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Comprehensive Strategies through the Application of Medical Information Management for the Mitigation of Lumbago

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Abstract

Back pain is a pain that occurs from the waist to the legs. If back pain continues, the quality of life is mentally and physically degraded. The purpose of this study is to implement comprehensive strategies through the application of medical information management for the mitigation of lumbago. This study was analyzed using interviews and surveys from January 17 to March 22, 2024. It is classified as 43 members of the experimental group and 43 members of the control group. Low back pain symptoms and treatment were measured by a t-test before and after the application of medical information management. The results of this study are as follows. Firstly, in the experimental group, 67.4% of those who sat for more than 10 hours were significantly higher than 32.6% of those who sat for less than 9 hours a day ($X^2=3.19$, $p=.00$). Secondly, the forward bending has been increased significantly from the average of 30.58 points before the application of medical information management to 46.27 points after the application ($t=-1.65$, $p=.03$). Thirdly, lumbago has been shown to decrease continuously since 6 days. Fourthly, stretching continued to rise significantly from 3 days after applying medical information management. The results of this paper will contribute to reducing symptoms in patients with lumbago.

Keywords : Lumbago, Patients, Treatment, Medical information management, Numbness

1. INTRODUCTION

Lumbago is a pain that occurs from the waist to the legs[1],[2]. A quarter of working men experience back pain more than once in a year. More than 80% of the world's population experiences back pain. If people have lumbago, they will have difficulty in the whole process of their daily life. If people leave their back pain unattended, they become dangerous[3],[4].

We need to check people's physical condition and check their lumbago. If chronic lumbago persists, even mild illness can cause complications[5]. Once or twice of lumbago is fine, but as lumbago adapts to their bodies and becomes habitual, it naturally builds up in their bodies[6],[7]. The older people get, the more people feel chronic lumbago. People can feel extreme lumbago even if they are often stressed mentally or have a lot of worries all the time. If back pain continues, the quality of life is mentally and physically degraded. Neglecting back pain causes complications throughout the body. To this end, it is necessary to treat

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back pain. Previous studies have mainly studied the status of back pain. In this study, it is to treat back pain through the medical information management one step higher[8],[9]. Therefore, this study analyzes the effectiveness of treatment through the medical information of patients with low back pain. This will be used as basic data to reduce the incidence of low back pain patients.

2. MATERIALS AND METHODS

2.1. Systematic Approach to Treatment of Lumbago

Figure 1 shows a systematic approach to preventing lumbago. The overall concept for alleviating back pain is as follows. 1) Symptoms of back pain patients 2) Analysis of the situation of everyday life. 3) Measurement of participants 4) Conducting a survey 5) Application to patients in the medical information management 6) Application of medical information management 7) Drawing participants' opinions 8) Applied effect and analysis of the results 9) Effectiveness of medical information management.

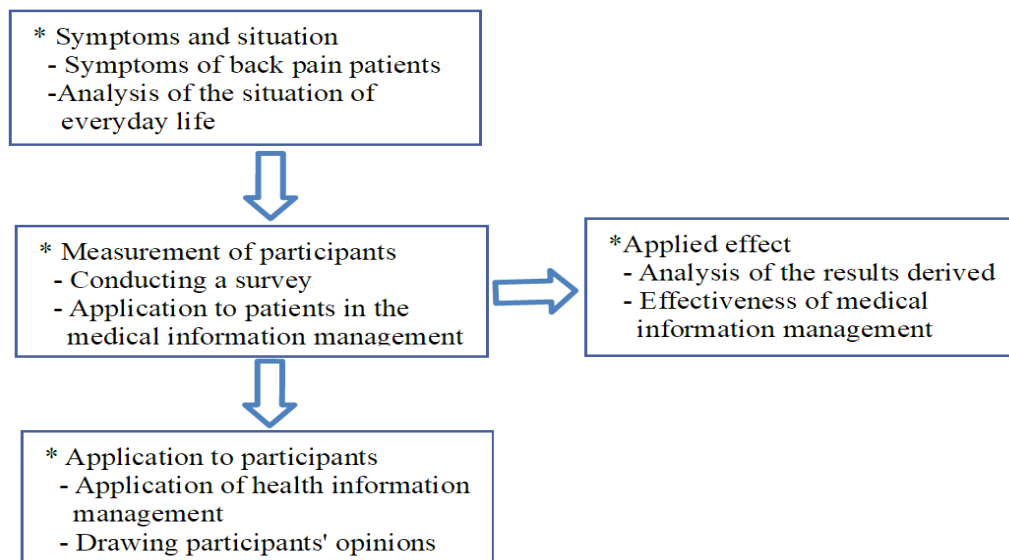


Figure 1. Systematic Approach to Treatment of Lumbago

2.2 Materials

The subjects conveniently sampled low back pain patients at a general hospital located in the C area. This study was analyzed using interviews and surveys from January 17 to March 22, 2024. The survey was conducted only by those who agreed after sufficiently explaining the study to the participants. The criteria for selecting subjects were those who did not have other diseases accompanied by pain other than back pain. Additionally, it was targeted at those who could communicate and had no history of mental illness. During the study period, 2 people in the experimental group, 3 people in the control group, and a total of 5 people were eliminated. So 43 people in the experimental group and 43 people in the control group were the subjects of the study. Therefore, 86 out of 91 surveys were finally analyzed, excluding 5 poor answers.

Medical information management is a program that manages patients by providing medical information such as food and acupuncture to relieve back pain. To this end, patient management is performed using phone calls, texts, and kakao talk. The results before and after the experiment were compared and analyzed.

2.3 Methods

The general characteristics of the subjects were analyzed by X²-test. The cause of low back pain was compared before and after the application of medical information management using t-test. Low back pain symptoms and treatment were measured by a t-test before and after the application of medical information management and the comparison of 5, 10, 15, and 20 days after application. This survey was conducted on a five-point scale. Missing or poor data from the survey were excluded. The experimental and control group were composed of the same requirements.

3. RESULT

3.1. General characteristics of study subjects

Table 1 presents the general characteristics. In the experimental group, the height of shoes over 5 centimeters was 58.1%, significantly higher than 41.9% under 4 centimeters (X²=2.85, p=.04). In the experimental group, 67.4% of those who sat for more than 10 hours were significantly higher than 32.6% of those who sat for less than 9 hours a day (X²=3.19, p=.00).

Table 1. General characteristics in Study Subjects

Variables	Exp. group	Cont. group	X ²	p
	N(%)	N(%)		
Height of one's shoes/cm				
≤4	18(41.9)	26(60.5)	2.85	.04
≥5	25(58.1)	17(39.5)		
Stretching				
Hardly	29(56.9)	18(41.9)	10.43	.07
Sometimes	8(29.4)	14(32.6)		
Often	6(13.7)	11(25.6)		
Marital status				
Single	13(30.2)	17(39.5)	0.75	.49
Married	30(69.8)	26(60.5)		
Sitting time/hr(daily)				
≤9	14(32.6)	30(69.8)	3.19	.00
≥10	29(67.4)	13(30.2)		
Heavy lift				
Hardly	18(41.9)	27(62.8)	1.84	.01
Often	25(58.1)	16(37.2)		
Total	43(100.0)	43(100.0)		

3.2. Before and after application of health information on the cause of back pain

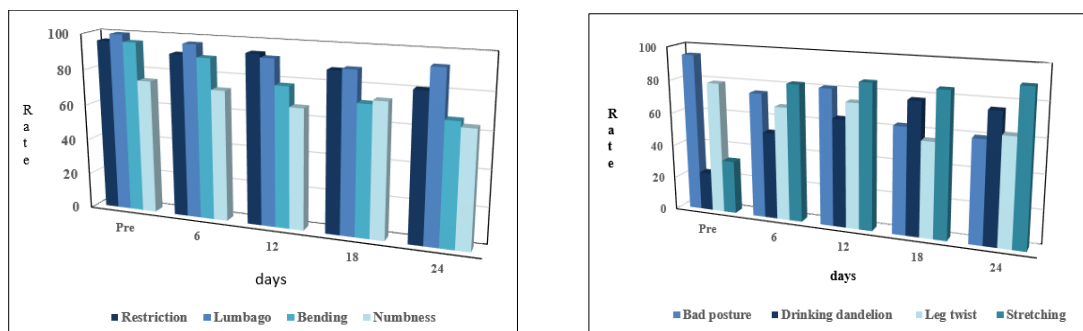
Table 2 shows the comparison before and after medical information management on the cause of back pain. In the cause of numbness in the legs, the average was 32.95 points after the application of health information management, a significant decrease from the average of 45.62 points before application (t=0.75, p=.04). The forward bending has been increased significantly from the average of 30.58 points before the application of health information management to 46.27 points after the application (t=-1.64, p=.03).

Table 2. Before and after application of health information on the cause of back pain

Variables	Pre	Post	t	p
	Mean±S.D.	Mean±S.D.		
Lumbar pain	49.99±3.18	41.57±2.49	1.47	.43
Pain around of hip	48.97±2.53	39.62±1.85	3.62	.26
Numbness of the one's legs	45.62±3.71	32.95±1.93	0.75	.04
Act of stretching back	32.29±4.35	49.52±4.18	-4.29	.02
Lying down and hurting	45.74±0.98	38.76±0.59	-2.53	.01
Walking pain	47.16±3.17	41.63±3.62	4.87	.27
Forward bending	30.58±1.92	46.27±1.59	-1.65	.03
Heavy lifting	41.72±5.28	30.84±4.63	0.93	.14
Muscle stiffness	44.29±0.63	39.17±0.51	2.28	.26

3.3 Back pain symptoms and changes over time of treatment

Figure 2 shows the symptoms of back pain and changes over time of treatment. Lumbago has been shown to decrease continuously since 6 days. Stretching continued to rise significantly from 3 days after applying medical information management. Bad posture has been decreased after 4 days and then increased slightly again after 12 days.



A. Symptoms of lumbago over time

B. Treatment of back pain over time

Figure 2. Back pain symptoms and changes over time of treatment

4. DISCUSSION AND CONCLUSION

This study analyzes the effectiveness of treatment through the medical information management of patients with low back pain. In the results of the study, lumbago has been decreased steadily after stretching. In previous studies, it was similar to the results that arthritis was alleviated by stretching[10],[11]. Lumbago can't be treated in one way because it can come from a variety of causes. Low back pain is a condition in which a part of the intervertebral disc has from the membrane and escaped. When lumbago occurs, it signals the whole body, reducing the body's immune system. Through this medical information management, it was confirmed

that stretching is effective in relieving back pain.

According to the results of this study, bad posture decreased after management compared to before the application of medical information management. Particularly, the lumbago has been decreased after 6 days or longer than before the application of the medical information management. This is consistent with previous studies showing that persistent bad posture causes lumbar disc[7],[11]. Most chronic low back pain is caused by jobs and bad posture, such as sitting for a long time or driving for a long time. As a result of the study, drinking dandelion tea continued to increase since 6 days after the application of it compared to before the application of medical information management. After 6 days of drinking it, back pain has been decreased. This is similar to the results that drinking quince tea is effective in alleviating inflammation of the herniated disc in previous studies[12],[13]. Dandelion tea seems to be effective because it reduces inflammation. Therefore, the application of medical information management was found to be effective in relieving lumbago. The results of this paper will contribute to reducing physical pain in patients with lumbago.

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