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Perception of general and dental health hazards among ragpickers in Lahore, Pakistan

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ABSTRACT

BACKGROUND & OBJECTIVE: Ragpickers are free-lance workers who wander throughout the day or for the time that suits them to pick and gather recyclable waste materials. This material is collected from street wastebins and sold to various scrapyards that compensate them with a minimal amount. The conditions they work in are harsh, with health hazards around every corner of which they are unaware. This study aimed to explore the awareness of health hazards among Ragpickers in Lahore.

METHODOLOGY: The study was conducted in the slum vicinity near The University of Lahore adjacent to Raiwind, Lahore. The perception of health hazards among Ragpickers was assessed through a proforma before the start of the study. The Snowball technique was used to collect data. An analysis among the same population was done two weeks later after being given awareness about health hazards. The data was analyzed using chi-square and McNamara Test with p-value <0.05 considered as significant.

RESULTS: The results show that amongst the 150-sample population, the awareness level of the subjects increased by 50% about all diseases, but the knowledge about personal hygiene practices remained unchanged. Only 9% were aware of the diseases tetanus, and none of them was aware of hepatitis, etc.; however, after counseling, they became aware of the common hazards encountered during such work. The awareness level increased significantly (P<0.001). The data was analyzed using chi-square and paired sample t-tests with p-value <0.05 considered as significant.

CONCLUSION: There was a prominent lack of awareness in the ragpickers included in the study, and after the intervention, they showed a greater understanding of infectious diseases. Through health care programs sponsored by the government and NGOs, significant improvement in health among Ragpickers could be seen by following simple hygiene principles.

KEYWORDS: Disease, Needle, Garbage, Medical Waste, Awareness.

INTRODUCTION

Ragpickers are unskilled people who make their living by picking up recyclable pieces of waste from trash cans and public dumps [1]. Such material is sold to the relevant people, whereas the ragpickers generate limited income so that they can manage their daily living [2].

The landfills in the major urban hubs are a big problem, and the amount of waste is increasing tremendously, as in Lahore, Pakistan [3]. In this system, ragpickers play an unnoticeable but significant role, as they are not paid by the government or sponsored by any NGO [4].

They collect a tremendous amount of garbage, from which they screen recyclable material, which could be sold to the relevant person, such as a paper merchant or tin merchant [1].No particular skill or education is required; they only need to wander the whole day to collect material that could add to their income [2]. A large population is involved in this occupation, including people of all age groups with indiscrimination of gender, so the exact figure cannot be estimated [4].

Due to the low income and high risk associated with ragpickers' jobs, they face health hazards daily. This population is most vulnerable to occupational health hazards [4,5].

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The issues related to health that Ragpickers commonly encounter are general health and dental issues. Public health and dental problems among them are malnutrition, anemia, dental caries, poor dental hygiene, and hepatitis-related needle pricks they pick during their work [6].

Ragpickers are working in filthy conditions surrounded by street dogs and other animals, working in extreme weather conditions without any safety measures such as gloves, protected shoes, etc. Their survival depends on remnants of filthy food found in trash cans [2,7]. During their search for recyclable material, they come across hospital waste such as used syringes, needles, wasted gloves, and other hospital waste materials. If these materials are not properly handled, they can cause serious illnesses like hepatitis and AIDS [8]. Under the given circumstances, all such workers must be provided with awareness about health issues they come across, which they could be protected from if proper awareness is provided to them [9,10]. The ragpickers are at an increased risk of contracting diseases found in the waste; the study's objective was to study the health awareness level among ragpickers, which has never been conducted before in our context.

METHODOLOGY

The study was designed as a Quasi-experimental pre and post-test interventional study. It was conducted after the approval from the Ethical Review Board, UCD (ERB approval number UCD/ERCA/21/03ah). The study was conducted from January 2021 to May 2021. Ragpickers who make their living by collecting waste material from trash cans were selected randomly. Ragpickers of all age groups who consented to the study (by verbal approval after explanation of their rights as participants according to the protocols of ERB, UCD) were included as subjects. Those who did not consent to the study were excluded from the study. They were read the consent form, which outlined the purpose of the study and their participation in it as well as their rights. Upon agreement, either signature or thumb impressions were taken.

The Snowball technique was used to collect the sample [11]. A couple of Ragpickers were selected for the study, who pointed out other ragpickers and their locations. A total of 150 Ragpickers from the vicinity near the Teaching Hospital of The University of Lahore were selected using this technique.

A self-structured questionnaire was designed, which was improved by a pilot study among the community medicine departments of various medical colleges, which was reviewed by at least two faculty members from 3 different colleges and validated the questionnaire. It focused on age, gender, literacy level, daily income as all of them are working daily, and the awareness level of health hazards related to this occupation. The surveyors were first calibrated by community medicine members. These calibrated surveyors went into the field and briefed the ragpickers individually, informed them in detail about the study and, upon their approval, asked them to fill out the questionnaire form.

After filling in the forms, the ragpickers were included in a group, and awareness lectures using posters and videos were given to them in groups. Each group included 15 to 40 participants at a time. The spread of diseases, their symptoms and outcomes were explained in detail and prevention was also discussed, especially in their occupational context. The prevention methods included the importance of handwashing, taking care while disposing of sharps and how to manage needle prick injuries. It was supervised by doctors and medico-social workers. Feedback was received after two weeks. Data was analyzed by frequency and percentage distribution. The chi-square test was applied for gender and demographic data, and the McNamara test was used to assess the perception before and after the intervention. P-value was considered significant at <0.05.

RESULTS

It is exhibited that 65% of the population worked less than 5 hours per day and were females. Due to support and responsibility to take care of family, female working hours were found to be less than males. The working hours of males were significantly higher (75%) (p<0.001). Table- I shows that males dominated over females and were 62%. As 65% of the population belonged to a very low-income group and were between 2000-5000 rupees per month.

Only 9% were aware of the diseases tetanus, and none of them was aware of hepatitis, etc.; however, after counselling, they became aware of the common hazards encountered during such work. A study conducted in 2016 in Surabaya supports the findings of our research. The awareness level increased significantly (p<0.001). Improvement was also observed in hygiene after awareness was given; this is shown in Table-II.

Table-I: Demographic data details of the subjects.

variables	Categories	Males n (%)	Females n (%)	Total n(%)	p-value
Literacy status	Illiterate	46 (52)	34(52)	79 (53)	0.417
	Primary	29 (34)	20(30)	50 (33)	
	Middle	9(12)	12(18)	21 (14)	
Age	14-20	26(31)	13 (20)	39 (26)	0.136
	21-25	12 (14)	11 (17)	23 (15)	
	26-30	7 (8)	12 (18)	19 (13)	
	31-35	20 (24)	10 (15)	30 (20)	
	>35	19 (23)	20 (30)	39 (26)	
Income per month	2000-5000	48 (53)	48 (80)	96 (64)	0.092
	5001-8000	23 (26)	9 (10)	32 (21)	
	8001-10000	13 (17)	9 (10)	22 (15)	
Hours of work	<6 hours	19 (23)	31 (47)	50 (33)	≤0.001
	6-9 hours	60 (71)	25 (38)	85 (57)	
	>9 hours	5 (6)	10 (15)	15 (10)	
Total		84(100)	66(100)	150(100)	

Table-II: Awareness of various hazards.

Awareness of various hazards	Before intervention n(%)	After intervention n (%)	p-value
Tetanus	13 (9%)	87 (56%)	≤0.0001
HIV/AIDS	42 (26%)	99 (69%)	≤0.0001
Hepatitis B & C	0 (0)	24 (16%)	_
Awareness of dental health			
General Dental hygiene	12(9%)	126(84%)	≤0.0001
Dental caries	5(2%)	140(93%)	≤0.0001
Awareness of diseases caused by vector bites			
Dengue	95 (63%)	139 (92%)	≤0.0001
Malaria	87 (60%)	127 (84%)	≤0.0001
Awareness about hand washing hygiene			
Hand washing before meals	4 (2%)	9 (6%)	0.063
Steps of hand washing	0 (0)	18 (12%)	_
Awareness about diseases due to not hand washing			
Diarrhea	91 (59%)	140 (93%)	≤0.0001
Cholera	0 (0)	20 (14%)	_
Typhoid	40 (27%)	65 (45%)	≤0.0001

McNamara Test

DISCUSSION

This study shows that 62% of the population are males; studies from different parts of the world have shown similar results. In our context, males are supposed to be the leading financial supporter of the family; despite this fact, a large proportion of the females are also involved in this profession. The majority of the females who were involved in this profession are above the age of 35 years. Due to limited resources with this low income, both males and females have to work to earn for their families[2]. The findings in this research are supported by research in Brazil.

The study conducted by PI Adella and T Nurlambang supports the finding of our research; while 53% were illiterate and 33% had attended primary school[12], a study conducted in 2001 in India is in favour of the present study. The illiteracy rate was higher in males, at 60%. Young people aged 14-20 years were 27%, whereas those 35 years and above constituted 25%. Females above the age of 35 years were more than half the population (51.3%) [13]; another study conducted in India by AS Godara, M Rani supports the situation of female Ragpickers in our research.

Studies conducted show the risk of different infections and hazards encountered during work by Ragpickers, which is shown in Table- II. 43% mentioned the injuries they suffered, such as needle pricks and injuries by sharp-pointed instruments [14,15]; among the total population, only 13% were vaccinated for tetanus, and the rest were unaware of vaccination.A study conducted in Brazil [5] supports the low income among this population. The earning capacity of males was significantly higher (79.2%), and it was statistically significant (p<0.001).

The majority of the population falls within the middle age group (21-35 years). Similar findings are observed in different countries [5], and they are supported by the study conducted in Brazil.The majority of the population, i.e., males, were illiterate (53%); this finding is supported by a similar study conducted in Nepal [15].

The majority of the males, 67%, worked for more than 5 hours, which is supported by studies conducted in Calcutta and the Netherlands [16,17]; these studies also emphasize that increased working hours lead to more earnings. The income of the ragpickers falls between 2000 and 5000 rupees per month. However, more income was associated with males.

Studies from around the world suggest the increased infection prevalence among Ragpickers [4,5,18] which were conducted in India, Brazil, and Egypt. People associated with this profession are vulnerable to common diseases much more than the rest of the population; commonly encountered diseases are diarrhea, worm infestation, and malaria. The majority of the diseases were due to poor hygiene, such as a lack of interest in washing hands; however, after awareness about handwashing, this practice did not flourish because water was not available the majority of the time.

A large group of this population was not aware of dental hygiene; they had no idea about dental hygiene. The diseases related to poor dental hygiene and repeated pricking of teeth with an infected needle they collect from garbage resulted not only in dental caries but also in the misery of hepatitis. This feature is quite obvious in this particular group because the hospital waste they collect is sold at a reasonable price and is easily available to them. These hospitals used needles used by Ragpickers to insert in gums to relieve pain, which further adds to the misery of these people [19,20].

Needle pricks and damage by sharp instruments were also a hazard commonly observed among this population. Not a single participant in the study was aware of the infections caused by pricks or damage to the skin by some infected instrument [20,21]. The majority of the Ragpickers were concerned about the mosquitos and flies, and the majority were aware of some diseases due to these insects. However, after awareness about the disease due to vectors, significant awareness was observed among Ragpickers.

CONCLUSION

Awareness level among illiterate, low socioeconomic Ragpickers improved. Hygiene, which is a costless thing, could improve the health of the entire group if basic facilities are available to them. This study provided an opportunity to raise awareness about dental hygiene, from which these people were unaware. Awareness about dental hygiene and general health could protect them from communicable diseases. The significant role these people play is unnoticed by the government and NGOs. This role is played at the

cost of their health, which is due to unawareness of some hygienic issues.

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Authors Contributions:

Imran Jawaad : Substantial contributions to the conception and design of the work.
Nimra Ali: Design of the work and the acquisition.
Izah Tahir: Analysis and interpretation of data for the work.
Nissa Khan: Drafting the work.
Wamik Ehsan: Acquisition of data for the work.
Furqan Khan: Reviewing it critically for important intellectual content.
Obaid Bajwa: Final approval of the version to be published.

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