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**Topic: Perception, Knowledge, Attitude, and Practice of Menstrual Hygiene in Kohistani Women**

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**Abstract:**
**Background:** Menstrual hygiene management (MHM) is an important issue for the developing world.
**Objectives**: This study aimed to assess the knowledge, attitudes, and practices (KAP) related to menstrual hygiene among women in Kohistan, Pakistan.

**Methods:** This is a cross-sectional study which was conducted with 196 female participants, who were between 18 to 50 years of age. Data were collected using a structured questionnaire assessing menstrual hygiene knowledge, attitudes, and practices. Socio demographic factors such as age, gestational age, residence status, gravida, parity, education, and occupational status were also recorded. Statistical analysis was conducted using STATA version 18. Chi-square tests were used to examine associations between socio demographic variables and MHM outcomes.

**Results:** The study found that about 98% of participants had poor knowledge, attitudes, and practices regarding menstrual hygiene. Only 1.53% demonstrated good knowledge, and similarly, only 1.03% had an adequate attitude and practice towards menstrual hygiene. No significant associations were observed between socio demographic factors such as age, gestational age, residence status, gravida, and parity with menstrual hygiene outcomes. However, occupational and educational status was significantly associated with improved knowledge, attitudes, and practices ($p < 0.0001$). These findings suggest that education and employment are crucial factors influencing menstrual hygiene outcomes among Kohistani women living in Pakistan. .

**Conclusion:** This study highlights significant gaps in menstrual hygiene knowledge and practices among Kohistani women.

**Keywords**: Menstrual hygiene management, knowledge, attitudes, practices, sociodemographic factors, rural women, Kohistan, educational status, occupational status, Pakistan.

**Introduction:**

Menstrual hygiene management (MHM) is an important public health issue, particularly in resource-poor countries, such as Pakistan.[1-3] Prevalent culture influences how women manage their menstrual hygiene.[1-2] A study conducted in India showed that women face difficulties during their menstrual cycles.[1] There is stigma associated with menstruation cycles, and lack of communication and dialogue regarding MHM creates knowledge gaps that further deter appropriate menstrual hygiene practices. Women living in rural areas face more health related challenges, where inadequate reproductive health education compounds the issue. [2-3]

In many developing countries, women face a significant lack of knowledge about menstruation and hygiene practices. Due to limited access to sanitary products, they often rely on reusable cloth pads.[2-3] Educating women on menstrual hygiene is essential, as lack of awareness and resources increases their risk of health problems, such as reproductive tract infections. Raising awareness about proper hygiene and the environmental effects of disposal practices can lead to better health outcomes for women.[2] Social and economic factors significantly shape how women manage menstrual hygiene. When women have limited control over healthcare decisions and face economic challenges, they struggle to access the necessary menstrual hygiene products.[3] Poor menstrual hygiene has serious health consequences, especially for women in low-resource settings. Research highlights the urgent need for targeted efforts to improve menstrual hygiene knowledge and practices, as this is key to reducing health risks. [4] The lack of support from schools and cultural taboos around menstrual products make the situation more complex, emphasizing the importance of addressing these issues through community-driven programs. [4]

In Pakistan, where menstruation is often considered a taboo topic, women and girls face limited awareness and education about menstrual health. [5-7] This lack of knowledge impacts their physical and mental well-being, limiting their chances for empowerment and personal growth. According to the World Health Organization, inadequate understanding of menstruation leads to poor hygiene practices, exposing women and girls to health risks, absenteeism, and a diminished quality of life. [8-9]

Research consistently highlights the need for greater awareness of menstrual hygiene management (MHM) in parts of Pakistan where cultural and socioeconomic challenges are pronounced.[5-7] Research in Gilgit and Sindh show that many girls do not have accurate information about menstrual hygiene and face limited access to sanitary products.[9] This lack of resources and knowledge increases stigma and results in poor hygiene practices, such as infrequent changing of absorbents and improper disposal. Many girls in these areas also feel anxious and confused when they start menstruating, as they lack guidance from their families or schools. This leaves them unprepared and vulnerable to harmful myths and misinformation.

Kohistani women form a distinct group, with their menstrual hygiene practices shaped by strong cultural beliefs and limited resources. This study aims to explore their knowledge, perceptions, attitudes, and practices related to menstrual hygiene. By understanding these aspects, the research hopes to provide insights that can inform strategies to improve awareness and access to menstrual hygiene resources in remote areas of Pakistan. By addressing knowledge gaps and challenging cultural attitudes in Kohistan, the study will contribute to broader efforts to enhance menstrual health support and foster a safe, stigma-free environment for managing menstruation.

**Methodology**

This study used a cross-sectional descriptive design to examine the perceptions, knowledge, attitudes, and practices related to menstrual hygiene among Kohistani women. The research took place in THQ hospital Pattan and BHU Jijal Lower Kohistan, KPK, Pakistan, during this time period 1st August 2024 till 30th November 2024 where socio-cultural and economic challenges influence menstrual hygiene practices. The study focused on women aged 18 to 50, representing various stages of reproductive life. Only women who had reached menarche and were willing to participate were included. Women who had menopause were excluded from this study.

The required sample size of 196 participants was calculated using the WHO sample size calculator [10], based on a prevalence of good knowledge at 51.2%, a margin of error of 7%, and a 95% confidence interval.[11] This sample size was selected to ensure statistically significant results.

A convenience sampling method was used. Given the region's remote nature and cultural sensitivities, this approach allowed for easier access to women who were willing and available to participate. Recruitment occurred in THQ hospital pattan and BHU jijal , Lower kohistan KPK , Pakistan. Data were gathered using a structured, self-administered questionnaire adapted from previous research. [6-7, 12-13] The questionnaire addressed three main areas:

Knowledge: Questions about the biological aspects of menstruation, sources of menstrual blood, and familiarity with sanitary products.

Attitudes: Items assessing cultural beliefs, taboos, and comfort levels with discussing menstruation.

Practices: Questions related to hygiene practices, the use of menstrual products, disposal methods, and how often sanitary products were changed. The knowledge of participants regarding menstrual hygiene was assessed through a self-administered questionnaire containing 12 questions. Each correct answer received 1 point, while incorrect answers scored 0. Based on their total score, participants' knowledge was categorized as Good (7–12 points), or Poor (0–6 points). Attitudes toward menstrual hygiene were evaluated using a self-administered questionnaire with 6 questions, where each correct response scored 1 point and incorrect responses scored 0. Attitude levels were classified as Good (4–6 points), and Poor (0–3 points). Practices related to menstrual hygiene were also assessed through a self-administered questionnaire of 10 questions, with 1 point given for each correct response and 0 for incorrect responses. Practice levels were labeled as Good (6–10 points), and Poor (0–5 points). These categories provided a structured method to evaluate the knowledge, attitudes, and practices of participants related to menstrual hygiene. The questionnaire was translated into Urdu to ensure it was culturally relevant and easily understood by participants. A pilot test was conducted with 20 participants (10% of the total sample) to refine the questions and enhance clarity. Data collection took place over a 06-month period, from (1st August 2024) to (31st Jan 2024). Trained female interviewers from the local community assisted participants, particularly where literacy was a concern, and ensured that responses were recorded accurately and kept confidential. Informed consent was obtained from each participant before data collection began. The study received ethical approval from district health office lower kohistan KPK, and all participants were informed about their rights. They provided written consent, and we ensured their confidentiality throughout the process. Participants were told they could withdraw at any point without facing any consequences. Data were analyzed using STATA (Version 18.0) [14]. Descriptive statistics, such as frequencies and percentages, were calculated for demographic characteristics and variables related to menstrual hygiene management (MHM). Cross-tabulations and chi-square tests were used to explore relationships between demographic factors (e.g., age, education, and income) and MHM knowledge, attitudes, and practices. Statistical significance was set at $p \leq 0.05$.

## Results

A total of 196 participants took part in the study, and their socio-demographic characteristics revealed important trends. The majority of participants (60.20%) were aged between 20 and 30 years, with the remaining 39.80% falling in the 31 to 45-year range. In terms of gestational age, 52.04% were at or below 16 weeks of pregnancy, while 47.96% were beyond 16 weeks. Most participants (63.27%) lived in urban areas, while 36.73% came from rural regions, giving the sample a slight urban bias. The gravida data showed that 57.14% of participants had three or fewer pregnancies, and 42.86% had more than three. Regarding parity, 95.92% had given birth three times or fewer, while only 4.08% had more than three children. All participants reported a family monthly income of 60,000 PKR or less, indicating similar economic conditions across the sample. Socioeconomic data also revealed that 98.47% of participants were unemployed, with only 1.53% holding a job. Educationally, most of the women (98.47%) had no formal education, with very few having completed primary (0.51%) or secondary (1.02%) schooling.

**Table I: General Characteristics of the Sample Population of our Study.**

| Variables | Frequency n | Percentage % |
|---|---|---|
| Mother's age (years) | | |
| 1=20-30 | 118 | 60.20 |
| 2=31-45 | 78 | 39.80 |
| Gestational age (weeks) | | |
| 1≤ 16 | 102 | 52.04 |
| 2 >16 | 94 | 47.96 |
| Residence status | | |
| 1=urban | 124 | 63.27 |
| 2=rural | 72 | 36.73 |
| Gravida | | |
| 1 ≤ 3 | 112 | 57.14 |
| 2> 3 | 84 | 42.86 |
| Parity | | |
| 1≤ 3 | 188 | 95.92 |
| 2> 3 | 8 | 4.08 |
| Family monthly income | | |
| 1≤ 60000 | 196 | 100 |
| 2>60000 | - | - |
| Occupational status | | |
| 1=employed | 3 | 1.53 |
| 2=unemployed | 193 | 98.47 |
| Educational status | | |
| 1=illiterate | 193 | 98.47 |
| 2=primary | 1 | 0.51 |
| 3=secondary | 2 | 1.02 |
| 4=higher | - | - |
| Knowledge | | |
| 1=good | 3 | 1.53 |
| 2=poor | 193 | 98.47 |

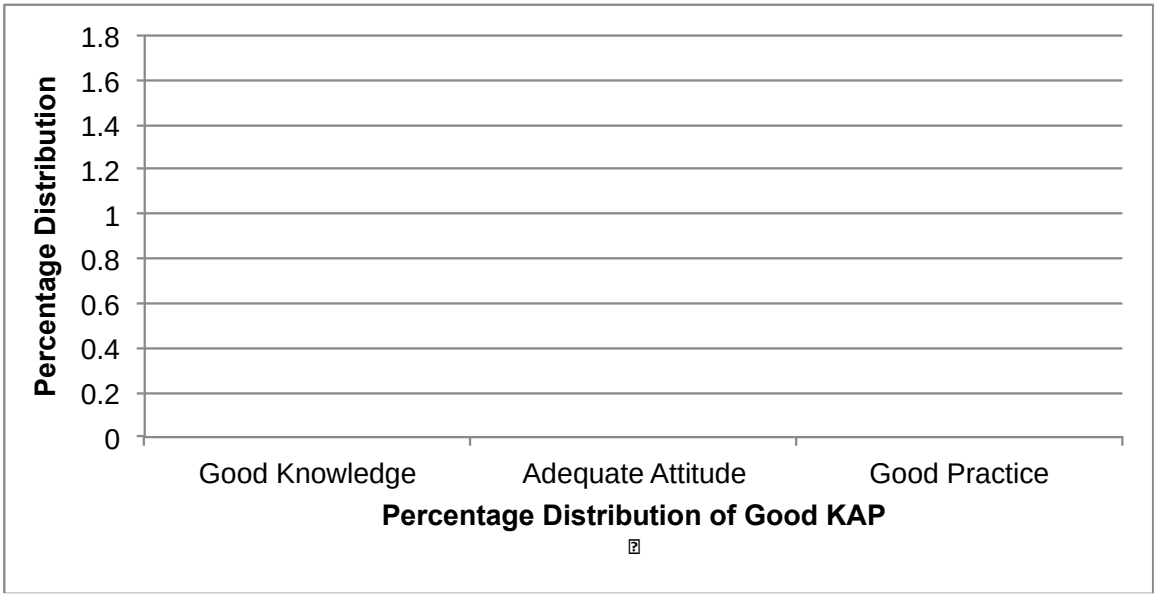
| | | |
|---|---|---|
| Attitude<br>1=adequate<br>2=inadequate | <br>2<br>192 | <br>1.03<br>98.97 |
| Practice<br>1=good<br>2=poor | <br>2<br>192 | <br>1.03<br>98.97 |

**Table 2: Chi-square analysis (p values) of the association between socio-demographic variables (Mother's Age, Gestational Age, Residence Status, Gravida, Parity, Occupational Status, and Educational Status) and menstrual hygiene knowledge, practices, and attitudes.**

| Variables | Knowledge p value | Practice p value | Attitude p value |
|---|---|---|---|
| Mother's Age (Years) | 0.81 | 0.76 | 0.78 |
| Gestational Age (weeks) | 0.61 | 0.95 | 0.97 |
| Residence Status | 0.90 | 0.68 | 0.68 |
| Gravida | 0.13 | 0.22 | 0.22 |
| Parity | 0.72 | 0.78 | 0.78 |
| Occupational status | <0.0001 | <0.0001 | <0.0001 |
| Educational status | <0.0001 | <0.0001 | <0.0001 |

Figure 1 further illustrates the challenge of turning knowledge into practice. Although only 1.53% of participants' demonstrated good knowledge, there was a slightly lower percentage of adequate attitude or good practices, both of which stood at 1.03%. This suggests that, while some level of awareness about menstrual hygiene exists, barriers may prevent effective implementation of this knowledge in daily life.

**Figure 1: Percentage Distribution of Good Knowledge, Adequate Attitude, and Good Practice.**



**Discussion**

The study highlights major gaps in menstrual hygiene knowledge, attitudes, and practices among Kohistani women. These findings point to an urgent need for targeted interventions to improve menstrual hygiene education, particularly in economically disadvantaged areas. The discussion focuses on the implications for menstrual hygiene management (MHM) in schools, especially in KPK, Pakistan. The study shows that menstrual health is still largely ignored in Pakistan's education system, a trend seen in many low- and middle-income countries (LMICs). Cultural taboos and limited resources often prevent these countries from prioritizing MHM.[7-13] The study also reveals significant barriers to effective MHM, including a lack of awareness, resources, and proper education in schools.

In KPK, many educators and school leaders consider menstruation a sensitive topic, which stops them from discussing it openly or providing adequate support to menstruating students. This view reflects the broader societal stigma around menstruation, which limits both awareness and access to necessary resources in schools.[15-16] Without structured menstrual hygiene education in the curriculum, many students remain uninformed about menstruation until they get their first period. This lack of preparation often leads to confusion, anxiety, and unnecessary distress when they experience menarche. [17-18] These challenges are common for adolescent girls in many low- and middle-income countries (LMICs), where menstruation is treated as a private matter rather than a public health issue. [19]

Another study [5] found that there was a lack of basic facilities in public schools in KPK, including separate toilets, sanitary materials, and running water. Only about half of the schools provided options for sanitary disposal, medical support, or pain relief for menstruating girls. [5] This mirrors problems faced in countries like Ghana, Uganda, and Kenya. [20-21] The knowledge gaps revealed in our study show a clear need for focused educational efforts to raise awareness and improve menstrual hygiene practices among Kohistani women.

The shortage of essential resources highlights the urgent need for comprehensive WASH (Water, Sanitation, and Hygiene) programs that specifically address the needs of menstruating students. [5,22] Without proper sanitation and menstrual products, girls struggle to manage menstruation in a healthy and dignified way, which limits their ability to attend school and increases their risk of infections. [5,22-23]

One study [5] noted that while some educators saw the potential of the WASH in Schools program to improve menstrual hygiene management (MHM), they felt it wasn't implemented well enough. Researchers have recommended adding MHM to the school curriculum and pushing for policy reforms to ensure schools have the necessary resources and infrastructure. [24]

These suggestions from previous studies, and the data from our study, echo broader calls for policies that consider the cultural and contextual realities of MHM in low- and middle-income countries (LMICs), as highlighted by studies in other regions. [25-26]

## Conclusion

Our study reveals significant gaps in menstrual hygiene knowledge among Kohistani women. The data gathered from hospitals shows that without focused efforts in education, policy, and resource availability, these gaps will continue. The lack of awareness and proper menstrual hygiene practices not only fuel stigma but also harm the health and well-being of menstruating women, making it harder for them to manage menstruation effectively. To improve outcomes, we need to address these gaps by offering targeted education and increasing access to menstrual health resources for Kohistani women..

## Conflict of Interest

The authors declare no conflict of interest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## Statements and Declarations

Not Applicable

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