

## Shoulder Pain in Policemen Due to Gun Hanging in Lahore, Pakistan

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### ABSTRACT

**Objective:** To assess the frequency of shoulder pain in policemen due to gun hanging in Lahore, Pakistan.

**Study Design:** Cross-Sectional Study.

**Place and Duration:** Police Stations in Lahore, including Johar town, Model Town, Faisal Town and Khyaban e Amin. Lahore Pakistan from Nov 2019 to May 2020.

**Methodology:** The data were collected from the policemen of different police stations in Lahore. Inclusion criteria were work-related shoulder pain and no fracture or dislocation, and with no history of trauma or injury, and the age limit is 25 to 40 years of policemen. Data was collected using "Shortened disabilities of the arm, shoulder and hand questionnaire (Quick DASH)".

**Results:** There were 100 study participants. The mean age of the participants was 32.48±4.49 years. Results of this study showed that 43% had no shoulder pain, and 57% had shoulder pain due to gun hanging. In addition, results showed that 21% participants had no difficulty, 18% had mild difficulty, 27% had moderate difficulty, 22% had severe difficulty, and 12% were unable to open the jar.

**Conclusion:** The shoulder pain due to gun hanging is high among policemen Daily life activities such as sleeping patterns and recreational and social life activities were also disturbed due to shoulder pain.

**Keywords:** Gun hanging, Physiotherapy, Police, Shoulder pain.

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### INTRODUCTION

Among musculoskeletal pain, the most common shoulder pain is very common and causes considerable sickness. Overhead working, heavy lifting and forceful work at work stations with a combination of bad posture increases the risk of shoulder pain.<sup>1,2</sup> In most cases, the cause of pain is unknown, but the pathophysiology seems to contain muscle pain and spasm. There are several causes and symptoms of shoulder pain, including physical and psychosocial factors. In working people, shoulder injuries are very common.<sup>3</sup> Shoulder pain affects adults more i-e 18%-26%, which makes it the most common pain syndrome. Symptoms can be determined and can affect daily life activities in the workplace.<sup>4</sup> There are also considerable financial costs, with enlarged health care demands. That includes impaired work performance, sick leave, and early retirement or job loss.<sup>5,6</sup> Due to the nature of work, there are various body pain and injuries in policemen caused by workload and working environment.<sup>3</sup> There is less evidence of body injuries and pain in the police. Another research stated that an enlarged occurrence of shoulder and lower back pain is related to prolonged sitting in a fleet car.<sup>7</sup> Another research has stated the same results but also suggested that the

obligation of police to wear body armour is a great risk. Another research stated that driving and wearing a duty belt do not contribute to back pain in the police. Stress fractures described in a male Prussian soldiers were most frequent and troublesome injuries encountered in recruits during basic combat training worldwide.<sup>8</sup> There is a higher risk of strain damage in troopers on the musculoskeletal framework compared to the all-inclusive community. There is higher peril of strain damage in officers on the musculoskeletal.<sup>9,10</sup>

The rationale of this study was to check the shoulder pain in Policemen due to gun hanging. This current study also checked that those daily life activities were also affected due to shoulder pain. Previous studies have been done on risk factors that can contribute to musculoskeletal injuries in shoulder pain in the police. This research can be very beneficial for determining the occurrence and effect of shoulder pain in daily and recreational activities on policemen.

### METHODOLOGY

This cross-sectional study was conducted from November 2019 to May 2020. This research was conducted at different Police Stations in Lahore, including Johar town, Model Town, Faisal Town and Khyaban e Amin, Lahore Pakistan. The study approval was taken from Kanaan Physiotherapy and Spine clinic (with reference number PT/2019/REC/IRB/094).

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**Inclusion Criteria:** Policemen aged 25 to 40 years with no history of trauma or injury were included in the study.

**Exclusion Criteria:** Policemen with a previous history of trauma, fracture or dislocation, any systemic disorder were excluded from this study.

After taking the consent form, data was collected from the police stations in Lahore through non-probability convenient sampling. The sample size of this study was 100, which was calculated using the formula taking estimated proportion=0.21 desired pre-precision of estimate=0.08 Confidence level=95%.<sup>11</sup> Data was collected by using the "Shortened disabilities of the arm, shoulder and hand questionnaire (Quick DASH)".<sup>12</sup>

Statistical Package for Social Sciences (SPSS) version 21.0 was used for the data analysis. Mean and standard deviation were calculated for quantitative variables, whereas qualitative variables were summarized in the form of frequencies and percentages.

### RESULTS

There were 100 study participants. 57% of participants marked they have shoulder pain due to gun hanging, and 43% marked no pain due to gun hanging (Figure).

severe difficulty, and 12% were unable to open the jar (Table).

### DISCUSSION

This study aimed to observe the frequency of shoulder pain in police officers due to gun hanging. Results of this research stated that gun hanging causes pain in policemen and it affects the daily life activities of policemen. This study also stated that the social life of policemen is also affected due to shoulder pain. Junior *et al.* did a study about the musculoskeletal pain in military police of Caxias. That cross-sectional study was done on 19 policemen of Caxias do Sul.

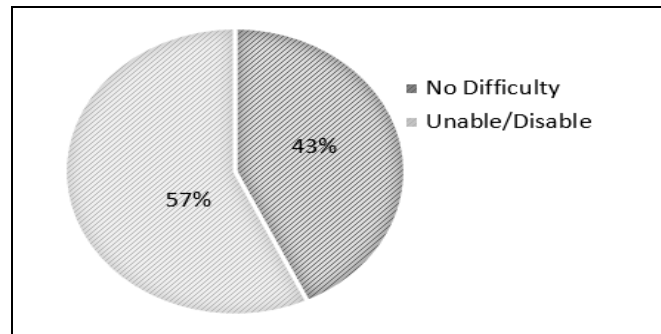


Figure: Frequency of Shoulder Pain

Table: Frequency Distribution of characteristics (n=100).

Characteristics	Frequency (%)				
	No Difficulty	Mild Difficulty	Moderate Difficulty	Severe Difficulty	Unable
Open the jar	21	18	27	22	12
Do heavy household chores (e.g., wash walls, floors)	21	24	16	19	20
Carry a shopping bag or briefcase.	7	23	34	19	17
Wash Your Back	16	19	14	27	24
Use a knife to cut the food	10	10	15	30	35
Recreational activities in which you take some force or impact through your arm, shoulder or hand (e.g., golf, hammering, tennis, etc.).	6	23	32	23	16
During the past week, to what extent has your arm, shoulder or hand problem interfered with your normal social activities with family, friends, neighbors or groups?	10	41	32	9	8
During the past week, were you limited in your work or other regular daily activities as a result of your arm, shoulder or hand problem?	23	7	38	20	12
Shoulder Pain	43	0	0	0	57
Tingling (pins and needles) in your arm, shoulder or hand.	8	22	26	30	14
During the past week, how much difficulty have you had sleeping because of the pain in your arm, shoulder or hand? (circle number)	11	17	26	29	17

The minimum age of study participants was 25 years, and maximum age was 40 years, the mean age of 32.48±4.49 years. Results of this study showed that 43% had no shoulder pain, and 57% had shoulder pain due to gun hanging. In addition, results showed that 21% participants had no difficulty, 18% had mild difficulty, 27% had moderate difficulty, 22% had

The Nordic Musculoskeletal Questionnaire and the Physical Functional Evaluation Form were applied to verify the pain variables. 52.6% of the participants marked low back pain, and 27.8% felt relief from the pain at rest. In addition, 42.1% marked knee pain in the last year, and 21.1% described shoulder, hip and ankle pain.<sup>13</sup>

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Another research was conducted to examine the efficient, methodical organization of the Korean police and its status. This research also found the anticipation of musculoskeletal disorders in Korean policemen.<sup>14</sup>

A previous study presented data indicating that weight and equipment distribution influence muscular activity and posture.<sup>15</sup> Another study stated that unstable load distribution could increase vertical forces and, as a result, increased activation of trunk muscles of the dominant side may be a compensation mechanism.<sup>16</sup> The development of weight carriage ruffle should consider possibilities for equal load distribution.<sup>17</sup> The results of the current study stated that participants having shoulder pain were having difficulties in doing household chores, and participants were also having severe difficulties in washing their backs and also difficulties in opening the jar or using a knife to cut food.

Ramstrand *et al.* did research in 2012 on musculoskeletal injuries at the workplace of the Swedish police. This study was done to find the types and causes of musculoskeletal injury in Swedish police.<sup>2</sup> In another recent research, there were seven exact areas of concern, and there was a great deal of resemblance in the replies of focus groups involved in the study.<sup>18</sup> They stated that the duty belt worn by police was the major cause in all groups. The weight of the duty belt, including all items, is about 4 kilograms which can affect the normal lordotic curve of the spine. In previous literature, conservation of the natural spinal lordosis has been confirmed to reduce lower back aches.<sup>19</sup> The duty belt is possible cause of musculoskeletal injury in police, and sustained research is required to investigate the relative effects that continuous wear of a belt may have on the gait and posture of policemen.<sup>20</sup> Current study was conducted to check the shoulder pain in police officers due to gun hanging using the Quick Dash Questionnaire. The current study was conducted in different areas of Lahore, Pakistan. Results showed that the shoulder pain was 57%. Results also showed that participants were having difficulties in doing differently daily life activities and recreational activities. The current study also stated that participants had difficulty sleeping due to shoulder pain.

This study was only limited to Police Stations in Lahore, so we suggest that another study should include different Police stations in different areas with the same circumstances as ours. There should be more research with a larger sample size. More research is

required on risk factors that lead to the development of shoulder pain and level of disability.

### LIMITATIONS OF STUDY

The study was limited to a small population. Just Policemen of Lahore were included in this study. Only male policemen were included in this study.

### CONCLUSION

The shoulder pain is quite high among policemen due to gun hanging. It was found that due to shoulder pain, policemen were not able to do daily life activities. Social and recreational activities were also disturbed due to pain. The present study also found that shoulder pain disturbed sleeping patterns were also disturbed.

**Conflit of Interest:** None.

### Author's Contribution:

Following authors have made substantial contributions to the manuscript as under:

HS & AA: Data acquisition, critical review, approval of the final version to be published.

ST: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

IZ & KA: Study design, data analysis, critical review, drafting the manuscript, critical review, approval of the final version to be published.

SS: Data acquisition, data analysis, data interpretation, critical review, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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