



Original Research Article

## Hygiene and Sanitation Practices among Slum Dwellers Residing In Urban Slums of Pokhara Sub-Metropolitan, Nepal

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### ABSTRACT

**Introduction:** Poor hygiene and sanitation in Nepal has been a major public health challenge. The study was conducted to assess the existing practices of sanitation and hygiene among slum dwellers residing in urban slums of Pokhara sub-metropolitan.

**Methods:** A descriptive cross-sectional study was carried out in 7 urban slums out of 41 urban slums of Pokhara sub-metropolitan. Information was collected through face to face interview to 374 women and observation of sanitation and hygiene status.

**Results:** There was availability of latrine in most of the households (96.3%) out of which 74.72% households had improved non-shared latrine. The study showed 71.4% of the respondents used to wash their hands with soap water after defecation. Few of the respondents reported bathing daily (17.9%). More than two-third of the households (68.2%) used improved source of drinking water of which majority (64.2%) of the households used to take water directly from sources. Nearly half of the households (43.3%) used to dispose garbage waste directly into river.

**Conclusion:** Sanitization and hygiene practices in urban slums of Pokhara metropolitan was reported satisfactory than other studies but still public health concern.

**Key words:** Sanitation, Healthy practices, Slum areas.

### INTRODUCTION

According to National Sanitation Foundation of the USA; "Sanitation is a way of life. It is the quality of living that is expressed in clean home, clean firm, clean business, and clean community. Sanitation covers the whole field of controlling the environment with a view to prevent disease and promote health".<sup>[1]</sup>

Hygiene is commonly known as cleanliness or conditions and practices that serve to promote or preserve health.

Improved housing, improved nutrition and improved hygiene with improved access to safe water, sanitation and good hygiene are the essential components for the war against infectious diseases and bases for clean environment, socio-economic development and sound public health.<sup>[2]</sup>

Worldwide, an estimated 2.5 billion people lack access to basic improved sanitation, 780 million lack access to improved drinking water and 1.1 billion defecate in open areas.<sup>[3]</sup>

In Nepal, NDHS 2011 showed that 89% of populations use an improved drinking water and 39% of populations with access to improved sanitation, 38.4% of people defecate in open areas and 11% of total population has to rely on unimproved form of water supply. [4]

The United Nation Habitat have described sanitation and hygiene challenges in slums in terms of poor basic services results in lack of access to sanitation facilities as well safe water sources. This is due to the lack of waste collection services, poor rain water drainage system, poor infrastructure and absence the of an electricity supply. [5]

The objective of this study was to assess the existing practices of sanitation and hygiene among slum dwellers of Pokhara sub-metropolitan.

## MATERIALS AND METHODS

A descriptive cross sectional study was carried out in 7 slum areas in Pokhara sub metropolitan. A sample size of 374 households was determined based on the 43% sanitation coverage in Pokhara valley. [4] A multistage systematic random sampling technique was used in this study. At first 7 slums were selected randomly out of 41 slums in Pokhara metropolitan. The required numbers of households from each slum were determined proportionately. Every 5<sup>th</sup> household was selected as sample unit to collect data. Interview was conducted to individual married women/house wife using structured interview schedule. Observation checklist was also administered for collecting primary data and information. Written permission to conduct the study was obtained from the Public Health Programme of Pokhara University. Propose of the study was explained and oral informed consent was obtained from each study subject before conducting the interview. Care was also taken to maintain the privacy and

confidentiality. The collected data was analyzed and processed systematically using SPSS version 16.0.

## RESULTS

**Socio-demographic information of respondents:** Among 374 women interviewed; more than one-third of the respondents (35.8%) were of age group 20-30 with mean age 37.35±1.43. More than half of the respondents (54%) were belong to nuclear family. Majority of the respondents (73.7%) were Hindus. More than one-fourth of the respondents (27.5%) women were illiterate. About half of the respondents (50.8%) were housewife.

**Information regarding availability, use and maintenance of latrine:** Most of the households (96.3%) had latrine. Only 3.7% of the respondent were lacking toilet in their home. Majority of the houses (74.72%) in slum area had improved not shared latrine. Most of the respondents were aware about importance of cleanliness of latrine. Nearly two-third of respondents (63.1%) used to clean their latrine on daily basis. Out of 3.7% not having latrine in their house; maximum numbers of the people (71.4%) defecate in bushes. Most of the respondents (92.86%) revealed that they haven't built latrine due to lack of money (Table1).

**Table 1: Information regarding availability, use and maintenance of latrine (n=374)**

Variables	Frequency	Percentage
Availability of latrine in home		
Yes	360	96.3
No	14	3.7
Types of latrine available (n=360)		
Non-improved	82	22.8
Improved not- shared	269	74.7
Improved shared latrine	9	2.5
Frequency of cleaning latrine (n=360)		
On daily basis	227	63.1
On weekly basis	79	21.9
Rarely	54	15.5
Place to defecate if there is no latrine (n=14)		
Bushes	10	71.4
Open field	4	28.6
Reasons for not building latrine (n=14)		
Lack of money	13	92.9
Lack of place to built	1	7.1

**Information regarding personal hygiene of respondents:** The study revealed only seven out of ten respondents (71.4%) used to wash their hands with soap water after defecation

and (70.1%) used to brush their teeth once daily (70.1%). Few of the respondents reported bathing daily (17.9%) (Table 2).

**Table 2: Information regarding personal hygiene (n=374)**

Variables	Frequency	Percentage
Things used for anal cleaning after defecation		
Water	360	96.3
Leaves	14	3.7
Number of people washing hands after defecation		
Yes	360	96.3
No	14	3.7
Things used to wash hands after defecation (n=360)		
Water only	85	23.6
Water with soap	257	71.4
Water with ashes	18	5
Frequency of brushing teeth		
Once in a day	262	70.1
Twice a day	67	17.9
In every two days	35	9.4
Rarely	10	2.7
Frequency of bathing		
Daily	67	17.9
Alternative days	67	17.9
Weekly	146	39.0
Occasionally	94	25.1

**Information regarding water purification:**

In more than two-third of the households (68.2%) improved source of water was used. In majority households (64.2%) no treatment was undertaken for drinking water (Table 3).

**Table 3: Information regarding water purification (n=374)**

Variables	Frequency	Percentage
Source of drinking water		
Improved source	225	68.2
Non-improved source	119	31.8
Purification before taking water		
Not directly from source	240	64.2
Boiling	33	8.8
Filtering	101	27

**Information regarding waste disposal:** In nearly two-third of households (61.5%) compound/surrounding was used to clean once daily. Mostly (43.3%) wastes were disposed directly in the river. More than one-third of households (36.6%) used to deposit waste water haphazardly into the street (Table 4).

**Table 4: Information regarding waste disposal (n=374)**

Variables	Frequency	Percentage
Frequency of cleaning compound		
Once daily	230	61.5
Once weekly	107	28.6
Rarely	37	9.9
Place of disposing household refuse		
Refuse dump site	102	27.3
Garbage pit	50	13.4
Street	60	16.0
Riverbank	162	43.3
Place of disposing waste water		
In the street	137	36.6
Within courtyard	87	23.3
In the gutter	91	24.3
In the river	59	15.8

**Findings from observation of latrine and surrounding:**

The observation of the study found that most of the households (96.3%) had latrine in their house. More than half of the latrines (53.3%) were in good condition therefore no need for further construction. But the latrines surface was non-impervious in most of the households (58.6%). Nearly two-third of the households (65.6%) had toilet brush but only 44.2% had cleaning agent in their toilet. In majority of the latrines (69.4%) observable feces were not

found. Water was sufficiently present in more than half of the latrines (54.7%). No faces were observed in the surrounding of most of the households (91.7%). But in more than half (54.8%) of the households waste were not managed properly (Table 5).

**Table 5: Findings from observation of latrines and surrounding (n=374)**

Variables	Frequency	Percentage
Household having latrine (n=374)		
Yes	360	96.3
No	14	3.7
Physical structure (n=360)		
No need for further construction	192	53.3
Need maintenance	107	29.7
Need reconstruction	61	16.9
State of latrine surface (n=360)		
Impervious	149	41.4
Non-Impervious	211	58.6
Available toilet brush (n=360)		
Yes	236	65.6
No	124	34.4
Available toilet cleaning agent (n=360)		
Yes	159	44.2
No	201	55.8
Observable feces in latrine (n=360)		
Yes	110	30.6
No	250	69.4
Water sufficiency in latrine (n=360)		
Yes	197	54.7
No	163	45.3
Observed faces in surrounding (n=374)		
Yes	31	8.3
No	343	91.7
Waste management status (n=374)		
Managed	169	45.2
Unmanaged	205	54.8

**Findings from observation on personal hygiene:** It was found that 63.6% respondents kept nail clean, 70.1% had kept hair clean and 71.4% wear neat and clean clothes (Table 6).

**Table 6: Findings from observation on personal hygiene (n=374)**

Variables	Frequency	Percentage
Nail		
Clean	238	63.6
Dirty	136	36.4
Hair		
Clean	262	70.1
Dirty	112	29.9
Clothes		
Neat and clean	267	71.4
Dirty	107	28.6

## DISCUSSION

In this study most of the respondents (96.3%) used to defecate in latrine which was much higher than study conducted in Morang, Nepal; Madhya Pradesh and urban slum of South Delhi. [6-8] It might be due to open defecation free (ODF) camp had helped to built improved non-shared latrine in slum area to make Kaski district free from open defecation.

In the study majority of the respondent (74%) used improved but not shared latrine which were higher than NDHS, 2011 and similar to the study conducted in four different geographical areas of Nepal. [4,9] It might be due to ODF had built improved non-shared latrine in slum area to make Kaski district free from open defecation.

Only 71.4% respondents practiced hand washing with soap and water in this study which was higher than the study conducted in Morang District in Nepal; study in Madhya Pradesh, India and study in Thailand but similar to the study conducted in Eastern Uganda and lesser than the study conducted in four different geographical areas of Nepal,. [6,7,9-11] It might be due to different study setting in different countries.

In this study 70.1% respondents used to brush their teeth once daily which was similar to the another study conducted in Nepal. [9] In this study more than two-third (68.2%) of the respondents used improved source of water which was lesser than NDHS, 2011 and study conducted in four different geographical areas of Nepal but similar to the study conducted in Gondar city of Ethiopia. [4,9,12] It might be due to insufficient supply of drinking water in urban slums.

In this study nearly two-third (64.2%) of the households didn't use any method for drinking water treatment which was lesser than NDHS, 2011 but higher than the study conducted in four different

geographical areas of Nepal and study conducted in urban slums of South Delhi. [4,9,8] It might be due to negligence in purifying water in slum areas.

In this study 43.3% of the households of slums used to deposit their garbage/waste directly into river which was more than two times higher than the study conducted on 25 slum of Luck now, India. [13] It might be due to irregularity of municipal vehicle to pick the waste.

In this study 63.1% of the respondents reported that they used to clean their latrine once a day but observation of the study did not support it (41.4%). Similarly 61.5% respondents reported that they used to clean their compound once daily but during observation nearly half of the household waste was unmanaged.

This study was confined in 7 slum area of Pokhara Valley. Therefore, the results should be interpreted carefully while generalizing in a wider context. However, the results provided very useful clues to conduct more specific studies in future.

## CONCLUSION

Sanitization and hygiene practices in urban slums of Pokhara metropolitan was reported satisfactory than other studies but still public health concern. Various programs on sanitation and personal hygiene with direct involvement of respondent should be conducted to raise awareness.

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