

# KNOWLEDGE AND PRACTICE REGARDING HOUSEHOLD WASTE MANAGEMENT AMONG MIDDLE AGED ADULT PEOPLE OF BANEPA MUNICIPALITY

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## ABSTRACT

Globally, 2.6 billion people of the world population do not use proper method for waste disposal. Some 1.1 billion people still disposed of waste in the open places thus face many health related problems. According to the Central Bureau of Statistics, Currently, around 450 metric tons of solid waste is generated in Kathmandu every day. The objective of this study was to assess the Knowledge and Practice Regarding Household Waste Management Among Middle Aged Adult People in Banepa Municipality. A descriptive cross-sectional study was carried out among 60 adults using non-probability purposive sampling technique. Data was collected using pretested ( $r=0.85$ ) face-to-face interview schedule with structured and semi structured Nepali version questionnaire. The collected data were analyzed in SPSS version 16th by using descriptive statistics such as frequency, percentage, mean, standard deviation, and inferential statics such as chi square test. The study shows, mean age of respondents was  $48.36\pm 4.747$  years. The overall mean knowledge score was  $39.5\pm 9.62$  which ranged from 19 to 58. The overall mean practice score was  $17.41\pm 2.1$  which ranged from 13 to 20. The study was significant on the basis of training taken ( $p=0.016$ ). The findings of this study showed that majority of the respondents had low level of knowledge but good level of practices. Therefore, based on the finding of the study, the household waste management can be improved by providing various awareness programs to the family members of the community so that various kind of disease can be prevented.

## KEYWORDS

Knowledge, practice, waste management, Nepal

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## INTRODUCTION

Globally, 2.6 billion people or 39 percent of the world population do not use proper method for waste disposal. Some 1.1 billion people still disposed of waste in the open places.<sup>1</sup> Globally every year, million of people died due to mismanaged of waste and waste dumping. About 2.4 billion people will likely face the risk of needless disease and death because of bad sanitation".<sup>2</sup> With rapid population growth and urbanization, annual waste generation is expected to increase by 70% from 2016 levels to 3.40 billion tons in 2050. These practices create serious health, safety, and environmental consequences.<sup>3</sup> Women residing in the rural area must have basic knowledge on segregation and disposal of household waste.<sup>4</sup> In most cities, waste management is inadequate; a significant portion of population does not have access to a waste collection service and only a fraction of the generated waste is actually collected.<sup>5</sup> A study which conducted in Bangalore among 800 respondents showed that majority (89.7%) of the households did not know that waste can cause environmental problems. Negative response was obtained from 86.9% of the households with regards to health problems caused due to improper waste disposal techniques.<sup>6</sup> A study carried out among 600 respondents in Ghanain district showed that the majority (85%) of the respondents at tested that there were diseases like diarrhea, malaria and worm infestations recorded with regards to improper waste management.<sup>7</sup> A study by Tevera in Harare Zimbabwe found that over 100 people die every year due to diseases caused by improper household solid waste management . It is estimated that up to 5.5 million people are at risk of death from diseases that result from poor household solid waste management globally.<sup>8</sup> Domestic waste management problem is drawing attention of the people as huge garbage is lying down uncollected beside the roads, streets dustbins and on the ground which is causing threat to the environment as well as endangering public health and this deteriorates the environment.<sup>9</sup> A study conducted in Gokarhneshwor, Nepal reveals that majority 98.30% of respondents had moderate level of knowledge on waste management whereas only 41.70% respondents had good practice level.<sup>10</sup> In Kathmandu valley, there are lots of problem regarding solid waste management. Some of that are attitude of throwing the waste hazardously, transportation - long distance, old vehicles and heavy equipment's, lack of Training, need of well-equipped equipment's and workshop, only one landfill site and transfer station, lack of manpower, no appropriate laws and policies, lack of awareness, low composting

efficiency in households, public and political intervention.<sup>11</sup> According to survey done in year 2003 by Banepa Municipality showed that the average per capital household waste generation rate in Banepa was 0.23 kg/person/day. The main problem associated with waste management in Banepa is the lack of a sanitary landfill and compost plant, lack of human and financial resources, as well as lack of support from the local people.<sup>12</sup> For community people the main risks of health are indirect and are arises from breeding of vectors (e.g. flies, mosquitoes), burning waste contribute to air pollution; pollution of drinking water, directly by solid waste thrown from household can cause problems like diarrhea, cholera, typhoid, fever and dysentery.<sup>13</sup> Lack of knowledge, irregular and unplanned dumping of waste are the main reasons of improper waste disposal.<sup>14</sup>

## MATERIALS AND METHODS

A descriptive cross-sectional study was adopted to assess the knowledge and practice regarding household waste management among 60 middle aged adult population. The study setting area was Banepa Municipality. The data collection was carried out from 7<sup>th</sup> August to 28<sup>th</sup> August 2020. The study period was from 1<sup>st</sup> December 2019 to 18<sup>th</sup> December 2020. Non-probability purposive sampling technique was used for data collection. The reliability of the instrument was maintained by split half method with  $r=0.85$ . Formal permission was taken from Institutional Review Committee of Scheer Memorial Adventist Hospital and Informed verbal and written consent was taken from each respondent. Confidentiality was maintained throughout the study.

Data were collected through interview method using face-to-face interview schedule which contained structured and semi structured Nepali version questionnaire. The collected data were analyzed in SPSS (version 16). Interpretation of the data was done through on the basis of analyzed data and findings were presented on the relevant tables. Adequacy of level of knowledge and practice was analyzed according to the response given by the respondents. One mark was given for each correct answer and 0 was given for each wrong answer.

During analysis, respondents scoring was categorized as good knowledge and good practice if respondent answered >75% questions correctly, moderate knowledge and moderate practice if answered 50-75% questions and low knowledge and weak or low practice if answered < 50% of the questions.

## RESULTS

Table 1 shows that majority (73.3%) of the respondents were from the age group 40-50 years and the more than one fourth (26.7%) belonged to age group 51-60 years with the mean±SD= 48.36±4.474. Majority (81.7%) of the respondents were females. Similarly (43.3%) of the respondents belonged to upper caste group. Majority (83.3%) of the respondents belonged to Hindu religion. (73.3%) of respondents were literate. Majority (58.3%) of the respondents were from nuclear family. Majority (90.0%) of the respondents had not got training on household waste management. Majority (78.3%) of the respondents had space for household waste management.

Table 2 shows, statistics of overall mean knowledge of total respondents on knowledge

regarding household waste management was 39.5±9.62. The minimum score was 19 and maximum score was 58. The mean knowledge regarding household waste was 13.63±2.88, the mean knowledge regarding household waste management was 7.08±1.49, the mean knowledge regarding methods of household waste management was 15.03±3.64 and the mean knowledge regarding effects of household waste management was 3.76±9.62.

Table 3 depicts statistics of overall mean practice of total respondents on practice regarding household waste management was 17.41±2.1. The minimum score was 13 and maximum score was 20. The mean practice regarding method of household waste disposal was 9.85±1.2. The mean practice regarding hygiene during household waste management was 7.56±0.9.

**Table 1: Respondents socio-demographic information (n=60)**

Variables	n	%
<b>Age:</b>		
40-50	44	73.3
51-60	16	26.7
<b>Mean±SD= 48.36±4.747</b>	<b>Maximum: 43</b>	<b>Minimum: 59</b>
<b>Gender of participants:</b>		
Male	11	18.3
Female	49	81.7
<b>Ethnicity of participants:</b>		
Dalit	5	8.3
Disadvantaged janajati	1	1.7
Disadvantaged non dalit terai caste group	4	6.7
Religious minorities	2	3.3
Relatively advantaged janajati	22	36.7
Upper caste group	26	43.3
<b>Religion status:</b>		
Buddhist	1	1.7
Christian	9	15.0
Hindu	50	83.3
<b>Type of family</b>		
Nuclear	35	58.3
Joint	25	41.7
<b>Training</b>		
Yes	3	5.0
No	57	95.0
<b>Space for household waste management</b>		
No	13	21.7
Yes	47	78.3
Less than 50 meter	29	48.3
Between 50-100 meters	17	28.3
More than 100 meter	1	1.7

**Table 2: Respondents overall mean knowledge score regarding household waste management (n=60)**

Variables	Total possible score	Mean (SD)	Min	Max
Meaning of household waste	22	13.63±2.88	8	20
Meaning of Household waste management	10	7.08±1.49	3	10
Methods of household waste management	23	15.03±3.64	7	23
Effects of household waste	5	3.76±1.61	1	5
<b>Total knowledge score</b>	<b>60</b>	<b>39.5±9.62</b>	<b>19</b>	<b>58</b>

**Table 3: Respondents overall mean practice score regarding household waste management (n=60)**

Variables	Total possible score	Mean (SD)	Min	Max
Methods	11	9.85±1.2	7	11
Hygiene	9	7.56±0.9	6	9
<b>Total practice score</b>	<b>20</b>	<b>17.41±2.1</b>	<b>13</b>	<b>20</b>

**Table 4: Respondents level of knowledge and practice on household waste management (n=60)**

Variable	Total possible score	n	%
<b>Level of knowledge</b>			
Low knowledge (<50%)	60	25	41.7
Moderate knowledge (50-75%)	60	18	30
Good knowledge (>75%)	60	17	28.3
<b>Level of Practice</b>			
Low Practice (<50%)	20	0	0
Moderate Practice (50-75%)	20	0	0
Good Practice (>75%)	20	60	100

**Table 5: Correlation between knowledge and practice regarding household waste management (n=60)**

Variables	Mean (SD)	Pearson correlation coefficient	p-value
Knowledge on household waste management	39.5±9.62	<b>0.285</b>	<b>0.027</b>
Practice on household waste management	17.41±2.1		

Table 4 shows that, 41.7% of the respondents had low knowledge, and 30% of the respondents had moderate knowledge, and 28.3% of the respondents have good knowledge. Regarding Practices of household waste management 100% of the respondents had good practices.

Table 5 shows correlation between the knowledge and practice of household waste management and the mean knowledge score was 39.5 and SD was 9.62. The mean practice score was 17.41 and SD was 2.1. The correlation coefficient r value was 0.25 and p-value was

0.027 at 0.01 level of significant. So this showed that knowledge and practice had significant influence on household waste management.

## DISCUSSION

In present study, 41.7% of the respondents have low knowledge which is similar with the research conducted in Peshawar Pakistan which shows that 42% had low knowledge.<sup>15</sup> In present study, 40% of the respondents had dustbin in each room which was inconsistent with the



research conducted in Indonesia in which only 24% of the respondents had dustbin in each room.<sup>16</sup> In present study, 95% of the population had practice of separation of household waste which is inconsistent with the research done in Colombia, in which only more than half (52%) of the respondents had practice of separation of household waste.<sup>17</sup> In present study there is no significant difference in knowledge regarding the gender which is inconsistent to the study conducted in England where there was significant (p=0.016) difference.<sup>18</sup>

The study concluded that majority of the respondents had low level of knowledge while majority of the respondents had good level of practices. Despite of having low knowledge regarding household waste management the respondents are having good practices. But we can increase the knowledge of respondents by conducting awareness program by using different audiovisual aids or mass media. Training can also be provided so that knowledge can be enhanced.

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