

Knowledge, Attitude and Practice on Proper Disposal of Waste: A Survey

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Abstract

Background: Waste poses a threat to public health and the environment if it is not stored, collected, and disposed properly. The quantity of solid waste generated by society is increasing daily and at the same time many household do not recycle their waste, but instead, tend to dispose it outside their homes or on the streets. *Method:* Non-Experimental design and descriptive approach was used to assess the knowledge, attitude and practice among adults on proper disposal of waste. The population was adults residing in Bastwad at Belgaum Karnataka. Fifty adults were selected by employing non-probability convenient sampling technique. Self-administered structured questionnaire was used to assess the knowledge, attitude and practice regarding disposal of waste. The tool was highly reliable with 'r' value 0.8. The data were collected after getting consent from the adults. Survey technique was adopted and self-administered questionnaire was answered by each adult for the duration of 20-30 minutes. Data were compiled using descriptive and inferential statistics. *Result:* With regards to knowledge 5(10%) subjects were having inadequate knowledge, 24(48%) had moderately adequate knowledge and 21(42%) had adequate knowledge on proper disposal of waste. 31(62%) had moderately positive attitude, and 19(38%) had positive attitude. With respect to the practice on proper disposal of waste, 13(26%) reported moderately acceptable practice and 37(74%) reported acceptable practice. *Conclusion:* The people who have adequate knowledge on waste management technique are more likely to develop positive attitude and acceptable practice on disposal of waste.

Keywords: Knowledge; Attitude; Practice; Adults; Disposal of Waste.

Introduction

Proper disposal of human waste is important to avoid pollution of water sources, minimize the possibility of spreading disease, and minimize the rate of decomposition. Waste is an unavoidable by-product of human activities. Economic development, urbanization and improved living standards in cities increase the quantity and complexity of generated solid waste. If accumulated, it leads to degradation of urban environment, stresses natural resources and leads to health problems [1]. Management of solid waste is the discipline associated with the control of generation, storage, collection, transfer and transport, processing and disposal of wastes in a manner that is in accordance with the best principles of public health, economics, engineering, aesthetics and other environmental considerations [2].

According to World Health Organization statistical information 2008, 62% of world's population has access to improved sanitation in 2008. Only slightly more than half of them or 31% of the world population living in houses is connected to sewer. Overall 2.5 billion people lack access to improved sanitation and thus most resort to open defecation or other unsanitary form of defecation, such as public latrines or open pit latrines. This includes 1.2 billion people who have access to no facilities at all [3].

Although average Indian only generates around half a kilo of solid waste per day, the volume is huge. Given the current developments, the generation of municipal solid waste in India in the year 2047 has been projected to exceed 260 million tons- a number more than five times the present levels. While the quantity of solid waste generated by society is increasing; the composition of solid waste is becoming

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more and more diversified. At the same time many households do not recycle their waste, but instead, tend to dispose it outside their homes or on the streets [4,5].

Waste poses a threat to public health and the environment if it is not stored, collected, and disposed of properly. The perception of waste as an unwanted material with no intrinsic value has dominated attitudes towards disposal [6]. National and International organizations have been formulated and as well as amended policies across the years concerned to the collection, segregation, storage, transportation, processing and disposal of municipal solid waste. So, maintenance of healthy living environment can be possible through proper disposal of waste. However, it has been discovered that most households are struggling with how to manage their waste.

Management of non-hazardous residential and institutional waste in metropolitan areas is usually the responsibility of local government authorities, while management of non-hazardous commercial industrial waste is usually the responsibility of generator [2]. However, although it is the duty of local bodies (Urban and Local) to address the issue of Solid Waste Management, tight budget, inefficient organization, etcetera has rendered a situation that has little hope for alleviation in the near future [7].

In urban as well as in rural areas, especially in rapidly urbanizing cities, the problems and issues of solid waste management are of immediate importance. However, it has been discovered that most households are struggling with how to manage their waste.

Therefore, the above scenario motivated the investigator to assess the knowledge, attitude and practice of adults on proper disposal of waste. And present study attempted to find the answers for following questions: Do adults have proper knowledge on disposal of waste? What kind of attitude the adults have towards disposal of waste? Whether the adults are properly practicing disposal of waste? And is there a relationship between knowledge, attitude and practice of adults on proper disposal of waste?

Methods

Non-Experimental design and descriptive approach was used to assess the knowledge, attitude and practice among adults on proper disposal of waste. The population of research study was adults who resided in Bastwad at Belgaum, Karnataka. 50

adults were selected by employing non-probability convenient sampling technique. The data were collected using tool which consisted of four distinct parts. Part I consisted of demographic data that included 09 items, part II entailed 15 items to assess the knowledge on proper disposal of waste, part III consisted of 10 items of attitude on proper disposal of waste, and part IV comprised 10 items to assess practice on proper disposal of waste. The tool was found to be reliable ($r=0.8$). The data were collected through self-reporting questionnaire. Each subject took 25-30 minutes to answer the questions. Informed consent from each subject and permission from respective authority were warranted to evade ethical issues. Both descriptive and inferential statistics were used to analyze the data.

Results

Section I: Findings Related to Demographic Data

Regarding the age, 48% adults belonged to age group of 20-25 years, 22% adults belonged to the age group of 26-30 years, 6% adults belonged to the age group 31-35 years and only 24% adults belonged to the age group of 36-40 years.

With regard to education, 24% subjects had primary education, 30% had secondary education, and 46% had education above degree. While considering the type of family, 48% were from nuclear family and 52% were from joint family.

More than half subjects, that is, 53% had Rs. 10,001-15,000 income per month, 27% adults had 5,000-10,000 income per month and remaining 20% had more than Rs. 15,000 income per month. As far as information regarding proper disposal of waste is concerned, 61% adults had some sources of information and remaining adults did not have any sources of information.

Section II: Percentage Distribution of Subjects by their Knowledge, Attitude and Practice on Proper Disposal of Waste

Data in above figure describes that 5(10%) were having inadequate knowledge, 24(48%) had moderately adequate knowledge and 21(42%) had adequate knowledge on proper disposal of waste. The mean value of the knowledge on proper disposal of waste was 13.56 with standard deviation of 2.71 which fell in the moderately adequate level. The overall percentage distribution of knowledge of adults on proper disposal of waste was 67.8%.

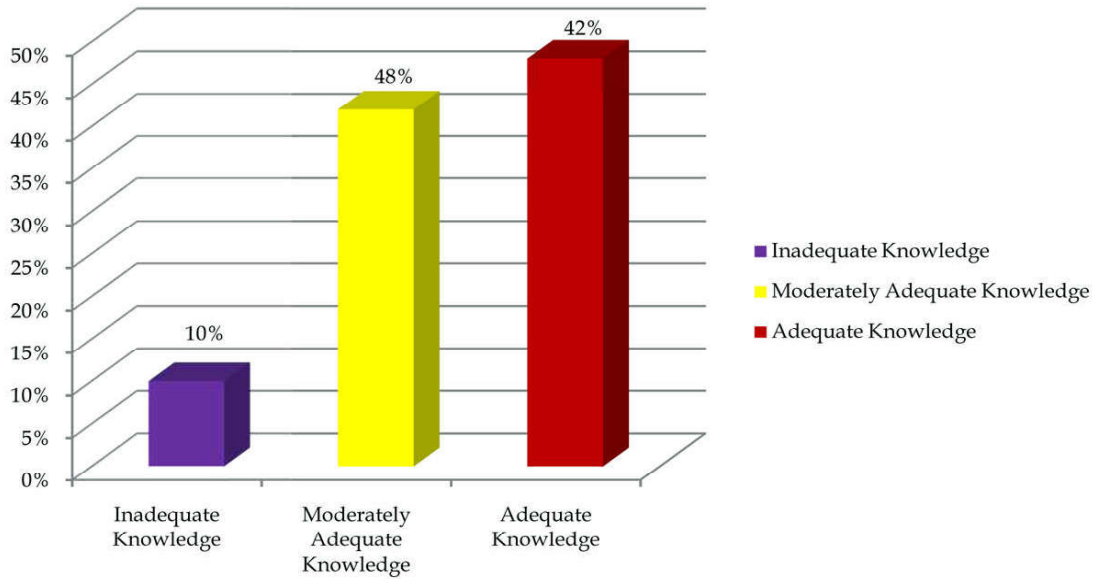


Fig. 1: Percentage distribution of subjects by their knowledge on proper disposal of waste.

Table 1: Percentage distribution of adults by their attitude on proper disposal of waste.

Attitude	Number	Percentage (%)
Negative Attitude (1-49%)	00	00
Moderately positive attitude (50-74%)	31	62
Positive attitude (75% and above)	19	38

Table 2: Percentage Distribution of respondents by their practice scores on proper disposal of waste.

Practice	Number	Percentage (%)
Unacceptable Practice (1-49%)	00	00
Moderately Acceptable Practice (50-74%)	13	26
Acceptable Practice (75% and above)	37	74

The above table illustrates that 31(62%) subjects had moderate positive attitude, and 19(38%) had positive attitude. The mean value attitude on proper disposal of waste was 36.58 with standard deviation of 4.72.

The above table shows that 13(26%) subjects reported moderately acceptable practice and 37(74%) reported acceptable practice. The mean value of practice on proper disposal of waste was 16.28 with standard deviation of 2.5.

Section III: Correlation between Knowledge, Attitude and Practice

The r value (0.07756) showed that there was a positive correlation between knowledge and attitude. Interestingly, a negative correlation was found between knowledge and practice (r = -0.00334). Also, a negative correlation between attitude and practice was found (r = -0.6210).

Section IV: Association between selected demographic

variables and knowledge, attitude and practice on proper disposal of waste.

Statistically significant association was found between monthly family income and knowledge scores of respondents on disposal of waste at p<0.05 level. No statistically significant association was found between knowledge scores on disposal of waste and other demographic variables of adults. There was no significant association between any of the demographic variables and attitude as well as practice scores on disposal of waste among adults.

Discussion

The findings of the present study had shown that a vast majority of study subjects had moderately adequate to adequate knowledge on proper disposal of waste and this knowledge definitely influenced their attitude towards disposal of waste as shown by coefficient of correlation value. More than half of adults

were found to have moderately positive attitude towards proper disposal of waste. Almost three fourth of the adults were found to be practicing acceptable methods of proper disposal of waste. The demographic variable family monthly income was found to be significantly associated with the mean knowledge scores of respondents on disposal of waste, which may imply that economic status of people affects their knowledge on sanitation and proper waste disposal.

The findings of the present study has somewhat contrasting correlation with the findings of a cross-sectional study conducted by Ethrampoushand Baghianion knowledge, attitude, and practice about solid waste disposal and recycling among 237 adolescents. The instrument of research was a self-administered questionnaire. Knowledge level of 66% males was good while that of 34% was low. The knowledge of 51.4% females was low. The difference between the knowledge of males and females was significant ($p < 0.016$). Pertaining to the method of segregation and separation of solid waste, 72.1% believed that the best method was segregation at home and 9.6% deemed that the segregation must be done in the place of disposal. More than 66% of them did not have any action in segregating and recycling of solid waste [8]. In the present study, comparison of knowledge of male and female sample on waste disposal was not done and a vast majority of the sample was found to possess moderately adequate to adequate knowledge on waste disposal.

Conclusion

India produces huge amount of waste and is facing a big problem of its safe disposal. Poor environmental sanitation is a problem in both rural as well as urban India. Poor environmental sanitation is a source of lots of communicable diseases. As we know that modification of human behavior could be possible only through proper education in any aspect. So, if people get adequate knowledge and motivation on waste management technique, they may be able to prevent most of the communicable diseases and maintain environmental sanitation which restores the individual's health. This study can be replicated with

a larger sample size for wider generalization of findings. The systematic reviews of various studies can also be performed with a view to develop methods for proper disposal of waste. And, the short term training program on proper disposal of waste and its effectiveness can be analyzed through pre and post-test methods. The government and non-governmental organizations should create more awareness on environmental sanitation and proper disposal of waste, and work in collaboration with rural and urban people to achieve the predefined objectives of 'Swachh Bharat Abhiyan'.

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