent-focused education. This finding aligns with Phillips-Howard *et al.* (2016), which underscores the importance of targeted educational interventions to improve menstrual knowledge and practices among adolescents.

Access to private spaces and adequate water, sanitation, and hygiene (WASH) facilities remains a critical concern. A substantial proportion of respondents lack access to private changing spaces, reinforcing the argument made by Jewitt and Ryley (2014) that privacy is central to effective menstrual hygiene management. In addition, inconsistent access to water and soap further compromises hygienic practices. Socio-cultural barriers compound these infrastructural challenges, as restrictions related to religious practices and social norms continue to limit women's mobility and participation during menstruation. Such patterns mirror

observations by Joseph (2021), highlighting the persistence of deeply embedded cultural taboos. Together, these structural and social constraints underscore ongoing gender inequalities that shape menstrual experiences and restrict full participation in daily life.

Menstrual waste disposal practices raise significant environmental and public health concerns. The widespread disposal of used materials in natural water bodies reflects inadequate infrastructure and limited awareness of safe disposal methods, a pattern also noted by Velasco Perez (2021) in rural contexts. Safer disposal options, such as the use of bins or controlled burning, remain limited, further emphasizing gaps in both facilities and knowledge. While awareness of proper disposal practices is present among a majority of respondents and tends to improve with higher educational attainment, disparities persist across educational groups. This finding is consistent with insights from UNICEF reports (as discussed in Sommer *et al.*, 2021), which highlight the critical role of education in promoting safe menstrual waste management. These results point to the need for integrated interventions combining infrastructure development with targeted awareness campaigns to encourage environmentally sustainable practices.

The statistical analysis further indicates a significant association between education level and the use of disposable menstrual products, although the absence of a clear linear trend suggests a more complex relationship. The reliability of this finding is constrained by methodological limitations, particularly low expected cell counts, and should therefore be interpreted with caution. Additionally, age shows a positive association with access to privacy during menstrual material changing, suggesting that older women may experience relatively better conditions than younger counterparts. In contrast, no significant relationships are observed between age or marital status and changing behaviours, indicating that these factors may not strongly influence such practices within the sample. Overall, these findings highlight the multifaceted nature of menstrual hygiene management and underscore the need for further research with larger and more representative samples to better understand these dynamics.

6. Conclusion

The study highlights a clear preference for disposable sanitary pads among Raji girls and women, reflecting broader trends observed in low-resource settings where convenience and accessibility shape menstrual product choices, as noted by Ahmed *et al.* (2024). Despite this shift toward improved menstrual materials, effective menstrual hygiene management continues to be constrained by persistent challenges, including inadequate privacy, limited access to sanitation facilities and clean water, and unsafe disposal practices, as similarly discussed by Ghosh (2024).

Socio-cultural factors remain equally influential, with entrenched cultural and religious norms continuing to restrict women's autonomy and participation during menstruation, echoing findings by Schmitt (2017). Furthermore, disparities in

menstrual health awareness—particularly regarding safe disposal practices—are evident among younger and less educated groups, reinforcing the observations of Kaur *et al.* (2018).

Addressing these interconnected challenges requires a comprehensive and integrated approach that combines improvements in WASH infrastructure, targeted educational initiatives, and sustained community engagement. Such efforts are essential to promote menstrual health equity, ensure dignity in menstrual management, and empower women in marginalized communities.

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