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STATUS OF SANITATION AND HYGIENE IN THE COLLEGES OF KASHMIR: UNDERSTANDING THE EXPERIENCES OF FEMALE STUDENTS THEREOF

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ABSTRACT

Access to adequate water, sanitation, and hygiene (WASH) facilities is crucial for maintaining the health, dignity, and well-being of students in educational institutions. Nevertheless, numerous institutions continue to face challenges related to insufficient sanitation infrastructure, which disproportionately affects female students. This study investigates the state of sanitation and hygiene facilities and examines the daily experiences of female students at Amar Singh College in Srinagar, Jammu and Kashmir. Employing a qualitative methodology, the research is based on in-depth interviews with 24 female students selected through convenience sampling. The findings indicate that inadequate access to water and sanitation, coupled with unhygienic conditions, complicates the college experience and daily activities of female students. These challenges often deter students from utilizing the available facilities and may result in health issues and discomfort, particularly during menstruation. The study underscores the necessity of enhancing sanitation infrastructure and ensuring gender-sensitive facilities within higher educational institutions. Addressing these issues is imperative for supporting the health, dignity, and academic engagement of female students.

INTRODUCTION

Globally, approximately 2.6 billion individuals continue to lack access to improved sanitation facilities (UNICEF and WHO, 2012). In numerous developing nations, restricted access to clean water and adequate sanitation exposes substantial portions of the population to infections and diseases (Bartram et al., 2005). Inadequate sanitation significantly contributes to the global disease burden, with approximately 10 percent of illnesses worldwide associated with insufficient sanitation and the proliferation of diarrhoeal diseases (Mara et al., 2010).

Educational institutions are similarly affected by these challenges. Approximately two-thirds of primary schools in developing nations lack access to adequate sanitation facilities (Hands, 2010). The absence of proper water, sanitation, and hygiene (WASH) systems in schools can lead to increased absenteeism among students and negatively impact their academic performance (Mills and Cumming, 2016). Inadequate sanitation facilities are also associated with a heightened risk of gastrointestinal and communicable diseases among students (Jewkes and Connor, 1990; Moelyaningrum et al., 2023). Similarly, Duran-Narucki (2008) identified school sanitation facilities as a significant factor influencing students' attendance and academic success. Ortiz-Correa et al. (2015) further emphasized that sanitary conditions in schools are crucial for enhancing both students' health and their educational outcomes. The lack of adequate sanitation facilities has particularly serious consequences for girls' educational experiences. Insufficient access to clean water and sanitation can hinder girls' concentration in class, often due to stress and discomfort from inadequate facilities (Devnarain and Matthias, 2011; Urme et al., 2025). Inadequate sanitation also limits the ability of marginalized communities to meet their basic needs and maintain proper hygiene (Sridhar, 2006). Kabir et al. (2021) highlight that inadequate sanitation conditions on university campuses often discourage students from regularly using available facilities, which can increase health risks and adversely affect their comfort and overall well-being within the university environment. Evidence from a study conducted in the North and South Atlantic Caribbean coastal regions of Nicaragua re-

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vealed that 81 percent of schools lacked handwashing stations and 74 percent lacked soap. The study underscored the urgent need to improve safe water, sanitation, and hygiene conditions to enhance both health and educational outcomes (Jordanova et al., 2015). Gender inequality is also reflected in the unequal access to sanitation facilities. One of the most common challenges faced by women and girls is the lack of access to private, safe, and conveniently located toilets (Schmitt et al., 2018). Inadequate sanitation disproportionately affects women's health, dignity, and rights, and can have serious implications for their overall well-being (Mehta, 2013; Corburn and Hildebrand, 2015). A study conducted in rural Odisha, India, examined the relationship between sanitation access and women's mental well-being and found that sanitation insecurity was closely associated with higher levels of anxiety, depression, and emotional distress (Caruso et al., 2018). In many cases, inadequate sanitation facilities contribute to girls' absenteeism during menstruation (Corburn and Hildebrand, 2015). However, studies have shown that improvements in sanitation and hygiene infrastructure can significantly reduce absenteeism among girls (Freeman et al., 2011). Similarly, Mahon and Fernandes (2010) found that the lack of private spaces and facilities for personal hygiene and menstrual management was one of the main reasons girls remain absent from school during menstruation in India and Nepal.

Access to clean water and adequate sanitation is crucial for maintaining acceptable public health standards. The establishment of safe sanitation systems and enhanced access to clean water can significantly reduce the prevalence of diseases globally (Montgomery et al., 2007). Despite its critical importance, access to sufficient WASH services remains a substantial challenge in numerous countries due to limited awareness, weak policy implementation, insufficient budget allocation, and financial constraints (Olukanni, 2013). Poor sanitation not only impacts physical health but also induces emotional stress and discomfort among individuals (Sahoo et al., 2015). Moreover, inadequate sanitation can affect the broader social and economic conditions of societies, particularly in developing nations (Tumwebaze et al., 2013). Adequate WASH systems promote better health and increased school attendance, thereby contributing to more successful educational experiences for students (Jasper et al., 2012). In India, improving health and hygiene conditions has been a significant concern since independence (Nagpal et al., 2019). Several initiatives have been undertaken to enhance sanitation infrastructure in educational institutions. For instance, WaterAid India has collaborated with district governments to ensure that schools have access to adequate water supply and separate toilets for boys and girls (Mahon and Fernandes, 2010). Despite these efforts, many girls worldwide continue to avoid attending school due to concerns about menstrual staining, menstrual discomfort, and the lack of appropriate facilities to manage menstruation in schools (WaterAid, 2017). Continuous access to improved sanitation facilities is therefore essential for safeguarding women's health, dignity, and well-being (Nagpal, 2019). Against this backdrop, the present study aims to assess the water, sanitation, and hygiene (WASH) facilities available to female students at Amar Singh College in Srinagar, Jammu and Kashmir. The study also seeks to examine the sanitation-related challenges faced by female students, particularly concerning menstrual hygiene management and issues of privacy.

RESEARCH METHODOLOGY

Research Design: This study utilized a qualitative research design to investigate the experiences of female students concerning sanitation and hygiene facilities at Amar Singh College, Srinagar, Jammu and Kashmir.

Study Settings: The present study was conducted at Amar Singh College, situated in Wazir Bagh, Srinagar (74˚-48' N latitude, 34˚-03' E longitude, and 1589m altitude). This institution was deliberately chosen for the study due to its status as one of the oldest colleges in the Kashmir Valley, with a history spanning over a century. The college occupies an area of 35 hectares. Amar Singh College offers a variety of undergraduate programs in Arts, Science, Commerce, and Computer Applications, as well as a postgraduate program in Geography. The college enrolls students from diverse societal backgrounds, with 3,375 males and 2,077 females in undergraduate courses, and 111 males and 156 females in postgraduate courses. Additionally, the college provides UGC-sponsored add-on courses in Information Technology, Video Editing, Computer Applications, and Web Design. It also functions as a study center for IGNOU and serves as a nodal college for the Kashmir division, coordinating the Department of Higher Education and approximately 50 government colleges in the province. Furthermore, it is a constituent college of Cluster University Srinagar. Historically, the college was established in November 1913 as the Amar Singh Technical Institute to impart education in art, culture, and basic skills such as carpentry and masonry, and was formally inaugurated on 29 May 1914 by Maharaja Pratap Singh. In June 1942, the technical institute was transformed into Amar Singh College through the bifurcation of Sri Pratap College.

Sample size and Recruitment of participants: The study's target population comprised all female students enrolled at Amar Singh College, Srinagar. Participants were selected through convenience sampling, resulting in a sample of 24 female students who consented to participate. These participants were from various semesters and were enrolled in different courses. Their ages ranged from 19 to 25 years.

Data Collection: Prior to data collection, permission was obtained from the principal of the college. Subsequently, all participants were informed about the study and their right to withdraw or terminate their participation. Interview schedules were developed to gather responses regarding the sanitation facilities available to female students. Demographic information, including age, semester, subject stream, and residence, was collected at the beginning of each interview. The fieldwork for this study was carried out between July and September 2025. Data collection adhered to the principle of data saturation, whereby participants were continuously recruited until no new and relevant information emerged. To avoid complexity, technical terms were not used.

Data Analysis: The data was analyzed using a thematic analysis approach (Braun and Clark, 2006), which involves familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Four major themes emerged, describing the status of sanitation and the concerns of female students at Amar Singh College.

Ethical Considerations: Participants were assured of the confidentiality of the information collected. Interviews were conducted in an informal and flexible environment to encourage open discussion of personal experiences with the researcher. All interviews were audio-recorded with the participants' consent, and each interview lasted between 20 and 30 minutes. To maintain confidentiality, participants' actual identities were protected by assigning each a unique number instead of using their real names.

Table 1. Demographic information of the participants

No.	Age (in years)	Class/ semester	Course/ subject stream	Residence
1	21	5th	B. Com	Urban
2	21	5th	B. Com	Urban
3	22	5th	B. A	Rural
4	21	1st	B. A	Urban
5	19.5	5th	B. Sc	Urban
6	22	5th	B. A	Urban
7	21	1st	IG English	Urban
8	24.5	4th	PG In Geography	Rural
9	22	5th	B. A	Urban
10	22	5th	B. A	Rural
11	20	1st	B. A	Urban
12	24.5	4th	PG in Geography	Rural
13	20	1st	B. A	Urban
14	22	5th	B. Sc	Urban
15	25	4th	PG in Geography	Rural
16	20	1st	B. A	Urban
17	19	1st	B. A	Rural
18	22	4th	B. Com	Urban
19	22	4th	B.Sc.	Rural
20	24	4th	P.G. in Geography	Rural
21	21	3rd	B. A	Urban
22	21.5	3rd	B. Com	Urban
23	24	4th	P.G. in Geography	Rural
24	21.5	3rd	B.Sc.	Urban

Source: Field-work, 2025

RESULTS AND DISCUSSION

Four significant themes emerged from the analysis. First, the theme on accessibility, focussing on access to toilets, water, handwashing facilities and sanitary napkins; second the status of sanitation and avoidance; third, privacy concerns; and finally, issues and concerns of girls during menstruation.

Accessibility

Access to water and sanitation: Access to water and sanitation is recognized as a fundamental human right. The provision of adequate sanitation facilities in educational institutions has been shown to enhance student participation and academic performance. It is estimated that improved access to water and sanitation could result in an additional 1.9 billion school days due to a reduction in the incidence of diarrheal diseases among students (Hutton and Haller, 2004). Within the scope of our research, a significant finding emerged concerning the availability of toilets for female students. Our study revealed that there were only 10 toilets available for 2,354 female students, resulting in a notable toilet-to-student ratio of 1:235. The findings indicated that toilet facilities within departmental premises were exclusively accessible to staff members, while a separate facility located outside the departmental buildings was designated for student use. "*I am in the 5th semester and I have used the college toilet four to five times only. There were no separate toilets for girl students and we sometimes used the female staff washroom. It would remain locked for the students most of the time and we had to take keys from our teacher. We suffered a lot*." (P.14) Access to water and adequate latrines within school settings is of significant importance, particularly for pre-pubescent and menstruating girls (Sommer, 2013). To foster a conducive learning environment, all participants in this study expressed a desire for sufficient access to water and sanitation. Regarding access to separate toilets, postgraduate students from the Department of Geography reported the use of a common toilet for both male and female students. "*Our department does not have a separate toilet for females. Both boys and girls use a common toilet. You can yourself guess how awkward it becomes for us to access the toilet. Usually, many boys are waiting for their turn, and entering or leaving the toilet in these situations is very embarrassing."* (P.12) A substantial portion of participants highlighted that the lack of water was the primary reason for refraining from using toilet facilities. This finding aligns with the results of Hirve et al. (2015), who identified the unavailability of water as a primary challenge encountered by girls while using toilet facilities. "*Sometimes no water is present inside the toilets. Washrooms without water are like humans without oxygen. Lack of water makes the situation troublesome for us."* (P.2) The study findings revealed the presence of flush facilities inside the toilets; however, they were non-functional. This lack of operational flush facilities resulted in significant inconvenience and discomfort for students. "*We can't use the toilet at times because the toilet is covered with feces due to the unavailability of water and proper flush facilities.*" (P.4) The study also found the unavailability of toilet paper inside the toilets.

Access to handwashing facilities: Access to hand washing facilities is essential for maintaining a healthy lifestyle and serves as an effective measure against numerous diseases. The study identified a lack of soap or hand washing facilities within toilets, thereby increasing students' vulnerability to various illnesses. Insufficient access to water and soap for proper hand hygiene can exacerbate the transmission of diseases among students (Jordonova et al., 2015). One participant noted, "*We bring our hand washes or sanitizers with us. The soap dispenser remains empty most of the time*" (P.3). Another participant stated, "*Currently, I am in the 5th semester, and I have never used the college toilet. When basic sanitation facilities are lacking, how can a person go inside? Going inside means inviting infections and diseases*" (P.9). Our findings align with

the study by Lundblad and Hellstrom (2005), which found toilet avoidance to be common in schools. Sommer (2010) also emphasized that the lack of fundamental sanitation facilities in schools leads to toilet avoidance. Urine and fecal retention can result in numerous health problems. Many female students expressed concerns about urine retention and potential health-related issues. One participant remarked, "*I avoid using the college toilet because the toilets always remain dirty, and no one is available to clean them. The unavailability of soap or handwash causes inconvenience to us. We face many problems. We retain our urine throughout the day, and it causes us pain and discomfort*" (P.7). Avoiding or delaying toilet use can lead to various health issues, as Vernon et al. (2013) argue that children who refrain from using school toilets may experience adverse effects such as an increased risk of incontinence, constipation, and urinary tract infections (UTIs). Barnes and Maddock (2002) contend that toilet avoidance behavior can negatively impact students' health by inducing discomfort and potentially leading to bowel and urinary issues. Inadequate sanitary conditions heighten the risk of disease transmission. Many female students reported unhygienic conditions and perceived themselves at risk of contracting diseases such as UTIs. One participant expressed, "*I avoid using the college toilets because I fear contracting urinary tract infections. So, I avoid drinking water during college hours. Not drinking an adequate amount of water causes many health-related problems*" (P.1).

Access to sanitary napkins: Participants were found to be unaware of the availability of sanitary items within the college and expressed a desire for sanitary napkins to be more accessible. It is suggested that the college should provide sanitary napkins to students in times of need. *At least college should provide sanitary napkins to the students in times of need. We cannot keep on asking every single teacher for the sanitary napkins. There should be a separate cabinet where such things would be accessible.* **"(P.2)**Participants expressed concern about the lack of adequate sanitation supplies inside the college and expressed worry in case they got their period unexpectedly or had leakage due to prolonged heavy periods. *Once I got my period unexpectedly and I was without any sanitary item. Toavoid blood leakage,I had to call my cousin sister who travelled from home togive me the sanitary napkin."*(P.6)

Status of Sanitation and Avoidance

The presence of clean toilets is indicative of a hygienic environment. Although separate toilets for boys and girls were available, the majority of participants reported that these facilities were untidy and unpleasant. The inadequate cleaning of toilets led to their avoidance. One participant stated, "*Toilets are never cleaned. Someone should be assigned the task of cleaning the toilets*" (P.4). Another participant, in the final semester of their bachelor's degree, remarked, "*College life has been very pathetic as far as the toilet facility of the college is concerned. The toilet floor is always covered with muddy water, and our shoes get wet while going inside the toilet*" (P.1). These observations align with the study by Hirve et al. (2015), which identified insufficient cleanliness as a prevalent issue encountered by girls while utilizing school toilets. Most participants described the toilets as unpleasant and dirty, perceiving them as unsafe and unhealthy to use. One participant expressed, "*I avoid going to the toilet because everything inside is unhygienic. Many times, I have come back from the door because everything inside is so dirty, the floor, the containers, and everything. A person gets worried about contracting some disease while using the toilet*" (P.5). This finding is consistent with the study by Wada et al. (2020), which highlighted poor and inadequate sanitation facilities as a reason for students not utilizing school toilet facilities, resulting in toilet avoidance and prolonged urine and fecal retention. To encourage student enrollment and attendance, adequate sanitation and proper hygiene must be prioritized. This is consistent with the study conducted by Wada et al. (2020), which argues that significant efforts are required to achieve relevant Sustainable Development Goals targets.

Privacy concerns

Numerous participants indicated that the lack of privacy deterred them from using the toilets, as the presence of boys outside the facilities caused embarrassment when entering or exiting. One participant stated, "*We avoid going to the toilets because boys are present in groups. This makes one uncomfortable and shy*" (P.2). Another participant expressed, "*The presence of boys outside makes me feel uncomfortable. Either I take my friend along or I avoid going to the toilet*" (P.12). Postgraduate students from the Department of Geography voiced concerns regarding the absence of separate female washrooms, which led to urine retention and avoidance of toilet use. They emphasized the need for a dedicated female toilet, stating, "*We are pursuing our post-graduation here, and most of the time we stay inside our department. So, in order to get the desired privacy, we keep waiting for the chance when no one is around the toilet so that we can use the toilet. This results in urine and fecal retention at times*" (P.8). This finding aligns with the study conducted by Hirve et al. (2015), which found that girls avoided using toilets due to the embarrassment caused by the presence of boys nearby.

Issues and concerns of girl students during menstrual cycle

Women may encounter issues such as dysmenorrhea, heavy menstrual bleeding, and premenstrual syndrome (Jamieson, 2015). Due to their unique physiological characteristics, reproductive health processes, prevailing social norms, and susceptibility to violence, women and girls have distinct sanitation requirements compared to men (Schmitt et al., 2018). Consequently, establishing an environment that promotes adequate sanitation and hygiene is essential for all individuals, particularly menstruating women. Women typically utilize restroom facilities more frequently and for extended durations than men (Rawls, 1998), especially during their menstrual cycles (Edwards and Mckie, 1996). Inadequate menstrual hygiene practices lead to school absenteeism among girls during menstruation across Asia and Africa (House et al., 2013). In the context of the present study, a majority of participants reported consistently missing college during the initial two days of their menstrual periods due to insufficient sanitation facilities. "*It becomes exceedingly challenging to manage college during menstruation. Inadequate sanitation facilities adversely affect our physical and mental health. Our bodies are more susceptible to infections during this time. Exposure to unsanitary environments is particularly stressful and exacerbates during*

menstruation. Therefore, we prefer staying home during our menstrual periods" (P.9). This finding aligns with those of Eijk et al. (2016), who identified the lack of water, hygiene, and disposal facilities in schools as a contributing factor to girls missing one or more school days during menstruation. Inadequate disposal facilities, such as the absence of dustbins, were also identified as a concern, as girls had no place to dispose of waste. "*We usually prefer staying home during our menstrual cycle because proper hygiene is necessary during this time, and it is not available. Sometimes sanitary napkins are found on the floor because girls have no place to dispose of the waste. Occasionally, upon entering the toilet, we encounter blocked latrines because students have disposed of sanitary napkins in the toilets, further contributing to the mess and causing nausea*" (P.11). The lack of adequate disposal facilities and the unavailability of dustbins in toilets led participants to skip college during their menstrual cycles. Tegegne and Sisya (2014) also found that girls abstain from and drop out of school due to the lack of disposable sanitary napkins and sanitation facilities. "*We never change our sanitary napkins at college because there are usually no dustbins inside the toilets. Either we skip college during the menstrual cycle, or we come with extra protection so that we do not need to change the sanitary napkins*" (P.1). This finding is consistent with the findings of Devnarain and Matthias (2011), who identified water shortages, lack of privacy, and inadequate sanitary disposal facilities as reasons for girls' absenteeism during their menstrual cycles. Bodat et al. (2013) also highlighted inadequate sanitation facilities in schools as a factor contributing to girls' absenteeism during their menstrual periods.

Female students often refrained from attending college due to concerns about menstrual leakage. The anxiety surrounding the possibility of staining their uniforms was significant, as it was perceived as a distressing scenario. "*The availability of a mirror in restrooms allowed for self-checks, but in its absence, students had to rely on others to inspect their uniforms, which could be uncomfortable, particularly when friends were unavailable, necessitating the approach of strangers for assistance"*(P.12). The apprehension of potential harassment in the event of staining contributed to their decision to remain at home. This observation aligns with the findings of Chinyama et al. (2019), who noted that the fear of menstrual accidents led women to avoid school to prevent staining. Additionally, female students were susceptible to infections in college restrooms due to unsanitary conditions and contaminated containers, which heightened their fear of contracting vaginal yeast infections, as well as reproductive and urinary tract infections. One participant reported, "*The unsanitary toilets in our college increase our vulnerability to various infections. The contaminated containers act as breeding grounds for diseases and infections. Unfortunately, I used the college toilet during my menstrual period, and since then, I have been suffering from a urinary tract infection*" (P.4). Poor menstrual hygiene has been identified as a contributing factor to reproductive tract infections (Bulut et al., 1997; Dasgupta and Sarkar, 2008) and abnormal vaginal discharge (Anand et al., 2015). Phillips-Howard et al. (2016) argue that inadequate menstrual hygiene may adversely affect health, increasing the risk of infections in the reproductive and urinary systems.

Menstruation is a biological process; however, girls often exhibit reluctance in disclosing it, particularly to male peers. They typically confide in a limited number of relatives and friends. Consequently, adequate privacy is essential to address the needs of menstruating girls. A study conducted in Uganda revealed that 43% of girls preferred changing pads at home due to insufficient privacy for changing sanitary pads in schools (Crofts and Fisher, 2012). The lack of privacy hindered girls from changing sanitary pads while at school (Lawan et al., 2010). In the context of our study, inadequate privacy in washrooms impeded girls' ability to maintain menstrual hygiene, as they avoided changing sanitary products in the toilets. Many girls opted to change sanitary napkins at home, and some preferred staying at home during menstruation. "*Dustbins are present, but they are located outside the toilet, making it inconvenient to dispose of sanitary items. Carrying the waste outside for disposal is quite embarrassing. We experience heavy menstrual flow during the first two days, necessitating frequent changes of sanitary napkins. However, considering the privacy issues at college, sometimes the only option is to skip classes*" (P.15). Girls encounter numerous challenges during menstruation, such as fatigue, nausea, abdominal and lower back pain, leg cramps, dizziness, and fatigue. Therefore, it is imperative to provide a separate room with an attached washroom in colleges where girls can rest. "*Periods are exhausting. One desires to sleep throughout. At times, we seek a place to rest, but unfortunately, we find ourselves wandering to locate a suitable spot. Usually, we sit in groups, and if someone needs to rest, we lean on a fellow's shoulder while other girls surround us. Had there been a room for girls, the situation would have been entirely different*" (P.6). Furthermore, when designing toilets, the needs of disabled individuals in general, and disabled female students in particular, should be considered. The toilets lack ramp facilities, making it challenging for disabled girls to access them. Not only is there an absence of ramps, but the cubicles also fail to meet the requirements of disabled female students. Women are rarely consulted about toilet design (Burt et al., 2016), resulting in challenges for women in meeting their sanitation needs. Within a female washroom, larger stall space is necessary to allow adequate movement within the cubicle (Schmitt et al., 2018). Additionally, concerning menstrual needs, a separate space for washing or cleaning stained clothes, equipped with washing soap, should be provided.

CONCLUSION

Adequate sanitation facilities are essential for the physical and mental well-being of individuals. The absence of these facilities, combined with unhygienic conditions, poses significant challenges to the college experience and daily routines of female students. The inaccessibility of sufficient water and sanitation, along with unsanitary conditions, complicates the college experience and daily activities of female students, particularly during their menstrual cycles. Due to inadequate facilities, many female students are compelled to remain absent during their menstrual cycles, as maintaining proper hygiene becomes challenging. The lack of privacy further contributes to discomfort, adversely affecting their emotional and psychological well-being. Therefore, ensuring proper sanitation and hygiene not only reduces their susceptibility to infections and illnesses but also alleviates the associated stress. With the Sustainable Development Goals aiming to improve sanitation and

water facilities for all by 2030, it is imperative to prioritize the availability and accessibility of adequate sanitation amenities. This study concludes that adequate sanitation facilities in educational institutions are necessary for both the well-being and effective learning of students.

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