

ORIGINAL ARTICLE

Morbidity Patterns and Provision of Workplace Safety among industrial workers

RABIAH MAHWISH¹, MUHAMMAD ATIF GUL², MARIA QIBTIA³, MUHAMMAD ASLAM BAJWA⁴

¹Assistant Professor Community Medicine Department, SIMS Lahore

²Medical officer, Sheikh Zyed Hospital, Lahore

³Medical student, SIMS Lahore

⁴Associate professor community medicine department, FMH Lahore

Correspondence to Dr. Rabiah Mahwish, Email: dr.rabiah5@gmail.com, Tel. 03215050678D

ABSTRACT

Background: Occupational injuries are among the ten most common reasons of illness and death. In Pakistan, the circumstances are very grave like many other developing countries. So, it was inevitable to carry a study among industrial workers.

Aims: To determine the morbidity patterns, socio-demographic determinants and to provide safe workplace environment to the industrial patients admitted in the Social Security Hospital, Lahore.

Method: Cross sectional survey among industrial workers was conducted at Social Security hospital, Lahore. Total size of the sample was 385 which was distributed equivalently among all the indoor units of hospital. A structured questionnaire was administered, and data was analyzed using SPSS version 23. For quantitative variables like age, mean and standard deviation and for qualitative variables frequency and percentage was calculated. Chi square was applied among qualitative variables. Data was presented in the form of tables and bar graphs.

Results: Mean \pm SD age was 32 \pm 7.5 years: 118(30%) of the sample was between 26-30 years. Majority of the patients, 366(95%), were men and 258(67%) were married. Majority of the sample, 158(41%), were illiterate. 318(83%) of the sampled patients were workers/laborers, 25(7%) had administrative duties, 17(4%) were working in office and 13(4%) skillful laborers. The incidence of injuries and accidents was remarkably high among the laborers 96(25%) followed by Gastroenteritis 50(13%), fever 50(13%) and cough & respiratory tract infections 38(10%). 298(77%) stated that most of these incidences were not reported at their workplace, 309(80%) were not using any personal protective equipment.

Conclusion: Majority of the industrial patients were admitted due to accidents and injuries at their workplaces. Majority of them were young adults, married males. Unskilled labor was largely uneducated. Safety practices at workplace of the respondents were very poor.

Keywords: morbidity patterns, industrial workers, social security hospital, personal protective equipment.

INTRODUCTION

Early death, ill health along with incapacitation of millions of individuals worldwide every year occur because of occupational hazards. Occupational injuries are among the ten most common reasons of illness and death, according to a report by WHO in the year 2002. The report stated, approximately 310,000 thousand deaths every year are due to hazards related to workplace¹. In USA for every 5 seconds a laborer is injured and a worker is incapacitated provisionally or perpetually every 10 seconds². Ever since 1970, International Labor Organization (ILO) has done enormous work to thwart occupation related risks⁴. International Labor Organization has introduced an innovative Safe Work Program to provide protection, well being along with adequate surroundings. The central aims behind this initiative are to bring cognizance for injuries, disabilities and morbidities related to work, to plan and apply protecting measures and to encourage delivery of basic protective tools to all the workers according to ILO standards³. A dire need to enforce occupational health and safety (OHS) is due to Industrialization. OHS can be defined as to provide safety to the employees from occupation related risks or from exposure of hazardous materials caused by un healthy surroundings and the accomplishment of work related targets using wrong ways⁵.

Most of the workers in industries are uneducated and have no awareness about the utilization of the proper protective methods available according to their jobs. And

almost all of them are not able to handle the harmful circumstances related to their occupation⁶. The prevalence of work place hazards is not smoothly distributed among different parts of the world. There is significant discrepancy among developing and the developed world⁷. In Pakistan, the circumstances are very grave like many other developing countries because of many contributing factors like lack of education, inadequate health services and the statistics provided about accidents in workplace is unreliable. In Pakistan, Punjab Employee Social Security Institution (PESSI) is providing health services to the staffs in industries along with the members of their families. PESSI is also involved in providing monetary aid to the workers and their families. The key source of generating money of PESSI is the Social Security Contribution which is collected from the notified industries⁸. So, it was inevitable to carry a study among industrial workers admitted in social security hospital.

METHODOLOGY

It was a cross sectional hospital-based study done from March-November 2019. The sample consisted of all the industrial workers who were getting benefit from social security services provided at a tertiary care hospital made by Punjab Social Security (PSS). After permission from IRB, sample was taken from the workers presenting with some ailment at Regional Social Security Hospital Lahore, size of the sample was calculated with the help of formula given below where the p value which is anticipated frequency was considered to be 50%⁹, as it was not known yet ; d value or margin of error was considered 5% and the confidence interval (CI) of 95%.

Received on 14-05-2021

Accepted on 19-09-2021

$$n = \frac{z^2 \alpha / 2 p (1-p)}{d^2}$$

$$n = \frac{(1.96)^2 \times (50 \times 50)}{52} = 385$$

Non-probability convenient sampling method was used to select patients from all the inpatient wards of the hospital which was proportional to the number of patients admitted. Inclusion criteria consisted of industrial workers that were being admitted in any inpatient wards of Social Security Hospital Lahore who were listed in social security network. Exclusion criteria consisted of all the patients admitted in any inpatient wards of Social Security Hospital Lahore, but they were either not an industrial worker or working in any industry but was not listed in Social Security Institution. Partners and blood relations of those listed in social security network were not included in the study.

A structured questionnaire including all the variables under study was used to collect data. This was a valid standard tool that was derived from country profile on occupational safety and health in Pakistan (OSH) and with some additional questions taken from a book by author Bar Kontor¹⁰. Data was processed in different phases including: Collection of data, Data entry, Cleaning of data, screening and then finalization of data for the purpose of analysis. For analyzing statistical SPSS version 23.0 was used. For any further relationship between variables that could be possible data was analyzed using cross tabulations.

RESULTS

Mean \pm SD age was estimated to be 32 \pm 7.5 years, & range was between 17 to 53 years. Majority of the participants i.e., 118(30%) were included to the group 26-30 years. Approximately there were 6-10 member in household of each respondent, 226(59%) surpassed the average household size which is estimated to be 7 in Pakistan. Most of the participants, were male 366(95%) on the other hand only 19(5%) of them were female working in various industries. 159(41%) were uneducated followed by 126(33%) who were educated till matriculation. Majority of the respondents 257(67%) were wedded while 110(2.8%) were unmarried, 8(2%) were divorced and 9(2%) were widow.

318(83%) worked as laborers while the others were doing some administrative jobs i.e., 25(7%) or office work 17(4%).

Most of the respondents working in industries were admitted because they were injured 96(25%) whereas the other significant current ailments were Gastroenteritis in 51(13%), fever was in 50(13%) and upper and lower respiratory tract infections were in 38(10%). On further questioning, about their perceptions of these ailments whether these are occupation related or not, 144(37%) thought it was occupation related while 241(63%) responded in negation. Relationship between cause and effect was tried to discover in people of different mindset and it turned out that rate of accidents and injuries was more prevalent among those who perceived that their illness was somehow work related i.e. 217(56%).

Chi square test showed that there is significant statistical relationship in frequency of ailments between these two groups, affirming that frequency of accidents and injuries was significantly high in the group perceiving that their illness was work related. (χ^2 :156.67, df: 12, p=0.000).

279(73%) of the participants had not been admitted to the hospital previously with the same ailment and 105(28%) had never been admitted previously. On enquiring about past medical history 329(86%) had no chronic illness on the other hand, 55(15%) had history of some chronic ailment. Only one respondent was suffering from disability even that due to some congenital anomaly which was not work related.

Figure: Illness of the respondents

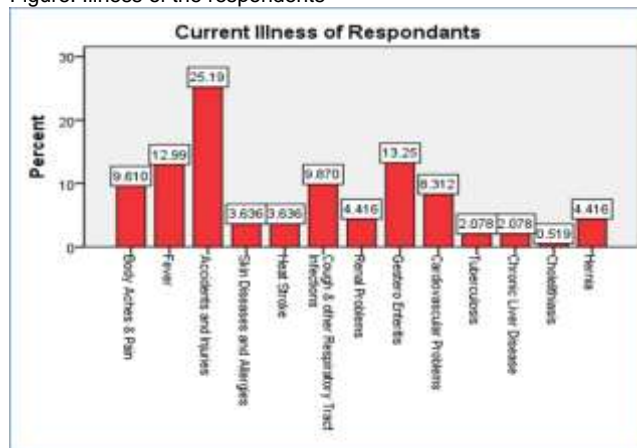


Table: Facilities provided to the workers at workplace

Fire fighting facilities	n
Adequate	177(46%)
Inadequate	123(32%)
Not available	85(22%)
Transportation in emergency	
Adequate	262(68%)
Inadequate	123(32%)
Emergency treatment	
Adequate	150(39%)
Inadequate	154(40%)
Not available	81(21%)
First Aid facilities	
Adequate	189(49%)
Inadequate	158(41%)
Not available	38(10%)

298(77%) responded that accidents did not happen at their workplace while only 87 (23%) answered in affirmation. 309(80%) responded that they never used personal protective equipment at work. Only 76(20%) used personal protective equipment of some kind at their workplace. When (n=76) further questioned regarding drill on use of personal protective equipment only 28/76(37 %) affirmed that they were trained regarding how to use personal protective equipment. 7(9%) affirmed that their place of work has facilities for maintenance of personal protective equipment. 376(98%) of patients had some kind of warning signs at their workplace, that deceptively showed that safety measures have been cited at their work places very evidently, but reality was contrary to it. Proper healthcare surveillance services were available to only 130(34%) participants on the other hand there were no such services accessible for 181(47%).

DISCUSSION

In our research majority of the participants correspond to the age category of 26-30 years that is in correlation to the maximum number of working population in the developing world. Similar data was shown by a research done in the textile segment of Pakistan^{6,10,11,12}. Most of the respondents were

male workers that is in correlation with studies done workers of textile industry of Pakistan in Faisalabad⁶, in India¹¹ and in Nigeria¹².

Our data showed that 67% of the workers were married. Around 50% of labors, employed in a metal making industry in Addis Ababa were also married¹³. Disagreeing with our data, married and unmarried percentage of textile workers was equivalent in Pakistan⁶.

Majority of the respondents were uneducated. Comparable results was stated in the textile workers in Pakistan (Karachi) in which 61% were uneducated¹⁴ and a research done on accidents among rig workers and seafarers 29% of the workers were educated¹⁵. Most of them were simple laborers similar to another research done in Vietnam¹⁶.

Most of the participants were admitted due to injuries and accidents. This is in agreement with a study conducted in Vietnam on occupation related injuries showing 40% of the injuries were work related in Vietnam¹⁷. Similar study aiming mostly on occupation related safety showed 36% of the workers become a victim of occupation related injuries in most government industries and 28% in private industries¹⁸ and a research particularly done on laborers of metal production industries in Addis Ababa established that 49% were injured due to occupation related hazards¹³. Almost half of the participants used to smoke, which is in consistency with a study done in India^{19,20}.

Most of the workers affirmed that their work place had proper sanitary facilities, in consistency with a study done in Pakistan showed that 64% workplaces had toilet facilities inside their workplace^{21,22}.

A large number of the participant told that accidents did not occurred at their place of work that is in agreement to a study done particularly to provide directions for future policy where injuries related to workplace were not reported or appropriately recorded^{23,20}.

Most of the workers were not using any kind of PPE (personal protective equipment) at their place of work and very few of the respondents affirmed any sort of workshop on how to utilize personal protective equipment as is being reported in children involved in carpet making in three of the districts of Punjab, Pakistan^{24,25}.

Because of the limitation of time and funding this study was done in only one social security hospital present in Lahore with a limited sample population of 385 industrial laborers who were admitted in social security hospital which is not the actual representation of all the industrial workers of our country.

CONCLUSION

Most important conclusion was injuries of about 25% at workplace. Most of the industrial workers were young, married, men. As most of the untrained workers were illiterate, this added up another reason for most of the occupation related hazards. 80% of the laborers were not using any kind of safety equipment, of which just 9% had maintenance facilities for such equipment. No proper first aid health facilities were accessible to almost 41% of the workers. There is lack of availability and surveillance for proper use of personal protective equipment in industrial sector.

REFERENCES

1. WHO. The world health report 2002: reducing risks, promoting healthy life. 2002:[Online available from]: https://books.google.com.pk/books?hl=en&lr=&id=epuQi1PtY_cC&oi=fnd&pg=PR9&dq=he+world+health+report+2002:+reducing+risks,+promoting+healthy+life,+World+Health+Organization&ots=N3G08VDfTp&sig=73GoqoU7H42thsHcjzX49LdBfE0. Accessed Nov 2017.
2. Rosenstock L, Cullen M, Brodtkin C. Textbook of clinical occupational and environmental medicine. 2004.
3. Benjamin O. Fundamental principles of occupational health and safety. ILO. 2001;13(2):1-159.
4. Rodgers G, Lee E, Sweptson L. The ILO and the quest for social justice, 1919-2009. IRL Press. 2009:53.
5. Ahasan MR, Partanen T. Occupational health and safety in the least developed countries-a simple case of neglect. J Epidemiol. 2001;11(2):74-80.
6. Malik N, Maan AA, Pasha TS, Akhtar S, Ali T. Role of hazard control measures in occupational health and safety in the textile industry of Pakistan. Pak J Agri Sci. 2010;47(1):72-6.
7. O'Neill S. Accounting for lost time: examining corporate accountability to stakeholders for occupational health and safety. 2010:[Online available]: <http://researchbank.rmit.edu.au/view/rmit:13632>. Retrieved Nov 2017.
8. Pasha TS, Liesivuori J, Finland K. Country profile on occupational safety and health in Pakistan. Kuopio (Finland): Finnish Institute of Occupational Health. 2003:[Online available from]: http://ilo.ch/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/policy/wcms_187800.pdf. Retrieved Nov 2017.
9. Ashraf M. Medical Statistics-analysis guide for students and research professionals. Jatala Publications Lahore 2016:181.
10. Bar K. It's H&S risk Bar Kontor's sector guide on H&S risk assessments in the workplace assessment time! [Online available on]: http://bar-kontor.dk/Files/Billeder/BARKontor/pdf/risk-assessments-in-the-workplace_Netudgave.pdf. Retrieved Nov 2017.
11. Manjunatha R, Kiran D, Thankappan K. Sickness absenteeism, morbidity and workplace injuries among iron and steel workers-A cross sectional study from Karnataka, Southern India. Australas Med J. 2011;4(3):144-7.
12. Ilyade AA, Omotoye OJ. Pattern of eye diseases among welders in a Nigeria community. Afr Health Sci. 2012;12(2):210-6.
13. Habtu Y, Kumie A, Tefera W. Magnitude and factors of occupational injury among workers in large scale metal manufacturing industries in Ethiopia. Open Access Library J. 2014;1(08):e1087.
14. Memon I, Panhwar A, Rohra DK, Azam SI, Khan N. Prevalence of byssinosis in spinning and textile workers of Karachi, Pakistan. Arch Environment Ocupat Health. 2008;63(3):137-42.
15. Martinovich T. Factors influencing the incidence rates of injuries and accidents among seafarers and rig workers providing support to the WA offshore oil and gas industry. 2013:[Online available from]: <http://ro.ecu.edu.au/theses/1084/>. Accessed Nov 2017.
16. Phung DT, Nguyen HT, Mock C, Keifer M. Occupational injuries reported in a population-based injury survey in Vietnam. International journal of occupational and environmental health. 2008;14(1):35-44.
17. Phung DT, Nguyen HT, Mock C, Keifer M. Occupational injuries reported in a population-based injury survey in Vietnam. Int J Occup Environ Health 2008;14(1):35-44.
18. Okun A, Lentz TJ, Schulte P, Stayner L. Identifying high-risk small business industries for occupational safety and health interventions. Am J Indust Med. 2001;39(3):301-11.
19. Sellappa S, Prathymnan S, Balachandrar V. DNA damage induction and repair inhibition among building construction workers in South India. Asian Pac J Cancer Prev. 2010;11:875-80.
20. Hagmar L, Bellander T, Englander V, Ranstam J, Attewell R, Skerfving S. Mortality and cancer morbidity among workers in a chemical factory. Scandinavian J Work, Environ Health. 1986:545-51.
21. Awan S, Nasrullah M, Cummings KJ. Health hazards, injury problems, and workplace conditions of carpet-weaving children in three districts of Punjab, Pakistan. International journal of occupational and environmental health. 2010;16(2):113-9.
22. Mitra S. A study of the health conditions of child workers in a small scale leather industry in Calcutta. British journal of industrial medicine. 1993;50(10):938-40.
23. Ghaffar A, Hyder AA, Mastoor MI, Shaikh I. Injuries in Pakistan: directions for future health policy. Health policy and planning. 1999;14(1):11-7.
24. Awan S, Nasrullah M, Cummings KJ. Health hazards, injury problems, and workplace conditions of carpet-weaving children in three districts of Punjab, Pakistan. Int J Occup Environ Health. 2010;16(2):113-9.