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Relationship between Diabetes Mellitus and Low Back Pain in the Clinics of Traditional Iranian Medicine

Fariba Heidari, Maryam Baradaran-Binazir* and Fatemeh Ranjbar-Oskouei

Social Determinants of Health Research Center, Health Management and Safety Promotion Research Institute, Tabriz University of Medical Sciences, Iran

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***Corresponding author:** Maryam Baradaran-Binazir, Social Determinants of Health Research Center, Health Management and Safety Promotion Research Institute, Faculty of Medicine, Tabriz University of Medical Sciences, Golgasht Ave. Tabriz, Iran

Abstract

Low back pain is commonly identified among diabetic patients, yet it is not determined if there is a causal association. The aim of this study was to identify associations between low back pain and diabetes in an Iranian population. This cross-sectional study was done on the patients with low back pain referred to traditional medicine clinics in Tabriz, East Azarbayjan, Iran, 2019. A short checklist about the presence diabetes and body mass index was applied to identify diabetic patients. Totally 210patients participated in our study. A total of 31 women (23.6%) and 21 men (26.5%) reported that they had diabetes. Our study found that that the prevalence of low back pain in diabetic patients was approximately greater than non-diabetic patients.

Keywords: Diabetes; Low back pain; BMI; Musculoskeletal; Hyperglycemia

Introduction

Diabetes is a prevalent metabolic disorder that demonstrates the sign and symptoms of hyperglycemia [1]. Low back pain is the most prevalent musculoskeletal system disease and the main element of inability universally. Based on statistics approximately 80% of the people will have a period of low back pain once throughout their lives [2]. Low back pain is commonly identified among diabetic patients, yet it is not determined if there is a causal association [3]. Even though the definite pathology of diabetes associated with low back pain is ambiguous, there is evidence that atypical collagen impeachment in the musculoskeletal texture changes the anatomical and the mechanical features of these tissues [4]. The relationship between diabetes and musculoskeletal deterioration were somewhat associated with other factors in diabetic patients as defective blood circulation [3]. Furthermore, diabetes and low back pain have common risk factors like high body mass index, sedentary life and smoking [2]. In epidemiological investigations, the incidence of musculoskeletal pain has been seen to be high in diabetic patients in areas such as the shoulder, neck, back, arms, knees and hips [5]. There are very rare population-based investigations of relations between diabetes and low back pain [2]. In an investigation of Danish patients with diabetes, the prevalence of low back pain was quite greater among the diabetic patients [6]. However, in a longitudinal study of adult Spanish twins, low back pain was not reported to raise the risk of diabetes relatively [7]. The aim of the current study was to study associations between low back pain and diabetes in an Iranian population, in the clinics of traditional medicine in Tabriz. This city is the capital of East Azerbaijan Province, in northwestern Iran.

This cross-sectional study was done on the patients with low back pain referred to traditional medicine clinics in Tabriz, East Azarbayjan, Iran. The study conducted from July to December 2019. A total of 210 patients with low back pain participated in our study. We applied Krejcie and Morgan's table to calculate the sample size [8]. We asked the participants to complete a short checklist about the presence Diabetes and body mass index. Nearly 25% of participants were determined as having the diagnosis of type 2 diabetes. A total of 31 women (23.6%) and 21 men (26.5%) reported that they had diabetes (Table 1). These patients had a mean age of 53.1 years. A major part of patients (98.7%) had type 2 diabetes. The mean highest recorded BMI was 35.6 kg/m2.Data analysis was done applying chi-square test and independent t-test with a $P<0.05$ by SPSS software (version 16). This study was approved by the Ethics Committee of Tabriz University of Medical Sciences with an ethical approval number of IR.TBZMED.REC.1397.947.

Table 1: Association of diabetes and low back pain with BMI, sex and smoking among 210 patients, using Chi-square test and independent t-test.

Variables	Low Back Pain No Diabetes	Low Back Pain and Diabetes	P
Mean BMI (kg/m^2) *	30.51	34.12	<0.001
Female sex(N)	100	31	<0.001
Smoking(N)	31	29	0.12

Conclusion

The present study found that the prevalence of low back pain in diabetic patients was approximately greater than non-diabetic patients. The association is not related to gender. The association is found among women and men. In smokers, no relationship can be established.

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