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Research Article

Chronic diseases and trauma among low-income workers of Karachi, Pakistan

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ABSTRACT

Background: The self-efficacy of individuals is influenced by experiences in the community, the workplace, and in broader civil society, all of which exert a collective influence on attitudes and behaviors. The low-income population is more likely to suffer from many chronic health problems and trauma. This study was done to assess the prevalence of chronic diseases and workplace physical trauma among low-income workers in Karachi, Pakistan.
Methods: A descriptive cross sectional study was conducted in Karachi, Pakistan. Trained interviewers used a structured questionnaire to interview 707 workers and collected information on socio-demographic characteristics, chronic health problems and physical trauma among them. The data were analysed using SPSS version 18.
Results: Majority (72%) of the participants were aged between 15 and 35 years. More than one-third (35.1%) were educated up to secondary level only. Half of the participants (50.8%) had a household comprising 6-10 people, while 34.8% of the respondents were the only breadwinners in their family. Two fifths (39.5%) reported a household income between Rs11000 and Rs 20000 per month. A significant number (21%) of workers reported being diagnosed with a chronic disease including Diabetes Mellitus, Asthma, Hepatitis, Arthritis, Hypertension, Hyperlipidemia, Hypothyroidism, Epilepsy, Chronic obstructive pulmonary disorder, whereas three fourths (75%) reported physical trauma history at their work place during the past year, while majority (95.2%) of them looked apparently healthy.
Conclusions: These chronic health conditions not only affect their productivity but play a vicious role in poverty and poor health cycle. The findings of the present study cannot be generalized due to the limited sample. Still, the study supports the notion that factors such as low socioeconomic status may lead to the poor management of physical trauma and course of chronic diseases. Future research should direct attention toward workers' health and working conditions to improve the effectiveness of the interventions to reduce the disparities in provision of health services for the low-income workers.

Keywords: Low income workers, Chronic diseases, Physical trauma

INTRODUCTION

Working conditions along with socioeconomic conditions create situations that can lead to ill health. The low-income population has a lower life expectancy compared to those earning higher incomes[1-3] and is more likely to suffer from many chronic health problems including diabetes, hypertension and obstructive lung diseases.[4-9] The increasing incidence of trauma affects all parts of our society[10] and more often than not those affected are poorly managed due to lack of proper treatment mainly due to insufficient resources.[11]

Globally, 400,000 people die each year due to work-related accidents; a large majority of them in the developing countries.[12] However, there is very limited research on occupational injuries in developing countries, including Pakistan.

Low-income populations are also more likely to engage in unhealthy behaviors such as cigarette smoking, physical inactivity and eating diets high in carbohydrate and low in fresh fruits and vegetables.[11,13,14,15] While historically these were seen as individual behavior choices; there is increasing understanding of how opportunities and constraints imposed by external factors influence this health behaviors.[16,17,18]

Vulnerability begins with a notion of risk. Risk is characterized by a known or unknown probability distribution of events.[19] To maintain social and economic development, a healthy productive worker is very critical. Most workers spend about one third of their time at the workplace therefore working environment greatly affects their health.[20] Workers in poor communities are much more likely to be exposed to workplace hazards and to suffer work-related diseases and injuries resulting in disabilities that reduce their productivity and earning capacity.[21] Moreover, most low-income workers are vulnerable as they lack social protection, access to healthcare and healthy foods; as a result they are at high risk of injury, disease and poverty.[22]

There is a long list of occupational diseases associated with exposures in the workplace and this correlation between the exposures and the disease is well known in medical research. Poverty causes ailments and ill-health pushes people towards poverty.[22] It is a vicious cycle. A study by the World Bank reported that about 4% of the population in Pakistan is pushed into poverty due to ill health.[23]

Work-related trauma and disease not only results in individual suffering but also affects the workers' families, moreover it also affects the society at large. Previous studies have estimated that the chronic disease burden among the workforce can impact a country's GNP by 2-14%.[24]

This study was conducted to determine the prevalence of chronic diseases and work place physical trauma among low-income workers working at various sectors in Karachi. Karachi is the largest and most populous metropolitan city of Pakistan and the 2nd most populated city in the world[25] It is also the financial center of the country. Karachi metro has an estimated population of over 23.5 million people as of 2013, and area of approximately 3,527 km^2 (1,362 sq. mi), resulting in a density of more than 6,000 people per square kilometer (15,500 per square mile). According to Price water house Coopers, in 2009 Karachi had a total GDP of $78 billion with conservative projections expecting it to rise to $193 billion in 2025.[26,27,28,29,30] This study will help inform public health policy regarding low income and health may contribute towards forming more equitable health policies for low income workers.

METHODS

A descriptive cross-sectional survey was done from October 2014 to February 2015. The study sample was conveniently selected from specific organizations in the city of Karachi. A sample of 707 employees in different organization was selected.

Sample size was calculated on the assumption that the prevalence of diseases and trauma reported would be 50% amongst low-income workers. The confidence level was set at 95% with a 10% acceptable margin of error. This required a sample size of 702, which was increased by 5 to allow for any dropouts or withdrawals. Therefore, a total of 707 workers were recruited for the study. Men and women at least 18 years of age, and willing to participate in the study were considered eligible for inclusion.

A structured questionnaire was used. Ten trained interviewers were employed to collect information on factors including socio-demographic data, physical trauma at work and disease testing. The interviews were held at participant's working place. The data were entered and analyzed using SPSS for Windows, version 18.

Ethical considerations

Informed consent was obtained from each participant before the interview. They were fully informed of the nature of the study and the use of the data. They were free to withdraw from the interview at any time or refuse to answer any particular question. Participants were also ensured of confidentiality.

RESULTS

In this study, workers from different organizations in the city of Karachi were selected, which included 32 (4.5%) domestic workers, 439 (62.1%) hospitality workers, 113 (16%) multinational organization workers, 19 (2.7%) school workers and 104 (14.7%) small and medium enterprise workers. Table 1 shows demographic characteristics of the participants.

179 out of 707 workers had history of hospital admission due to workplace trauma despite the fact that 529 (74.8%) workers responded in affirmative for experiencing at least one incidence of physical trauma during the past year at their work place (See Tables 3 & 4).

In our study, out of 707 workers 558 (78.9%) workers had no history of disease, while 21 (3.0%) workers had hypertension, 2 (0.3%) workers had diabetes, 8 (1.1%) workers had Asthma, 3 (0.4%) workers had Arthritis and 115 (16.2%) of workers had other chronic diseases

including Hyperlipidemia, Hypothyroidism, Epilepsy, and Chronic obstructive pulmonary disorder (See Table 5).

Table 1: Demographic Characteristics of the Participants (n=707).

Variable	Category	N (%)
Gender	Male	649(91.8%)
	Female	58 (8.2%)
Age (years)	15-20	4.7
	21-25	18.8
	26-30	26.4
	31-35	20.2
	36-40	12.4
	41-45	8.5
	46-50	4.5
	>50	4.4
Marital Status	Married	61.1
	Unmarried	36.5
	Divorced	2.4
Education level	Uneducated	8.2
	Primary	6.9
	Middle	17.1
	Secondary	35.1
	Intermediate	14.9
	Graduate	13.2
	Post-Graduate	1.8
	Others	2.8
House hold Members	3-5	31.8
	6-10	50.8
	11-15	8.8
	16-20	3.1
	>20	5.5
Employed Members	1	34.8
	2	27.6
	3	18.7
	4	10.7
	5	5
	6	1.7
	7	1.6
Transportation	None	48.7
	Cycle	5.8
	Motor Cycle	35.9
	Car	3.5
	Others	6.1
Household Income/month[+]	Rs.6000-10000	16.7
	Rs.11000-20000	39.5
	Rs.21000-30000	17.5
	Rs. 31000- 40000	7.2
	Rs.41000-51000	5.4
	Rs.51000-60000	8.3
	Rs.61000-70000	1.7
	Rs. 71000- 80000	1.7
	>Rs.80000/month	2

Table 2: Frequency Distribution of General Appearances (n=707).

General Condition	Frequency	%	Valid Percent	Cumulative Percent
Healthy	673	95.2	95.2	95.2
Sick	34	4.8	4.8	100.0
Total	707	100.0	100.0	

Table 3: Comparison between Organization and Hospital Admission (n=707).

Frequency Distribution of Organization	Frequency distribution of hospital admission		Total
	Yes	No	
Domestic	10	22	32
Hospitality	115	324	439
Multinational	26	87	113
School	3	16	19
Small and medium enterprises	25	79	104
Total	**179**	**528**	**707**

Table 4: Comparison between Organization and Trauma (n=707).

Frequency Distribution of Organization	Frequency distribution of Trauma		Total
	Yes	No	
Domestic	5	27	32
Hospitality	113	326	439
Multinational	31	82	113
School	1	18	19
Small and medium enterprises	28	76	104
Total	**178**	**529**	**707**

Table 5: Comparison between Organization and Chronic Disease Prevalence (n=707).

	None	Hypertension	Diabetic	Asthma	Arthritis	Others	Total
Domestic	18	4	1	0	0	9	32
Hospitality	360	2	0	7	1	69	439
Multinational	84	10	1	1	0	17	113
School	15	0	0	0	0	4	19
Small and medium enterprises	81	5	0	0	2	16	104
TOTAL	**558**	**21**	**2**	**8**	**3**	**95**	**707**

DISCUSSION

More than half (56%) the workers in this study reported a monthly income of less than Rs 21000 (less than 200US$), whereas another 42% were earning between 200 and 800US$ per month. Therefore the study sample clearly belonged to low-income group.

68% participants reported a family size of more than 6 members. PDHS 2012-13 reported the average family size for Pakistan as 6.8 with not much difference between rural and urban areas.[31] In the present study more than one third of workers (35%) were the only earning members in their family, this puts a huge burden on them physically and psychologically. For a large majority of low paid workers, their job is the only or primary source of income, as a result all their decisions regarding their own and their family's health are dependent on this.[32] For instance, they may not take leave from work even when ill for fear of losing their wages; they may not eat healthy foods due to high costs resulting in poor diets for themselves and their families; or they may put in long hours at work to make more money.[32] Research has shown that putting in overtime is associated with physical trauma, disease and mortality.[32,33] In our study, 74.8% participants reported at least one instance of work related injury during the past year. This is the prevalence of trauma among those who were still working. This is just the tip of the ice berg; there is a need to collect data on disabilities and fatalities due to trauma as well. Only then would it be possible to assess the true impact of these injuries on families, as occupational injuries can be costly to families. Street vendors in Ghana reported that work-related injuries could cost 2-6 weeks of income, while a survey done in India found that 92% of the sample had lost their earnings due to work related trauma.[23]

Although about 75% participants reported experiencing workplace trauma during the past one year, only 24% of them reported hospital admission as a result of this trauma. This may be due to lack of healthcare services or lack of resources to afford healthcare. Those with low income have little or no access to personal transportation and as a result they may have difficulty in reaching healthcare services, food markets and social networks.[22] In the present study almost half (48.7%) of the participants had no private transport.

Most (70%) of the participants in the present study were younger than 40, whereas the chronic disease prevalence was found to be 21%, which is quite high. In developing countries, the working-age population bears the greatest burden of chronic disease and about 80% of all DALYs are lost before the age of 60.[33] Chronic diseases impact the workforce by decreasing the working capacity of a worker and also incur higher healthcare costs.[21] As a result the workers may lose their job or choose to take up a low demanding and less paying jobs.[34] Research in Russia has reported that workers with chronic disease get 18% to 22% less wages as compared to the healthy ones.[35]

Further research is needed regarding workplace conditions and benefits provided to these workers. The irony is that poor working conditions and lack of job security are preventable causes of ill health, yet it remains unseen due to lack of research and data, especially in developing countries.

Limitations

The limitations of this study include its cross-sectional design and the lack of information on a specific cause of the injuries. Hence, the reported research findings indicate a reliable but conservative estimate of the prevalence of workplace trauma and illness in Karachi. The sample was predominantly male therefore the study may not have captured specific trauma regarding female workers.

CONCLUSION

A significant number of workers were found to have chronic diseases like Diabetes, Asthma, Arthritis, Hypertension, and others including Hyperlipidaemia, Hypothyroidism, Epilepsy, Chronic obstructive pulmonary disorder and physical trauma at their work place, despite almost all of them appearing healthy. These chronic health conditions not only affect their productivity but play a vicious role in poverty and poor health cycle. The findings of the present study cannot be generalized due to the limited sample. Still, the study supports the notion that factors such as low socioeconomic status may lead to the development and course of the disease. Research is needed to assess the risk factors associated with work related injuries in low-income workers to improve the effectiveness of any interventions to reduce the disparities towards improving the health of these workers. Policies are needed that focus specifically on low-income workers rather than a one size fits all approach.

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