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Education, Health and hygiene status of slum areas in Dehradun, Uttarakhand: An in-depth study

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ABSTRACT

There are many problems faced by slum dwellers in Dehradun, who have migrated from various parts of India due to the increasing demand in the construction industry in Uttarakhand. These migratory laborers face several inherent problems as they settle in to make a living. A survey was conducted among seven slum areas in Uttarakhand to analyze their status, namely whether they were employed or unemployed; what the conditions were that they were living in; and whether these conditions increase their vulnerability to diseases. What would be the impact of the various programs that the central and state governments have announced with respect to toilets, safe drinking water, and sanitation? What is the extent of literacy/illiteracy levels that exist amongst adults and children in the slums? Primary survey analysis of seven slum areas has indicated that there are basic issues that have led to increased illness and spread of diseases amongst the elderly and children. The government should initiate specific schemes for these areas that could address these primary issues and help the population move out of abject poverty. Questions regarding attitudes towards empowering the female gender, both adults and children, were addressed, and the involvement of the entire family, irrespective of gender, in achieving a regular, stable income.

Key Words: Hygiene, Education, Sanitation, Health, Socio-economic status, Slum dwellers, Urbanization, Unemployment, Literacy, Public health, Wages, Economy.

1. Introduction

The state of Uttaranchal, the 27th state of India, was carved out of Uttar Pradesh, and in January 2007, the new state changed its name to Uttarakhand, meaning the northern region. Dehradun became the capital of Uttarakhand State. It lies in Doon Valley at the foothills of the Shivalik Himalayan range in India. It is a British Raj heritage city, with a picturesque landscape, milder climate, and a getaway to upper regions like the hill station Mussoorie, which makes it a busy

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city as well as a tourist destination. It is an important administrative and industrial city that houses eminent educational and research institutions. Over the past few decades, the city has grown as a commercial, educational, and industrial hub, leading to rapid urbanization. With this urbanization came the development of slums and squatter settlements. This study aimed to map the slums and squatter settlements within the Dehradun area and collect information on key characteristics of every slum settlement concerning their Education, Health, Hygiene conditions, and other basic human needs.

2. Definition- It is important to define certain basic entities that are used in the process of research.

2.1 A slum household

The general definition of a slum household is a group of individuals who live under the same roof, lacking one or more of the following conditions:

- Access to improved water
- Access to improved sanitation
- Sufficient living area
- Housing durability
- Security of tenure

This definition has been adopted by the Millennium Development Goal target 7.

The definition of a slum household in our study is a household located in a slum settlement that fulfills either of the following criteria:

1. The household uses a shared latrine.

2. The household uses shared water sources

2.2 Occupational Status / Occupation

An occupation is a job that one does for a living. These fall into two categories- paid and unpaid. A type of work or job that requires a particular set of skills, knowledge, and expertise can be considered an occupation.

Occupational status could be impacted by socioeconomic conditions, but primarily it is dependent on wages. In India, when one considers occupational status, it implies a fundamental measure of social standing that reflects the distribution of power, privilege, and prestige associated with positions in the occupational hierarchy.

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Socio-economic status is described as low, medium, and high depending on education, income, and type of job. People with lower socio-economic status have less access to financial, educational, social, and health resources than those with higher socio-economic status. In India, in the urban area, jobs are concentrated in:

- Service Industry
- Manufacturing Industry
- Trade and Commerce.

In the rural areas, they are concentrated in agricultural activities. In India, 46% of the population is dependent on the agricultural sector, but its contribution to the GDP is only 20% (2024, City Group India report 2024).

3. Research gap and methodology

The paper would address, through primary data, the problems faced by migratory slum dwellers in the seven slums that were analyzed and the possible policy solutions for uplifting and solving issues that are being faced by them.

The methodology adopted is the use of primary data in understanding the inherent problems faced by the slum dwellers and the expectations from the government in addressing them. Some quantitative and qualitative data would be used from authentic secondary sources to substantiate various arguments.

4. Reasons for migration from rural to urban areas in India

The main reason for migration from rural to urban areas is the lack of opportunities for work and the search for a better quality of life. Rural areas often lack basic living needs like education institutions, healthcare services, and financial independence etc.

Average urban wages are usually higher than average rural wages. Rural areas have been facing the problem of unemployment due to the hard physical labor involved in agricultural practices and the comparatively poorer pay. People move to urban areas due to better administration and management in the cities. Cities with better infrastructure, transport, drinking water, electricity, etc. Unequal development in villages creates differences in the basic standards of living, floods, famines, and debt in villages push people to look for better opportunities in bigger cities.

Reasons for slums in urban areas are rapid rural-urban migration, poor planning, economic stagnation, poverty, high unemployment, and the informal, unorganized economy. The growth of slums is primarily due to a lack of affordable housing, leading to migrants settling down wherever they can. Besides the reasons that have been mentioned above, slums also arise due to

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forced or manipulated ghettoization, poor planning, politics, natural disasters, and social conflicts.

Slum formation is influenced by various factors, namely economic, social, and political systems, such as urban-rural dynamics, and limited living options that contribute to slum formation.

Slums represent a large proportion of housing markets in developing countries. Whatever the definition, slums are always associated with some sort of deprivation, such as insecure land tenure, low standards of urban services, and non-durable housing structures. They occupy unauthorized land in environmentally vulnerable locations. These settlements have limited access to clean water and proper sewage treatment and are associated with a worse quality of life. According to the UN-Habitat Report of 2016, in 2014, 30% of the urban population in developing countries lived in slums.

Fig. 2 Image of a slum

Source-(https://www.habitatforhumanity.org.uk/what-we-do/slum-rehabilitation/what-is-a-slum/)

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In many cases, slum dwellers work in low-paying informal sector jobs, which are often the only employment opportunities left available to them. Some of them could be industrial labor in the commodity-producing sector, while others could be daily wage earners, primarily rickshaw pullers, masons, and hawkers. These slums mushroom in vacant land beside roads and railways in an unplanned manner. Slums are characterized by a high density of population with a low standard of housing. Poverty is an inseparable part of slum dwellers, and they are economically backward.

Due to rural poverty, most of the unskilled village people migrate from rural to urban areas, and they build their houses in these vacant lands. Slums are characterized by a lack of basic facilities, streetlights, garbage disposal, and unhygienic conditions.

In slums like Dharavi in Mumbai, the economic activities span from tailoring to plastic recycling, leather crafting, and textile processing.

5. Literature review

M. Sarkar, in his study on Calcutta slums, found that female students were more knowledgeable than male students regarding the maintenance of personal hygiene. According to his research, there was a wide gap between practice and knowledge of personal hygiene among the primary school children living in the slum area. There was a significant association between personal hygiene practices among primary school children and the literacy status of their mothers. Sudhanshu Mahajan et al studied hygiene in a slum in Pune, and their study indicated the same result as Sarkar's study, that there was a strong association between a mother's education and adequate hygiene practices. They suggested that the schools should take up and conduct health education programs for parents, so that they can improve the health habits of their children. V.R. Roja et al, in their study in southern India, stated that undernutrition was highest among children of illiterate mothers, while children of working mothers were affected by morbidity. Morbidity amongst children was also seen in families with low income and low socio-economic backgrounds. According to their study, parental education, occupation, and income were significantly associated with the age group of 5.

6. Objective and Area of Study

The objective of this study was to analyze the health conditions of people living in a slum area in Dehradun. 120 families were identified, and important general features of the inhabitants were identified.

The gender of the respondents was as below-

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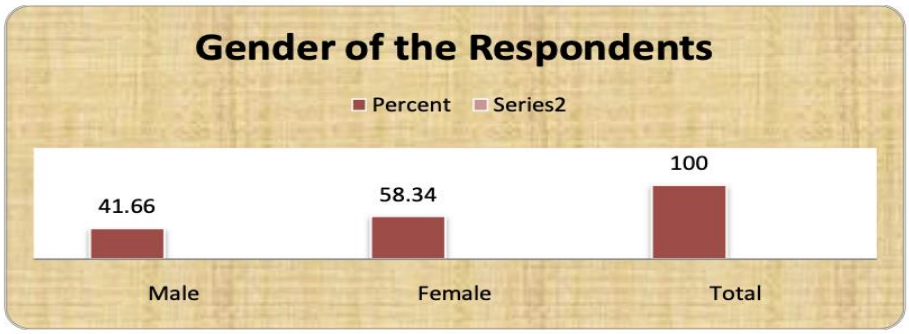
Table 1: Findings according to gender

Number of respondents in terms of gender

Gender	Frequency	Percent
Male	50	41.66
Female	70	58.34
Total	120	100.0



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From the above table, 41.66 % (50 individuals) were male interviewers, and the remaining 58.34% (70 individuals) were female. The respondents indicated that they were needy and were keen to change their lifestyle and living conditions. They expressed that they had participated in various ways, indicating their requirements, but no concrete measures were adopted to improve their living conditions.

Table 2: Frequency distribution according to age group

Frequency Distribution of Respondents with respect to Age-Group

Variables	Slums	
	No.	%
15-25	30	25
25-35	40	33.33
35-45	20	16.66
45-55	20	16.66
55-65	10	8.33
Total	120	100

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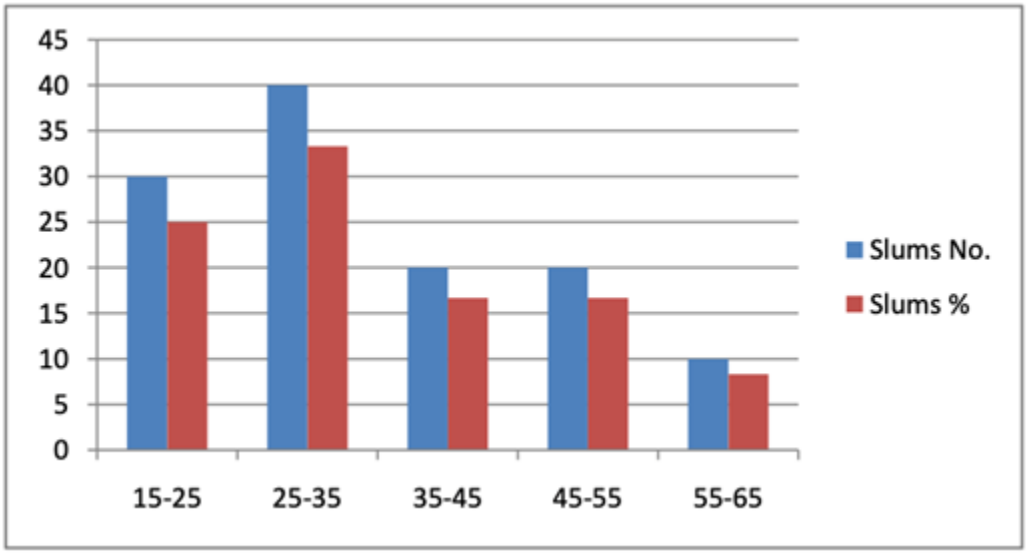

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The above table indicates that the majority age group that lived in the slums was between 25 and 35 years, and the minimum numbers were in the age group 55-65 years.

Educational status of the slum dwellers

Table 3: Educational status

Name	Educational Status					
	Illiterate	Literate up to 5	5-12	Graduate - Post Graduate	Other Higher Education	Total
Sudhowala	3	13	4	0	0	20
Thakurpur	5	10	5	0	0	20
Selakui	4	11	5	0	0	20
Nanda Chowki	6	10	4	0	0	20
Bhauwala	3	13	4	0	0	20
Tilwari	5	12	3	0	0	20
Total	26(21.66%)	69(57.5%)	25(20.83%)	0	0	120

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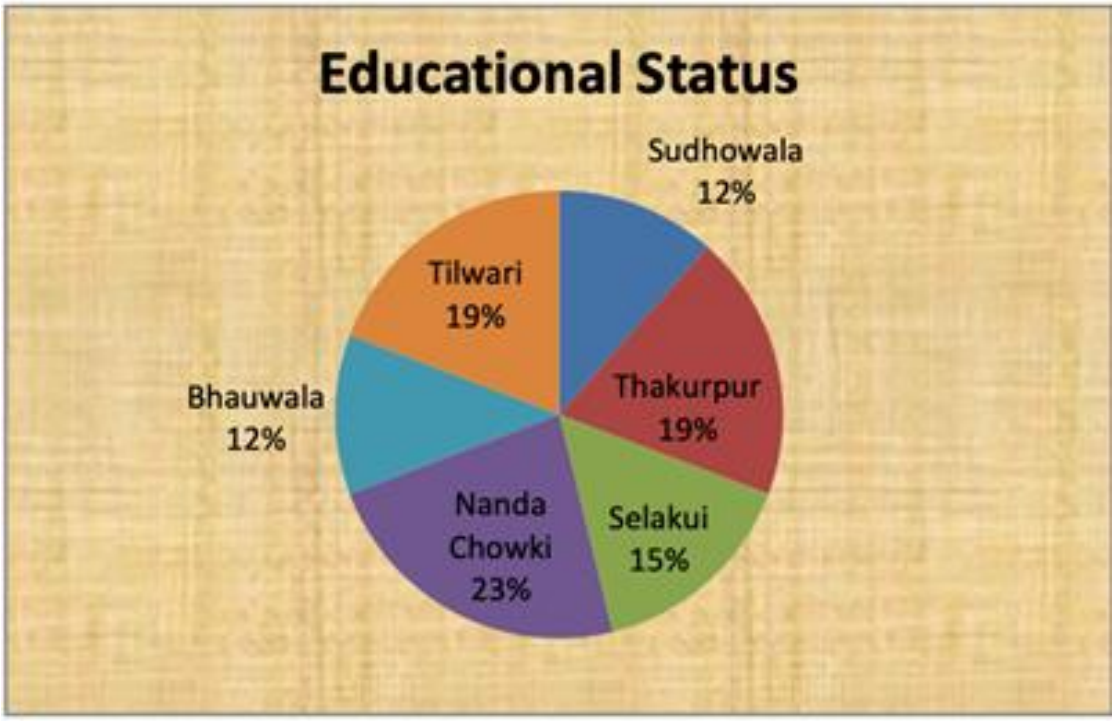

Source: Own source

This table indicates that 21.66% of the respondents were illiterate, 57.5% had studied till class 5, 20.83% were educated from primary to higher secondary level, and there were 0% of the respondents had moved beyond the secondary level.

Analysis of respondents who had dropped out of the education system

Table 4: Frequency distribution of school dropouts

Gender	Frequency	Percent
Male	40	33.34
Female	80	66.66
Total	120	100.0

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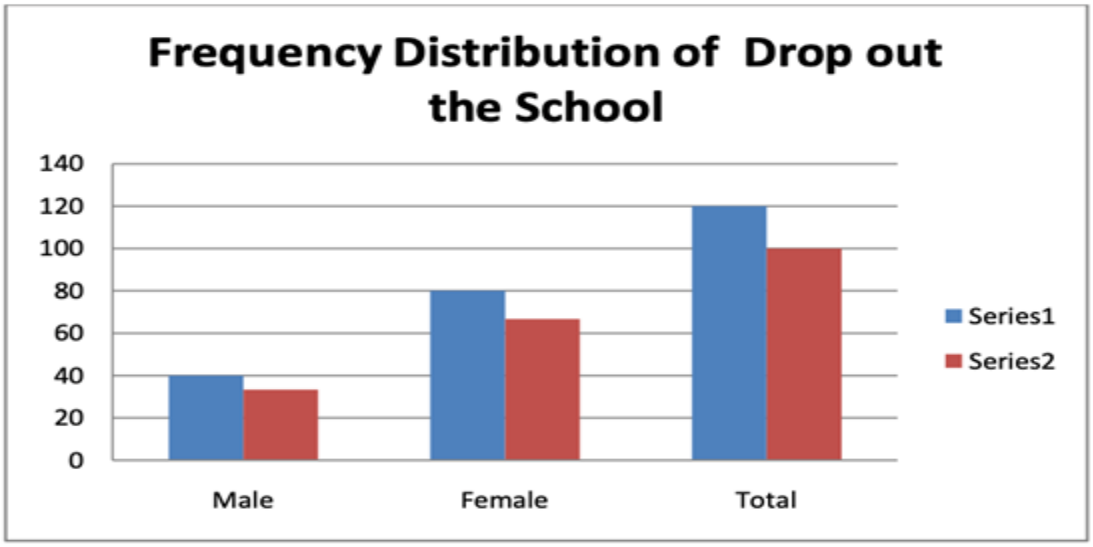

Source: Own source

Occupational Status of respondents who participated in the survey

Table 5: Frequency Distribution of Respondents for Occupational Status

Occupational Status	Slums	
	No. (Series 1)	**%** (Series 2)
Self & Regular Skill	56	46.66
Unemployed.	30	25
Employee	11	9.17
Others	21	17.5

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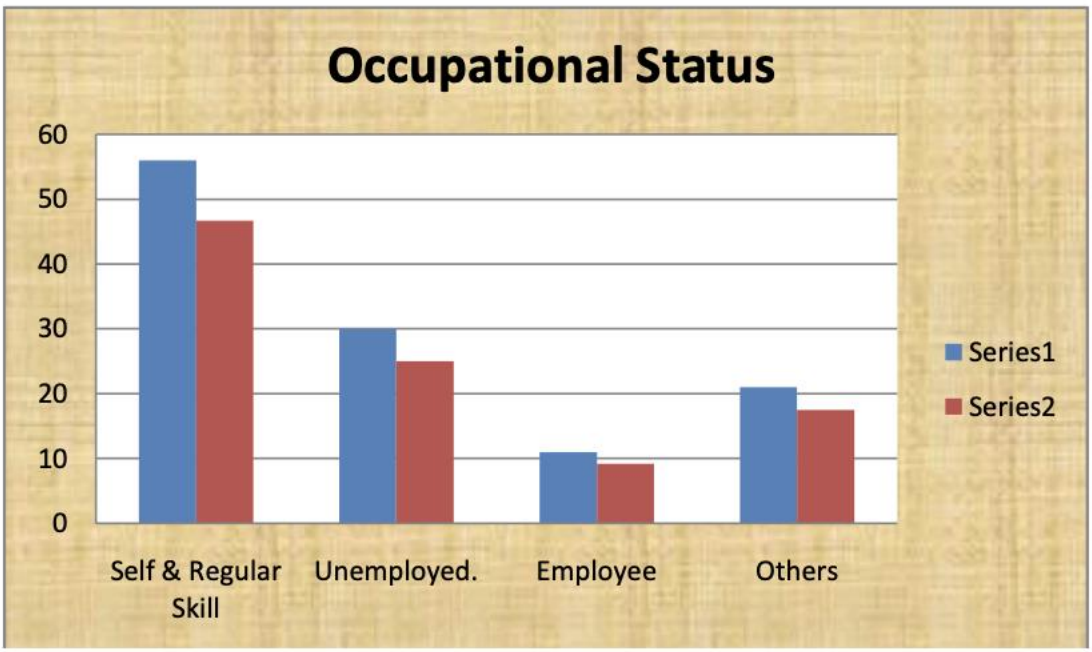
The table indicates the percentage of people who are self-employed and others who are unemployed. Some still employ other people, but that percentage was 9.17%. The same is indicated in a bar chart below, where series 1 is the number for the occupational status and series 2 is the percentage of that number. This is indicated in the bar chart below**.**

Table 5: Continued



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The figure and table above indicate that most of the respondents were self-employed or unemployed. A minuscule number have set up their work and are employing other people. The other category consisted of people who were not regularly employed and might have been working on a part-time basis as and when they got some work.

It was important to understand the system of healthcare that exists in slums. Healthcare is an extremely important factor as it determines the number of man-days that might be lost due to ill health. Considering that most of the respondents were working on a daily wage, health becomes an extremely important determinant of income.

What was indicated in the survey was that the utilization of healthcare services was 44.5%. Out of the total 120 households surveyed, an age-wise distribution of utilization of health services is indicated below.

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Table 6: Bivariate Analysis of Healthcare Utilization

Variables	Utilization of Healthcare Services		p-value
	Slum Area		
	No (%)	Yes(%)	
Age			
15-25	25	4	0.230
25-35	33.33	10	
35-45	16.66	2	
45-55	16.66	16	
55-65	8.33	25	

The *higher* the p-value, the better. P-values can indicate how incompatible the data are with a specified statistical model. The p-value tells us the probability observed in the relationship between two variables. It helps us understand the extent to which the relationships in our analyses are real and not just random.

The “no” and the “yes” in the form of percentages in the table above indicate the number of respondents corresponding to the age group who utilize the health services that are available in the Dehradun slum that was being surveyed. It indicates that the age group 15-25 hardly utilizes healthcare services. As one grows older, the percentage of healthcare utilized increases. (Between the age group 55-65, 25% of the respondents utilized available healthcare, and 45 55 16% utilized available healthcare. On the other hand, the age group 15-25 utilized only 4% of the healthcare services.

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Table 6: Continued

Gender			
Male	41.66	15	0.003
Female	58.34	78	
Educational Status			
Illiterate	10	43	0.001
Primary	27	45	
Secondary	07	5	
Above Secondary	00	00	
Occupational Status			
Self & Regular Skill	46.66	50	0.045
Unemployed.	25	34	
Employee	9.17	55	
Others	17.5	10	
Medication			
Govt. Dispensary	24	30	.064
Private Shop	14	17	
Did not take any Medicine	34	50	
Govt. Scheme			
Yes	16	40	0.067
No	20	60	
Ayushman Card			
Yes	26	56	0.082
No	45	55	

Source: Own source

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The age of the respondent indicated the extent of a significant statistical difference that existed in the table. (If the statistical significance is high, it indicates that the effect is large enough to be meaningful.) If P is ($p>0.05$), then the utilization of healthcare according to gender and age group that the null hypothesis is likely to be true, and the results are not statistically different. If $p<0.05$, it means that the result of a statistical test is statistically significant, which means that the data is unlikely to have occurred by chance, and the null hypothesis can be rejected. The null hypothesis is the statement that there is no difference between the groups and variables. A statistical test is used to compare the sample data to the null hypothesis. It can also be defined as stating that there is no significant difference between specified populations and any observed difference is due to sampling or experimental error.

Educational status, which was one of the important factors, was found to be significantly associated with the utilization of healthcare services ($p<0.05$). Occupational Status was found to be not significantly associated with the utilization of healthcare services in the slum area ($p>0.05$ The variable medicine was found to be not significantly associated with the utilization of healthcare services in the rural area ($p>0.05$). Govt. The scheme and Ayushman Card for the utilization of healthcare showed a statistically significant difference for the slum area ($p>0.05$). The 0.05 level of significance indicates the probability that the results reported happened by chance.

Table 7: Hygiene conditions in the slum area

Variables	Frequency	Percent
Washing clothes	60	50
Washing your body	45	37.5
Washing child's bottom	20	16.66
Washing child's hands	35	29.16
Washing hands after defecating	10	8.3
Washing hands after cleaning child	30	25
Washing hands before feeding child	5	4.16
Washing hands before preparing food	47	39.16
Washing hands after using Sanitary pads	4	3.33

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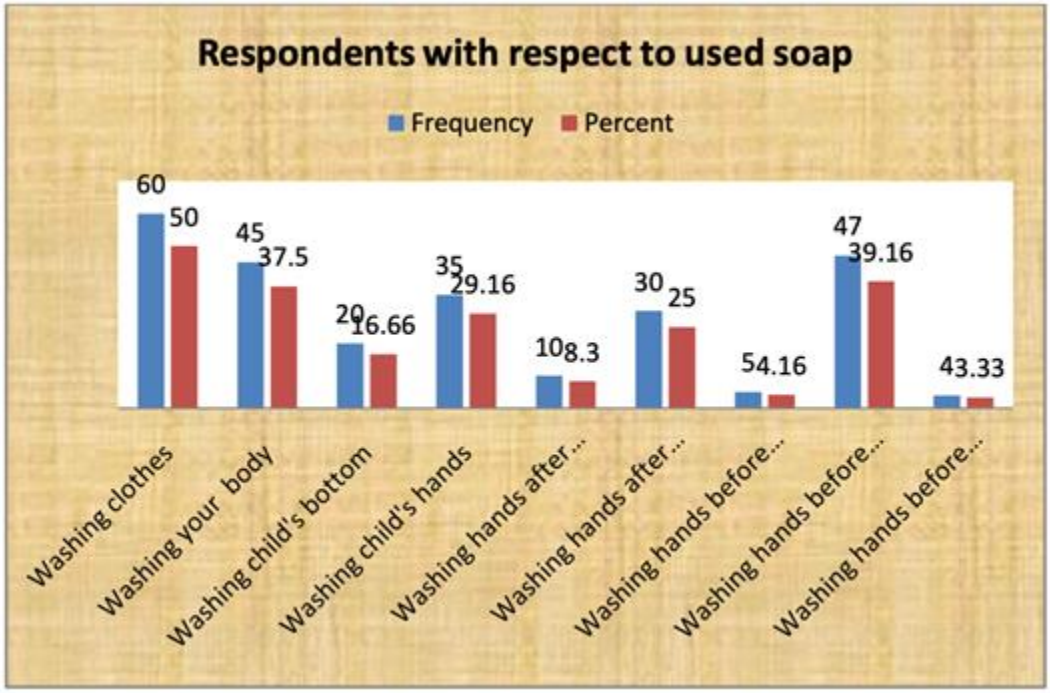

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Acute respiratory infection (ARI) is a leading cause of morbidity and mortality. 83% of ARI mortality occurs in low and middle-income countries. Interventions that promoted hand washing with soap reduced ARI, compared with no hand washing. The multiple physical contact, primarily with the use of hands, for example, wiping noses, changing diapers, etc., allows opportunities for microorganisms to travel between the caregiver and the child. Hand washing has traditionally been identified as the most important infection-control intervention to prevent disease transmission and is recommended before and after contact with patients, body fluids, and dirty material.

Table 8: Toilet/ Bathroom status

Toilet/bathroom status

Variables	Frequency	Percent
Toilet/bathroom inside the house	10	8.33
Toilet/bathroom outside the house	30	25
Open space outside the house	65	54.16
Public toilet/bathroom	10	8.33
Any other	5	4.16

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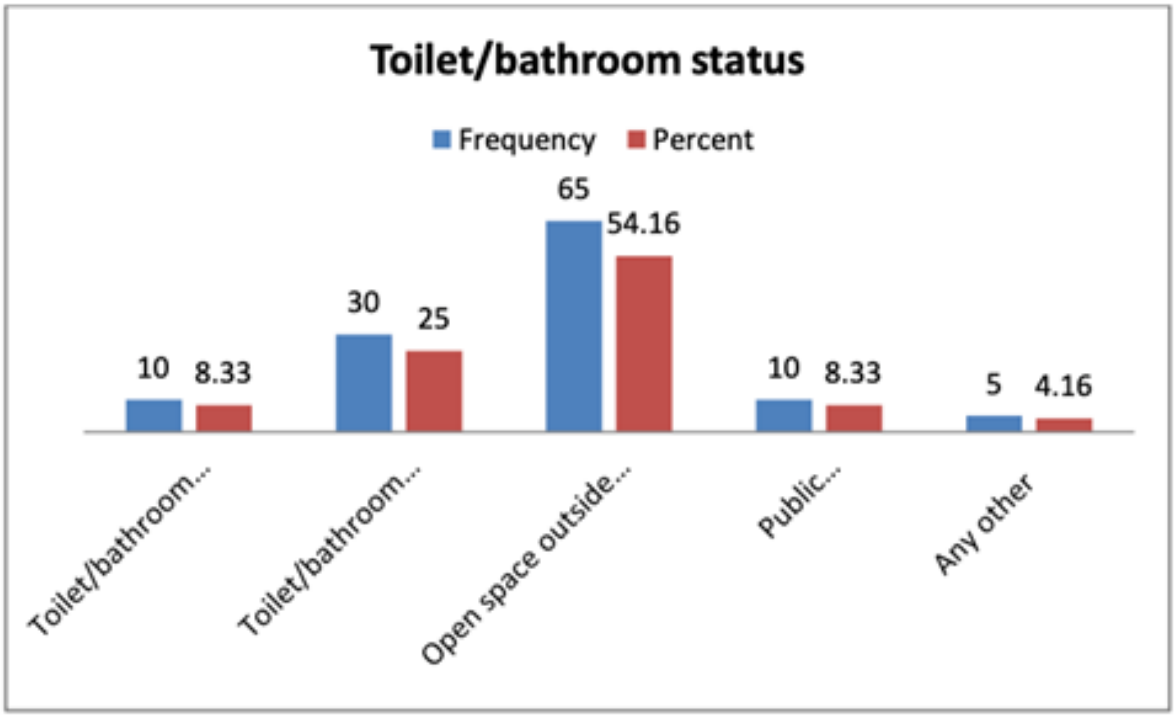

Source: Own source

The table above indicates that 54.16% of the respondents used the open space outside the house. This indicates the inadequacy of the number of toilets available to the slum residents. There were only 8.33% of the people who used the public toilets that were provided by the government, either due to inadequate numbers or the cleanliness factor. This indicates that despite the government promoting the construction of toilets by giving financial support, this has not borne fruit in the slum area that was surveyed. This may be because the toilets may not have adequate drainage or water facilities, so they can become a viable alternative instead of using open areas.

Table 9: Drinking water status

Drinking water status

Variables	Frequency	Percent
Number of safe drinking water	40	33.33
Number of unsafe drinking water	80	66.66

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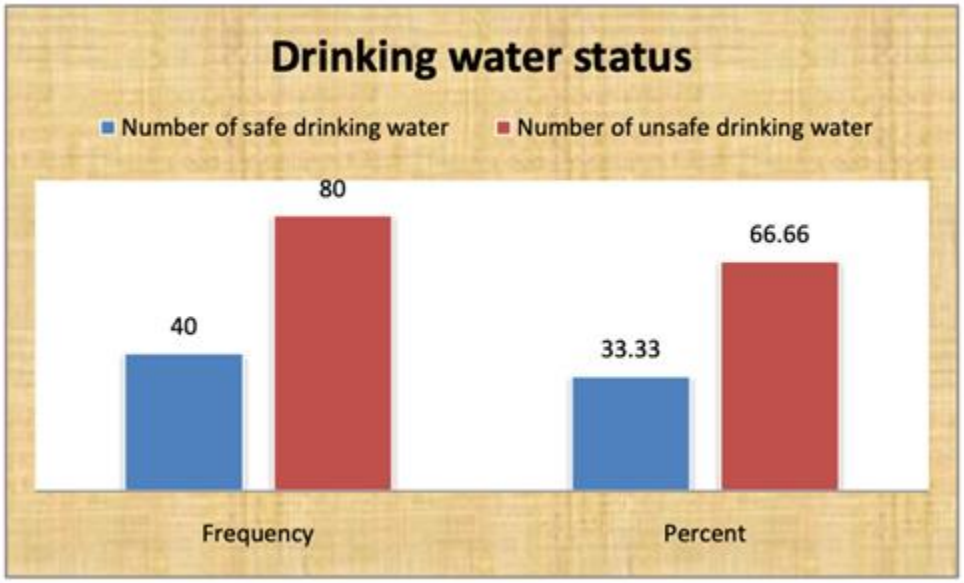

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The analysis indicated the importance of using safe drinking water, and it was found that the number of respondents who contracted water-borne diseases was minimal amongst those who had access to safe drinking water. The number of people who contracted water-borne diseases exponentially increased due to the non-availability of safe drinking water.

7. Conclusion:

Living in slums leads to several inhuman conditions that are faced by the residents. Besides the fact that they are primarily of a migratory status and have settled in various cities to enhance their incomes, the living conditions may lead to the contraction of several diseases. These diseases are normally observed to flare up due to unhygienic conditions. Many of these diseases are water-borne and have erupted due to a lack of safe drinking water and an inadequate number of clean toilets.

Despite the respondents looking for a better life for themselves and their children, the analysis has indicated that a large percentage were self-employed, and there were very few who could be considered literate in the true sense.

The government, both central state and district, would have to adopt policies to address issues concerning employment, safe drinking water, sanitation, and encouragement of both adult and regular literacy. Not only should funds be allocated, but there should be an attempt to oversee the dispersal of these funds in the required areas. The government has initiated many policy measures like MNREGA (ensuring minimum employment), SWACH BHARAT (toilet and safe

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drinking water), various insurance policies for health, and universal education for all. The main lacuna is adequate implementation.

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