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**Research Article**

### PERCEPTION AND PRACTICES OF HOUSEHOLD WASTE MANAGEMENT AMONG MEDICAL AND ALLIED GRADUATE STUDENTS

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#### Abstract

**Introduction:** Household waste management is one of the most important environmental and public health issue. In Pakistan like many developing countries house hold waste management remains a neglected area which leads to high burden of communicable diseases as well as creates environmental problems. Ineffective and inefficient household management caused by unplanned urbanization, unawareness of the community about waste management, low literacy rate etc. **Objective:** The objective of the study was to assess the knowledge of medical and allied students as well as to compare this knowledge of these students. **Material and Methods:** Study was a cross sectional study carried out at ISRA University. Sample size was 120 including medical and Allied sciences. Inclusion criteria was all eligible students giving consent for participation in the study. Data was analyzed by descriptive statistics and Chi square was applied with p value < 0.05 was considered significant. Informed consent sought from participants and ethical approval taken from ethical committee of university. **Result:** Among the sample of 120 students included in the study, the mean age of the participants was 20 years with standard deviation of 1.2 years. Out of these students, 27.8% were male and 67.2% were female. Sample included 50.9% MBBS students, 24(20.7%) Physiotherapy students and 23.3% of nursing students. Seventy-eight (65%) students belong to urban areas and 42(35%) belonged to rural areas. Practice of waste disposal among students was assessed and it revealed that 47(40.5%) throw their house hold waste in nearby container, 33(20(17.2%) told that house hold waste of their house is being thrown in the street and 10(8.6%) use other methods of disposal of waste. Practices of storage of waste was assessed and result revealed that 51(17.5%), 27(17.5%) used cardboard boxes for storage of house hold waste, 27(22.5%) bins or drums for storage of waste and remaining 21(17.5%) used other means for storage of waste. While assessing practice of separation of waste, 45 (37.5%) were practicing separation of waste and majority 75, (62.5%) were not separating household waste. **Conclusion:** Perception and practice of the house hold waste management was not satisfactory among students of this medical college, which depicts the poor condition of waste management both in rural and urban areas. There was a significant difference in knowledge of mbbs student comparison with nursing and physiotherapy students. **Keywords:** Household, MBBS, waste management, environmental, public health

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**INTRODUCTION:**

Solid waste management is an important environmental issue globally but in developing countries it remains a neglected area in the context of absence of appropriate planning, availability of financial and human resources as well as lack of community participation<sup>1</sup>. Ineffective and inefficient waste management is associated with multiple factors which are interlinked, these factors include unplanned urbanization, unawareness about house waste management, high dependency ratio, low literacy rate and increased waste generation<sup>2</sup>. UNEP has estimated that about 8.4 million deaths are caused by environmental issues and about 10-12 percent of these deaths are caused by inadequate handling of waste<sup>3</sup>.

Pakistan is a developing country with a population of 204,202,000 with growth rate of 1.9% per year. Rapid urbanization from relocation from rural to urban areas leads to dire condition of waste management in urban and sub urban areas. Waste management being a multidimensional issue need to be solved by raising awareness in the communities, enhancement of financial resources for building better infrastructure and bringing new technology for proper solid waste management. It is evident that problem of waste management is influenced by human behavior<sup>4</sup>. Community awareness and attitude of house hold residents. Littering is a highly prevalent behavior among general population. There is a dire need to change the social norms and behavior by increasing awareness of the communities. Number of reasons have been cited as cause of this behavior such as convenience, lack of community participation in proper house hold management. (o Cornell) in most of the developing countries negative attitude of littering is common and community is habitual of throwing their house hold waste in the streets or in open space available nearby their homes. Generally, lack of interest of communities towards environmental pollution and waste management is a leading cause of improper waste management<sup>5</sup>. It has been estimated that in Pakistan solid waste generated in urban areas is about 55,000 tons per day. Situation of solid waste

management in Pakistan is a big public health issue. Improper waste management practice by community and ineffective measures for disposal of house hold waste by municipal authorities are responsible for common practice of open dumping and burning of house hold waste leading to environmental and health issues. In number of developing countries research has been carried out for assessment of perception and practice of waste disposal of house hold waste which indicate that improper and inadequate measure are taken by community and municipal authorities multiply impact leading to transmission of infectious agents as well as cause environmental pollution. Solid waste management disposal is domain of municipal and local government department which lack good governance and proper infrastructure for collection and disposal of solid waste disposal. Unplanned urbanization, increase population and increase in solid waste generation per capita multiplies this problem many folds. Health consequences of open dumping and burning at public places are major concern for generating environmental pollution and posing major health risk<sup>6</sup>.

Household waste, which is one of the component of solid waste, regarded as higher priority. Inadequate management of waste disposal system include regular collection, separation, transportation and waste treatment. Open dumping and untreated waste pose a higher risk for both environmental and health of the population living in middle and lower income settlements. Unawareness and attitude towards proper waste management cause health problems and leads to higher burden of communicable diseases in these areas<sup>7</sup>.

House hold waste consists of organic matters such as fruit, vegetable and food left over and inorganic matter as plastic, paper and glass etc. In Pakistan, generation of house hold waste has increased due to growth in population, unplanned urbanization, mismanagement of municipal authorities and lack of community sensitization. For Reduction and control of waste generation appropriate awareness in community and

efficient management by service providers either by public sector or private sector is essential. Solid waste management comprises of number activities which include three important components which are collection, transportation and disposal of waste generated by households. In prospective of comprehensive waste management various strategies are applied which include reduction, segregation, treatment, recycling and proper disposal<sup>8</sup>. Environmental protection Agency(EPA) has estimated that in Pakistan about 20 million of waste is generated per year and in Karachi about 47,000 tons of waste is generated per day. There remains a big gap of ineffective or either nonexistent treatment and recycling of waste in Pakistan<sup>9</sup>. This study was conducted in a medical university with a mixed population of students from rural and urban areas are studying. Perception and awareness about house hold waste management was sought with objective to know about student's perception and practices regarding house hold waste management so that proper gaps can be identified and recommendations can be given to concern authorities.

This study focused on impact of knowledge, perception and practice of the students regarding house hold waste and their knowledge regarding preventive measure associated with health risk of waste related diseases. Practice of safe methods of waste disposal and safety behavior is important for prevention of transmission of infectious agents and exposure to environmental pollution caused by improper waste disposal methods.

#### **MATERIAL AND METHODS:**

This was a cross sectional study carried out at Isra University. A sample of 120 students were randomly selected from various departments including undergraduate medical students, students of Isra School of Nursing and students of department of physiotherapy were included. A structured questionnaire was given to students after taking their consent. Inclusion criteria was all eligible students giving consent for participation in the study. Data was analyzed by descriptive statistics and Chi square was applied with p value less 0.05 was considered significant. Informed consent was sought from participants and ethical approval was taken from ethical committee of university.

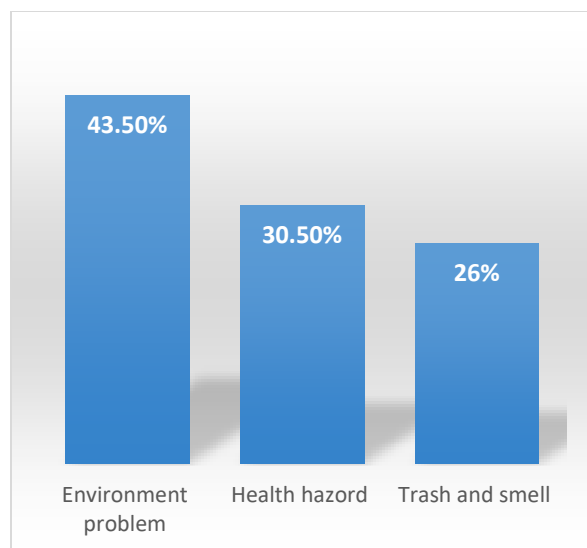
#### **RESULT:**

Among the sample of 120 students included in the

study, the mean age of the participants was 20 years with standard deviation of 1.2 years. Out of these students, 27.8% were male and 67.2% were female. Sample included 50.9% MBBS students, 24(20.7%) DPT students and 27(23.3%) of nursing students. Seventy-eight (65%) students belong to urban areas and 42(35%) belonged to rural areas. Out of 120 participants 49(42.2%) affirmed that large dust bins have been provided in their areas and 61(52.8%) had no provision of dust bins in their areas near their homes. Practice of waste disposal among students was assessed and it revealed that 47(40.5%) throw their house hold waste in nearby container, 33(20(17.2%) told that house hold waste of their house is being thrown in the street and 10(8.6%) use other methods of disposal of waste. Practices of storage of waste was assessed and result revealed that 51(17.5%), 27(17.5%) used card board boxes for storage of house hold waste, 27(22.5%) bins or drums for storage of waste and remaining 21(17.5%) used other means for storage of waste. While assessing practice of separation of waste, 45(37.5%) were practicing separation of waste and majority 75(62.5%) were not separating house hold waste. Assessment of factors associated with improper dumping revealed that majority 64(53.3%) participants told that dust bins were placed at long distance, 37(30.8%) had unavailability of dust bins in their areas, 11(9.3%) gave other reasons for not dumping the house hold waste and 8(6.6%) were reluctant due to their personal reasons. Assessment of perceived problems with improper waste management showed that 39(32.5%) participants were of the view that environmental pollution is a problem associated with waste management, 37(30.9) cited hazard, 24(20.2%) feel odor as a problem and 20(16.4%) thought waste lying around is a major problem associated with improper waste management.

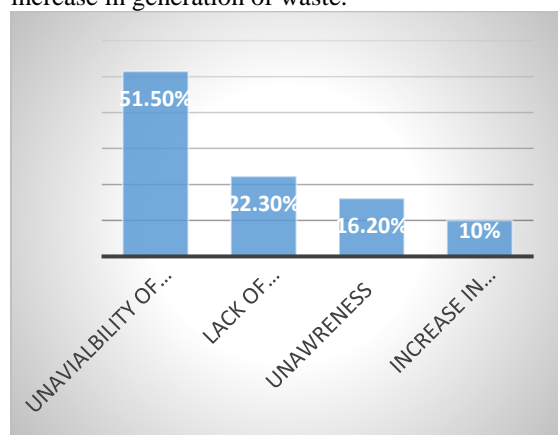
#### **Perception about Waste Management:**

The Figure No.1 indicates the perception of the participants about house hold waste management. The participants were asked about problems associated with improper waste management. The majority of participants responded about Environmental problem whereas minimum number of participants showed trash and smell as the major hazard of improper waste management while few of the participants felt that health hazards is the major issue associated with improper house hold waste management.



**Figure No.1 Perceived problems of improper waste management (N=120)**

The figure no.2 indicates the perception of the participants about household waste management, the majority of respondents indicated that waste management is an issue because of unavailability of municipal services. Comparative lower number of participants felt that improper household waste management is due to lack of community interest. Other participants held unawareness responsible for improper waste management and lower percentage for increase in generation of waste.



**Figure 2. Perception of the participants About improper waste management (N=120)**

The table No.1 depicts landfill as frequent practice for disposal of waste. Whereas it shows that composting is known as another practice of disposal of waste. Very fewer and less frequent practice of incineration is used besides the other two. And the rest of them did not know how to deal with the waste.

**Table No 1. Knowledge about Methods of disposal of waste (N=120)**

Method	Frequency	Percentage
Landfill	58	48.6%
Compositing	32	26.4%
Incineration	13	10.8%
Do not know	17	14.2%

In Table No.2 the participants were asked about their practices of waste management. The most frequent method of waste management was to use the plastic bags, whereas the fewer number of participants used bins and drums to deal with the waste management. The very less frequent practice of participants was to use the card boards as the practice of waste management.

**Table No 2. Practice of waste management by participants (N=120)**

Practice	Frequency	Percentage
Plastic bag	51	42.5%
Card board	21	17.5%
Bin/Drum	27	22.5%
other	21	17.5%

Table no.3 shows the hazards associated with waste management. The waste causes environmental pollution within the surroundings in great percentage. The waste is also held responsible for the health hazards caused, with odor and waste lying within the surroundings as less frequent.

**Table No 3. Hazards associated with waste management (N=120)**

Perceived problems	Frequency	Percent
Environmental pollution	39	32.5
Health hazard	37	30.9
Odor	24	20.2
Waste lying around	20	16.4

Table 4 describes the comparison of knowledge was assessed by applying chi-square test of significant which indicated statistically significant level of higher awareness among MBBS students in comparison of nursing and students of department of Physiotherapy with p value of 0.01.

**Table 4: Comparison of level of knowledge about waste management among students**

Awareness level	MBBS students	Nursing students	Physiotherapy students	Chi-square
High	33	8	8	P= <0.05 (0.01)
Medium	23	9	6	

**DISCUSSION:**

This high volume of organic waste is common in developing as well as in developed countries. In developed countries, this larger portion of organic food waste is utilized by composting for generation of biogas or for making fertilizer<sup>10</sup>. Plastic and cardboard are utilized by recycling. This study assessed the methods of disposal of waste, which indicated that a large number of the study population use open dumping, this is in accordance to some studies in Pakistan and other developing countries such as in Pakistan as depicted by a study in Lahore where 41.45% of the study population disposed of their household waste in open space. Open dumping remains a common practice in other developing countries. A study in India by Arora et al supported these findings. In Guinea, Keita M et al<sup>11</sup> had shown same findings where practice of open dumping remains a major method of disposal of waste.

Practice of waste disposal among students was assessed and it revealed that 94(78%) throw their household waste openly in street, 14(12%) told that household waste of their house is thrown in the waste bins provided by municipal authorities and 12(10%) use. While assessing practice of disposal of household waste, result of this study showed that 78% of the respondents affirmed that they throw waste in open space in street and then collected by hand carts or by trolley either by municipal authorities or in some urban areas by privately managed committees. Only 10% throw their household waste in nearby containers provided by municipal authorities. This high volume of organic waste is common in developing as well as in developed countries. In developed countries, this larger portion of organic food waste can be utilized by composting for generation of biogas or for making fertilizer. Plastic and cardboard are utilized by recycling but in Pakistan

lack of these technologies and resources are sparsely available. The result of this study indicated that major number of the respondents had good knowledge of issues associated with improper household waste management but on the contrary practice of waste was lower among respondents. These findings are in accordance to a study by Sabiha J et al.<sup>13</sup> Result obtained in this study show that most of the respondents 78% have positive attitude towards safe disposal of household waste while agreeing to acknowledge that safe disposal of waste is responsibility of every household member. This result is in accordance to a study by Asase M et al<sup>14</sup>. In developing countries, rapid and unplanned urbanization has created number of problems including generation of large amount of waste in cities. Municipal authorities, already having dearth of financial, logistic and human resources have to cope with this huge task of collection, transportation, treatment and disposal of waste which directly enhance health risk and environmental problems. Impact of household waste management is directly and indirectly on environment and human health, direct effect of household waste can cause direct pathogenic contact leading to communicable disease and indirect impact is reflected in long term impact leads to damage to ecosystem.

**CONCLUSION:**

Household waste management is a serious problem in Pakistan. Perception and practice of the household waste management was not satisfactory among students of this medical college which depicts the poor condition of waste management both in rural and urban areas. Improper household waste management poses a great threat of high burden of communicable diseases. Open dumping and land fill are common practices of disposal of waste. The prevalent poor condition of waste management is caused by number of factors including absence of good governance in municipal authority and lack of financial and human resources. It is recommended to enhance awareness and arrange health education sessions at community to sensitize this issue.

**REFERENCES:**

1. Khatib I.A, Kumar. Municipal Solid Waste Management in developing countries: Future challenges and possible opportunities, Integrated Waste Management. 2015;
2. Hofman P. Wasted waste- Disappearing residue at the peri-urban interface. Environmental sciences and policy. 2013;(31):13-22
3. Sobeiri SM, Omidvar B, Prahallada N. A comparative study of environmental awareness



- among secondary school students in Iran and India. *Int. J. Environ* 2007;1(1):28-34
4. Cnang N, Davilla E. Municipal solid waste characterization and management strategies for the lower Rio Grandy Vally, Texas. *Waste Management*. 2008;28(5):776-94
  5. Qasim M, Anees M, Bashir A. Unhygienic water is cause of water born diseases among villagers: A case of Gujrat-Pakistan. *World App J*;29(12):1484-1491
  6. Bashir A. Environmental degradation cause by urbanization in Pakistan (A review paper). 2014 bulletin of Energy Economics. 2(3)62-71
  7. Ray MR, Roychoudhury S, MukharjeeG, RoyS, Lahari T. Respiratory and general health impairment of workers, employed in a municipal solid waste disposal at open landfill site in Delhi. *Int J of Hyg and Environ Health*. 2005;108(4):255-262
  8. Badar A, Hakimi A, S Abusaif. House hold waste composition and management in Jeddah City, Saudi Arabia: A Planning Model. *Int. Res. Envir Sc* 2015;4(15):1-10
  9. Sabiha J, Faisal H, Saira M, Qasim M, Anees M, Usman G. Management of municipal solid waste generated in eight cities of Pakistan. *Int J Sci & Engineering Research* 2014;5(12):1186-92
  10. Dhokhikah Y, Trihadiningrum Y. Solid waste management in Asian developing countries, Challenges and opportunities. *Journal of Applied Environmental and Biological sciences*. 2012;2(7):329-335
  11. Woodwell G.M. Effects of pollution on the structure and physiology of ecosystems. *Science*. 1970;4(3):100-107
  12. Barloa EP, Lapie LP, De La Cruz CPP. Knowledge, attitudes and practices on solid waste management among undergraduates in a Philippines State University. *JEES*. 2016;6(6):146-53
  13. Hashmi HN, Malik N, Shah N. solid waste management in Peshawer. *International Conference, ESD, COMSAT 2007*;1:999-1006
  14. Sha A, Aboho S, Enej S. Survey of solid waste generation and compsiteing in a rapidly growing urban areas in Central Nigeria. *Waste Management* 2007;27(3):352-358.