

Frequency of musculoskeletal disorders among prisoners of Lahore, Pakistan

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Objective: To determine the frequencies of musculoskeletal disorders among male and female prisoners of Central Jail, Lahore.

Methodology: This descriptive cross sectional study included male and female prisoners of central jail, Lahore. Convenient sampling was used. Data were collected through Nordic musculoskeletal questionnaire.

Results: Out of 294 subjects, 57% were male and 43% females. The musculoskeletal disorders are very common; disorders of knee were 60%, being

the highest affected body part. Low back pain was 2nd most common disorders (51%) followed by ankle and foot (35%).

Conclusion: Musculoskeletal disorders were highly prevalent among prisoners of Lahore. Both male and females are commonly affected. Lower limb was more affected than upper limb. The most commonly affected areas are knees, low back ankle and foot. (Rawal Med J 202;45:388-391).

Keywords: Musculoskeletal disorders, Nordic, Pain, Lahore, prisoners,

INTRODUCTION

Musculoskeletal disorders (MSDs) are the most health care problems faced by society nowadays. These disorders are more common in people who live in generally underprivileged areas.¹ To determine the musculoskeletal disorders, psychosocial work factors, individual factors and physical ergonomic should be examined simultaneously.^{2,3} These disorders are associated with over loading of a body part due to applying excessive forces, repetitive motion, long time sitting, sustained exertions and bad postures.⁴ These disorders have a higher impact on long-term disabilities, chronic health conditions and restriction in ADLs (54%, 40%, 24%), respectively.^{5,6} Musculoskeletal disorders among prisoners are common, as they have more poor health status than general public due to poor diet, awkward postures, poor ergonomics and poor hygienic conditions.⁷ They have higher rate of chronic medical conditions as compared to general population.⁸ Because self-medication is prohibited in prison, they need more medical help even for simple complaints.⁹ Those prisoners who are confined in cells have poor sunlight exposure and low dietary intake so vitamin D deficiency can occur, which can lead to muscle weakness and fractures.¹⁰

A study on English prisoners age more than 60 years showed that effected in 85% had one or more major illness, 3rd common was MSK.¹¹ Despite prisoners population is increasing in number, they are excluded in national health surveys.¹² A Canadian study reported that the male inmates had highest prevalence of head injury (34.1%) followed by low back pain (19.3%).¹³ A study from Brazil stated that most prevalent disorders found were spine, neck and back pains (76.7%), second was joint dislocation (28.2%) and bursitis (28.2%) while less frequent were sciatica and arthritis.¹⁴

There is little data about prisoner's health in Pakistan. The main aim for this study was to determine the frequencies of MSDs prisoners of Central Jail, Lahore. The results of the study can be beneficial for the health care providers to plan strategies to minimize risk factors and prevent disability, and may help prisoners after completing the tenure of punishment to be able to work efficiently for family support.

METHODOLOGY

This descriptive cross-sectional study was completed in 6 months from November 2018 to May 2019 after Ethical Committee approval from Azra

Naheed Medical College, Lahore. A sample of 304 participants was taken using 5% Margin of Error, 95% Confidence Interval, 70% Response distribution and Expected Prisoners to be 5000 using Raosoft Sample Size calculator¹⁵ using convenient sampling. The data were obtained from the prisoners both male and female of central jail Lahore after the informed permission by Inspector General (IG) Punjab after complete procedure and documentation. Written informed consent was taken from every participant.

The study included participants who were confined from more than 6 months having age 20-45 years of age, both male and female gender, while prisoners with physical violence (remand), mental disorder

and any musculoskeletal injury were excluded. Data were collected through Nordic Musculoskeletal Questionnaire, which is most common and valid tool for MSDs/discomfort assessment.¹⁶

Statistical Analysis: All data were entered in SPSS version 21. For categorical variables, frequency and percentage was used and for discrete variables, mean and standard deviation was used.

RESULTS

Out of 294 subjects, 57% were male and 43% females. Majority of prisoners were working more than 20 hours per week. Mostly were in prison from 1-5 years (49%). 28% participants were in prison from 6-10 year. Only one was prisoner for more than 20 years.

Table 1. Frequency of upper extremity disorders.

Region of Body	Have you at any time during the last 12 months had trouble (such as ache, pain, discomfort, numbness, tingling, or pins and needles)			Have you at any time during the last 12 months been prevented from doing your normal work (at home or away from home) because of the trouble?			Have you had this trouble during the last 7 days		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	N=166	N=128	N=294	N=166	N=128	N=294	N=166	N=128	N=294
Neck	54 (33%)	39 (30%)	93 (32%)	20 (12%)	25 (20%)	45 (15%)	50 (30%)	39 (30%)	89 (30%)
Shoulder	25 (15%)	27 (21%)	52 (18%)	36 (22%)	44 (34%)	80 (27%)	38 (23%)	45 (35%)	83 (28%)
Elbow	8 (5%)	15 (12%)	23 (8%)	13 (8%)	34 (27%)	47 (16%)	13 (8%)	35 (27%)	48 (16%)
Wrist & Hand	9 (5%)	53 (41%)	62 (21%)	12 (7%)	70 (55%)	82 (28%)	12 (7%)	72 (56%)	84 (29%)

MSK=Musculoskeletal, N= Number of Participant

Table 2. Frequency of lower extremity and back disorders.

Region of the Body	Have you at any time during the last 12 months had trouble (such as ache, pain, discomfort, numbness, tingling, or pins and needles)			Have you at any time during the last 12 months been prevented from doing your normal work (at home or away from home) because of the trouble?			Have you had this trouble during the last 7 days		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	N=166	N=128	N=294	N=166	N=128	N=294	N=166	N=128	N=294
One or both Hip, Thigh, Buttocks	8 (5%)	33 (26%)	41 (14%)	5 (3%)	29 (23%)	34 (12%)	5 (3%)	33 (26%)	38 (13%)
One or Both Knee	97 (58%)	78 (61%)	175 (60%)	93 (56%)	73 (57%)	166 (56%)	95 (57%)	77 (60%)	172 (59%)
One or Both Ankle/Feet	51 (31%)	52 (41%)	103 (35%)	46 (28%)	45 (35%)	91 (31%)	51 (31%)	51 (40%)	102 (35%)

Table 3. Frequency of Back disorders.

Region of the Body	Have you at any time during the last 12 months had trouble (such as ache, pain, discomfort, numbness, tingling, or pins and needles)			Have you at any time during the last 12 months been prevented from doing your normal work (at home or away from home) because of the trouble?			Have you had this trouble during the last 7 days		
	Male N=166	Female N=128	Total N=294	Male N=166	Female N=128	Total N=294	Male N=166	Female N=128	Total N=294
Upper Back	18 (11%)	32 (25%)	50 (17%)	16 (10%)	29 (23%)	45 (15%)	17 (10%)	31 (24%)	48 (16%)
Lower Back	72 (43%)	77 (61%)	149 (51%)	66 (40%)	76 (59%)	142 (48%)	70 (42%)	76 (60%)	146 (50%)

During last 12 months, almost all had upper extremity disorders; wrist and hand (21%), shoulder (18%) and elbow (8%) (Table 1). Lower extremity disorders were found in both knees (61%), ankle and foot (35%), neck (32%) and hips and thighs (14%) (Table 2). Almost all studied body areas were exposed to MSDs but knee disorders were most common (60%). Low back pain was 2nd most common disorders (51%). Ankle and foot were found to be the third most affected area having MSK disorders (35%) (Table 3).

DISCUSSION

This is perhaps the first study which is going to provide frequencies of musculoskeletal disorders among male and female prisoners of Lahore, Pakistan. Percentage of male population (56.5%) was more than female population (43.5%) in this study. Majority of prisoners were working more than 20 hours per week and most were in prison from 1-5 years (49%).

Upper limb was more affected by MSDs. Knee was the most commonly affected area (60%). The second most commonly affected area is low back (51%). And the third area which was prone to MSDs was ankle and foot (35%). Our results are similar to the study by Fazel and Baillargeon who found that 85% of elderly prisoners had one or more major illnesses and MSD.¹⁷

Musculoskeletal disorders of knee were 60% prisoners. A study by Wolff et al showed that somatic health problems like skin (27%), MSDs (19.2%), digestive (15%) and respiratory (14%) were highly prevalent in detainees.⁹ On the other hand, Feron et al showed that, on average a prisoner

consults to general practitioner times per year.¹⁸ Musculoskeletal disorders (12%) were one of the common reasons of consultation to general practitioners.¹³

Creasey et al studied prisoners of war (POWs) and non-prisoners of war (non POWs) and found that MSDs were 76% in POWs and 60% in non POWs and caused a great decline in functional performance of prisoners.¹⁹ We had similar results. Limitations of study were that it was only carried out at single settings of Central Jail Lahore. Further studies can be carried out in different jails of Punjab. The study has not focused other health conditions including depression, anxiety and mental health.

CONCLUSION

Musculoskeletal disorders were highly prevalent among prisoners of Lahore. Both male and females are affected. Lower limb was more affected than upper limb. The most commonly affected areas were knees, low back, ankle & foot. This alarming rate of musculoskeletal disorders can be minimized through education and provision of proper health facilities for the prisoners.

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