HEALTH BEHAVIOR FACTORS INFLUENCING BACK PAIN IN URBAN AREAS

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Abstract

This study is to identify the factors of health behavior that affect the incidence of back pain in urban areas. Forty-one confirmed patients with back pain were selected as case group. Forty-one patients in the control group was also selected not to belong to back pain as a result of examination for the same period and method as the case group. This study was conducted with a survey and interview of patients who have been visited an orthopedics in a general hospital from April 6 to June 8, 2022. A total of 82 subjects were used as data. The results of this study are as follows. Firstly, in the case of non-smoking, the case group was lower than the control group, and the odds ratio was 0.50 times, and the incidence of back pain was significantly reduced (95% Cl=0.17-0.98). Secondly, the average of the case group whose sitting posture is not appropriate was 70.7 points, which was significantly higher than the average of 41.4 points of the control group (95% Cl=1.84-7.92). Thirdly, the odds ratio was 3.11 times. In the case of hardly stretching, the average score of the case group was 75.6 points, which was significantly higher than the average of 46.3 points of the control group (95% Cl=1.52-12.47). The odds ratio was 3.59 times. Fourthly, variables such as BMI, age, sitting position, walking, stretching and smoking status were included in the risk factors for back pain. Therefore, the results of this study will contribute to the prevention and treatment of back pain.

Keywords: Health behavior, Back pain, Smoking, Stretching, Sitting position.

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I. INTRODUCTION

Back pain is called back pain. It can feel pain only in the waist, but people can also feel pain in the pelvis, tailbone, hips, thighs, and legs. Sensory impairment of the legs or muscle weakness may occur together. Symptoms vary depending on the cause of the disease[1],[2]. Disc-related diseases can cause severe symptoms due to increased disc pressure when sitting or leaning in a chair. Spinal stenosis causes back pain and numbness in the lower extremities when walking [3],[4]

Syndrome can worsen when people lean their back and apply a load. Inflammation can worsen the pain. Staying in one position for a long time, such as sitting or standing in the office, can strain their pelvis and worsen back pain. Sometimes it hurts so badly that people can't bend or straighten their upper body[5],[6]. Eighty percent of adults have back pain at least once in a lifetime. Repeated back pain can cause the disc to protrude and lead to the lumbar disc. Back pain is caused by various structural and functional causes. The quality of life of the elderly is greatly reduced if they develop chronic back pain. As the degree of stress increases, the association with pain increases proportionally. Previous studies pointed out that people with severe stress have 2.82 times higher chronic back pain[7],[8].

Back pain can be cured by removing and correcting the cause. It is necessary to investigate medical information on this. This study is to identify the factors of health behavior that affect the incidence of back pain in urban areas. Through this, it is to treat back pain and improve the quality of life.

2. MATERIAL AND METHODS

2.1 Materials

Forty-one confirmed patients with back pain were selected as case group. Patients who were diagnosed with back pain for more than 6 months were excluded from the case group. Forty-one patients in the control group was also selected not to belong to back pain as a result of examination for the same period and method as the case group. This study was conducted with a survey and interview of patients who have been visited an orthopedics in a general hospital from April 6 to June 8, 2022. A total of 82 subjects were used as data for this study

2.2. Data and Ethical Considerations

After the trainee fully explained the purpose of the study, it was conducted after obtaining consent from the research subjects. It was also explained to the study subjects that they would not use it other than for research purposes.

2.3. Methods

The general characteristics of the study subjects and the risk factors for back pain were calculated as numbers and percentages. In order to identify the factors that health behavior affects the incidence of back pain, the factors related to back pain are independent variables. Logistic regression analysis was performed with the presence or absence of back pain as a dependent variable. The estimated odds ratio of back pain-related factors and their statistical significance were verified by obtaining a 95% confidence interval.

3. RESULTS

3.1. General Characteristics in Study Subjects

Table 1 shows the general characteristics of the study subjects. The BMI of the case group was significantly higher than that of the control group at 30kg/m^2 or higher, and the odds ratio was 2.26 times (95%

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Cl=1.35-9.82). In the case of poor posture, the case group was significantly higher than in the control group, and the odds ratio was 4.66 times (95% Cl=1.95-10.42). In the case of non-smoking, the case group was lower than the control group, and the odds ratio was 0.50, and the incidence of back pain was significantly reduced(95% Cl=0.17-0.98).

Table 1. General Characteristics in Study Subjects

Variables	Case Group	Control Group	OR	95% Cl
	N (%)	N (%)		
BMI (kg/m²)				
<18.5	8(19.5)	11(26.8)	1.0	
18.5≤X<22.9	10(24.3)	16(39.0)	0.86	0.41-3.97
≥30	23(56.0)	14(34.1)	2.26	1.35-9.82
Age				
≤50	5(12.2)	8(19.5)	1.0	
51-59	9(22.0)	10(24.3)	1.44	0.18-7.13
60-69	11(26.8)	14(34.1)	1.26	0.97-5.35
≥70	16(39.0)	9(21.9)	2.84	1.52-10.38
Sitting position				
Adequate	12(29.3)	27(65.9)	1.0	
Inadequate	29(70.7)	14(34.1)	4.66	1.95-10.42
Smoking				
Smoking	16(39.0)	10(24.4)	1.0	
Non-smoking	25(61.0)	31(75.6)	0.50	0.17-0.98

3.2 Factors Related to Lifestyle and Back Pain

Table 2 presents factors related to lifestyle and back pain. The average of the case group whose sitting posture is not appropriate was 70.7 points, which was significantly higher than the average of 41.4 points of the control group(95% Cl=1.84-7.92). The odds ratio was 3.11times. In the case of hardly stretching, the average score of the case group was 75.6 points, which was significantly higher than the average of 46.3 points of the control group (95% Cl=1.52-12.47). The odds ratio was 3.59 times.

Table 2. Factors related to lifestyle and back pain

Variables	Case group N (%)	Control group N (%)	OR	95% Cl
Sitting position				
Adequate	12(29.2)	24(58.5)	1.0	
Inadequate	29(70.7)	17(41.4)	3.11	1.84-7.92
Stretching				
Often	10(24.4)	22(53.7)	1.0	
Hardly	31(75.6)	19(46.3)	3.59	1.52-12.47
Crossing the legs				
Often	30(73.2)	24(58.5)	1.0	
Hardly	11(26.8)	17(41.5)	0.52	0.54-6.91
Sitting hours, a day/hrs				
<5	13(31.7)	26(63.4)	1.0	
≥6	28(68.2)	15(36.5)	3.73	0.38-7.14
Walking exercise				
Regular	15(36.6)	23(56.1)	1.0	
Hardly	26(63.4)	18(43.9)	2.21	1.61-10.29
Drinking goji berrys				
Yes	3(7.3)	6(14.6)	1.0	
No	38(92.7)	35(85.4)	2.17	0.47-12.83

3.3. Logistic Analysis of Factors Related to Back Pain

Table 3 presents a logistic analysis of factors related to back pain. Multiple logistic regression analysis was performed using a stepwise selection method to significantly correlate variables with the incidence of back pain in the study results. Variables such as BMI, age, sitting position, walking, stretching and smoking status were included in the risk factors for back pain.

Table 3. Factors related to lifestyle

Variables	OR	95% Cl
BMI		
<18.5	1.0	
≥30	1.95	1.27-8.43
Age		
≤50	1.0	
≥70	2.19	0.31-6.52
Smoking		
Smoking	1.0	
Non-smoking	2.47	1.59-12.86
Sitting position		
Adequate	1.0	
Inadequate	2.61	1.45-5.07
Stretching		
Often	1.0	
Hardly	3.24	1.67-11.39
Walking		
Regular	1.0	
Irregular	2.18	1.43-9.16

4. DISCUSSION AND CONCLUSION

This study is to identify the factors of health behavior that affect the incidence of back pain in urban areas. As a result of this study, the case group without walking exercise had a significantly higher incidence of back pain with a odds ratio of 2.21 tunes than the control group. walking exercise reduced the risk of depression by half. This was similar to the results of previous studies[9],[10]. If people leave their back pain as it is, it can lead to a major illness. Back pain is a disease that not only degrades physical and mental health but also reduces the quality of life. Back pain in the 50s and older has been shown to double the risk of developing depression and five times the risk of suicidal thoughts. This study demonstrated that walking exercise is effective in preventing back pain.

As a results of this study, when stretching was not performed, the case group had a significantly higher incidence of back pain with a odds ratio of 3.24 times than the control group This study is consistent with the fact that breathing strengthens pulmonary function in previous studies. Stretching ensure flexibility and mobility of the spine and its surrounding tissues by stabilizing the posture. Therefore, it was confirmed that continuous stretching is effective in treating back pain.

As a result of this study, it was found that the case group who did not smoke did not develop back pain significantly compared to the control group. This was similar to the results of previous studies[11],[12]. Smoking worsens bone health. Therefore, people should stop smoking so that people are not exposed to smoking. This study is significant in that it is an analytical and epidemiological study on various risk factors affecting the incidence of back pain. Thus, the results of this study will contribute to the prevention and treatment of back pain.

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*Eur. Chem. Bull. **2023**,12(Special Issue 1, Part-B), 1394-1399*

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