

## Health Status of Industrial Workforce in District Lahore

AWAIS GOHAR<sup>1</sup>, ZUBAIR HAFEEZ<sup>2</sup>, MUHAMMAD ATHAR KHAN<sup>2</sup>, ISHRAT ALII<sup>1</sup>

### ABSTRACT

**Background:** Industrial labour is an important population section as it is actively engaged in the industry of the nation. Labour work force and health have bi-directional relationship, as hazardous work can produce negative effect on health in terms of injury and disease. Since sickness and absenteeism is an indicator to measure the health status of Labour workforce as well as an important indicator to measure the functioning of the industrial establishments; therefore, it has been focused to describe the distribution of their health status in this project.

**Study design:** Descriptive epidemiological cross sectional study.

**Settings:** Nawaz Sharif Social Security Hospital, Lahore

**Methods:** Industrial labour (patients) presented at Nawaz Sharif social Security Hospital, Lahore to seek treatment were included in this study. A total number of 87,278 patients were included in this project. It was a time based study for the period from July, 2013 through June, 2014.

**Results:** The average age of patients was 36.5±10.5 years, which is the productive age group. Out of a total of 87,278 labour patients 83160 (95.28%) were male and 4118(4.72%) were female. Among the patients 22046 (25.26%) were recorded with infectious diseases and 65232(74.74%) were recorded as non-infectious diseases. Among infectious diseases, the most frequent conditions with a ranking in the descending order was gastro-intestinal disorders with a number of 10719(48.62%), tuberculosis & chest infection were 7497(34.01%) followed by 3699(16.78%) suffering with skin diseases, while 123 (0.56%) were of hepatitis-C virus (HCV) and the least with hepatitis-B i.e., 08(0.04%). Among non-infectious diseases the most common patients reported were 16902(25.94%) with cardiovascular diseases followed by 10306(15.80%) of orthopedics, 7439(11.40%) of urology, 5422(8.31%) of diabetes and 5047(7.74%) of various eye diseases.

**Conclusion:** The number of absenteeism due to tuberculosis & pulmonary disorders were statistically higher than number of absenteeism due to other diseases (P<0.001). This magnitude of problem would double the burden on exchequer of the organization concerned with the quality of healthcare services at all levels and improvement in it. The health status of labour workforce affects the economic productivity of the nation's wealth, therefore, comprehensive health & labour policy is needed to address the health issues of the labour workforce which is the need of the hour, so as to achieve the maximum outcome in a decent work environment.

**Keywords:** Health status, industrial workforce, descriptive epidemiology

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### INTRODUCTION

Labour workforce population is engaged for the production of goods and services for the country. According to the Labour Force Survey (LFS) 2010-11 Pakistan has a labour force of 57.24 Million<sup>1</sup>. It includes general public available in the labour market either by working or looking for job i.e., both employed and un-employed. Industrial labour is an important component of this population segment as it is actively engaged in the industry of nation to keep the economic wheel moving.

Social security laws<sup>2</sup> are in line with the Conventions of International Labour Organization (ILO) to safeguard the rights of industrial labour and to provide comprehensive health coverage under health

Insurance scheme. Punjab Employees Social Security Institution (PESSI) has a stewardship role in the provision of health services to the industrial labour and their dependants i.e., family members through the network of hospitals.

Health and work are interwoven and have bi-directional relationship, as hazardous work can produce negative effect on health in terms of sickness, injury and disease<sup>3,4,5,6,7</sup>. Sickness absence is an expression of this complex relation. It is since an indicator to measure the working population's health status and also to measure the functioning of the industrial establishments, therefore, it has been focused in this project<sup>8,9,10,11</sup>.

The aims of this study were to evaluate the health status of industrial workforce in district Lahore, to estimate the burden of infectious vs non-infectious diseases and to find out reported absenteeism due to sickness.

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<sup>1</sup>Punjab Employees Social Security Institution, Lahore

<sup>2</sup>University Institute of Public Health, University of Lahore

Correspondence to Dr. Awais Gohar Email: dr.awais.gohar@gmail.com

## MATERIAL AND METHODS

Descriptive epidemiological cross sectional study was conducted at Nawaz Sharif Social Security Hospital, Lahore for the period from June, 2013 through July 2014. All industrial labour presented at Nawaz Sharif Social Security Hospital, Lahore to seek treatment were included in this study. This was a time based study so the total number of patients was 87,278 during the period from July 2013 through June 2014. All the patients (industrial labour) male and female attending the hospital for the period from July, 2103 through June, 2014 were included in this study. They were provided treatment according to medical and surgical ailments in the hospital, free of cost. Medical leaves were granted with payment as financial compensation @ 75% of wages by the Institution during the entire period of sickness. All data available

were analyzed on SPSS version-17 and output for parametric (quantitative) data was presented as mean±S.E non-metric data (categorical) were presented in the form of frequency tables and percentages. Non-parametric chi-square test for proportion was used. Bar chart was also used for non-parametric data. A P-value less than 0.05 was taken as significant.

## RESULTS

The average age of patients was 36.5±10.5 years. In this study total 87278 industrial workers were enrolled. Among them 83160(95.28%) were male and 4118(4.72%) were female. The distribution of diseases gender wise tabulated and described as under:

Table.1 Distribution of various diseases in male & female labour workforce patients.

|   | Male          | Female      | Total         |
|---|---------------|-------------|---------------|
| Cardiac Surgery                         | 1365(1.64%)   | 30(0.73%)   | 1395(1.60%)   |
| Cardio Vascular diseases & Hypertension | 16745(20.14%) | 157(3.81%)  | 16902(19.37%) |
| Dental Diseases                         | 1887(2.27%)   | 228(5.54%)  | 2115(2.42%)   |
| Diabetes Mellitus                       | 5052(6.08%)   | 370(8.98%)  | 5422(6.21%)   |
| ENT diseases                            | 3454(4.15%)   | 257(6.24%)  | 3711(4.25%)   |
| Eye diseases                            | 4776(5.74%)   | 271(6.58%)  | 5047(5.78%)   |
| Gastro Intestinal diseases              | 9849(11.84%)  | 870(21.13%) | 10719(12.28%) |
| Gynae & Obs. Complication               | 0             | 328(7.97%)  | 328(0.38%)    |
| Hepatitis-B                             | 8(0.01%)      | 0           | 8(0.01%)      |
| Hepatitis-C                             | 120(0.14%)    | 3(0.07%)    | 123(0.14%)    |
| Nephrology                              | 4372(5.26%)   | 444(10.78%) | 4816(5.52%)   |
| Oncology                                | 815(0.98%)    | 74(1.80%)   | 889(1.02%)    |
| Orthopedic                              | 10100(12.15%) | 206(5%)     | 10306(11.81%) |
| Psychiatry                              | 2626(3.16%)   | 195(4.74%)  | 2821(3.23%)   |
| Skin diseases                           | 3454(4.15%)   | 245(5.95%)  | 3699(4.24%)   |
| General Surgery                         | 3965(4.77%)   | 76(1.85%)   | 4041(4.63%)   |
| Tuberculosis & chest infections         | 7276(8.75%)   | 221(5.37%)  | 7497(8.59%)   |
| Urology                                 | 7296(8.77%)   | 143(3.47%)  | 7439(8.52%)   |
| Total                                   | 83160         | 4118        | 87278         |

Among males 16745(20.14%) patients suffered from cardiac diseases including hypertension followed by 10100(12.15%) orthopedic patients and 9849(11.84%) with gastro intestinal disorders. However, among female patients, the most prevalent were Gastro Intestinal disorders 870(21.13%), while 444(10.78%) were of nephrology followed by 370(8.98%) with diabetes mellitus and 328(7.97%) had gynecological and obstetric complications. Among all the patients, a total of 22046(25.26%) were recorded with infectious diseases and 65232(74.74%) were recorded as non infectious diseases.

Among infectious disease the most frequent diseases were of gastro intestinal disorders 10719 (48.62%), tuberculosis & chest infection were in 7497

(34.01%) patients followed with 3699(16.78%) skin infection, 123(0.56%) hepatitis-C and the least was hepatitis B 8(0.04%).

Among non infectious diseases, cardio vascular diseases patients were more frequent 16902(25.91%), followed by 10306(15.80%) orthopedics, 7439(11.40%) urology, 5422(8.31%) diabetic, 5047(7.74%) eye, 4816(7.38%) Nephrology patients, while 4041(6.19%) patients had undergone general surgery, 3711(5.69%) were ENT patients, 2821(4.32%) were with psychiatric disorder, 2115(3.24%) were with dental disease, 1395(2.14%) had undergone cardiac surgery, 889(1.36%) were oncology patients and 328(0.50%) were with gynae complications

Table.2: Magnitude of infectious vs non-infectious diseases

| Gender | Infectious disease | Non infectious disease | Total |
|--------|--------------------|------------------------|-------|
| Male   | 20707(24.8%)       | 62453(75.1%)           | 83160 |
| Female | 1339(32.5%)        | 2779(67.5%)            | 4118  |
| Total  | 22046(25.3%)       | 65232(74.7%)           | 87278 |

Chi square test 120.54, \*p-value significant at 0.005  
P-value <0.001

Fig.1: Distribution of patients according to Infectious and non- Infectious diseases.

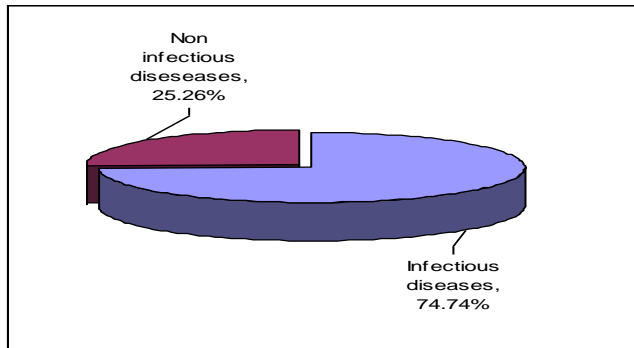


Fig. 2: Distribution according to gender and infectious diseases

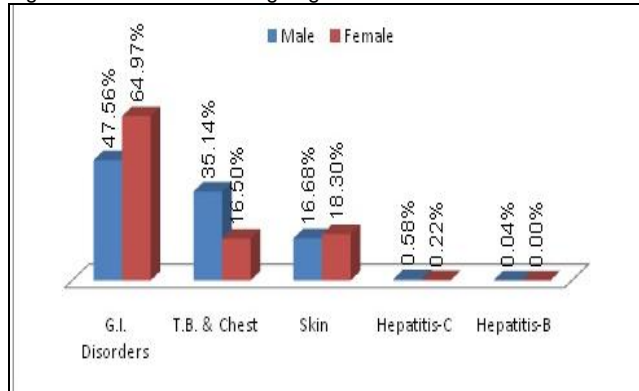
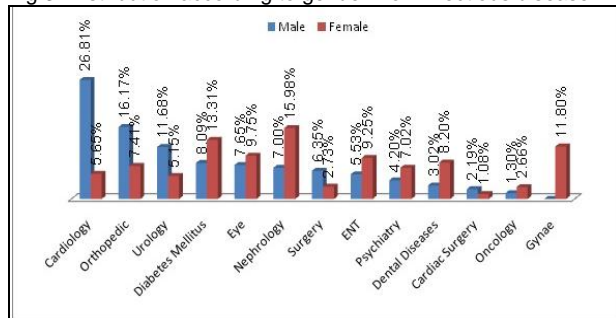


Fig.3: Distribution according to gender Non-infectious disease



The ranking order of diseases in descending order reflects that cardiac diseases are most prevalent in the Industrial labour (19.37%) followed by Gastro-Intestinal disorders with (12.28%) and orthopedic (11.81%). The graph below reflects the burden of disease.

Fig 4: Distribution of various diseases in labour workforce p

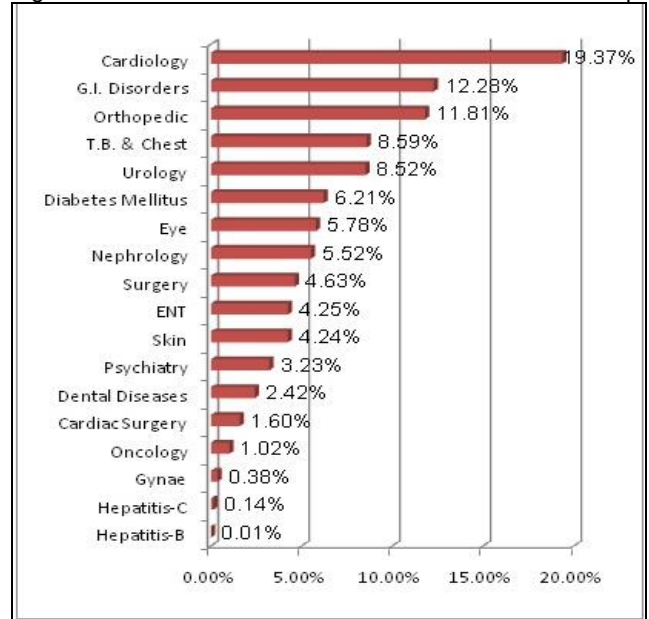


Table 2: Sickness absenteeism of labour workforce patients due to various diseases

|            | Mean    | Std. Deviation | 95% Confidence Interval for mean |             | Min | Max  | p-value |
|------------|---------|----------------|----------------------------------|-------------|-----|------|---------|
|            |         |                | Lower Bound                      | Upper Bound |     |      |         |
| TB & Chest | 905.50* | 172.11         | 796.15                           | 1014.85     | 587 | 1155 | <0.001  |
| Eye        | 362.58* | 138.39         | 274.66                           | 450.51      | 189 | 619  |         |
| Ortho      | 147.08  | 24.65          | 131.42                           | 162.74      | 95  | 181  |         |
| ENT        | 89.00   | 41.32          | 62.75                            | 115.25      | 35  | 162  |         |
| Surgery    | 70.92   | 16.67          | 60.32                            | 81.51       | 50  | 107  |         |
| Hepatitis  | 52.33   | 24.36          | 36.85                            | 67.81       | 33  | 120  |         |
| Psychiatry | 51.18   | 40.49          | 23.98                            | 78.39       | 7   | 124  |         |
| Urology    | 29.25   | 5.17           | 25.96                            | 32.54       | 20  | 38   |         |
| Skin       | 24.00   | 18.35          | 12.34                            | 35.66       | 2   | 66   |         |
| Oncology   | 16.42   | 4.94           | 13.28                            | 19.56       | 7   | 24   |         |
| Cardiology | 15.93   | 5.46           | 15.84                            | 16.01       | 15  | 30   |         |
| Total      | 175.87  | 273.48         | 126.22                           | 225.51      | 2   | 1155 |         |

ANOVA 168.38, \* p-value significant at 0.05

Number of leaves due to tuberculosis & pulmonary diseases and eye were statistically higher than number of sickness leaves due to skin, ear nose and throat, orthopaedic, surgery, urology, hepatitis and oncology diseases (p<0.001). Similarly sickness leaves due to orthopaedic complications were higher than sickness leaves of ear nose and throat (p=0.264), surgery (p=0.649), hepatitis (p=0.063), psychiatry (p=0.068), urology (p=0.611), skin (p=0.490) and oncology (p=0.329). Sickness leaves due to surgery were more than hepatitis (p>0.999), psychiatry (p>0.999), urology (p=0.929), skin (p=0.864) and oncology (p=0.727). And similarly, among sick leaves of hepatitis, psychiatry, urology, skin, oncology and cardiology no statistically significant difference was found.

## DISCUSSION

Health status of the labour workforce is assessed on the basis of self-assessment by a labourer and the same is linked with an early retirement, disability pension or with sickness absenteeism leading to unemployment<sup>12,13,14,15,16</sup>.

The study under reference is however, a denominator based study wherein the health status of the labour force is assessed by a qualified physician.

The study encompasses that there was overwhelming majority of males in industrial labour, while the number of female workers were relatively low, however, number is increasing day by day as compared to previous years, but at a slow pace. The reason(s) may be socio-cultural and socio-economic set up of the society etc.

In this study the industrial workforce in district Lahore remained under focus and according to the ranking of diseases in a descending order the non-infectious diseases predominantly cardio vascular diseases including hypertension and diabetes ranked higher as compared to tuberculosis & pulmonary diseases and gastro intestinal disorders followed by injury and trauma<sup>17,18,19,20</sup>.

The dwellings of the industrial labour are modest, yet these are located in peri-urban areas around the industrial cluster. Most probably the reason for such diseases was unhealthy life style, bad eating habits, cigarette smoking, overcrowding, bad hygiene and poor sanitary conditions<sup>21</sup>.

The double burden of disease emphasizes on quality of care and services at all levels for improving access of essential health services for the most vulnerable community. Comprehensive Health & Labour policies are warranted to address the issues of labour workforce and to provide decent work environment as well as their welfare and well being for industrial productivity<sup>22,23,24</sup>.

However, to over-come the limitations of this study a detailed analysis of the situation is required also taking into consideration the life style, nutritional habits, smoking and environment at work place as well as implementation of occupational and safety health standards as well as adherence to social protection laws<sup>25,26</sup>.

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