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PREVALENCE OF SHOULDER PAIN AND DISABILITY AMONG SECURITY GUARDS DUE TO GUN HANGING.

Somiya Asif[1], Iqra Bibi[2], Samar Fatima[2], Faiza Iftikhar[2]

[1]Bs-PT, Ms-NMPT, Assistant Professor, Department of Physical Therapy, Ibadat International University, Islamabad, Email: somiya.asif@uipt.iiui.edu.pk
[2]DPT Student, Department of Physical Therapy, University of Lahore, Islamabad,
Emails: iqra.asghar9521@gmail.com , samarfatima876@gmail.com , faizaiftilhar514351@gmail.com

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Corresponding Author:
Somiya Asif,
Bs-PT, Ms-NMPT, Assistant Professor, Department of Physical Therapy, Ibadat International University, Islamabad,
Email: somiya.asif@uipt.iiui.edu.pk

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ABSTRACT

Background: Shoulder pain and disability are pressing health concerns that significantly affect individuals' ability to perform daily and occupational tasks. Security guards, who frequently engage in activities such as patrolling and prolonged standing, may be particularly susceptible to shoulder-related issues. Despite the critical nature of their roles, there is a paucity of research on the prevalence of shoulder pain and disability among security guards.

Objective : To determine shoulder pain and disability among security guards due to gun hanging.

Methodology: The study investigated the prevalence of shoulder pain and associated disability among security guards. A total of 377 security guards from various institutions of Rawalpindi and Islamabad was participated in the study. Data collection involved administering a structured questionnaire and the Shoulder Pain and Disability Index (SPADI), which evaluates the severity of shoulder pain and the degree of disability.

Results : The mean age of our study participants was 40.59 ±9.52 .The right shoulder was more dominant. The results showed that (179)47.9% participants reported shoulder pain and 195(52.1) reported no shoulder pain due to gun hanging.in addition the results also show the total SPADI score which was 22.40±17.08.

Conclusion :

This study concludes that prevalence of shoulder pain was found among security guards.

INTRODUCTION:

Musculoskeletal pain is common in security guards. Shoulder pain, which is prevalent among musculoskeletal issues, often lead to significant discomfort and illness. Preforming overhead work, heavy lifting, and forceful task with poor posture increases the likelihood of experiencing shoulder pain. Shoulder pain is prevalent among working individuals due to various causes, including both physical and psychosocial factors with shoulder injuries being a frequent occurrence characterized by a range of symptoms. Around 18% to 26% of adult's experience shoulder pain at some point in their lives, making shoulder pain one of the top regional pain condition (1). Because of the physical demands of their jobs, shoulder pain and impairment are major occupational health concerns for security guards. Security guards are more likely to develop musculoskeletal disorders (MSDs) since they regularly work long hours, conduct repetitive actions, and are often in static postures. Studies show that 48.5% of security guards experience musculoskeletal pain in the upper quadrant, with shoulder pain being most common.(2). Shoulder pain has an effect that goes beyond mere physical discomfort; it can result in functional constraints that make it difficult for a guard to carry out vital tasks. Studies have demonstrated that MSDs have a major impact on job performance and quality of life, as they are a major source of absenteeism in this field.(3) Furthermore, psychological distress caused by chronic pain, such as worry and depression, can exacerbate the difficulties these workers encounter.(4) According to the Occupational Safety and Health Act, musculoskeletal diseases are health conditions that affect the neck, shoulders, waist, upper and lower extremities, as well as surrounding tissues. These conditions can be brought on by dangerous factors like vibration, temperature, sharp objects in the workplace, improper posture, excessive force, and repetitive motions. Being one of the most common occupational diseases in society, these musculoskeletal disorders linked to the workplace have received a lot of attention.(5). Shoulder pain ranks among the most common local musculoskeletal complaints in the workplace setting (6). The shoulder joint is the main component that determines how the upper limb functions.(7). Shoulder injuries are a contributing factor to both long-term disability and a considerable number of lost duty days for active-duty soldiers and service members (8).Risk factor for musculoskeletal ache encompass age, gender, smoking, low education, low body activity, bad social interaction, depression. Tension, and sleep disorders (9). In addition to causing significant handicap, impaired shoulder movement brought on by pain, stiffness, or weakness can also make it difficult for a person to work and perform daily tasks like eating, dressing, and maintaining personal hygiene.(10).So the main definition of shoulder pain refer to discomfort or pain experienced in the shoulder joint or surrounding areas, which can be caused by various factors such as injury, overuse inflammation, or under medical condition affecting shoulder joint, muscle, tendon, ligament or nerve.(11)

And functional disability is a condition or injury that causes an individual to be unable to perform the gross, and fines movement that are necessary in everyday life.(12)

Shoulder pain is common or frequently result in incapacity for everyday activities and employment. The primary element that determine shoulder discomfort are age and physical load consideration(13).

Acromioclavicular joint injuries, clavicle fractures, glenohumeral dislocations, proximal humerus fractures, and rotator cuff tears are among the common acute shoulder injuries. Young adults are most commonly affected by clavicle fractures and arthroscopic clavicular joint injuries as a consequence of direct trauma or sports-related injuries.

Conservative care is an option for the majority of non-displaced or minimally displaced injuries. Physical therapy as needed, pain management, and the temporary use of a sling for comfort are all part of the treatment plan. Contact sports, falls, bicycle accidents, and other high-impact traumas can cause glenohumeral dislocations. Patients typically experience pain while moving their afflicted arm and reduced shoulder range of motion when holding it in their non-affected hand. Physical findings could include a dimple laterally inferior to the acromion or a palpable humeral head in the axilla.(13)

When shoulder pain lasts longer than six months, it is considered chronic. Adhesive capsulitis, shoulder instability, rotator cuff problems, and shoulder arthritis are common illnesses that can cause chronic shoulder pain. Disorders of the rotator cuff include partial tears, total tears, and tendinopathy(14).

Shoulder pain and disability occur in different occupations such as labors, policemen's, weightlifters etc. The aging population, athletes, and labours are becoming increasingly concerned about shoulder pathologies. The two most prevalent conditions causing discomfort, impairment, and degeneration in the shoulder are osteoarthritis and rotator cuff disease.

Body builders often experience injuries while engaging in resistance and weight training, with the type and severity of these injuries depending on the specific training method and positions utilized. These injuries can range from acute conditions like strain, sprains, compartment syndrome,and tendon avulsions to chronic issues such as rotator cuff tears, fractures, stress injuries and tendinopathies.furthuremore incorrect technique and muscle hypertrophy can lead to muscle injuries.(15)

Owing to the nature of their jobs, police officers frequently experience a variety of physical ailments and injuries brought on by their workload and working conditions. Less physical damage and pain are seen in the police. Another study found that extended periods of time spent sitting in a fleet automobile was associated with a higher incidence of low back pain and shoulder pain.it can also hinted that there is a significant risk associated with police officers being required to wear body armor.(1)

In athletes, shoulder soreness is common occurrence .in these people the usual physiological limitations of the soft tissue components that make up the shoulder joint both static and dynamic may be exceeded by the pressure imposed on the shoulder. because injuries can happen one after the other, a single damage to one structure may result in discomfort in different area(16)

Although Prevalence of MSK disorders including back pain have been well reported internationally in security guards. There was no published data addressing the prevalence of shoulder pain and disability among security guards. This study adds to the growing literature and the results may be generalized to other occupations involving heavy equipment.

Methodology:

Every participant was communicated about the nature of research and its goal. Non-probability convenience sampling technique was used to gather data. Participants included were only males with age group 20 to 55 years with one year or more of job experience and worked 8 hours every day. And the participants with the history of recent shoulder trauma or accidents within the past 3 months, inflammatory arthropathy, bone and nerve diseases and systemic and metabolic disorders such as diabetes and ankylosing spondylosis were excluded from the study. Before beginning the data collection process, signed informed consent was obtained from each participant. A self-structured questionnaire was administered to collect participants characteristics and demographic data. SPADI (Shoulder pain and disability

Index) Questionnaire was used to measure the shoulder pain intensity and disability It is valid and reliable tool to measure shoulder pain intensity and disability. SPADI (Urdu Version) demonstrate strong reliability and construct validity when evaluating shoulder impairments, particularly among patients seeking primary care for shoulder pain (17). It consists of 13 items divided into subscales measuring pain (5 items) and disability (8 items). Each item is assessed on a visual analogue scale ranging from 0 to 10 the total score ranges from 0 to 100with higher score indicating more severe pain and disasblity.it is used in various condition like rotator cuff tear and adhesive capsulitis with a change of 10 points often considered clinical significant(18).. Data was analysed by using SPSS version 26. For continuous variable descriptive statistics of mean and standard were computed, while percentages were computed for categorical variables. Data was presented in the form of tables and graphs .

Results:

In our cross-sectional study we targeted 377 participants. Among which 3 participants were not fulfilling the eligibility criteria because they were having metabolic disorder subsequently the data were analyzed for 374 patients. The mean age of our study participants was 40.59 ±9.52. The participants' characteristics are shown in Table No 1.

Table No 1: Participant characteristics

Participant Characteristics	Mean	St. Deviation
Age	40.59	9.52
Working days	6.73	2.55
Working hours	11.47	1.25
Working experience	8.60	6.55

Results also showed that frequency and percentage of dominant shoulder among which right were 157(41.6), left were 93(24.7), and bilateral were 124(32.9). (Figure No 1)

Figure No 1: Dominant Shoulder

Results revealed that the prevalence of shoulder pain was 47.9%

Table NO 2: Total SPADI Score

	Mean	St. Deviation
Total pain score	10.79	6.80
Total disability score	11.83	11.34
Total SPADI score	22.40	17.08

The total pain score was 10.79±6.80 and total disability score was 11.83±11.34, the mean score of the total SPADI was 22.40±17.08.

DISCUSION:

In this study, data was collected from 374 participants the minimum age of participant was 20 and maximum was 55 years, and result shows the mean age of participant was 40.59±9.52. This outcome is nearly identical to the result nearly found in a study conducted in Lahore among policemen revealed that the minimum age of participant was 25 years and maximum age was 40 years and the mean age of 32.48±4.49 years (1). Mean age of our study also compare with another study conducted by Manandhar N et al. in Nepal among security guards in which minimum and maximum age was 21 to 60 year and their data was collected from 200 participant and mean age of their participant is 36.5±9.5(19).

The working characteristics in which working experience include in our study was 1 year or more and results showed the mean of working experience in the current study was 8.60±6.55.

this finding is consistent with the previous study in Manandhar N et al in which the mean working experience in a security guard was 7±6.2 years(19).

Hence the estimation of prevalence of shoulder pain among security guards in the current study among 374 participants 47.9% participants experienced the shoulder pain and 52.1% participants were with no shoulder pain due to gun hanging. The previous study conducted by H Shakeel et al. in which the prevelance of shoulder pain among policemen showed that 57% policemen had shoulder pain and 43% had no shoulder pain(1) . The findings also consistent with the another previous study conducted by ST Muntha et el and their results show that 39.1% workers reported the shoulder pain and 60.9% workers did not report shoulder pain (20).

Due to gun hanging in security guards the mean disability score was 11.83. A study of MA Rafi et al showed that 23% of weight lifters were having shoulder pain as they were going to the gym daily, performing repetitive tasks in their occupational settings and their pain was exacerbated by lifting arm over the head. This pain was causing mild disability in performing their ADLs (21). H. Shakeel et al in his study stated that policemen's having shoulder pain were having difficulty in various activities for example household chores, washing their bags, opening the jar or cutting the food items. (1) In the current study, the mean pain score among security guards was 10.79. This might be attributed to carrying guns on their shoulders and prolonged working hours, which increase the load on the shoulder and cause shoulder pain. And the disability might be due to working load and limited holidays.

CONCLUSION: This study concludes that the prevalence of shoulder pain was found among security guards due to gun hanging.

Limitations:

Self-structured questionnaires were used in this study, which may lead to concerns about the potential for underreporting or over reporting.

Recommendations:

Future studies should be conducted on the risk factors that lead to shoulder pain and disability. Moreover, studies should also be done to evaluate ergonomic assessment among security guards.

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