

## Original Research

## Governance problems and effects of health hazards on scavenger children's and their quality of life in Pakistan

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## ABSTRACT:

The purpose of this study was to dig out the environmental governance problems with especial focus on the association between health hazards faced by scavenger children and their quality of life. This study on poor health governance was conducted at four different areas of District Peshawar Khyber Pakhtunkhwa, Pakistan. Data were collected from 196 respondents through simple random sampling. Association of variables were tested by using chi-square test. The association of scavengers' Quality of Life (QOL) was found significant with the collection of usable from burning dumps, collection of sharp edge items, flies and mosquitoes on dump, suffering from lungs problem, receiving of cuts while collecting usable, suffering from fever, body pain and visiting doctors for treatment. The key governance measures which included awareness of safety knowledge, providing protective equipment at the workplace, ensuring scavengers access to health facilities like hospital, doctors, and quality medicines by registering these scavengers and their regular medical check-up, training the scavenging children in adopting harm preventing measures and introduction of recycling industries. These suggestions have been put forward to the local, provincial and national government which are based on the results and analysis of the study.

## Keywords:

Health hazards, Vulnerability, Equipment, Quality of life, Scavengers.

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## INTRODUCTION

The term 'scavenger' is generally used for those birds which eat from garbage or leftover thing i.e. crows, kites, and vulture, as they are usually seen eating rotten or dead bodies. On the same analogy scavenging children are those who collect usable materials from home to home, over garbage's, bins, dump site, markets and commercial areas etc. to survive in the society as they belong to poor families whose are struggling to survive in the society so they worked jointly to support each other and get some money and edible food (Medina, 1997; Ali *et al.*, 2018).

Scavenger's families are usually migrated from rural area to urban for making some money. Developing cities are in front of some serious problem for waste collection which provide opportunity for scavenging children to reuse or recycling to survive because they are deprived, poor and isolated from the mainstream society and other basic needs of life such as pure drinking water and health facilities (Jaramillo, 1988)

In Asia and Latin American cities, it has been estimated that up to 2% population survives their life through scavenging; they collect materials to reuse or sell it for recycling. Most of the waste picker children are young poor and belonging to joint family system, they are satisfied from their work with the company of their peer group and relatives. However the prevailing condition is very hostile and bad. They are in front of numerous problems like social insecurity, health and physical facilities of community is very dishearten.

These children are generally known 'scavengers' (Bartone, 1988; Khan *et al.*, 2018a). Scavengers are vulnerable to different kind of hazards, physically, socially and psychologically because their workplace is unsafe and terrible with negative consequences on their life (GP, 2006). Scavengers working activity is very risky for their physical and psychological health. Most of the waste pickers have to walk for 6 to 8km to collect recyclable material. They carry heavy

loads of collected material for a long distance. Furthermore, the process of collecting usable is very dangerous. The scavengers are at high risk of injuries and diseases due to infections of used syringes, blades, razor, and pieces of glass, broken bottles and expire or discarded medicines which affect their health badly. Most of the scavengers have no protection equipment such as gloves, sticks, torch, shoes etc. while collecting usable (Khan *et al.*, 2018b). The hardships of working in the polluted environment are enhanced due to bad weather. Children work under 40°C heat and bad smelling condition. Flies, mosquitoes and risk of dog bites are additional hazards. Due to unbearable poverty, tiredness, social stigma and polluted work environment some of the scavenger's children are compelled for begging or prostitution.

Scavenger's children are isolated from mainstream society and strongly neglected due to their practice. People doesn't want to mix their children and play with them even community people doesn't like to shake hand with them or drink and eat with scavengers children, so these children are physically, socially and psychologically rejected from society (Kshitij, 2004).

Scavengers suffer from a multiplicity of problems due to their occupation. They are two times more prone to illness than non-scavengers. The difference is because of the activity of scavenging and living in hazardous conditions. Direct contact with germs and insects make them more liable to health hazards. The vulnerability to diseases is grave when the scavenger's lack protective, preventive and safety tools for efficient working. (Nath *et al.*, 1991; Rehman *et al.*, 2017a). According to a research report in Mexico City, it was identified that dumpsite scavenger had 39 years of life expectation while that of the general population was 39 years (Meyer, 1987; Wilson *et al.*, 2006). The frequency of parasitic and enteric diseases was also higher in scavengers including diarrhoea, cholera, skin disorders, malaria, and typhoid fever, poliomyelitis and anthrax. It is

because of the ugly and unhygienic practice of scavenging children with lack of protective equipment (Adan, 1982).

Scavenger's children are more prone to scabies, infection, skin diseases and cuts or swollen, pus diseases on their feet and arms (Holley, 2005; Rehman *et al.*, 2017b). A high rate of mortality and morbidity in scavengers can be visualized from the study conducted in Egypt where the waste picker community had high infant mortality of 1/3, mean one death of an infant after every three live births, which is very higher than the rest of the population. Other diseases such as parasites and prevalence of enteric and diarrhoea etc. were also very high. Just like that, In Cario, in the waste picker community, one baby out of four died earlier than first year (Castillo, 1990; Meyer, 1987). While in Manila, some serious diseases prevailed in scavengers communities, including malaria, typhoid fever, diarrhoea, tuberculosis, skin disorders, pneumonia, dysentery, cholera, anthrax, and poliomyelitis (Adan, 1982; Rehman *et al.*, 2018). Due to the inadequate disposal of waste people are estimated to infected form different diseases. In urban areas waste generated sources are increase like domestic, industrial and commercial sources due to which huge environmental health problem increases. There are also occupational health risks who work with waste. Scavengers make a living by selling usable material they collect from garbage's, dumpsite, bins and from a long roadside. Although they have functional contributions to society in terms of waste recycling, they are vulnerable to health problem due to lack of protective equipment and unawareness of infected hazardous waste material.

This study is designed to describe the health risks to scavenger's children in their workplace and its association with their QOL to come up with some sound recommendations for improving their life quality. Street children are easy targets for criminal recruitment. They are young, small, poor and ignorant of their rights and

usually have no family members who will come to their defence. It does not require much time or effort to detain and beat a child to take out a confession, and the children are unable to register formal complaints. Due to young age, poverty threatening social environment at workplace and limited institutional support from various protection agencies expose scavenger's children to violence at workplace. These children are rejected by locals, deprived of their collected usable and money and sexually assaulted by criminals. Criminal tendencies start to develop in these children right from an early age (Siddaramu, 2013).

## MATERIALS AND METHODS

This study was comprised at four different residential town of Peshawar, Namely Tehkal, Canal town, Board Bazar and Gulbahar town, Khyber Pakhtunkhwa, Pakistan. Through Quantitative method of research, the study was conducted, before a pilot survey of researcher and estimated that there were total 400 scavenging children in the above four town. Through simple random sample from 196 children, the primary data was collected using Sekaran (2003) table of sample size.

The depended variable QOL of scavenger kids was indexed to acquire a summary of results for each scavenger. Some scrounger partaking a good QOL is the one who answered positively on more than six attitudinal proclamations on QOL. Those who answered positively on 4 to 6 attitudinal proclamations seems to be continuing towards the QOL were ranked as fair while the rest were with deprived QOL as they replied negatively on more than six attitudinal statements on QOL.

Table 1 represents the free variable (i.e. health hazards) and dependent variable (scavenger's QOL) were stated by combining attitudinal statement from the prevailing literature and taking replies on three levels of

**Table 1. Conceptual framework**

Independent variable	Dependent variable
Health hazards	Scavengers quality of life

Likert scale. The dependent variable (Scavenger QOL) was indexed and cross-tabulated with free variable (Health hazards) to find out their connotation. Chi-square test was used to test the hypothetical connotation, as charted by Tai (1978) through the formula as below:

$$\chi^2 = \sum_{i=1}^c \sum_{j=1}^r \frac{(O_{ij} - e_{ij})^2}{e_{ij}}$$

**Table 2. Frequency and percentage distribution of the respondents on the basis of health hazards to scavenger's activities**

S. No	Age (Years)	Frequency	Percentage
1	5-8	15	7.7
2	9-11	88	44.8
3	12-14	55	28.1
4	15-18	38	19.4
<b>Total</b>		<b>196</b>	<b>100</b>

  

S. No	Education status of respondents	Frequency	Percentage
1	Literate	5	2.6
2	Illiterate	191	97.4
<b>Total</b>		<b>196</b>	<b>100.0</b>

  

S. No	Gender	Frequency	Percentage
1	Male	174	88.2
2	Female	22	11.2
<b>Total</b>		<b>196</b>	<b>100.0</b>

  

S. No	Scavenger's monthly income	Frequency	Percentage
1	1000-1500	38	19.4
2	1501-2000	87	44.4
3	2001-2500	33	16.8
4	2501-3000	23	11.7
5	3001 and above	15	7.7

  

S. No	Family size	Frequency	Proportion
1	5-6	38	19.3
2	7-8	51	26.1
3	9-10	56	28.5

## RESULTS AND DISCUSSION

### Frequency and percentage distribution on the basis of health hazards to scavenging activities

Scavengers, due to their profession, are exposed to the multiplicity of health hazards. They have to breathe in intolerable smoky and stinging environment and are exposed to germs and wounds during collecting usable from dumps. Due to an inadequate disposal of discarded medicines, used syringes and other hospital waste, especially from the private clinics the hands of the waste picker may be hurt and cause serious diseases. Health-related hazards faced by scavengers are enumerated in Table 2.

The results indicated that majority (78.1%) of respondents collect useable stuff from the burning dumps, and 54.6% respondents collect sharp edge items like blades, pieces of glass or mirror, similarly, 73.5% respondents collected disposable needles and used surgical equipment's. 81.6% respondents received cuts during their collection. While collecting usable from the dump, the scavengers are prone to suffocation and lungs problem due to smoke and burnt waste, they are also prone to physical injuries and cuts or getting diseases due to the collection of used surgical items. This result was supported by Kshitij (2004) that without protective equipment like gloves, sticks, shoes, torch, masks, and collection of waste material is very risky because there are different kinds of hazardous material like pieces of mirror, blades, used syringes, discarded medicines and broken bottles which may cause them serious injuries and affect their health. Chances of these hazards could be reduced if the scavengers used protection equipment's during the waste collection of the waste.

Besides that, 75.5% respondents agreed that dumps were hidden with flies and mosquitoes. The results further clarified that 52% respondents were suffering from lungs problems like asthma and permanent cough. Moreover, 94.4% respondents were safe from chronic diseases like hepatitis, whereas 36.7% respond-

ents were suffering from fever regularly. Furthermore, 53.1% respondents were suffering from body pain, headache and skin rashes; In same way 66.8% respondent's eyes were safe from burning regularly while 33.2% respondent's eyes were having burning sensation regularly due to their scavenging activities. Beside that 96.4%, respondents were not bitten by dogs, scorpion, and other insects while 3.6% were bitten. Furthermore, the majority 83.7% of the respondents did not visit any doctor for medical treatment in case of sickness. Due to the smoke, insects, sharp edge items and germs exposure the children receive various diseases like lungs problem, fever, eye burning and even hepatitis. Sometimes, these scavengers were bitten by poisonous insects or dogs etc. Body pain was common for almost all the scavengers. To the dismay, the scavengers seldom visited doctors for treatment. Maynez (1988) supported the result who found that street scavengers are more prone towards crimes as compared to dumpsites while domestic workers are safe, from being assaulted, robbed or threatened. Night time waste picking at dumpsite is the most profitable because of the scraps or thrash which is thrown out from the hotels, residence and bars. However, risk of injuries and stealing of material and money is enhanced. Scavengers have a severe vulnerability of physical, sexual abuse and night time criminal activities.

The results also confirmed the finding of Anon (1994), that scavengers face multiple hazards and danger during the collection of recyclable materials as they are in touch with dirt, nastiness, and diseases. Similarly, Adan (1982) argued that the majority of parasitic and enteric diseases were also higher in scavengers including diarrhoea, hepatitis, cholera, skin disorders, malaria, and typhoid fever, poliomyelitis, and anthrax. Kshitij (2004) argued that scavengers work is unsafe and bad weather also makes it difficult as children work under 40°C heat and bad smelling conditions. Flies and mosquitoes and risk of dogs, cutting in this sort of environ-

ment are another danger hazards. The finding of Nath *et al.* (1991) also supported these results that scavengers are more vulnerable towards infections and diseases. The difference is because of their activity of scavenging and living condition. Touching hands in the waste and then touching food with germ affected fingers cause different diseases. The finding of Caroline (1996) supported these result that children carrying heavy loads to a long distance mostly had muscular problems. On garbage's, dumpsites and on roadside mostly fire burns to waste to decrease the volume of the material which is harmful in term of smoke inhalation.

WHO (1988) supported the results that climatic condition can also be hazardous for scavenger's children because the waste which they collect can also contaminate the water, air and soil of the environment in which they live. These communities often live in informal settlements which are not serviced by municipality. Hot and cold weather affect child labour health.

#### **Association between health hazards and scavengers QOL**

Mostly scavengers children are unaware that how to ensure their safety from different kinds of hazardous material which people thrown on the dumps. They are untrained and unprofessional about the basic safety knowledge and required tools of waste collecting due to which scavengers children are vulnerable to serious injuries and diseases. Beside that domestic, hospitalize and industrial waste are not properly disposed which pass away from these children waste barehanded which may leads to infections.

The association between health hazards and scavengers QOL is given in Table 3. A significant ( $P=0.001$ ) association was found between scavengers QOL and collection of usable from burning seducing dumps. Children collecting usable from burning dumps were more likely to have a poor QOL as scavenger's children skin are very soft. Caroline (1996) argued that scavenger's children have a faster rate of breathing than

adults due to which they are more in danger towards airborne hazards usually when waste is burning. In addition, significant ( $P=0.017$ ) association was found between scavengers QOL and collection of sharp edge item. Similarly, highly significant ( $P=0.000$ ) association was found between the dumps ridden with flies mosquitoes and scavengers QOL. Similarly, significant ( $P=0.003$ ), association was found between scavengers QOL and frequent occurrence of respiratory diseases like asthma and permanent cough. In some way, significant ( $P=0.002$ ) association was established between scavengers QOL and suffering from fever regularly. Similarly, highly significant ( $P=0.000$ ) association was found between scavengers QOL and suffering from body pain, headache and skin rashes. Scavenging is a dangerous and risky work. It requires safety knowledge

and equipment to protect scavengers from germs and sharp objects thrown on garbage such as sharp blades, sharp pointed nails, broken pieces of glass etc. Cuts from such sharp edge items cause different infections and disease smoke, dirt, flies, and mosquitoes are causing several diseases. Higher exposure to this environment increase health hazards and reduces scavenger's QOL. These diseases in scavenger's community require serious investigation study to provide them safety in their working condition. Harassment is another threat for scavengers as these children are young and belong to extremely poor families' status, and there is no check from their parents as they have given free hand for earning. The local community people, police and shopkeepers use them for personal benefit and sexual harassment with some little money. Moreover, health-related poli-

**Table 3. Association between health hazards and scavenger's quality of life**

S. No	Statement	Yes		No		Total	Mean ( $\bar{X}$ )	SD ( $\sigma$ )	$\bar{X}+\sigma$	$\bar{X}-\sigma$	Deviation %	
		O.V	V%	O.V	V%						Sample -1	Sample -2
1	You collect usable items from burning dumps	153	78.9	43	21.9	196	98	78	176	20	14	3
2	You collect sharp edge item like blades/glass.	89	45.4	107	54.6	196	98	13	111	85	8	8
3	You collect disposable needles / used surgical equipment's.	144	73.5	52	26.5	196	98	65	163	33	13	4
4	The dumps are hidden with flies / mosquitoes.	148	75.5	48	24.5	196	98	71	169	27	14	4
5	You are suffering from lungs problem like asthenia / permanent cough.	94	48	102	52	196	98	6	104	92	9	8
6	You are suffering from chronic diseases like hepatitis.	11	5.6	185	94.4	196	98	123	221	-25	1	15
7	You receive cut while collecting usable.	160	81.6	36	18.4	196	98	88	186	10	15	3
8	You suffer from fever regularly.	72	36.7	124	63.3	196	98	37	135	61	7	10
9	You suffer from body pain, headache or skin rashes.	104	53.1	92	46.9	196	98	8	106	90	10	7
10	Your eyes burn regularly.	65	33.2	131	66.8	196	98	47	145	51	6	10
11	You are beaten by poisons insect / scorpion /dogs or snakes.	7	3.6	189	96.4	196	98	129	227	-31	1	15
12	You visit doctor when you are ill.	32	16.3	164	83.7	196	98	93	191	5	3	13

cies are needed for waste picker communities. Furthermore, significant ( $P=0.045$ ) relationship were taken with scavengers QOL and receiving of cuts while collecting usable in the waste. Hands and feet of scavengers were in direct contact of the infected waste. Cuts and scratches expose blood, body fluid at the internal tissue to germs. Scavenger children are more prone to scabies, infection, skin diseases and cuts or swollen pus diseases on their feet and arms. Mostly, scavenger's children are suffering from body scabies and body pain carrying heavy loads from long distance. A significant ( $P=0.001$ ) association was found between scavengers QOL and visiting doctor in case of sickness. Children, because of poverty, could not manage to consult a doctor to cure their diseases which have an adverse effect on their QOL. Huysmans *et al.* (1994) notified that waste picker or scavenger would suffer from more severe health conditions than the other children due to their unsafe work environment, lack of safety equipment and medical check-up. According to these results scavengers are more vulnerable to be ill than non-waste picker due to their unhygienic life style and lack of unawareness. Furthermore, scavenger's children are more vulnerable to health hazards as compared to the elder, children may pick hazardous material which adult know to avoid them. Besides that children have soft and thin layer of skin than adults which may make them more prone towards burns and chemical absorption.

Conversely, a non-significant ( $P=0.870$ ) association was found between scavengers and collection of disposable needles used the surgical equipment. Similarly, a non-significant ( $P=0.382$ ) association was found between scavengers QOL and infection of chronic diseases like hepatitis. Furthermore, non-significant ( $P=0.811$ ) association was found between scavengers QOL and regular burning of eyes. Similarly, non-significant ( $P=0.514$ ) association was found between scavengers QOL and bites from poisonous, insect, scorpion, dogs or snakes.

It has been analysed from these result that scavengers are exposed to a working environment which threatens their health. The consequences of working unhealthy environment are noticeable in form of various diseases and body pain. These children are also vulnerable to exposure to poisonous chemicals. The negative health consequences are further aggregated when these children are unable to access doctors for treatment. The state of exposure to health hazards, in its turn, is deteriorating scavenger's QOL.

## CONCLUSION

Besides poor governance and environmental problems, the poverty and disparity induce these children to get involved in dirty and polluted jobs like scavenging. Collection of waste material is an easily available source of income for poor children because their families are struggling to survive in the society. They are highly exposed to various diseases and body fatigue. They are also constrained to consume food items thrown by people on the dumps that have extremely negative consequences on their health and subsequently on lowering their QOL. Proper disposal of hazardous waste of hospitals and industries involvement of government and non-government organizations in carrying out baseline studies to enlist the actual number of scavengers, provide them basic awareness about the best ways of collecting usable and provide them with the tools and equipment that ensure protection of scavengers from health hazards and improve their working efficiency and medical check up.

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