

# PATTERN OF MUSCULOSKELETAL PAIN AMONG DIABETIC PATIENTS IN A SPECIALIZED HEALTH CARE FACILITY IN DHAKA

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**Abstract:** *Diabetic related musculoskeletal pains are a significant burden on sufferers, employers and moreover national economy. It continues to be a substantial detonation of public health. Musculoskeletal pains have a major impact on society in terms of morbidity long-term disability. The present study was designed to investigate the pattern of musculoskeletal pain among the diabetic patients in a specialized health care facility in Dhaka. This is a cross sectional study carried on 221 (94 males and 127 females diabetic patient with complains of MSP, attending a specialized health care facility in Dhaka. Among the respondents majority percent (69.2%) were found suffering from Type II diabetes. Knee (40.2%), Shoulder (27.4%), Neck (15.5%), lower back (29.2%) were found most common sites of MSP, chronic in nature and mostly moderate by severity. Almost all the cases (72.9%) had pain in single site. Musculoskeletal pain are common at all ages, but their greatest impact is on the elderly, among whom they are often associated with severely compromised quality of life and high costs for medical care.*

**Keywords:** *Musculoskeletal pain (MSP), Musculoskeletal disorders (MSK), Diabetic Patients (DP).*

## Introduction

Musculoskeletal pain (MSP) comprises a major health problem for the general population, affecting their quality of life, demanding increased health care cost. Musculoskeletal disorders have a major impact on society in terms of morbidity, long-term disability and economics. Diabetes mellitus (DM) is considered as an epidemic in the modern world and much of its morbidity and mortality is related to micro and macro vascular complications. However, it is also associated with musculoskeletal disorders of the hand and shoulder that can be very incapacitating and compromised their quality of life. Currently, DM affects 240 million people worldwide and this number is projected to increase to 380 million by 2025. Alarmingly, 80% of this burden will affect the low and middle income countries<sup>1</sup>. The musculoskeletal syndromes occurring in diabetes may be divided into those related to increase collagen deposition resulting in limitation of normal joint function, those related to neuropathy and other conditions<sup>2</sup>.

Diabetic patients may present with various muscular skeletal disorders. Adhesive capsulitis of shoulder joint is well established as a complication of diabetes. Trigger finger, catching and snapping of the fingers and complications involving joints e.g. Charcot's arthropathy are frequent in diabetic patients<sup>3</sup>. Diabetes may affect the musculoskeletal system in a variety of ways. The metabolic perturbations in diabetes including glycosylation of proteins; microvascular abnormalities with damage to blood vessels and nerves, along with collagen accumulation in skin and periarticular structures result in changes in the connective tissue. Musculoskeletal complications are most commonly seen in patients with a longstanding history of type 1 diabetes, but they are also seen in patients with type 2 diabetes. Some of the complications have a known direct association with diabetes, whereas others have a suggested but unproven association<sup>4</sup>.

Pain is the most common symptom of diabetics people. The most common cause of pain is musculoskeletal pain disorders. Musculoskeletal disorders (MSDs) are put into different categories according to pain location. One category is upper limb disorders which include any injury or disorder located from fingers to shoulder or the neck. Another category of musculoskeletal pain disorder is lower limb disorders which include injury and disorders from hips to toes. Possibly the most common MSD pain is back pain. MSPs can affect the body's muscles, joints, tendons, ligaments, and nerves<sup>5</sup>. The aim of this study was to find out the pattern of MSP among the Bangladeshi diabetic patients attending in selected Specialized Health Facility in Dhaka.

### **Materials and Methods**

This is a cross sectional study carried on 221 (94 males and 127 females). Mean age  $54.02 \pm 10.815$  years diabetic patients with complains of MSP, attending a specialized health care facility in Dhaka Bashabo Health Care Centre in Dhaka between August – December 2013. Samples were selected from ant patient Basabo Sastho seva kendro regular interval. Checklist for physical examination and interviewer administered Semi structured questionnaire.

### **Result**

A total of 221 respondents participated in this study. It was found that among the respondents, 21.3% (n=47) had Primary, 12.7% (n=28) had Secondary, 19.5% (n=43) had SSC passed 11.8% (n=26) had HSC, 20.4% (n=45) were Graduate and 11.8% (n=26) had post Graduation qualification. The monthly family income of the respondents, 35.3% had Tk. 20000, 30.8% had Tk. 20001 - 30000, 12.7% had Tk. 30001 – 40000, 9.5% had Tk. 40001 – 50000, and 11.8% had above Tk. 50000, Among the respondents, 19.5% were Service holder, 8.1% were Business person, 51.1% were House maker, 20.8% were Retired person. It was reported that among the respondents, 40.3% were manual worker, 35.3% work in seating position, 23.5% work in both manually and seated position. 79% of the respondent do exercise, majority 69.5% exercise every day, 29.3% 2-3 days a week.

**Table 1: Distribution of respondents by number of site MSP (n=221):**

Number of site	Frequency (n)	Percentage (%)
Single site	161	72.9
Two sites	44	19.9
Three and more sites	16	7.24
Total	221	100.0

Table 1 shows that 72.9% had pain in single site, 19.9% had pain in two sites and 7.24% had pain on three or more sites.

**Table 2: Distribution of respondents by type of pain (n=221):**

Site of MSP	Acute pain	Chronic pain
neck (n=34)	13 (38.2)	21 (61.8)
Shoulder/Arm (n=60)	6 (10.0)	54 (90.0)
Elbow/Forearm (n=19)	4 (21.1)	15 (78.9)
Wrist/Hand (n=19)	8 (42.1)	11 (57.9)
Upper back (n=1)	0 (0.0)	1 (100.0)
Lower back (n=64)	12 (18.8)	52 (93.2)
Knee (n=88)	6 (6.8)	82 (93.2)
Hip/Thigh/Buttock (n=11)	0 (0.0)	11 (100.0)
Ankle (n=6)	1 (16.7)	5 (83.3)
Sole/Heel (n=11)	4 (36.4)	7 (63.6)

Table 2 shows that 90% had shoulder or arm pain, 93.2% had knee pain, 81.3% had pain in the low back and 83.3% had pain in the thigh.

## Discussion

Knee, Shoulder/Arm, lower back and Neck were found as most common site of MSP. Pain was mostly chronic in type and by severity moderate in nature. Among the respondents majority percent (72.9%) had pain in single site, 19.9% had two sites and rest of 7.2% had pain in three or more sites. Study by Molsted, Tribler<sup>6</sup> and Snorgaard reported musculoskeletal pain 1.7-2.1 times as frequent ( $p<0.001$ ). Pain was more frequently reported in women ( $p<0.001$ ). Low-back pain and Pain in the arm, hand, knee and/or hip was associated with body mass index ( $p<0.005$ ). Low-back pain was associated with a sedentary life style, impaired quality of life and reduced physical function ( $p<0.0$ )<sup>6</sup>

As co-existing condition, three-fourth Neck pain, half Shoulder/Arm pain, fifty five percent knee pains, forty percent lower back, one-third Hip/Thigh/Buttock pain and one-sixth Ankle pain was radiating. Almost all the cases pain prevents their normal and most of the respondents suffer pain all the time. Study done by Ramchurn and associates found the prevalence as significantly higher among the controls (53%) [ $p=0.02$ ]. Shoulder capsulitis (25%), carpal tunnel syndrome (20%), tenosynovitis<sup>7</sup>. Study by Zamani<sup>8</sup> also

found Carpal tunnel syndrome (49.8%), knee osteoarthritis (45%), sclerodactyly (27.2%), Dupuytren's contracture (14.1%), trigger finger (11.9%), adhesive capsulitis (11.9%), limited joint movement's syndrome (8%) and Charcot joint (0.6%) were seen in patients<sup>8</sup>. Almost similar finding was also reported in the study by the study conducted in Libya<sup>9</sup> and study in Greece<sup>10</sup>.

### Conclusion

Knee (40.2%), Shoulder (27.4%), Neck (15.5%), lower back (29.2%) were found most common sites of chronic and mostly moderate by sever. Almost all the cases (72.9%) had pain in single site.

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