

Short-Term Impact Analysis of a Clinical Information System Adoption on Relieving Menstrual Distress in Women

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Abstract

The purpose of this study is to examine the short-term impact analysis of a clinical information system adoption on relieving menstrual distress in women. Data were collected from 130 women who took health examination in Y health promotion center from May 13 to June 14, 2013. The results of this study are as follows. Firstly, in terms of raising low abdominal temperature on relieving menstrual distress, the experimental group was significantly higher compared to control group($t=-2.69$, $p<.05$). Secondly, the present research showed that menstrual distress can be reduced to 54.2-67.8% by intervention. In conclusion, this paper resulted in significant positive effects on relieving menstrual distress and its implications could be used as the basic data for developing further systematic materials on relieving menstrual distress.

Keywords: *Impact analysis, Clinical information system, Adoption, Menstrual distress, Women*

1. Introduction

Menstrual distress is one of the most common pain in women [1-3]. Although menstrual pain is highest among women with pain in Korea. The exact underlying molecular mechanism of menstrual pain is not clarified yet.

In accordance with the increase in women's education and the rate of high-educated women, and, the increase in the women's economically active population, women's health issues are beyond an individual's problem and are becoming a social economic problem. Accordingly, some theoretical researches were conducted on the premenstrual syndrome which is a women-specific health problem, and the verification of the effects of health functional foods to help the health control regarding premenstrual syndromes [4-6].

Menstrual distress is an important health problem in women. Especially, the physical, cognitive psychosocial changes in women, may cause the menstrual distress and changes of menstrual patterns. Menstrual distress has a significant impact on well-being and quality of life, therefore the proper management and intervention are important. Premenstrual syndrome is a symptom common for most women, and since businesswomen are especially frequently exposed to various stresses. They are in an environment with a high rate of premenstrual syndrome manifestation. Therefore, based on the results of this study, it intended to promote working efficiency and enhance women's social economic status as well as individual women health care by developing a clinical information system that helps control premenstrual syndrome more safely and easily for women in the ages 20-49.

Menstrual distress is a major cause of female uterine myoma and physical dysfunctions, and it is reported that around 75 to 90 percent of women suffer from movement disorders. Menstrual pain would have a poor cardiopulmonary and make low their frequency of physical activity [7-9]. For the reduction of menstrual pain, treatment and taking medicine will be able to occur with the side effect in medicine [10-13]. The study to identify various factors affecting menstrual distress is needed.

However, there are few studies on menstrual distress of women conducted in such a way as to multidimensionally analyze the problem and predict its occurrence. In order to solve the problem, we should look for the practical plans. Especially, there were few studies to deal with application of a clinical information system development on relieving menstrual distress until present in Korea. This study designed to develop the long-term health intervention program and ultimately to analyze the intervention effect through its application.

Therefore, the purpose of this paper is to examine the effect of a clinical information system adoption on relieving menstrual distress in women. The program on the health for women with menstrual pain will contribute to improve their quality of life and its effectiveness in health promotion.

2. Materials and Methods

2.1. Construction of a Clinical Information System

This study is to design effectively database system by making use of intervention effect method [Figure 1]. The first step is to identify a problem through related health system and need-assessment of the participants. The second step is to carry out the procedures of conducting problem analysis and setting a goal of the program. When all of the above are done properly, the program planning is to be implemented. The third step is to identify the functional elements of successful models and gather the information about this. Program formation which will be reflected in effectively clinical system is designed as part of information gathering and synthesis. In the four step, an experimental stage, where preliminary program is to be applied in the field has been implemented.

2.2. Study materials

Subjects of this study were subjects who took health examination in Y health promotion center from May 13 to June 14, 2013. 130 women (experimental group 65, control group 65) were assigned to an experimental group and a control group among women who agreed to participate in clinical information program for 4 months. They had been estimated before, during and after intervention in reducing menstrual distress.

2.3. Study Methods

General characteristics of study subjects were measured by percentage and number. The pairwise t-test was done to compare the before and after application effect for performance rate of intervention. This was conducted to observe some significant differences between the two groups before and after the intervention effect program.

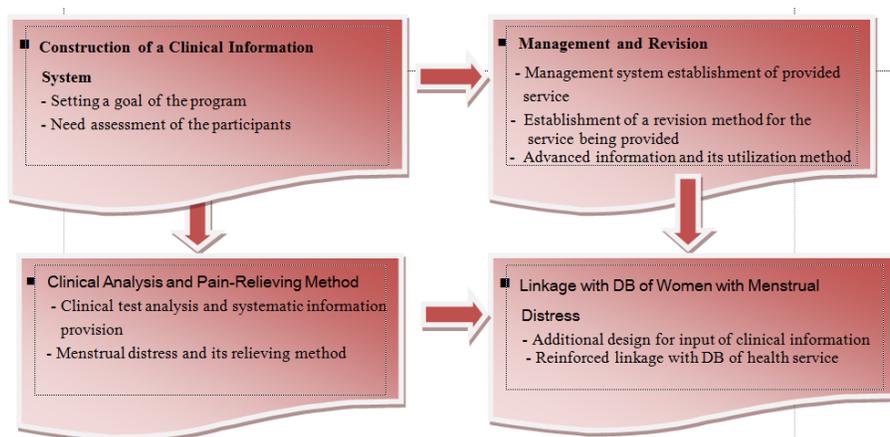


Figure 1. Construction of a Clinical Information System

3. Result

3.1. General characteristics of Study Subjects

Table 1 presents general characteristics of study subjects. Below table notes, the response rate (44.6%) of experimental groups was statistically significantly higher than the response rate(24.6%) of control group at the over 25.0($X^2=10.92$, $p<.05$) according to the BMI of subjects. On the other hand, for having another disease, the response rate(61.5%) of experimental group was significantly higher than the response rate(27.7%) of control group($X^2=7.41$, $p<.05$). The response rate (36.9%) of experimental group with job was higher than the response rate of control group (32.3%) with it at the present by employment status.

Table 1. General Characteristics of Study Subjects

Variables	Experimental group	Control group	X ²
	N(%)	N(%)	
Age			
≤20	9(13.8)	12(18.5)	8.37
30-39	31(47.7)	24(36.9)	
≥40	25(38.5)	29(44.6)	
Marital status			
Single	19(29.2)	16(24.6)	5.49
Married	46(70.8)	49(75.4)	
Educational level			
Under middle s.	11(16.9)	15(23.1)	13.52
Middle school	30(46.2)	22(33.8)	
Over college	24(36.9)	28(43.1)	
BMI¶			
18.5≤BMI<23.5	15(23.1)	26(40.0)	10.92*
23.5≤BMI<25.0	21(32.3)	23(35.4)	
≥25.0	29(44.6)	16(24.6)	
Another disease			
Yes	40(61.5)	18(27.7)	7.41*
No	25(38.5)	47(72.3)	
Occupation			
Yes	24(36.9)	21(32.3)	4.69
No	41(63.1)	44(67.7)	
Total	65(100.0)	65(100.0)	

*p<.05

3.2. Comparison of Health Practice Before and After Intervention

Table 2 presents the comparison of health practice before and after intervention. According to the health practice scores after intervention, the mean score of body weight control after intervention(55.72 ± 1.84) decreased significantly than the mean score of subjects($t=9.26$, $p<.05$) before intervention(72.92 ± 1.58). In terms of the change of abdominal temperature after intervention, the mean score of the subjects(59.07 ± 2.60) after intervention was significantly higher in abdominal temperature compared to subjects(37.59 ± 1.57) before intervention($t=-.269$, $p<.05$).

Table 2. Comparison of Health Practice Before and After Intervention

Variables	Before	After	t
	Mean±S.D.	Mean±S.D	
Exercise	28.16±0.94	57.92±0.62	-5.97**
Drinking water	35.64±1.72	51.18±0.59	-3.82*
Body weight control	71.92±1.58	55.72±1.84	9.26*
Carrot intake	48.67±0.92	78.49±0.36	-5.75*
Abdominal temperature	37.59±1.57	59.07±2.60	-2.69*
Drinking green tea	24.71±0.81	67.35±0.19	-1.82**
Taking medication	51.48±0.53	32.74±0.52	8.73*
Back pain	77.04±1.80	52.81±0.46	3.51
Abdominal pain	79.29±0.14	49.73±0.61	1.57*
Headache	64.57±0.96	35.68±0.29	6.80*
Depression	52.19±0.57	41.19±0.57	0.27
Stress control	53.36±0.48	35.82±0.49	4.63
Hypertension	45.98±0.94	31.59±0.61	1.62
Life living activity	32.71±0.50	43.68±0.27	-3.09
Fever	58.44±1.37	45.20±0.52	5.66
Foot/hand pressure	10.27±0.83	31.82±0.18	-2.75*

* $p<.05$ ** $p<.01$

3.3. Comparison of Menstrual Distress Before and After Application

Figure 2 was done to compare the menstrual distress as a function of time elapsed before and after application in two groups. In terms of drinking of green tea, it was estimated that experimental group was significantly higher during menstrual period than control group before menstrual period in the control group on relieving menstrual distress ($p<.05$). However, it showed that experimental group was similar with its response on postmenstrual period compared to that of control group on relieving menstrual distress.

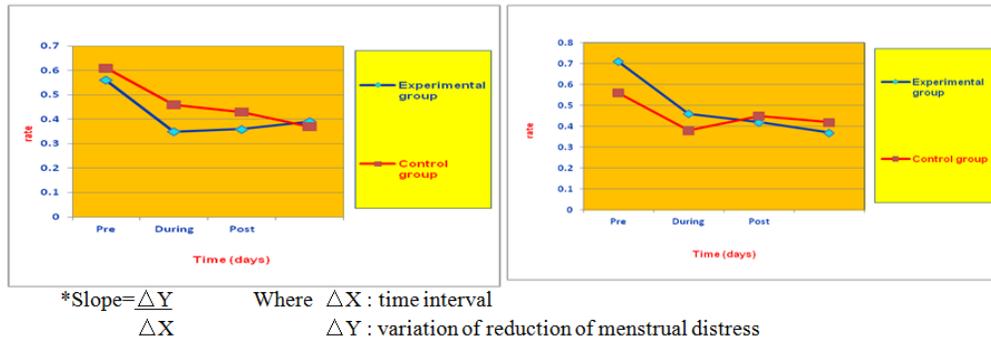


Figure 2. Comparison of Menstrual Distress After Application

4. Discussion

The study was to build a theoretical framework to maintain and promote health and improve the quality of life in women by establishing a prediction model for menstrual distress of women through an in-depth analysis of personal, family-related, and social-related factors. The purpose of this study is to develop a lifestyle intervention program for women with menstrual pain and to evaluate the effectiveness in them. The program was developed based on the model of therapeutic life.

The experimental research has been conducted to find out the actual reduction status of menstrual pain in women, and then to draw up plans for prevention and recuperation from pain condition to improve quality of life. Back pain was significantly decreased in experimental group of drinking green tea compared with the control group. Abdominal pain was also significantly decreased in experimental group of taking green tea compared with the control group.

Obesity is the major causative factor in menstrual pain. Especially, women with menstrual pain are a risk group for cardiovascular disease. The result of this study showed that drinking of green tea was significantly effect in premenstrual syndrome. The result of this paper, raising low abdominal skin temperature was the highest effect in relieving menstrual pain in women. The significance of reduction on the subjects' pain showed after intervention as compared before intervention. The finding was consistent with the result of earlier researches [14-16]. Therefore, it needs to perform systematic health education. There is also a need for a separate program to be implemented on the groups who characterize having lower levels of health knowledge and health promotion behavior.

These findings suggest that the application of a clinical information system may be effective to reduce the menstrual pain and increase the abdominal skin temperature in women. Further rigorous studies should be done with more objective measures.

The present research was estimated that the intervention effect was higher in women during menstrual period than before the menstrual period since the intervention. However, the intervention effect was lower in women after the lapse of menstrual period than women during the menstrual period since the intervention. Thus, month-based education should be performed more often in women with menstrual pain. The present research showed that menstrual pain can be reduced to 54.2-678% by the intervention, which is similar to data reported in the previous studies [17-18].

Therefore, this paper was proposed important data such as clinical information intervention, evaluation, control on menstrual pain, and tasks for efficient prevention. These may also be used for the planning report for reduction of menstrual pain in the future. Based on these results, this paper proposes social training program, cardiovascular disease program, pain

therapy program, sensitivity training program, and short-term concentration improvement program for patients with menstrual programs. Thus, this paper revealed that the implemented systematic intervention program of a clinical information system showed significant positive effects on the life patients and health behavior.

The clinical information system of this paper can be used as an effective method to improve for the reduction of menstrual distress in women. This paper, therefore, resulted in significant improvement in the quality of life of women with menstrual distress and its implications could be used as the basic data for developing further systematic materials on clinical information system intervention on menstrual distress and premenstrual syndrome in women.

5. Conclusion

This study was conducted to clarify the comparative effects of a clinical information system on menstrual pain in women. The results of this study are as follows. Firstly, the response rate (44.6%) of experimental groups was statistically significantly higher than the response rate (24.6%) of control group at the over 25.0 ($X^2=10.92$, $p<.05$) according to the BMI of subjects. Secondly, according to the health practice scores after intervention, the mean score of body weight control after intervention (55.72 ± 1.84) decreased significantly than the mean score of subjects ($t=9.26$, $p<.05$) before intervention (72.92 ± 1.58). Thirdly, in terms of raising low abdominal temperature on relieving menstrual distress, the experimental group was significantly higher compared to control group ($t=-2.69$, $p<.05$). Fourthly, the result showed that drinking of green tea was significantly effect in relieving menstrual distress, premenstrual syndrome. Therefore, research findings showed that the clinical information system is appropriate model.

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