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Research Article

To study knowledge and attitude regarding domestic waste disposal in slum areas of Pune city

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Abstract

Aim: The study reported here examined the knowledge regarding the domestic waste disposal and attitude regarding the disposal of domestic waste among the people of slum areas of Pune city. **Methods:** A total number of 100 samples in the age group of 18-55 years of people were selected by non probability convenient sampling technique from slum areas of Pune city. Data collection comprises of; First demographic data of the sample. Second, contains of questions for assessing the knowledge regarding the disposal of domestic waste among the people of urban slum area. And, third consists of questions for the assessment of the attitude regarding disposal of the domestic waste. The reliability was done by the split-half method. The pilot study was conducted by selecting 10 samples in the age group between 18–25. **Results:** Data analyses according to knowledge score reveals that out of 100 the majority of 70% people have average knowledge about disposal of domestic waste. 16% of people have good knowledge. 12% of people have poor knowledge and rest of 2% of people has excellent knowledge. Data analyses according to the attitude score of people toward the disposal of domestic waste reveals majority of 69.75% people are agreed. 14.58% of people are disagreed. 15.66% of people are strongly agreed. **Conclusion:** According to score the majority 90% of people have positive attitude, and rest of 10% people have negative attitude.

Key Words: Waste disposal, Management, Slum Areas, attitude and knowledge

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Introduction

Globally, millions of tons of municipal solid waste are generated every day. Urban waste management is drawing increasing attention, as it can easily be observed that too much garbage is lying uncollected in the streets, causing inconvenience, environmental pollution, and posing a public health risk [1, 2]. The problem of solid, liquid, and toxic-waste management in Africa has come with urbanization in the developing world. An important feature of the urbanization of the developing world is the rapid growth of cities and metropolitan areas. The high rate of urbanization in African countries implies a rapid accumulation of refuse. Social and economic changes that most African countries have witnessed since the 1960s have also contributed to an increase in the waste generated per capita [3, 4]. As a result, municipal waste management constitutes one of the most crucial health and environmental issues facing managers of African cities [5, 6].

Proper waste management is a public benefit and obligation. Improper waste disposal by one individual affects the entire citizenry, so, as a policy, countries have tasked every individual, establishment or institution to contribute significantly to the process of

keeping their communities and environment clean [7, 8]. In the colonial days, the population of the Ghana, then the Gold Coast, was below six million and waste was better managed. The waste generated in the 1920s was less voluminous and less complex than today, consisting largely of leaves, paper and wood products, with little plastic or hazardous chemicals [8]. The poor waste management situation in recent years has led to a high incidence of sanitation related illness, such as cholera, intestinal worms and typhoid. These are among the top ten diseases that have been recorded, which raises the alarm of a public health crisis [9, 10].

In Ghana, problems are encountered at all levels of waste management, particularly, collection, transportation and disposal. Generally, existing public facilities, including sanitary facilities, are inadequate to serve the user population, and the sheer volume of municipal solid waste generated in the country's urban centres is overwhelming. While existing waste disposal facilities are inadequate to deal with the quality and quantity of waste generated, more sophisticated systems are expensive and their maintenance requirements are high [11]. In Ghana, a study conducted at Kodiabe, which involved direct observations at disposal sites from five divisions, focused on the way in which refuse materials were disposed [12].

Another study conducted in Nigeria showed that the perception of domestic waste disposal indicates that people's attitudes about and perceptions of sanitation issues contribute to the waste management problem [13]. Similarly, a study done in Khulna, Bangladesh found that city dwellers think because they pay taxes it is the sole responsibility of the city authority to provide them with a nuisance-free habitable city [14]. Typically, local governments are responsible for the collection and disposal of the wastes generated within their jurisdiction, as well as for the operation and maintenance of their equipment. However, local governments usually lack the authority and resources to provide a satisfactory and economically viable service. Effective and efficient solid waste management depends upon an equitable distribution of responsibilities, authority, and revenue between the national government and all the local governments [15].

Although huge capital investment is required to improve waste management, social and behavioural factors are also important if waste management in slum areas is to be successful. It is in this light that the current study aims to investigate community practices and perceptions about domestic waste management and it implications for health in slum areas of Pune.

Aim:

1) To assess the knowledge regarding the domestic waste disposal among the people of slum area of pune city .

2) To assess the attitude regarding the disposal of domestic waste among the people of slum areas of Pune city.

2. Materials and methods

A total number of 100 samples were taken from the population of age group between 18-55 years for current study, residing in the slum areas of Pune city using non probability convenient sampling technique [13]. An unstructured tool is developed for assessing the knowledge and attitude, regarding disposal of domestic waste among the people of urban slum area. The tool comprises of first, demographic data of the sample, which include personal data of the people i.e. Age, sex, Educational status and occupation. Second, consists of questions for assessing the knowledge regarding the disposal of domestic waste among the people of urban slum area. And third, consists of questions for the assessment of

the attitude regarding disposal of the domestic waste among the people of urban slum area of Pune city [16].

The reliability of measuring instruments major criteria for assessing its quality and adequacy [23]. After establishing validity of the tools to be used for the study, the final tools were made and then the reliability of tools was done. The reliability was done Pune. After obtaining the consent 10 samples were selected as per the criteria. The scores were calculated and statistical analysis was done. The reliability was done by the split-half method.The formula used for this-

$r = \{k/k\text{-}1(1\text{-}\sum Pq/б2\}$

where,

б = standard deviation
k = no. of item (21)
p = correct response (89)
q = wrong response (121)

10 samples were selected for pilot study and conducted from 5/10/2015 to 7/10/2015, to assess the feasibility of the study and to decide plan for data analysis. The pilot study reveals that the majority of the samples are of age group 18-25, qualified as high school level. The majority of the samples have average knowledge under the scoring 8-14, which is 43% of the participants. There were no problems faced during the pilot study so the study is found feasible to conduct further research.

3. Results

Table -1 Demographic data of sample.

Frequency and percentage distribution of the people according to their demographic variables.

SN	Characteristic	Frequency	%
1	AGE-		
	18-25 YRS	29	29%
	26-35 YRS	28	28%
	36-45YR	31	31%
	46-55YRS	12	12%
2	Sex -		
	Male	41	41%
	Female	59	59%
3	Education:		
	Primary	28	28%
	Secondary	49	49%
	Graduation	18	18%
	Illiterate	5	5%
4	Occupation:		
	Employed	36	36%
	Unemployed	64	64%

Table – 1

The data presented in table -1 shows that majority 31% of people were in the age group of 35-45 year 29% of the people in the age group of 18-25 yrs and 28% of the people were in the age group of 25-35 and 12% of the people were in the age group of 45-55 .Majority 59%of the people were female and rest of 41% people were male. Education- majority 49% of the people were from secondary education, 28% people were from primary education, 18% people were from graduation and rest of 5% was illiterate. Occupation- Majority 64% people were unemployed and rest of 36% people was employed.

Figure 1 (Age)- Graphical presentation of the classification of people according to age in year

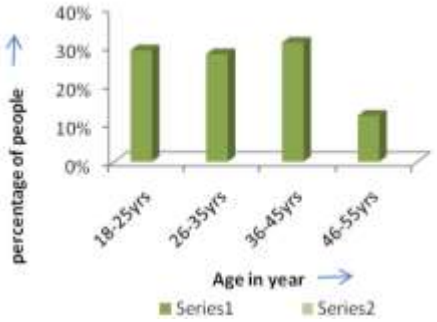


Figure 2 (sex) - Graphical presentation of the classification of people according to the gender–

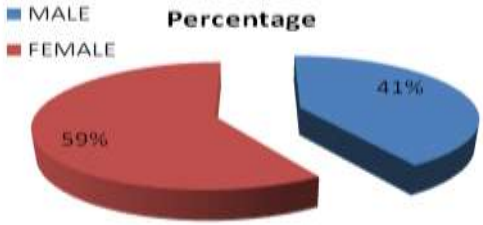


Figure 3 (Education) **-** Graphical presentation of the classification of people according to the education –

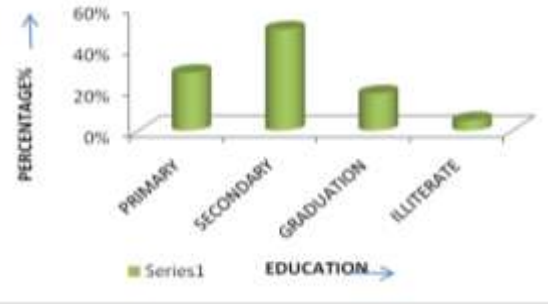


Figure 4 (Occupation):- Graphical presentation of the classification of people according to the occupation –

Analysis of data related to knowledge score
Table no.-2 N=100

Question no	A	B
1) Where should domestic waste be disposed?	26	74
2) How should the different waste be managed?	17	83
3) How much waste is produced in a day?	87	13
4) Which type of waste is produced in more amount?	53	47
5) Where the waste should be store before disposing?	79	21
6) Domestic waste should be dispose within……	63	37
7) Most effective non- hazardous method of waste management is.	17	83
8) Improper waste disposal can leads to-	29	71
9) What can be done for proper waste management in the community area?	39	61
10) Who all are responsible for the waste management?	52	48
11) Following are the diseases caused due to improper waste management except) Malaria	53	47
12) If you dump kitchen waste in a pit it may after sometimes.	47	53
13) Where dose municipal waste comes from?	51	49
14) Which of the following components of municipal solid waste can be recycled?	30	70
15) Which of the following is hazardous waste?	36	64
16) An example of biodegradable waste.	20	80
17) Safe method for the disposal of human excreta is-	34	66
18) Dry and wet waste should be disposed	52	48
19) How can the ashes be managed in the home?	40	60
20) In which wastes group does household garbage belong in.	39	61

A: No. of right answer

B: No. of wrong answer

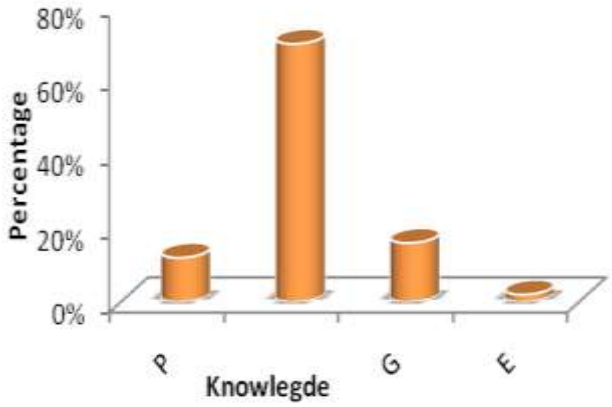
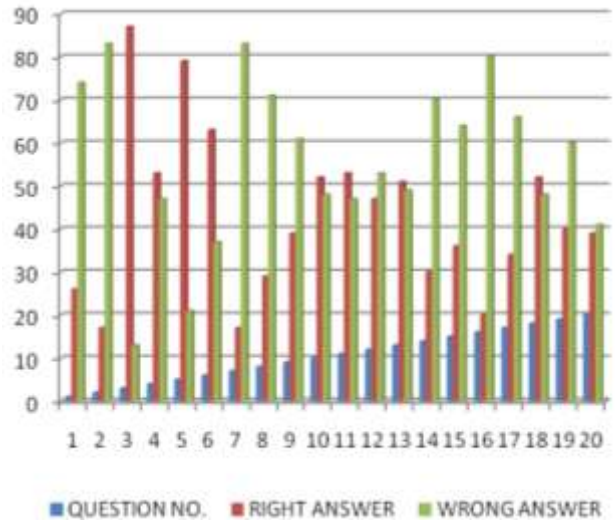
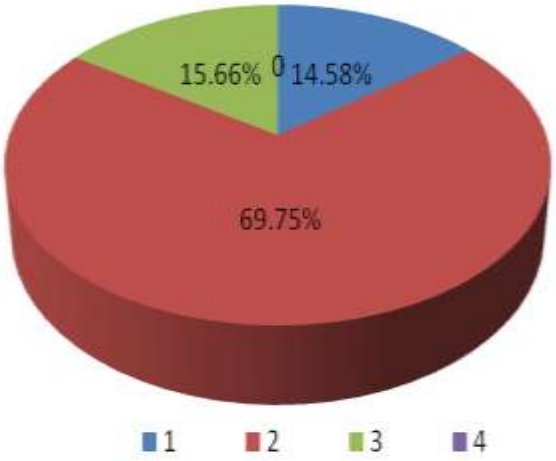


Figure 5- (Knowledge)

- Out of 100 the majority of 70% people have Average knowledge about disposal of domestic waste.
- 16% of people have good knowledge.
- 12% of people have poor knowledge and rest of
- 2% of people have excellent knowledge.

Figure 6- Graphical presentation of the no. of right and wrong answer in relation to question no. –





- Majority 69.75% people are agree
- 14.58% of people are disagree
- 15.66% of people are strongly agree
- The attitude is categorized into 2 categories.

Negative attitude 0-8 , positive attitude 9-16.

- According to score the majority 90% of people have positive attitude , and rest of 10% people have negative attitude.

Figure 8: Showing the positive and negative attitude-

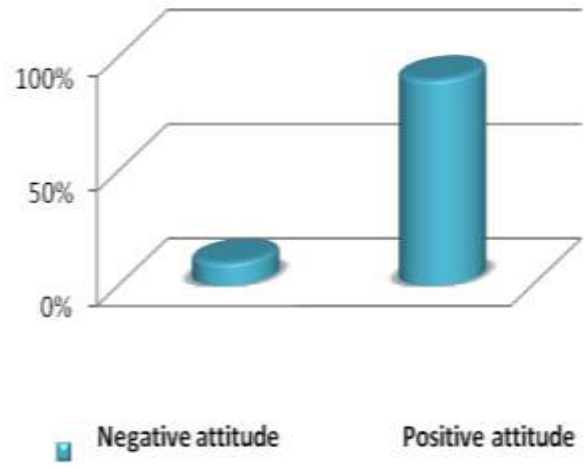


Table: Analysis of data related to attitude scale

SN	Statement	Disagree 0	Agree 1	Strongly agree 2
1	I play an important role in garbage management in the community	14	64	22
2	Environmental education should be taught in school	15	56	29
3	The purchase decisions that I make can increase or decrease the amount of garbage my household must get rid of (dispose of.)	09	69	22
4	I don't care that burning garbage can be bad for my health or of others	58	31	11
5	People throw garbage on the streets and in the drains and gullies because they have no other means of getting rid of (disposing of) their garbage	06	81	13
6	The Local Government is not doing enough to fix the garbage problem	09	77	14
7	Correct garbage management should NOT be taught in schools	09	73	18
8.	Other personal issues (like crime, unemployment, and cost of living) are more important to me rather than a garbage-free community	08	77	15
9	Regular collection of garbage is the only solution to garbage problem	07	81	12
10	Picking up garbage around my community is my responsibility as a resident	15	73	12
11	Public education about proper garbage management is the ONE WAY to fix the garbage crisis	13	78	09
12	It is very important that the Local Government put recycling laws and programs in place	12	77	11
Total		175 (14.58%)	837 (69.75%)	188 (15.66%)

Discussion

The study indicates that increased domestic solid and household activities in urban environments are linked to the generation of high volumes of domestic wastes [16]. It is also evident that some of this waste is dumped on the streets, gutters, holes and in nearby bushes. This has the potential of serving as breeding grounds for rodents and insects that could increase the risk of the spread of parasitic and zoonotic diseases [17].

Moreover, food debris disposed off indiscriminately could give rise to choked drains and blocked waterways, which create the possibility of flooding during the wet season [11,18].

The high level of plastic waste generated by households (64.3%) in this study supports the finding that plastic waste generation is increasing in African cities [9].

This phenomenon of increased plastic waste is likely to have implications for disposal, since plastic is not biodegradable. Most often, waste is burnt in the open air at the final disposal sites. Burning of plastic waste will add to the toxic gaseous emissions in the atmosphere, polluting the air and destroying the ozone layer and its protective properties, thereby increasing the risk of health hazards, including cancers. Apart from that, the large quantity of plastic waste that is generated could create financial and socio-economic losses for governments at large when they try to manage it. It is estimated that over 77.9% of households' generated plastic waste as a component of their domestic waste. In addition, plastic wastes seem to be part of almost all the waste generated at home. This is consistent with earlier studies that suggested that the increased of use of plastics is due to changes in life style and industrialization in which plastic packages replace other forms of packaging [19, 20].

The majority of the households were aware of the health implication of waste, although some had no basic education. Many perceived that children should be responsible for waste management. Most of the respondents thought that improper waste management could lead to malaria and diarrhoea. Proper waste management can lead to improvement in the quality of the environment while, on the other hand, poor waste management can lead to air pollution and breeding of mosquitos, thus causing disease [21,22].

Conclusions

As evidence by this study, several factors influence the knowledge level and these factors are dynamic. After the detailed analysis of this study leads to the following conclusion that the overall knowledge of the people in slum area of super Indranagar Pune were having average knowledge (70%) score between 6-11 regarding domestic waste disposal, 16% of people scored between 12-16 means they have good knowledge, 12% of people scored between 1-5 means they have poor knowledge and 2% of people scored between 17-21 shows that they have excellent knowledge about domestic waste disposal.

Although waste was disposed appropriately at communal sites, some community members practiced crude dumping in any available space, including gutters, holes, streets, and bushes. Although, indiscriminate dumping was frequently done, the community expressed interest in controlling waste disposal through the use of bins and regular collection to dump sites. The communities cherished improved waste management practices and were willing to pay for improved services. With a little push, support, and education to improve people's practices and perceptions regarding waste management, some of the challenges confronting municipalities in the area of waste management can be minimized.

References

[1] Nyang 'echi, G.N: (1992). Management of solid and liquid waste, A Manual for Environmental Health workers. *Nairobi*: AMREF;

[2] Zia, H,& Devadas, V. (2008). Urban solid waste management in Kanpur: opportunity and perspectives. *Habitat Int*, 32:58–73.

[3] Owusu, G, Oteng-Ababio, M, Afutu-Kotey, R.L. (2012) Conflicts and governance of landfills in a developing country city. *Accra. Landsc Urban Plan.* 104:105–113.

[4] Ahmed, SA Ali S.M: (2011). People as partners: facilitating people's participation in public-private partnership for solid waste management. *Habitat Int.* 30:781–796.

[5] Onibokun, A.G, & Kumuyi, A.J. (1999). Governance and Waste Management in Africa. Managing the Monster. Edited by Onibokum AG. *Ottawa*: IDRC.

[6] Ghana Statistical Service (GSS): Health Nutrition and Environmental Statistics. Accra: Ghana Statistical Service; 2003.

[7] Ministry of Local Government and Rural Development: Environmental Sanitation policy. Accra: MLGRD; 1999.

[8] Palczynski, R.J. (2002). Study on Solid Waste Management Options for Africa. Abidjan: cote d'Ivoire: A Project Report for ADB Sustainable Development and Poverty Reduction Unit.

[9] Achankeng, E. (2003). Globalization, Urbanization and Municipal Solid Waste Management in Africa. University of Adelaide: African Studies Association of Australasia and the Pacific Conference Proceedings - African on a Global Stage.

[10] Osei, F.B, & Duker, AA. (2008). Spatial dependency of V. Cholera prevalence on open space refue duimps in Kumasi, Ghana: a spatial statistical modeling. *Inter J Health Geog*. 7:62.

[11] Peter, S.A. (2002). Are the Municipal Solid Waste Management practices causing flooding during the rainy season in Accra, Ghana. *W Afri J Environ Assess Manage*; 4:56–62.

[12] Rhule, R.P. (2008). Discard behaviour and mound formation. M. Phil Thesis. University of Ghana: Department of Archaeology.

[13] Banjo, A.D, Adebambo, A.A.R,& Haight, M. (2009). Inhabitants' perception on domestic waste disposal in Ijebu Ode, Southwest Nigeria. Department of Biological Sciences. Ogun State, Nigeria: Tai Solarin University of Education, Ijebu Ode..

[14] Amin, N, Mahmood, S,& Hossain, M. (2005). People's Perception of the Existing Solid Waste Management of Khulna City Corporation (KCC) Area: A Case Study of Participatory. Khulna Bangladesh: The National Workshop for REGA and CDM Awareness Building & Motivation under the ADB PREGA Project in the Western Inn. Ltd.

[15] Norley, N. (2009). Poor disposal of liquid waste a Menace for city dwellers. *The Ghanaian: Chronicle*.

[16] Bernardo, E.C. (2008). Solid-waste management practices of households in Manila, Philippines. *Ann N Y Acad Sci*. ; 1140:420-4.

[17] Tadesse, T, Ruijs, A, & Hagos, F., (2007). Household waste disposal in Mekelle city, *Northern Ethiopia. Epub*; 28(10): 200312.

[18] Slack, R.J, Bonin, M, Gronow, J.R, Van Santen, A, & Voulvoulis N. (2007). Household hazardous waste data for the UK by direct sampling. *Environ SciTechnol*; 41(7):2566-71.

[19] Boadi KO, Kuitunen M. Environmental and health impacts of household solid waste handling and disposal practices in third world cities: the case of the Accra Metropolitan Area, Ghana. J Environ Health. [serial online] 2005 Nov[cited on 2009 Nov 20]; 68(4): 32-6. Available from: URL:http://www.pubmed.com

[20] Bolaane B, Ali M. Sampling household waste at source: lessons learnt in Gaborone. Waste Manag Res. [serial online] 2004 Jun[cited on 2009 Nov 20]; 22(3):142-8. Available from:URL:http://www.pubmed.com

[21] Nath KJ. Home hygiene and environmental sanitation: a country situation analysis for India. Int J Environ Health Res. [serial online] 2003 Jun[cited on 2009 Nov 20]; Suppl 1:S19-28. Available from: URL:http://www.pubmed.com

[22] Catapreta CA, Heller L. Association between household solid waste disposal and health, Belo Horizonte (MG), Brasil. Rev PanamSaludPublica.

[23] Polit. DF., & Hungler, B.P., (1999) Nursing Research Principles and Methods, *Philadelphia*, 6th edition*, Lippincott Co*.