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**COLLECTION OF WASTE MATERIAL AS POOR SCAVENGER'S QUALITY OF  
LIFE**

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**ABSTRACT**

The study focusses on the association between health hazards faced by scavenger children and their quality of life. A total sample size of the study was 196 respondents were interviewed through simple random sampling in selected areas of Peshawar City, Khyber Pakhtunkhwa Pakistan. The data was collected on a three-level Likert scale covering the measurement of the dependent variable (scavenger's quality of life) and independent variable (Collection of waste material for recycling). The association of scavengers' Quality of Life was found significant with collection of waste materials for recycling that scavenging as a source of income, using of instruments for digging of recyclable material, using of mask, using of gloves, collection of organic matter, eating of usable food from the dump. Recycling provided income opportunities and some earning to scavengers' children, but their lifestyle had some negative effects on their quality of life. The obvious reasons that downgraded scavenger's quality of life included negligence from using tools and equipment like a stick, torch, mask, and gloves to protect themselves and improve work efficiency. Moreover, poor quality of life was also linked to collection and use of rotting unhygienic food for own use and family which have derogatory health effects. Involvement of government and non-government organizations in carrying out basis line studies enlist the actual number of scavengers, provide them basic awareness about best ways of collecting usable and provide them with the tools and equipment that ensure the protection of scavengers from health hazards and improve their working efficiency. Encouraging the establishment of recycling

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industries in the big city to convert waste into a resource and help poor families to earn their livelihood in a better way.

**Keywords: Recycling, Waste Material, Protective Equipment, Awareness**

## 1. INTRODUCTION

Increasing trend of urbanization in developing countries has improved the living standard and increased consumption and subsequently the solid waste in cities. Most of the solid waste is not disposed of or recycled by the public sector. The incapacity or failure of the formal waste management system and public-sector organizations in the recycling of waste encouraged their informal sector for waste collection [1, 2]. It provides an opportunity for migrants, children, women, unemployed and handicapped individual to reuse or recycle the waste and ensure their income and survival opportunity. Scavenging is a dangerous and risky job, dangerous for the lives of scavengers due to harmful scrap material such as sharp blades, sharp pointed nails, broken pieces of mirror, sharp blade, germ affected waste which cause different serious diseases [3]. Scavenger's occupation and the living condition is offered lowest status in the society. They must work in a very poor and hostile condition. They are vulnerable to various risk mostly when they are working in dumpsites, landfill or garbage's and suffer exploitation and stigmatization because handling refuse, or waste material is denied by society [4, 5].

Scavengers are incapable or unwilling to get other form of employment but prefer to adopt low price industrial demand for recyclable material collected from scavenging. As recycling of waste material generated income opportunities but this opportunity is rewarded with low income and poor social status. The usable waste is easily available in urban areas thrown from houses, hotels, shops and industries providing earning opportunities to scavenger's children searching some money and food for their family [6]. Scavenging is a risky job that involves digging, scratching and felling usable waste from smoky and unhygienic dumps. Use of equipment like stick, gloves, mask and torch can protect scavenging children from harm and improve their quality of life. The scavengers have lack of protection equipment and facilities for searching of recycling material in the waste or garbage's, so they are more vulnerable to harmful material and health hazards [7]. Similarly, these results show that policymakers must consider the result of these communities in solid waste management policy framework to mitigate and make available them the healthy environment, workplace and other

necessary training, equipment or tool and facilities for collection of solid waste and recycling [8]. The process of collecting waste material is very dangerous. There is high risk of injuries and diseases because there are used syringes, blades, razor, and pieces of mirror, broken bottles and expired discarded medicines which affect children health as most of the scavengers have no protection equipment or tools such as gloves, sticks, torch, shoes etc., [9]. Moreover, the scavengers are poor and illiterate children and lacking the parent's advice and responsibility. Due to their unawareness and ignorance, waste picker has no protection equipment and even when they find any disposal vegetables or edible food in the waste they are likely to eat and take it to home [10]. The untouchable practice of scavenging made the children isolated from rest of the normal human activities and working groups. They have limited participation in social and other formal activities as compare to other children of society [11].

## 2. METHODS AND MATERIAL

The study was conducted in four towns of District Peshawar that are Board Bazar, Canal Town, Gulbahar Town and Tahkal Payan Khyber Pakhtunkhwa (Pakistan) for primary data collection. The study was conducted through quantitative method, a simple random sampling was chosen as a sampling technique and a total 196 sample

size was taken from 400 respondents through Sekaran (2003) table of sample size [12]. Primary data was collected through interview schedule and then analysed through Chi-square to find out the association between the dependent variable (scavenger's quality of life) and independent variable (Collection of waste material for recycling).

The dependent variable (Quality of Life of Scavengers) was indexed to get a summary result for QoL for each scavenger. A scavenger was ranked as having a good quality of life if he/she responded positive attitude on more than 6 attitudinal statements on QoL. Those that responded positively on 4-6 attitudinal statements related to QoL were ranked as fair on the scale and the rest were having a poor quality of life as they responded negatively on more than 6 attitudinal statements on QoL.

The study variables (Table-1) i.e. Collection of waste material for recycling (independent variable) and scavenger's quality of life (dependent variable) were measured by pooling attitudinal statement from existing literature and taking responses on three levels Likert scale. The dependent variable (Scavengers Quality of life) was indexed and cross-tabulated with independent variable (Collection of waste material for recycling) to determine their association. Chi-square test was used to test

the hypothetical association, as outlined by Tai (1978) through formula as below [13].

Ethical consideration was the prior intent of the researcher. Respondents were assured by the researcher that the information

exposed will be used for research purpose only. Similarly, only willing respondents were interviewed for which researcher's asked the consent of each scavenger.

Table 1 - Conceptual framework

Independent variable	Dependent variable
Collection of waste material for recycling	Scavengers Quality of Life

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

### 3. RESULTS AND DISCUSSIONS

The results of the data collected and discussion along with a detailed analysis has been given as follows:

#### 3.1. Frequency and Proportion of the Respondents

The finding result of demographic profile of scavenging children shows that 44.8% respondents were from the age group of 9-11 years, 88.2% respondents were male, 21.9% respondent's family size consisted of 9 members, Majority 97.4% of the respondents were illiterate, 44.4% monthly income was PKR 1600-2000, 51.5% family monthly income was 11000-15000 rupees. Economic deprivations and extreme poverty force the families to subject their children to economic activities at a very juvenile age. Some of these activities include heinous earning in form of odd jobs like scavenging. Involvements of children in earning activities exclude them from some very basic social need like health,

care, education and leisure [14]. Those male working children are in majority than females. Working opportunity and the environment was found suitable for male as compared to female due to the cultural, social and religious phenomenon and support from family and society. Large size families are prevalent in the poor segment of society. The rich get money and the poor get children, therefore, large size families symbolize traditional economy and high poverty. Large size poor families consider children as an earning hand; therefore, the juveniles are indulged in underage employment and forced to performed ugly jobs like scavenging. Illiteracy and poverty are strong correlates. Illiteracy bread poverty and poverty constraints literacy. Children from poor families are unable to get an education and constrained to involve in all jobs at an early age. It is evident from these result that almost two-thirds of respondents earned

below PKR 2000 per month. This effect prevails extreme poverty in the area. Such meagre amount is not sufficient to meet the basic needs of individuals. This finding shows that scavengers belonged to extremely poor's families' income. Low economic status deprived the poor families of most of the basic needs that are required for a quality of life. The children, therefore, are subjected to perform scavenging.

### 3.2. Collection of Waste Material for Recycling

Poverty is the main cause of deprivation in a society, however being a poor job child is like double deprivation. Poverty constrains families to subject their children to odds jobs at an early age. Scavenging, one worst form of odd jobs adopted by children, involve tedious and dangerous activities with low financial returns. Respondents were asked few questions about the experience of collecting waste material for recycling the results of which are given in table 3.

The result explained that majority of 68.4% respondents agreed with the statement that recycling creates an opportunity for scavenging, while 31.6% respondents disagreed with the statement. The informal and formal system (municipality) of scavenging provides an opportunity to waste pickers to go to dump and homes to collect usable. Nonetheless, recycling provides various social, economic and

environmental advantages such as decreases of water and air pollution and recycling of solid waste reduces waste from an industrial process and reduces import of raw materials in many cases [2]. Furthermore, the majority of 70.9% respondents disagreed that recycling is a good source of income while 29.1% respondents agreed. Collection of usable material is very exhaustive and risky work with low economic returns. These people also gain low social status and settle in lowest social class. This feeling of hardship and deprivation makes scavenging an undesirable job. However, scavengers themselves don't like the profession of scavenging due to physical hardship, low social status, and meagre economic returns [15].

Moreover, 55.6% respondents did not use any instrument like a stick for digging recyclable waste from dumps while 44.4% respondents used the stick for digging. Similarly, 79.1% respondents had no torch to search the dumps in dark whereas 20.9% respondents had a torch. Furthermore, the majority of 66.3% respondents did not wear any mask while collecting useable and 33.7% respondents wore a mask for safety. Similarly, 68.4% respondents did not use any gloves to protect their hands while collecting useable and 31.6% respondents wore gloves to protect their hands from cuts and germs.

These results indicate and given support to the statement of Kaseva and Gupta that scavenger's lack equipment's for protection and facilities for searching of recycling material in the waste or garbage so they are more vulnerable to health hazards [7]. According to Seow argued that policymaker must consider these communities into the solid waste management policy framework to ensure the provision of the healthy environment at workplace, training, equipment or tool and facilities for collection of solid waste and recycling [8]. Besides that, the majority of 62.2% respondents collected organic matter like refuse, peels of vegetable and food while 37.8% respondents avoided these things. The result is supported by Gerold that People throw organic matter in term of food items or fodder that is usable for human cattle's [15]. Such usable foodstuff is collected for their family. The table further explained that 100.0% respondents admitted that there is no local recycling industry. On the other hand, 83.7% respondents sell their recyclable products to stuff shops while 16.3% respondents don't like to sell their collected recyclable material to local stuff shops. Nonetheless, the waste picker sells their collected recyclable material to the local stuff shops and mostly they are exploited by middleman or resource merchant who paid

low prices for valuable material and takes a major part of it [16].

Majority of 59.7% respondents eats the useable foodstuff from the dump while 40.3% respondents did not use ate it. Findings of Caroline supported this result that scavengers are poor and illiterate children and lacking the parent's advice and responsibility, from their unawareness and ignorance waste picker have no protective equipment and even when they find any disposal or edible food in the waste they are likely to eat it because they are hungry [10]. Furthermore, 79.1% respondents collect broken toys to play with it while 20.9% respondents don't like to play with broken toys. Waste for one social group is a resource for other. Used food items and utensils are thrown away by rich families are a source of nourishment and utility for the lower class. It is concluded that scavenging is a source of income for poor income group, but not a good one. Children that are constrained to collect usable from dump did not use precautionary measures for the safety of their health. There was no recycling industry to sell the collected stuff and the poor children were constrained to sell usable to a middleman at low prices. Furthermore, to the worst, those children, when hungry, don't hesitate to eat food material collected from the dumps.

### 3.3 Association between Collections of Waste Material for Recycling and Scavenger's Quality of Life

Increasing trend of urbanization in developing countries has improved the living standard and increased consumption and subsequently the solid waste in cities. Most of the solid waste is not disposed of or recycled by the public sector. The incapacity or failure of the formal waste management system and public-sector organizations in the recycling of waste encouraged their informal sector for waste collection. It provides an opportunity for migrants, children, women, unemployed and handicapped individual to reuse or recycle the waste and ensure their income and survival opportunity. Scavenging is a dangerous and risky job, dangerous for the lives of scavengers due to harmful scrap material such as sharp blades, sharp pointed nails, broken pieces of mirror, sharp blade, germ affected waste which cause different serious diseases. Scavenger's occupation and living condition are offered lowest status in the society. They must work in a very poor and hostile condition. They are vulnerable to various risk mostly when they are working in dumpsites, landfill or garbage's and suffer exploitation and stigmatization because handling refuse, or waste material is denied by society. Scavengers are incapable or unwilling to

get another form of employment but prefer to adopt low price industrial demand for recyclable material collected from scavenging. There is a multifaceted relationship between a collection of waste material for recycling and scavenger's quality of life, as given in table 4.

A significant relationship ( $p=0.001$ ) was found between scavenger's quality of life and recycling create an opportunity for scavenging. The result makes it evident that for those children consider scavenging as a good opportunity for earning were subjected to the poor quality of life. As recycling of waste material generated income opportunities but this opportunity is rewarded with low income and poor social status. The usable waste is easily available in urban areas thrown from houses, hotels, shops, and industries providing earning opportunities to scavenger's children searching some money and food for their family. Similarly, a highly significant association ( $p=0.000$ ) was found between considering scavenging as a good source of income and scavenging quality of life. No doubt, the waste picking is the key source of income for needy people of the society [17]. Poverty and unemployment had direct impacts on the scavengers whose priority is to get food. Scavenging becomes an occupation and source of livelihood for lower class individuals in many societies of the world. Correspondingly significant

( $P=0.010$ ) association was found between using of the instrument for the digging of recyclable waste from dump and quality of life. In the same way, significant ( $P=0.008$ ) association was confirmed between scavengers and using of the torch for searching usable material. Scavenging is a risky job that involves digging, scratching and felling usable waste from smoky and unhygienic dumps. Use of equipment like stick, gloves, mask, and torch can protect scavenging children from harm and improve their quality of life. Similarly, high significant ( $P=0.013$ ) association was found between scavenger quality of life and using of the mask while collecting usable. Likewise, significant ( $P=0.008$ ) association was established between scavengers and using gloves to protect hands while collecting recyclable waste. Kaseya and Gupta supported these results that scavengers have lack of protective equipment and facilities for searching of recycling material in the waste or garbage's, so they are more vulnerable to harmful material and health hazards[7]. Similarly, finding of Seow confirmed these results that policymakers must consider the result of these communities in solid waste management policy framework to mitigate and make available them the healthy environment, workplace and other necessary training, equipment or tool and facilities for collection of solid waste and

recycling [8]. The finding of Kshitij added that the process of collecting of material is very dangerous. There is a high risk of injuries and diseases because there are used syringes, blades, razor, and pieces of mirror, broken bottles and expire discarded medicines which affect children health as most of the scavengers have no protective equipment or tools such as gloves, sticks, torch, shoes etc., [9].

In addition, highly significant ( $P=0.000$ ) association was found between scavenger's quality of life and collection of organic matter like refuse peals of vegetable and food. Scavenger's families are struggling for the availability of food and clothes for their children. Scavenger's children are found eating rotting food or fruit over dumps out of hunger or take it to home to feed their family. Use of food from garbage is significantly reducing scavenger's quality of life. Similarly, significant ( $P=0.001$ ) relationship was found between scavenger's quality of life and eating of usable foodstuff form the dump. This result is supported by the finding, of Caroline that scavengers are poor and illiterate children and lacking the parent's advice and responsibility. Due to their unawareness and ignorance, waste picker has no protective equipment and even when they find any disposal vegetables or edible food in the waste they are likely to eat and take it to home [10].

Furthermore, non-significant ( $P=0.322$ ) relationship was found between scavengers and selling of recyclable product to stuff shops. Gerold is against this result that usually scavengers are exploited by middleman or resource merchant that exploit them by paying little money and receive a major part of recyclable stuff[15]. Similarly, a non-significant ( $P=0.738$ ) relationship was found between scavengers' quality of life and collection of broken toys to play with it. Scavengers lifestyle provide some economic returns and few toys to play with, however, these have no significant contribution to improving scavenging lifestyle. Siddaramru stated that untouchable practice of scavenging made them isolated from rest of the normal

human activities and working groups. They have limited participation in social and other formal activities as compare to other children of society [11].

It is concluded that although that recycling provided income opportunities and some earning to scavengers' children, their lifestyle had some negative effects on their quality of life. The obvious reasons that downgraded scavenger's quality of life included negligence from using tools and equipment like a stick, torch, mask, and gloves to protect themselves and improve work efficiency. Moreover, poor quality of life was also linked to collection and use of rotting unhygienic food for own use and family which have derogatory health effects.

**Table 2: Frequency distribution and percentage proportion of the respondents based on age, gender, education, income and family size**

Age (Years)	Frequency	Percent	Education Status of respondents	Frequency	Percentage
5-8	15	7.7	Literate	5	2.6
9-11	88	44.8	Illiterate	191	97.4
12-14	55	28.1	Total	196	100.0
15 -18	38	19.4	Scavenger monthly income	Frequency	Percentage
Total	196	100	1000-1500	38	19.4
Gender	Frequency	Percent	1501-2000	87	44.4
Male	174	88.2	2001-2500	33	16.8
Female	22	11.2	2501-3000	23	11.7
Total	196	100.0	3001 and above	15	7.7
Size of the family	Frequency		Proportion		
5-6	38		19.3		
7-8	51		26.1		
9-10	56		28.5		
Above 10	51		26.1		
Total	196		100.0		

**Table 3: Frequency and percentage distribution of the respondents based on collection of waste material for recycling**

S.No	Statement	Yes	No	Uncertain	Total
1	Recycling create opportunity for scavenging	134(68.4)	62(31.60)	0(00)	196(100)
2	You are satisfied that recycling is a good source of income.	57(29.1)	139(70.9)	0(00)	196(100)
3	You use some instrument like stick for digging recyclable waste from dumps.	87(44.4)	109(55.6)	0(00)	196(100)

4	You have a torch to search the dumps in dark	41(20.9)	155(79.1)	0(00)	196(100)
5	You wear mask while collecting useable	66(33.7)	130(66.3)	0(00)	196(100)
6	You wear gloves to protect your hands while collecting recyclable waste.	62(31.6)	134(68.4)	0(00)	196(100)
7	You collect organic matter like refuse / peals of vegetables and food.	122(62.2)	74(37.8)	0(00)	196(100)
8	There is any local industry that directly purchase the products collected by you.	0(00)	196(100.0)	0(00)	196(100)
9	You sell the recyclable products to stuff shops	164(83.7)	32(16.3)	0(00)	196(100)
10	You eat the usable food stuff from the dump.	117(59.7)	79(40.3)	0(00)	196(100)
11	You collect broken toys to play with it yourself.	155(79.1)	41(20.9)	0(00)	196(100)

\*Values in the table present frequency while values in the parenthesis represent percentages proportion of the respondents.

Table 4: Association between collection of waste material for recycling and scavengers quality of life

Statement	Perception	Scavengers' Quality of Life			Total	Chi-Square(x2) P value
		Good	Fair	Poor		
Recycling create opportunity for scavenging	Yes	8 (4.1)	66 (33.7)	60 (30.6)	134 (68.4)	X <sup>2</sup> =13.864 P=0 .001
	No	2 (1.0)	48 (24.5)	12 (6.1)	62 (31.6)	
	Total	10 (5.1)	114(58.2)	72 (36.7)	196(100.0)	
You are satisfied that recycling is a good source of income	Yes	2(1.0)	46(23.5)	9(4.6)	57(29.1)	X <sup>2</sup> = 17.01 P= 0.000
	No	8(4.1)	68(34.7)	63(32.1)	139(70.9)	
You use some instrument like stick for digging recyclable waste from dumps	Yes	3(1.5)	61(31.1)	23(11.7)	87(44.4)	X <sup>2</sup> =9.197 P=0.010
	No	7(3.6)	53(27.0)	49(25.0)	109(55.6)	
You have a torch to search the dumps in dark	Yes	6(3.1)	21(10.7)	14(7.1)	41 (20.9)	X <sup>2</sup> =9.757 P=0.008
	No	4(2.0)	93(47.4)	58(29.6)	155(79.1)	
You wear mask while collecting useable	Yes	2 (1.0)	48(24.5)	16 (8.2)	66(33.7)	X <sup>2</sup> =8.693 P=0.013
	No	8(4.1)	66(33.7)	56(28.6)	130(66.3)	
You wear gloves to protect your hands while collecting recyclable waste	Yes	2(1.0)	46(23.5)	14(7.1)	62(31.6)	X <sup>2</sup> =9.578 P=0.008
	No	8(4.1)	68(34.7)	58(29.6)	134(68.4)	
You collect organic matter like refuse / peals of vegetable and food	Yes	6(3.1)	56(28.6)	60(30.6)	122(62.2)	X <sup>2</sup> = 21.999 P=0.000
	No	4(2.0)	58(29.6)	12(6.1)	74(37.8)	
You sell the recyclable product to stuff shops.	Yes	7(3.6)	94(48.0)	63(32.1)	164(83.7)	X <sup>2</sup> = 2.264 P=0 .322
	No	3(1.5)	20(10.2)	9(4.6)	32(16.3)	
You eat the usable food stuff from the dump	Yes	5(2.6)	57(29.1)	55(28.1)	117(59.7)	X <sup>2</sup> =13.184 P=0.001
	No	5(2.6)	57(29.1)	17(8.7)	79(40.3)	
You collect broken toys to play with it yourself	Yes	8(4.1)	88(44.9)	59(30.1)	155(79.1)	X <sup>2</sup> =0 .608 P= 0.738
	No	2(1.0)	26(13.3)	13(6.6)	41(20.9)	

#### 4. CONCLUSION

Poverty and inequality compel children from poor families to get individual in dirty jobs like scavenging. Collection of waste material from dumpsite is a source of income for poor children and their families. These children collect usable from wastes bar handed and without taking proper protective measures. Involvement of government and non-government organizations in carrying out basis line

studies enlist the actual number of scavengers, provide them basic awareness about best ways of collecting usable and provide them with the tools and equipment that ensure the protection of scavengers from health hazards and improve their working efficiency. Encouraging the establishment of recycling industries in the big city to convert waste into a resource and help poor families to earn their livelihood in a better way.

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