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An Analysis to Determine the Availability and Accessibility of Safe Drinking Water and Proper Sanitation Facilities in Government Degree Colleges of Bandipora District in Kashmir Division

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Abstract

Aims and Objectives: The present study aimed to assess the availability and accessibility of safe drinking water and sanitation facilities among undergraduate colleges of Bandipora district of Kashmir. **Materials and Methods:** This cross-sectional study was done in the Hassan Shah Khuehami Memorial Government degree college of Bandipora area and Government degree college of Sumbal area of Bandipora district in Kashmir, India. The study covered 404 Muslim girl's participants who were drawn from their graduate 2nd and 3rd years. The information was collected by circulating the pre-tested structured questionnaire containing demographic profile and availability, and accessibility of safe drinking water and sanitation facilities in the colleges. **Results:** Analysis based on age revealed that more than half of participants belonged up to 20 years of age. Less than three-fourths study in the 3rd year and the remaining students were in the 2nd year. A little more than 50% of girls were from nuclear families as high as 80% were from rural backgrounds. The economic status informed that the monthly household income ranged from Rs. 10,000 to Rs. 30,000 and the majority of the parents had school education completed and accordingly employed on wage earnings. With regard to accessibility and availability of safe drinking water and sanitation facilities as high as 90% of the girls opined that they did not have girl-friendly washrooms and were overcrowded and unhygienic. More than three-fourths of the participants expressed that they do not have access to disposal facilities for used sanitary materials, neither incinerators nor any other proper disposal facilities and no space for washing the stained clothes, though more than 90% held that direct tap water for drinking is available. It is to be tested whether the direct tap water is safe without any contamination. The study suggested that safe drinking water and proper facilities for handling menstruation at the educational institutions are the mandatory basic needs, in which the management has to be doubly careful and provide such facilities. **Conclusion:** More number of girls considered lack of infrastructural facilities to be major hurdle in meeting their higher educational needs. Colleges lacked adequate availability of separate toilets for girls, with no proper sanitation facilities. Inadequate facilities of proper sanitation inside the girls toilets were reported to be a strong reason for girls drop-out.

Keywords: Availability and accessibility, Girls, Safe drinking water, Sanitation

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Introduction

The World Health Organization (WHO) and United Nations Children Fund (UNICEF) Joint Monitoring Program for water supply and sanitation had estimated that 2.2 billon people are without impoverished water sources, though over one half of the developing nations (estimating 2.6 billion people) lack access to improved sanitation (the WHO and UNICEF 2000; Waddington *et al*., 2009). Access to water supply and sanitation has been deliberated as a fundamental need and human right by the world organizations. The dignity and health of all people are vital. Ustun and Corvalan in their critical study, in 2006, identified that across the globe 24% of the disease burden healthy life years lost and an estimated 23% of all deaths premature mortality was attributable to environmental factors.

In India, 600 million (approximately) people do face extreme water stress and about 94 million and more than 3 times the population of Australia are living without a source of clean water. During the course of COVID-19 pandemic, when access to water and sanitation were essential to protect people from health risks. It was found that lack of exclusive access to drinking water, distance to the source of water, poor sanitation, and hand washing habits were a challenge for households. Hence, preventing the infection also becomes a challenge (India Spend).[1-3]

"National Sample Survey Organization in their 76th round (2018) found that nearly 50% of the households both in urban and rural areas lack with the adequate and exclusive access to drinking water and one-fourth of households access it through a public and unrestricted sources". The Indian Natural Resource Economics and Management Foundation stated that among rural households, more than half in Madhya Pradesh and West Bengal had to use a public source for drinking, water and at the same time, it was little lower in Maharashtra, Uttar Pradesh, and Bihar.

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It is evident from the Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) of the United Nations (UN) initiative and vision (MDGs 7 and SDGs 6) that safe drinking water is anonymously accepted as an international agenda and priority. Even though the MDGs effort still many people lack access to safe drinking water, even lack access to basic water. The Third World Academy of Sciences reported that contaminated/dirty water is killing more people than cancer, AIDS, wars, or accidents. The number of people without access to safe drinking water is increasing. This is mostly related to the ever-increasing population growth in the developing countries and the inability of nations to provide adequate water supply facilities.

Inequitable access to water and sanitation are the product of disparities in fresh water resources, income, power, and institutional capacity between and within countries. Disparity in access to and use of water, and share in beneficial public expenditure in water sector, can be understood in at least four overlapping connotations (Phansalkar, 2007). In general, drinking water is liberally supplied to urban areas and within them to higher income groups. Kanmony (2003) found the urban-rural disparity in the provision of drinking water. Rural people are discriminated against and deprived of their rights to enjoy basic services. There has been a positive relationship between the level of economic development and access to drinking water (Kundu and Thakur, 2006; Zerah, 2006). There are considerable variations between large urban centers, small towns, and cities in piped water supply and sanitation services in India (Zerah, 2006; Shaban and Sharma, 2007).

The inequality in consumption of water is not only confined to the domestic sector but also in agriculture, industrial, and other sectors. It is observed that disadvantaged groups are discriminated against in the provision of safe drinking water (Kanmony, 2003; Shaban, and Sharma, 2007 and Darshan Singh, 2009). A study on review of development of scheduled castes in India also shows clear disparity between scheduled castes and other castes in access to drinking water source, distance, and improved sanitation facility (Singh, 2009). A recent study shows that there is a clear disparity between the public services received by the inhabitants, depending on their economic strata (Mohan, 2005, Kamyotra and Bhardwaj, 2011).

Women and girls are disproportionately burdened by water scarcity and this increases inequalities: They sacrifice their time and education to collect water (Moe and Rheingans, 2006).[10-12] Inefficiency in water use and irresponsibility in the management of water resources poses a serious threat to our water security and sustainability.[4,5]

Materials and Methods

Based on the above background of safe drinking water and sanitation, the paper studies the following aspects are as follows:

The present study aimed to assess the availability and accessibility of safe drinking water and sanitation facilities among undergraduate colleges of Bandipora district of Kashmir.

The design adopted for the present study was descriptive in nature as it analyzed the socioeconomic profile of the girls with the availability and accessibility of safe drinking water and sanitation facilities in the Bandipora District of Jammu and Kashmir as the area of study. The target population of the study included Muslim girls, in the age group of 18–24 years and enrolled for graduate program, in the Government Degree Colleges of Bandipora District. A systematic random sampling technique was adopted, to meet the meaningful sample size of the study. The researcher generated data through the administration of self-constructed structured tool and the data were analyzed using percentage distribution.[6-10]

Sample of the Study

S. No.	*College*	*Girls Enrolled*	*Universe*	*Sample (20%)*
1.	Government Degree College Bandipora	1440	1032	206
2.	Government Degree College Sumbal	1636	1222	244
	Total	3076	2254	450

The researcher distributed the response sheets to 450 respondents. However, only 404 response sheets were received back. Out of the 404 girls, 181 girls were from Government Degree College in Bandipora and 223 girls belonged to Government Degree College in Sumbal.

Validity and Reliability

The researcher sought the help of experts for guidance, to fix the standard, and to establish the validity of the tool. The panel of experts scrutinized the construction of the tool and made valuable suggestions. Based on their guidance and suggestions, the tool was redesigned. The draft went for a number of reviews and revisions by subject experts and the investigator. For this study, the reliability was measured using Cronbach alpha reliability test. An alpha coefficient above 0.70 is considered acceptable (George and Mallery, 2003).

Results

With regard to the age of respondents', more than 50% of them were in the age group of 20 years and less and more than 60% of them were in the 2nd year of their college degree program and more than 70% of them were from general community [Table 1].

While looking into the family profile of the respondents, 78% of respondents were located in rural areas and <50% lived in concrete houses and more than 50% were from joint family [Table 2].

Table 3 shows that <40% of respondents' fathers were educated up to higher secondary and <30% of them were educated up to secondary classes. It is shown that more than 30%

Table 1: Respondents' personal information

Personal Information	*N=404*	
	Frequency	*Percent*
Age (Years)		
Up to 20	207	51.2
Above 20	197	48.8
Community		
General	296	73.3
ST	30	7.4
Other	78	19.3
Year of Study		
Second	154	38.1
Third	250	61.9

(Other: Reserve Backward Area, Social Caste etc.), Source: Primary Data

Table 2: Respondents' family profile

Family Profile	*N=404*	
	Frequency	*Percent*
Type of Family		
Joint Family	209	51.7
Nuclear Family	195	48.3
Place of Residence		
Rural	316	78.2
Urban	88	21.8
Type of Residence		
Concrete	187	46.3
Tiled	141	34.9
Other	76	18.8

Source: Primary Data

Table 3: Respondent's socioeconomic status

Socioeconomic Status	*N=404*	
	Frequency	*Percent*
Fathers' Education		
Up to Secondary	110	27.2
Higher Secondary	155	38.4
Graduate and Above	139	34.4
Mothers' Education		
Up to Secondary	250	61.9
Higher Secondary	106	26.2
Graduate and Above	48	11.9
Family Income		
Up to 10,000	131	32.4
10,001–20,000	94	23.3
20,001–30,000	97	24.0
Above 30,001	82	20.3

Source: Primary data

Table 4: Drinking water, healthcare, and sanitation facilities

Categories	*N=404*	
	Frequency	*Percent*
Drinking Water		
Available	403	99.8
Not Available	01	0.20
Source of Drinking Water		
Pure it (Water purifier)	82	20.3
Tap water	218	54.0
R.O Purifier	104	25.7
Girl friendly Washrooms		
Available	49	12.1
Not Available	355	87.9
Availability of Water in Washrooms		
Available	354	87.6
Not Available	50	12.4
Sanitation Facilities		
Available	61	15.1
Not Available	343	84.9
Disposal Facilities		
Available	55	13.6
Not Available	349	86.4
Space for Washing Stained Clothes		
Available	65	16.1
Not Available	339	83.9
Type of Healthcare Facilities		
Dispensary	115	28.5
First Aid	289	71.5

Source: Primary data

of respondents' family income level was up to 10000 Rupees a month, while as mothers' educational level was more than 60% at secondary education.

Table 4 shows the availability of drinking water, healthcare, and sanitation facilities in the surveyed colleges of Bandipora District. Nearly 90% girl's opined that they did not have girl friendly washrooms and further, they added that washrooms were crowded, near the classrooms and unhygienic. It was revealed that more than 80% of girls were of the opinion that sanitation facilities, facilities for the disposal of used sanitary materials, and space for washing the stained clothes, and incinerators or proper dumping facility were not available. With regard to healthcare facilities, more than 70% of girls revealed that first aid facilities were available in colleges and <30% of them reported that dispensaries were available near to college.

Summary and Conclusion

The breakup of respondents, on the basis of age, revealed that more than half of them were in the age group of up to 20 years three-fourths of them were from general community and less than one-fourth belonged to other communities (Reserved Backward Area and Social Caste) and the rest belonged to ST community. With regard to the year of study of girls, less than three fourths of them were in the 3rd year and the rest of them were in the 2nd year.

Family Profile

The family profile revealed that little more than 50% of girls were from nuclear family and eight out of ten from rural background and irrespective of the place of residence, less than two-fourths of them lived in concrete houses.

Socioeconomic Status

The average family income Rs. 10,000–Rs. 30,000 and most of their parents had qualified only up to school education.

Drinking Water, Healthcare, and Sanitation Facilities

While examining the health-care facility, it was reported by more than one-third of the girls that only first aid kit was available, while rest of them reported that dispensary facilities were available near the college. The colleges lacked girl friendly washrooms with no proper sanitation and inadequate facilities of disposing off the stained materials. However, it was identified that drinking water was adequately available.

There are multifaceted factors which obstructed girls' higher educational advancement. Much needs to be done to improve their higher educational status by recognizing those factors which hinder their higher educational advancement. The prospects of girls' higher educational improvement depend more on concrete efforts at familial, national, and local level which can play an influential role in removing the barriers to girls achieving higher education.

More number of girls considered lack of infrastructural facilities to be major hurdle in meeting their higher educational needs. Colleges lacked adequate availability of separate toilets for girls, with no proper sanitation facilities. Inadequate facilities of proper sanitation inside the girls toilets were reported to be a strong reason for girls drop-out. The sociocultural factors, patriarchal traditions, and gender stereotyped behavior against women obstructed their access to higher education. This obstruction was more due to their grandparents' resistance, as they enjoyed more

power in decision making than that of their parents. It was revealed that illiteracy among grandparents negatively affected their higher education. Therefore, educated boys must convince their parents and grandparents about the importance of girls' higher education since they have the significant say in decision making. The status of Muslim girls in achieving higher education in the erstwhile State of Jammu and Kashmir needs to be examined further. There is dearth of research oriented literature on the accessibility and availability of safe drinking water and sanitation facilities on Muslim women and their higher education in Jammu and Kashmir.[11-13]

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