WATER INSECURITY AND MENSTRUAL HYGIENE AMONG WOMEN: A FIELD STUDY IN ALLU NAGAR DIGURIA, LUCKNOW, UTTAR PRADESH

INTERNSHIP REPORT

15 JUNE – 4 JULY 2026

SUBMITTED BY

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INTRODUCTION

Access to safe water, sanitation, and hygiene (WASH) is a basic human right and plays an important role in maintaining health, dignity, and well-being. However, many women and girls around the world still face difficulties due to inadequate water and sanitation facilities. These challenges become even more significant during menstruation, when access to clean water, privacy, and proper sanitation is necessary for managing menstrual hygiene safely and comfortably. In many low- and middle-income countries, water scarcity and poor sanitation infrastructure make this difficult, often affecting women's physical health, emotional well-being, and daily activities. Recent studies have moved beyond focusing only on access to WASH facilities and have introduced concepts such as water insecurity, sanitation insecurity, and menstrual insecurity to better understand women's experiences. These concepts highlight how a lack of adequate water and sanitation can affect dignity, privacy, safety, mental health, social participation, and gender equality. Since women are often responsible for collecting water and managing household sanitation, they are more likely to experience the negative impacts of WASH-related challenges. Drawing on seven key studies, this literature review explores the relationship between water insecurity, sanitation insecurity, menstrual hygiene management, and women's well-being. It examines how limited access to water and sanitation influences women's menstrual experiences, safety, mental health, and overall quality of life, while also identifying important gaps in the existing literature, particularly the need for more context-specific research on women living in water-scarce rural communities.

LITERATURE REVIEW

The reviewed studies show that water insecurity, sanitation insecurity, and menstrual insecurity are closely linked and have a significant impact on women's health, well-being, dignity, safety, and everyday lives. Across different contexts, women are found to be more affected by inadequate water and sanitation because they are often responsible for collecting water, managing household sanitation, caring for family members, and maintaining menstrual hygiene (Kayser et al., 2019; Tallman et al.,

2022). These responsibilities increase their workload and expose them to various physical, social, and emotional challenges.

One of the most common findings across the studies is the importance of water for menstrual hygiene management. Women need adequate water for bathing, washing menstrual materials, maintaining personal hygiene, and managing menstrual discomfort. When water is scarce, these activities become difficult, leading to poor menstrual hygiene practices, stress, embarrassment, and discomfort (Caruso et al., 2020; Choudhary et al., 2023). The studies suggest that menstruation is influenced not only by biological factors but also by social norms, environmental conditions, and access to WASH facilities.

The literature also shows that menstrual insecurity goes beyond the management of menstrual products. Many women experience anxiety, social stigma, restrictions on mobility, and difficulties in maintaining privacy and cleanliness during menstruation. Inadequate water and sanitation facilities often make these challenges worse and negatively affect women's confidence and dignity (Caruso et al., 2020; Choudhary et al., 2023).

Another important finding is that sanitation insecurity is not only about the availability of toilets. Even when sanitation facilities exist, women may still face concerns related to privacy, safety, dignity, physical strain, and social expectations (Caruso et al., 2017; Caruso et al., 2018). Their experiences are shaped by gender roles, household responsibilities, and local environmental conditions. This shows that sanitation insecurity is a broader social and psychological issue rather than simply an infrastructure problem.

Several studies also highlight the connection between WASH conditions and mental health. Women facing water and sanitation insecurity often report stress, fear, anxiety, shame, and emotional distress. Difficulties in maintaining cleanliness during menstruation can create feelings of embarrassment and reduce self-esteem. These psychosocial impacts are repeatedly identified as important but often neglected aspects of WASH insecurity (Choudhary et al., 2023; Caruso et al., 2018).

The studies further show that inadequate water and sanitation services can limit women's educational opportunities, participation in economic activities, mobility, and decision-making. The burden of water collection and household sanitation management often falls on women, increasing their physical workload and reducing opportunities for personal development. In some settings, women are also exposed to harassment, exploitation, and gender-based violence while collecting water or accessing sanitation facilities (Tallman et al., 2022; Kayser et al., 2019).

Overall, the reviewed literature indicates that water insecurity affects menstrual hygiene management through several interconnected factors, including limited water availability, poor sanitation, social stigma, gender norms, safety concerns, and psychological stress. The findings suggest that improving women's menstrual health requires more than simply providing infrastructure. Effective interventions should also address issues of dignity, privacy, safety, mental well-being, and gender equality. The studies provide valuable insights into the relationship between water insecurity and menstrual hygiene management while highlighting the need for more context-specific research in underserved rural communities.

Overall, the studies reviewed in this literature review show that issues related to water, sanitation, and hygiene (WASH) are much more complex than simply providing water sources or sanitation facilities. While access remains important, women's experiences are influenced by social norms, cultural expectations, environmental conditions, and the responsibilities they carry within households and communities. This means that the benefits of WASH services cannot be understood only through measures of access and infrastructure.

One of the main developments in recent research has been the introduction of concepts such as water insecurity, sanitation insecurity, menstrual insecurity, and gender-based water violence. These concepts have helped researchers move beyond traditional approaches and better understand how inadequate water and sanitation affect different aspects of women's daily lives. They draw attention to concerns such

as privacy, dignity, safety, and emotional well-being, which are often overlooked in discussions focused mainly on infrastructure.

The reviewed studies also show that women's experiences with WASH are closely linked to broader social and gender relations. Access to water and sanitation is shaped not only by the availability of resources but also by local customs, household dynamics, and community expectations. As a result, water and sanitation challenges often reflect wider patterns of gender inequality.

Another important observation is that recent studies have given greater attention to the emotional and psychological consequences of WASH insecurity. In addition to physical health concerns, women frequently experience stress, anxiety, fear, embarrassment, and reduced self-confidence when they struggle to access adequate water and sanitation. These experiences affect everyday life and demonstrate the need for a broader understanding of well-being within WASH research.

At the same time, some limitations can be identified in the existing literature. Much of the available research has been conducted in specific regions or settings, while many rural areas remain underrepresented. There is also a need for more research that focuses on women's everyday experiences and coping strategies rather than only developing concepts and measurement tools. Understanding these local realities can help generate more context-sensitive knowledge and improve future interventions. Key observations from the literature are specified below:

Water scarcity creates multiple challenges for menstrual hygiene management.

Access to adequate water is essential for bathing, washing menstrual materials, maintaining personal hygiene, and managing menstrual discomfort. In water-scarce settings, women often struggle to carry out these activities, which can affect both menstrual practices and their sense of dignity (Caruso et al., 2020; Choudhary et al., 2023).

Menstrual experiences are shaped by social, emotional, and environmental factors.

The reviewed studies show that menstruation involves much more than managing menstrual products. Feelings of anxiety, stigma, embarrassment, restrictions on mobility, and concerns about privacy often influence women's experiences, especially where water and sanitation facilities are inadequate (Caruso et al., 2020).

Water and sanitation insecurity have important psychosocial consequences.

Beyond physical health concerns, inadequate WASH conditions are associated with stress, fear, shame, anxiety, and emotional distress. These experiences can affect self-confidence, well-being, and overall quality of life (Caruso et al., 2018; Choudhary et al., 2023).

Gender roles play a central role in shaping WASH experiences.

Women are commonly responsible for water collection, household sanitation management, caregiving, and menstrual hygiene. These responsibilities increase their workload and expose them to physical strain, social pressures, and unequal burdens within households and communities (Kayser et al., 2019; Caruso et al., 2017).

Concerns related to privacy, safety, and dignity remain even when facilities are available.

Several studies found that access to toilets or water sources alone does not guarantee safe and comfortable experiences. Women continue to face challenges related to privacy, security, social expectations, and fear of harassment or violence when accessing water and sanitation services (Caruso et al., 2017; Tallman et al., 2022).

Women often adopt coping strategies that may affect their health and well-being.

To manage limited resources, women may reduce water consumption, delay sanitation needs, restrict movement, or prioritize household requirements over their own. Such strategies can have negative physical, emotional, and reproductive health consequences (Caruso et al., 2017; Choudhary et al., 2023).

Addressing WASH insecurity requires a broader and more gender-sensitive approach.

The studies collectively suggest that improving outcomes for women involves more than expanding infrastructure. Effective interventions should consider issues of dignity, safety, participation, mental well-being, and gender equality, while also ensuring women's involvement in decision-making processes related to water and sanitation services (Kayser et al., 2019; Tallman et al., 2022).

Despite an expanding body of literature on Water Insecurity and women's menstruation hygiene, there remains a gap in understanding across varying contexts. To begin with there is a limited evidence from rural Uttar Pradesh. Most studies shave been conducted in Odisha, selected urban areas, or international contexts. As a result, there is relatively little evidence on water insecurity and menstrual hygiene challenges in rural Uttar Pradesh, particularly in rural Lucknow. More region-specific research is needed to understand local realities and challenges. Secondly, there is inadequate focus on women's everyday experiences. While existing research highlights the difficulties associated with water and sanitation insecurity, less attention has been given to how women experience and navigate these challenges in their daily lives. Greater use of qualitative approaches could provide deeper insights into coping strategies and lived experiences. Thirdly, there is a lack of longitudinal studies on women's well-being. Most available studies rely on cross-sectional data, making it difficult to understand the long-term effects of water and menstrual insecurity on women's mental health and overall well-being. Longitudinal research could help address this gap. Fourthly, there is limited comparisons across different contexts. Only

a few studies have compared experiences across rural and urban settings, different regions, or diverse social groups. Such comparisons could improve understanding of how cultural norms, social conditions, and resource availability influence menstrual hygiene management and WASH experiences. Finally, there is a need for more evidence on intervention outcomes. Although many studies identify challenges related to water and sanitation, fewer examine the effectiveness of specific interventions. More research is needed to assess whether improvements in water access, sanitation facilities, and gender-sensitive WASH programmes lead to better menstrual health, dignity, and well-being for women.

Despite certain limitations, existing literature establishes that Water, sanitation, and hygiene (WASH) are essential for maintaining women's menstrual health, hygiene and well-being. However, access to safe drinking water and proper sanitation facilities remains a challenge in many rural areas of India. Irregular water supply and inadequate sanitation continue to affect the everyday lives of people, especially women. Women are often responsible for collecting water and managing household sanitation needs. During periods of water scarcity, these responsibilities become more difficult and also affect menstrual hygiene management, as access to water and privacy is necessary for maintaining proper hygiene during menstruation. In many rural areas, across India, the issue menstruation is still surrounded by silence, stigma, and cultural restrictions. Therefore, it is important to understand how women experience water insecurity and manage menstrual hygiene in their daily lives. However, further research is needed to explore these issues in diverse local contexts and to better understand how women manage water scarcity and menstrual hygiene in their daily lives. This research attempts to study how women's navigate menstrual challenges in context of water insecurity in in Allu Nagar Diguria village, Lucknow in India.

Objectives

1. To understand where households get their water from and what is the level of water insecurity.
2. To understand the challenges women, face due to water shortage and poor sanitation and identify the role of social and cultural beliefs in shaping these challenges.
3. To capture the impact of water insecurity on menstrual hygiene management.
4. To explicate women's coping mechanism while dealing with menstruation amidst lack of enough water.

METHODOLOGY

This study is based on a descriptive and qualitative approach. The idea was to listen to women's stories and understand their experiences, not just collect numbers.

Study Area, sample and data.

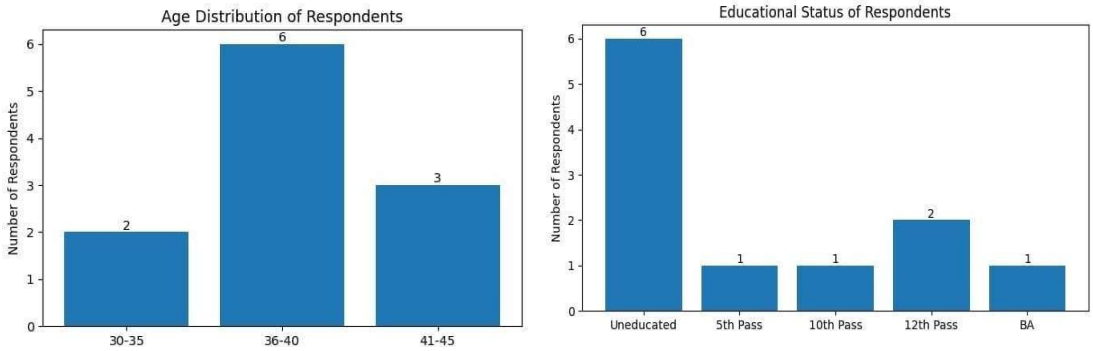
The survey was done in Allu Nagar Diguria village, Lucknow, Uttar Pradesh. Convenience sampling was used wherein, women who were available and willing to talk represent the sample. On the whole, 11 women from the village were included in the sample.

Primary data was collected through individual interviews using structured questionnaire. The questions revolved around household water sources, sanitation, menstrual hygiene, and the difficulties faced by women. In addition, field observations and casual conversations were also used to acquire additional insights. The study obtained ethical approval from Ethics Committee of the organization with which the internship was completed. Verbal informed consent was obtained from all respondents wherein the researcher explained the purpose of the study. Participation was completely voluntary and I took verbal consent. I also made sure to keep all responses confidential.

FINDINGS AND DISCUSSION

Background characteristics

11 women aged between 30 to 45 years were interviewed. Most of them were in the 35–45 age group (Figure 1). All of them were married and worked as homemakers. Education levels were quite low — many hadn't gone to school at all, and only a few had studied till secondary or higher.



A B

Figure 1A and 1B: Age Distribution and Educational Status of Respondents

(Source: Primary Survey, 2026)

Most families had 4 to 7 members. Many households also had more than one woman living together. This naturally increased the amount of water needed every day, especially for cooking, cleaning, and menstrual hygiene.

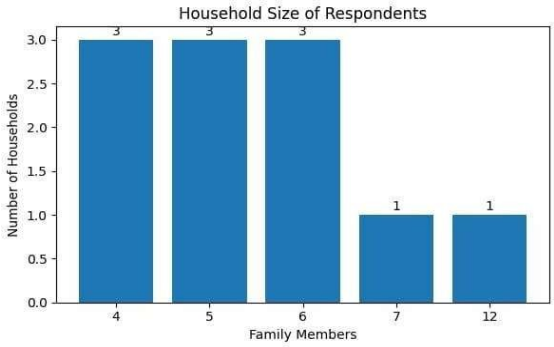


Figure 2: Household Characteristics

(Source: Primary Survey, 2026)

Household Water Insecurity and management

Water shortage was a big problem in the village. Many women said they had to borrow water from neighbours or relatives. Some houses did have government taps, but they didn't work properly — either the taps were broken or there was no electricity to run them. The main issues women mentioned were:

1. Taps not working
2. No electricity, so no water
3. Irregular water supply
4. Having to depend on others during shortages

All the women said the problem gets much worse in summer. Some families went 2 to 5 days without water, or until the electricity came back and repairs were done. In almost every house, women were responsible for getting water. Sometimes men or children helped, but the main responsibility still fell on women. To manage, women stored water in buckets, plastic drums, and big containers whenever water came.

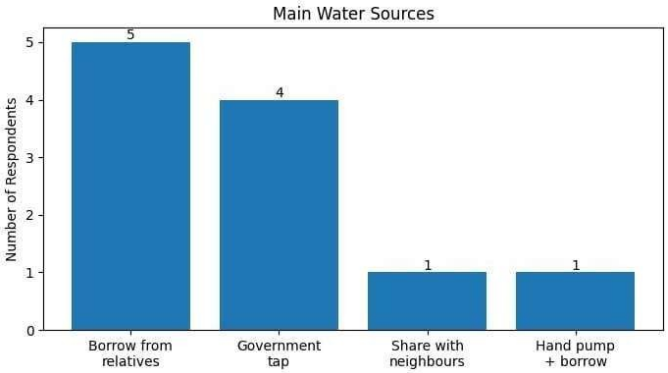


Figure 3: Water Sources

(Source: Primary Survey, 2026)

Menstrual Hygiene Practices

Most women used cloth during their periods. Only a few could afford or find sanitary pads, and even then, it was occasional. This shows that access to basic products is still a challenge, so many women rely on cloth and reuse it. Many women threw menstrual waste in open areas or near dirty ponds because there were no proper disposal options.

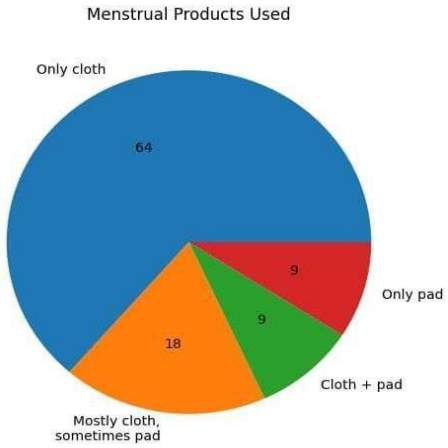


Figure 4: Menstrual Products Used

(Source: Primary Survey, 2026)

Figure 5: Disposal Methods of Menstrual Waste

(Source: Primary Survey, 2026)

Several women also talked about health issues like:

1. Infections and irritation
2. Severe period pain
3. Feeling weak
4. Trouble doing daily housework during periods

What came out clearly from the interviews is that water and sanitation problems don't just cause inconvenience — they directly affect women's daily lives. Since women are the ones managing water at home, irregular supply means more physical work and stress for them. They have to plan, store, and sometimes beg neighbours for water. During periods, this becomes even harder. Because water is scarce, most women use cloth and struggle to keep things clean. This leads to health problems like infections, weakness, and pain, and also makes it tough to do regular household work.

The interviews also showed how social beliefs play a role. One respondent, for example, said women aren't allowed to do pooja or enter the kitchen during menstruation. Newly married women especially face these restrictions. This means that a woman's experience during periods isn't just about water and toilets — it's also shaped by traditions and stigma.

Overall, the study shows that water insecurity and poor sanitation impact women's health, dignity, and day-to-day life. These findings match what other studies have said too — that water, sanitation, and menstrual hygiene are all deeply connected to how women live and how they're treated.

Managing menstruation amidst Water insecurity

The interviewed women stated that water shortage made managing periods extremely hard. Most of them told that when there was no water for 2 to 3 days, they had to put drinking, cooking, and other household work first. Personal hygiene came last. Because of this, many women bathed less often and delayed washing or changing

their cloths. Most women also shared that they were unable to afford sanitary pads and therefore relied on reusable cloth during menstruation. Those who used reusable cloths faced even more problems. They had to wash them with very little water. This led to discomfort, irritation, and infections. Women who had to borrow water from neighbours or relatives during their periods. It made them feel embarrassed. They described menstruating during water shortage as physically painful and emotionally stressful. Overall, the women said having regular access to water was important. It wasn't just about managing periods — it was about staying healthy, staying clean, and making menstruation less painful and stressful.

SUMMING UP

This study shows that women in Allu Nagar Diguria village, Lucknow face many challenges due to water insecurity and poor sanitation. Since women are mainly responsible for collecting and managing water, they are the ones most affected when supply is irregular.

The study also found that lack of water makes managing menstruation much harder. Limited water, reliance on cloth, no proper disposal options, and social stigma all add to the difficulties, women face during their periods. The stories shared by the women show that water and sanitation issues affect their health, daily routine, and overall well-being. To address this, we don't just need better infrastructure. We also need more awareness about menstrual health and open conversations to challenge the stigma around it.

Based on the field observations, the following steps can help:

1. Ensure regular and reliable water supply in rural areas.
2. Repair and maintain government taps and water systems properly.
3. Spread awareness about menstrual health and hygiene.
4. Make affordable menstrual products and safe disposal options available.
5. Hold community discussions to reduce stigma and myths around menstruation.

6. Involve women in local decisions about water and sanitation.
7. Do more research on how water insecurity affects menstrual hygiene in rural areas.

ADDITIONAL REFLECTIONS

Doing the field survey, several challenges were encountered. The biggest challenge was finding women who had time to talk. Most of them were busy with housework and could only give me a few minutes. Talking about menstruation and hygiene was also difficult. Because of stigma and cultural norms, some women felt shy and uncomfortable discussing it. A few didn't want me to record the interview, so I had to write down their responses by hand. Another issue was time. Since the internship was short, I could only cover 11 respondents. Even with these challenges, the conversations gave me real insights into how women deal with water problems and menstrual hygiene in their daily lives.

Despite these challenges, this internship helped me understand water, sanitation, and hygiene issues from a gender perspective. I got to see firsthand how women manage water shortages and handle menstrual hygiene in rural areas. It also improved my communication and interviewing skills. I learned how to talk to people in the community, design a questionnaire, collect data, and organize it for analysis.

Most importantly, it taught me that water and sanitation are not just about pipes and taps. They are directly connected to women's health, dignity, and everyday life. The experience helped me connect what I read in books with what actually happens on the ground. Overall, this internship was meaningful. It strengthened my research skills and gave me a better understanding of gender and development issues at the grassroots level.

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APPENDIX: QUESTIONNAIRE

Water Insecurity and Menstrual Hygiene among Women in Rural Lucknow, Uttar Pradesh

I am Ayushi Yadav, conducting this survey as part my Internship. The purpose of this study is to understand women's experiences related to water availability, sanitation practices, and menstrual hygiene management in rural areas. The information collected will be used only for academic purposes and will help in understanding the challenges faced by women in their daily lives.

Informed Consent:

Consent obtained: Yes

Type of consent: Verbal

Interviewee Id no.

Date:

Place:

DEMOGRAPHIC INFORMATION

1. age?
2. Education (literate, primary, secondary or higher?
3. occupation?
4. Marital status?
5. No of family members

WATER INSECURITY

Which of the following is true for your household?

a. We get enough water of good quality
b. We get enough water but of poor quality
c. We get inadequate water but of good quality
d. We get inadequate and poor quality of water

6. What is the main source of water for drinking? - piped in HH by municipality, private, water motor, Handpump, Municipal water tanker, public tap, river/pond/spring, well-covered/un covered, market
7. What is the main source of water for other household chores? - piped in HH by municipality, private water motor, Handpump, Municipal water tanker, public tap, river/pond/spring, well- covered/un covered, market
8. If water is to be collected, who is responsible for collecting water?
9. How much time does it take- to and fro including waiting time?
10. If water is to be stored, where do you store it?
11. Do you also purchase water?
12. if yes, how much it costs?
13. Does the supply of water remain same throughout the year or across months?
14. If no, in which season/month you face more water shortage?

MENSTRUAL HYGIENE MANAGEMENT AND WATER

15. Which menstrual product do you use?
16. How do you usually dispose of used menstrual product?
17. Does menstruation affect your daily activities or household work?
18. list items you need for managing menstrual hygiene
19. Do you usually have enough water for managing your menstruation comfortably?
20. What do you do when water is scarce during menstruation? [borrow, purchase, save beforehand, compromise cleaning]
21. Do other family members give up their water usage because you need more water during menstruation? If yes, who?

22. If there enough water for you to take bath daily or clean properly during menstruation?
23. List the difficulties you face during menstruation?
24. does lack of water during menstruation constraint your ability to prepare for school or job?
25. is there enough water in your school/work place to manage menstruation hygienically?
26. If no, what is your coping mechanism at these places? e.g. skipping school, taking leaves etc
27. What are the possible health problems that you face because of shortage of water

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during menstruation?

28. How do you feel when there is not enough water for you during menstruation?
29. What would you do differently while managing menstruation, if you had enough water?
30. Who you think is responsible for providing water to your household or at work/school