Original article
“Chronic diseases and trauma among low-income workers of Karachi, Pakistan”.

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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 (1,2,3) and 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 analyzed using SPSS version 18. 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 (50.0%) 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 at their workplace during the past year, while majority (95.2%) of them looked apparently healthy. These chronic health conditions not only affect their productivity but play a vital 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.

DISCUSSION

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 these 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 km² (1,362 sq mi), resulting in a density of more than 6,000 people per square kilometre (15,500 per square mile). According to PricewaterhouseCoopers, 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.

MATERIAL AND 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.

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.

| Table 1. Demographic Characteristics of the Participants (n=707) |
|-----------------|-----------------|-----------------|
| Variable        | Category        | n (%)           |
| Gender          | Male            | 359 (50.9%)     |
|                 | Female          | 358 (50.3%)     |
| Age (years)     | 15-20           | 4.7             |
|                 | 21-25           | 18.8            |
|                 | 25-30           | 70.4            |
|                 | 31-37           | 20.2            |
|                 | 38-45           | 12.4            |
|                 | 46-50           | 9.5             |
|                 | >50             | 4.4             |
| Marital Status  | Married         | 63.1            |
|                 | Unmarried       | 36.6            |
|                 | Divorced        | 2.4             |
| Education level | Unknown         | 3.3             |
|                 | Primary         | 6.9             |
|                 | Middle          | 17.1            |
|                 | Secondary       | 39.1            |
|                 | Intermediate    | 14.9            |
|                 | Graduate        | 13.2            |
|                 | Post-Graduate   | 1.3             |
| Household Members | 3-5         | 31.8            |
|                   | 6-10             | 59.8            |
|                   | 11-15            | 8.8             |
|                   | 16-20            | 3.1             |
|                   | >20               | 5.5             |
| Employed Members | None            | 48.7            |
|                   | Cycle            | 5.8             |
|                   | Motor Cycle      | 35.9            |
|                   | Car              | 3.5             |
|                   | Others           | 6.1             |
| Transportation   | 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               |
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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 Hyperlipidaemia, Hypothyroidism, Epilepsy, and Chronic obstructive pulmonary disorder (See Table 5).

DISCUSSION

More than half (56%) the workers in this study reported a monthly income of less than Rs 21000 (less than 200US$), whereas another 42% were earning between 200 and 800 US$ 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 iceberg; 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).
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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.

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.

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 workplace, despite almost all of them appearing healthy. These chronic health conditions not only affect their productivity but play a viscous 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.

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.

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