# Quality of Life and Mental Health Status Among Iranian Blue Workers With Self-Reported Chronic Low Back at 2015

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## ABSTRACT
Musculoskeletal disorders such as low back pain can cause a wide spectrum of chronic complications such as quality of life and general health impairment. Mental health is a wide spectrum of concepts that which those such as anxiety, depression or even quality of life had challengeable impacts on work related characters such as worker productivity, absensism. Present study was performed for evaluation of low back pain prevalence and its association with general health and quality of life status among blue workers of Fars ABFA Company.
In the present study we focused on low back pain among 451 blue workers and assessed their mental health status and quality of life status with general health questionnaire (GHQ-28) and short form questionnaire (SF-36) respectively.
In comparison one-year prevalence of low back pain was 44.2%. Mean of SF36 (63.90 ± 17.39 vs. 79.42 ± 15.01; P≤0.001) and General health subdomains (58.29 ± 19.63vs. 69.84 ± 18.63; P≤0.001) for workers with low back pain were significantly lower than other workers.
Findings of our study showed that low back pain had impact on mental health status and quality of life among workers and these changes must consider in the designing preventive program more than control of pain.
**Keywords:** Low Back Pain, Quality of Life, Mental Health, Occupational Medicine

## INTRODUCTION
Work related low back pain had been reported as increasing occupational burden and national health policy makers search to find suitable national preventive and interventional programs for prevention [1, 2]. Several studies on Iranian workers reported that the prevalence of musculo¬skeletal disorders and spinal complaints is much higher than that reported in most international reports [3, 4]. Burdens of low back pain, moreover workers had impacts on industries and society in the general view. In developing countries, we have several problems about workplace related disorders. We have poor working condition and no local or national effective MSD preventive program [5]. Musculoskeletal disorders such as low back pain can cause a wide spectrum of chronic complications such as quality of life and general health impairment [6, 7].
Mental health is a wide spectrum of concepts that which those such as anxiety, depression or even quality of life had challengeable impacts on work related characters such as worker productivity, absensism. Mental health assessment and improvement among workers had been considered nowadays as occupational policy and undiagnosed mental health problems were reported as cause of work absences and decline of worker productivity [7]. In most of previous studies quality of life and mental health status were evaluated separately on the workers and some interactions between their indices were missed. Present study was performed for evaluation of low back pain prevalence and its association with general health and quality of life status among blue workers of Fars ABFA Company.

## MATERIALS AND METHODS
Present cross sectional survey had been performed on the data of ABFA occupational registry system and had been approved in ethical committee of Iran University of medical sciences. In the present study, we focused on the low back pain among blue workers and assessed the association of the prevalence of low back pain among them with its relations with quality of life and mental health status.
Fars Province Water and Wastewater Company (ABFA) supply and distribute safe water for 1.6

Million people in 80 cities in Fars Province. ABFA Company had totally more than 1200 offices and blue workers and among them 550 (45.83%) were blue worker. Manger of ABFA Company developed one occupational registry system for better management of main occupational disorders such as musculoskeletal disorders among their office and blue workers. ABFA registry had been collected demographic variables such as sex, age, height, weight, smoking and body mass index and work related variables such as employment duration, shift working. Extra job and employment type had been gathered as general data. More than that, mental health status and quality of life status had been assessed with the general health questionnaire (GHQ-28) and a short form questionnaire (SF-36) respectively.

The Nordic Musculoskeletal Questionnaire (NMQ) was developed from a project funded by the Nordic Council of Ministers [8]. The aim was to develop and test a standardized questionnaire methodology allowing comparison of low back, neck, shoulder and general complaints for use in epidemiological studies. The tool was not developed for clinical diagnosis. This questionnaire can be used as a questionnaire or interview device [9]. The NMQ has been used in several studies for evaluating musculoskeletal problems, including computer and call center workers [10], car drivers [11], coopers industry [12], and forestry workers [13]. Previous studies reported that the NMQ is repeatable, sensitive and useful as a screening and surveillance tool. However, medical examination is essential to establish a clinical diagnosis [14, 15]. A 36-item Short Form (SF-36) questionnaire had been used for assessment of quality of life among study participants. The SF-36 was designed for use in clinical practice and research, health policy evaluations, and general population surveys [3]. GHQ-28 is a 28-item self-report questionnaire which assessed four subscales including somatic symptoms, anxiety, insomnia, social dysfunction, and depression aspect of general health among study participants. The score for each subscale ranges from 0 to 21. The total score, which is obtained by summing up the scores of all subscales, ranges from 0 to 84 with lower scores indicating higher general health status. The reliability and validity of the questionnaire were assessed in various studies and were also estimated and confirmed in Iran [16, 17].

*Statistical analysis*

Data was entered into the SPSS software and was analyzed by statistical tests. We used Chi-square for comparison of qualitative and student t-test for quantitative variables. Probability values below 0.05

were regarded as statistically significant throughout all analyses.

## RESULTS

In our study period, we use occupational data of only 451 blue workers from all 550 blue workers of ABFA Company. Registry data for 99 reminded worker were not completed and we cannot include their data into the study. Most of the study participants were male (411, 91.13%). Mean of age and work experience among study blue workers was 43.10 ± 8.44 and 17.43 ± 8.37 years respectively. Mean of body mass index among study participants was 25.38±5.29 kg/m2. Among blue workers, 91 (20.2%) were smoker, 128 (28.4%) had shifting work schedule and 53 (11.8%) had extra job. One-year prevalence of low back pain among ABFA blue workers was 44.2%.

Mean of age among workers with low back pain was significantly higher than other workers (44.04±8.61 vs. 42.38±8.25; P≤0.039). Mean of job experience and body mass index had no significant differences between two groups. Frequency of smoking had no significant association between workers of two groups (21.8% vs. 18.9%; P≥0.44). Prevalence of low back pain had no significant association with shift working (P≥0.44).

**Table 1.** comparing demographic variables between bleu workers with and without low back pain

| Variables | | Without LBP | With LBP | P-value |
|---|---|---|---|---|
| Sex | Female | 21 (8.3%) | 18 (9.1%) | 0.93 |
| | Male | 232 (31.3%) | 179 (90.9%) | |
| Age (Mean ±SD) | | 42.38 ± 8.25 | 44.04 ± 8.61 | 0.04 |
| Work experience | | 16.90 ± 9.23 | 18.09 ± 7.11 | 0.14 |
| Smoking | Yes | 48 (18.9%) | 43 (21.8%) | 0.44 |
| | No | 206 (81.3%) | 154 (78.2%) | |
| Extra job | Yes | 25 (10.1%) | 28 (14.4%) | 0.27 |
| | No | 221 (89.5%) | 166 (85.6%) | |
| Shift Working | Yes | 76 (29.9%) | 52 (26.4%) | 0.41 |
| | No | 178 (70.1%) | 145 (73.6%) | |
| Marital Status | Yes | 27 (10.6%) | 11 (5.6%) | 0.15 |
| | No | 225 (88.6%) | 186 (94.4%) | |

Mean of total score of quality of life and mental health among study participants were 72.57 ± 17.83 and 8.99 ± 12.24 respectively. Mean of total score of quality of life among workers with low back pain was significantly lower than workers without low back

pain (63.90 ± 17.39 vs. 79.42 ± 15.01; P≤0.001). Mean of total score of mental health among workers with low back pain was significantly higher than workers without low back pain (13.92 ± 13.63 vs. 4.95 ± 9.13; P≤0.001).

**Table 2-** Comparing SF36 subdomains between workers with and without low back pain

| SF36 subdomains | Without LBP | With LBP | P-value |
|---|---|---|---|
| Physical Function | 87.05 ± 19.49 | 72.38 ± 25.94 | ≤0.001 |
| Role limitations due to physical health | 82.65 ± 26.40 | 62.50 ± 34.70 | ≤0.001 |
| Role limitations due to emotional problems | 79.32 ± 31.63 | 63.39 ± 38.42 | ≤0.001 |
| Energy/ fatigue | 71.49 ± 18.26 | 60.78 ± 19.60 | ≤0.001 |
| Emotional wellbeing | 75.93 ± 17.17 | 65.66 ± 18.13 | ≤0.001 |
| Social functioning | 80.87 ± 19.94 | 66.28 ± 24.04 | ≤0.001 |
| Pain | 84.71 ± 17.38 | 63.85 ± 23.26 | ≤0.001 |

Mean of quality of life and global health subdomains between blue workers with and without low back pain. Mean quality of life subdomains in patients with low back pain was significantly lower than workers without low back pain. Mean of mental health subdomains for workers with low back pain were significantly higher than other workers.

**Table 3.** Comparing GHQ subdomains between workers with and without low back pain

| GHQ subdomains | Without LBP | With LBP | P-value |
|---|---|---|---|
| Somatic | 1.39 ± 2.54 | 3.46 ± 3.68 | ≤0.001 |
| Anxiety | 1.49 ± 2.58 | 3.96 ± 4.39 | ≤0.001 |
| Social Function | 3.48 ± 4.12 | 6.66 ± 5.56 | ≤0.001 |
| Depression | 0.42 ± 1.33 | 1.27 ± 2.34 | ≤0.001 |

## DISCUSSION

In our comparison on 451 ABFA blue workers, one-year prevalence of low back pain was 44.2%. Mean of SF36 subdomains including physical function, Role limitations due to physical health, Role limitations due to emotional problems, Energy/ fatigue, Emotional wellbeing, Social functioning, Pain and General health for workers with low back pain were significantly lower than other workers. Investigator in one study in the Gerick had been reported that most of musculoskeletal symptoms had been associated with a decline in meaning of quality of life indices. In other similar study on the office workers of the hospital, workers with low back pain had lower scores in some SF36 scores such as physical function, Pain, Emotional wellbeing and General health [18]. In other studies on the hospital personnel, workers with musculoskeletal disorders had lower scores in physical function, pain, Emotional wellbeing and General health [19].

In worker with low back pain physical function had the highest score and role limitation due to emotional problems had the lowest score among SF36 subdomains. In the other hand physical function received low impact from low back pain and workers performed daily activities against their pain experiences and had more limitation in their activities due to mental health problems. Picavet *et al.* in his study on the general population reported that people with musculoskeletal symptoms had lower scores in physical function, pain, general health and Role limitations due to physical health in comparison with other people [20]. Study findings were similar to results of other studies and we can conclude that quality of life in workers with musculoskeletal complaint such as low back pain had lower than other workers without noted complaints.

In the present study scores of the general health questionnaire in general health, somatic indices, depression and anxiety was significantly higher in workers with low back pain in comparison with other workers. One of the strengths of persent study of temporaliy assessment of quality of life and mental health in our study participations. Most similar studies worked only one of that and temporary assessment of note two related topics can help us to determine the relationship between low back pain prevalence with each of them and two points together in one box.

Our study had some limitations, first we performed that cross sectional design and this type of methodology only determined association and did not any idea about causative association. Next study with a cohort design will suggest solving this limitation. Secondary, we performed this study on one job type and one workplace and in the next studies suggest that multicenter study with inclusion of different job title such office workers and manager will perform to solve that.

## CONCLUSION

Findings of present study showed that low back pain had impact on mental
Health status and quality of life among workers and discharges must be considered in the designing preventive pograms more than control of pain.

## ETHICAL ISSUES

The study was approved by the ethics committee of Iran University of medical sciences.

## CONFLICT OF INTEREST

Authors of the study did not have any conflict of

interest.

## AUTHORS'CINTRIBUTION

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