Development of a Model of Prevention through Medical Information System for Plantar Fascia Patients

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족저근막염 환자를 위한 의료정보체계를 통한 예방의 모델 개발

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Abstract

This paper is to develop a model of prevention through a medical information system for patients with plantar fasciitis. The subjects of the study were 92 patients who visited orthopedics at a general hospital in the metropolitan area from July 08 through September 10, 2024. Before and after the application of medical information system of patients with plantar fasciitis, it was analyzed by a t-test. The results of this study are as follows. Firstly, wearing appropriate shoes was significantly higher after application than before the application of the medical information system(t=-3.59, p<.05). Secondly, the change of plantar fasciitis decreased after 10 days compared to before the application of the medical information systeme through intervention in patients with plantar fasciitis over time. In conclusion, the application of medical information system was effective in alleviating the difficulty of plantar fasciitis. Therefore, the findings will contribute to the treatment of plantar fasciitis in the future.

1. Introduction

The plantar fascia is a fibrous band connected from the heel to the toe. Plantar inflammation is a disease that causes inflamma tion and pain due to damage to the plantar[1]. Plantar fasciitis is likely to occur if the arches of the soles of the feet are flat or the arches are higher than normal. Plantar fasciitis is painful on the soles of the feet and suffers from pain for life[2].

Previous studies have shown that methods for the treatment of plantar fasciitis are insufficient[3],[4]. Therefore, this study is to develop a model of prevention through a medical information system for patients with plantar fasciitis.

2. Materials and Methods

2.1 Materials

The model construction for the prevention of plantar fasciitis is presented in Figure 1. The subjects of the study were 92 patients who visited orthopedics at a general hospital in the metropolitan area from July 08 through September 10, 2024.

2.2 Methods

Before and after the application of medical information system of patients with plantar fasciitis, it was analyzed by a t-test. In terms of symptoms of plantar fasciitis patients, 10, 20, 30, and 40 days were measured before and after the application of medical information management.

The experimental group is classified as the group that applied medical information management, and the control group is classified as the group that did not apply medical information management.



Table 1. Building a model for the prevention of plantar fasciitis

3. Results

3.1 Symptoms and practices before and after the application of

the medical information system

Table 1 presents a comparison between the symptoms and practices of plantar fasciitis patients before and after the application of the medical information system. Wearing appropriate shoes was significantly higher after application than before the application of the medical information system(t=-3.59, p<.05).

[Table 1] Symptoms and practices before and after the application of the medical information system

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Variables	Before	After	t
Proper shoes	35.10 ± 3.1	44.18±2.4	-3.59*
	7	1	
Weight management	29.82 ± 0.3	34.26±0.5	
	4	8	-4.71
Standing for a long	42.46 ± 4.2	31.29 ± 3.1	
time	9	7	2.64*
Stretching	25.17 ± 0.8	47.18±0.2	
	4	9	-2.75**
Tiredness of one's	40.38 ± 2.5	34.52 ± 2.7	1.00
feet	7	4	4.28
Pain in the heel	44.93±0.2	39.16±0.3	2.75
	8	5	
Regular and proper	23.58 ± 4.7	45.72±4.1	
exercise	3	8	-4.19**
	39.41 ± 1.2	32.33 ± 1.6	
Tingling of the feet			2.75
	5	2	
Acupressure of the	24.73 ± 4.1	46.82 ± 4.1	-118**
foot	9	7	-4.10**
Pain in the soles of	42.25±0.2	37.65±0.8	1.62
the feet	7	5	1.05

* p<.05 ** p<.01

3.2 Changes through intervention in patients with

plantar fasciitis over time

Figure 2 shows the change of plantar fasciitis decreased after 10 days compared to before the application of the medical information systeme through intervention in patients with plantar fasciitis over time. However, plantar fasciitis increased briefly after 20 days than before the application of the medical information system.



Fig. 1. Changes through intervention in patients with plantar fasciitis over time

4. Discussion

This paper is to develop a model of prevention through a

medical information system for patients with plantar fasciitis.

As a result, long-term standing cases significantly have been decreased after application compared to before application of the medical information system application. This study showed similar results to the disorder of lumbago in previous study[2],[5]. Plantar fasciitis is a prolonged standing, overloading of the soles of the feet. Therefore, foot rest is needed to reduce the burden on the soles of the feet.

In this study, the pain in the heel has been decreased after application than before medical information system was applied. This is a similar result to the plantar fasciitis in previous studies[3],[6]. The plantar fascia plays an important role in supporting the foot arch from heel bone to toe. The plantar fascia is a disease in which the plantar fascia is inflamed. Plantar fasciitis food needs prevention and management, such as therapy and proper walking. Through the results of this study, the application of medical information system was effective in alleviating the difficulty of plantar fasciitis. Therefore, the findings will contribute to the treatment of plantar fasciitis in the future.

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