Clinical Application of Predictive Models for Health Promotion of Patients Undergoing Thyroidectomy

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Abstract. This paper is focused on the clinical application of predictive models for health promotion of patients undergoing thyroidectomy. Subjects of this study were patients who visited general surgery in K general hospital from January 7 to July 8, 2013. As a results, the present research showed that the mean score of stress control after intervention decreased significantly than subjects(t=2.91, p=.038) before the intervention. Secondly, the present research showed that the performance ability rate of thyroidectomy can be increased to 52.7-68.4% by the intervention. The paper will contribute to the model of therapeutic lifestyle change program by the health promotion program's throidectomy patients.

1 Introduction

The incidence of thyroid cancer is steadily increasing in many countries including Korea[1]. Moreover the incidence of thyroid cancer was 16.7% in female and now thyroid cancer was reported the most common cancer in Korean female. The patients who had total thryoidectomy were undergoing radioactive iodine therapy. Postoperative nausea and vomiting is a common problem in patients recovering from anesthesia and surgery[1],[2]. There were the health problems related to physical, emotional and psychological issues after thyroidectomy. Thus, we need to develop a health management program for thyroid surgery patients. The method to establish the optimal management program about thyroidectomy patients,

In order to solve the problem, we should look for the practical plans. There were few studies to deal with clinical application of predictive model for health promotion in patients undergoing thyroidectomy 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 estimate the effect of a health promotion adoption for patients undergoing thryoidectomy. In addition, the program is to improve their quality of life and its effectiveness in health promotion, and to examine their satisfaction for the patients.

2. Materials and Methods

2.1 Study materials

Subjects of this study were patients who visited general surgery in K general hospital from January 7 to July 8, 2013. 142 patients (experimental group 71, comparison group 71) were assigned to an experimental group and a comparison group among women who agreed to participate in intervention program.

2.2 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 intervention effect for performance ability rate of clinical information.

3. Results

3.1 General Characteristics of Study Subjects

Table 1 presents general characteristics of study subjects. The response rate(59.2%) of experimental groups was statistically significantly higher than the response rate(53.5%) of control group at female (X^2=6.59, p=.042) according to gender of subjects.

Table 1. General Characteristics of Study Subjects

Variables	Experimental group	Control group	X^2	P
Gender				
Male	29(40.8)	33(46.5)	6.59	.042
Female	42(59.2)	38(53.5)		
Age				
-29	7(9.9)	11(15.5)	8.37	.087
30-39	25(35.2)	19(26.8)		
40-49	21(29.6)	17(23.9)		
50	18(25.4)	24(33.8)		
Marital status				
Single	21(29.6)	18(25.4)	5.49	.281
Married	50(70.4)	53(74.6)		
Economic status				
Less than 2 millions	19(26.8)	17(23.9)	10.86	.574

2-2.99 millions	21(29.6)	14(19.7)		
3-4.99 millions	11(15.5)	19(26.8)		
Above 5 millions	20(28.2)	21(29.6)		
Educational				
Less than middle s.	9(12.7)	13(18.3)	13.52	.069
High school	28(39.4)	30(42.3)		
Above college	34(47.9)	28(39.4)		
Total	71(100.0)	71(100.0)		

### 3.2 Comparison of Performance Ability Rate of Clinical Information

Table 2 presents the comparison of performance ability rate of clinical information before and after intervention. Below table notes, according to the health practice scores after intervention, the mean score of stress control after intervention decreased significantly than subjects(t=2.91, p=.038) before the intervention.

Table 2. Comparison of Performance Ability Rate of Clinical Information

Variables	Before Mean±S.D.	After Mean±S.D.	t	P
Stress control	53.07±1.64	36.27±1.92	2.91	.038
Exercise	39.46±0.81	59.63±0.48	-4.36	.015
Body weight control	71.53±1.64	50.81±1.53	8.14	.037
Meat intake	48.79±0.35	37.45±0.27	4.69	.046
Cholesterol control	57.16±1.56	42.13±2.61	1.35	.051
Depression	48.29±0.75	45.72±0.288	1.62	.703
Hypertension	51.42±0.48	35.54±0.75	7.95	.025
Blood sugar control	72.05±1.73	52.96±0.23	3.48	.048
Overworking	66.21±0.58	49.28±0.51	1.40	.036
Vegetable intake	41.57±0.9	53.62±0.35	-5.82	.042
Smoking	52.84±0.57	41.39±0.57	0.29	.027
Alcohol drinking	52.36±0.39	35.72±0.52	4.63	.015
Life living activity	46.92±0.73	37.58±0.64	1.58	.039

3.3 Change of Health Promotion According to the Time Intervals

Fig. 1 presents the change of health promotion according to the time intervals. The hypertensive change after two months by intervention was significantly different with experimental group compared to control group(p<.05). The diabetes mellitus was decrease significantly compared with the control group(p<.05).
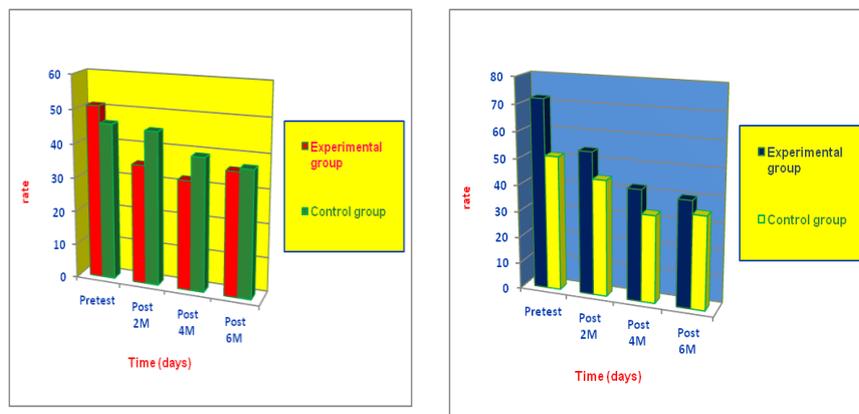
A. The Change of Hypertension   B. The Change of Diabetes Mellitus

Fig. 1. Change of Health Promotion According to the Time Intervals

4   Discussion

As a results, stress control was significantly decreased after intervention in subjects compared with before of the intervention. The results showed that clinical information significantly effect in reducing hypertension and in increasing vegetable intake of the experimental group. The significance of health practice on the subjects' body weight control showed after intervention as compared before intervention. The finding was consistent with the result of earlier researches [3],[4]. These findings suggest that the application of clinical information system may be effective to reduce the obesity and increase the vegetable intake of subjects. The present research showed that the performance ability rate of thyroidectomy can be increased to 52.7-68.4% by the intervention, which is similar to data reported in the previous studies [4],[5].

The objective measurement on the changes of the behaviors of the patients would be more valuable than mere abstract testimonies that are only responses to the questions provided by the programs. Therefore, this paper was proposed important data such as health information intervention, evaluation, control on stress, and tasks for efficient prevention. Thus, this paper revealed that the implemented systematic intervention program of a health information system showed significantly positive effects on the life of patients and health behavior.

5   Conclusion

This study was conducted to clarify the clinical effects of predictive models for health promotion in thyroidectomy patients. This study identified statistically positive effects of vegetable intake, hypertension control, and stress control($p<.05$). The present

research showed that the performance ability rate of thyroidectomy can be increased to 52.7-68.4% by the intervention. So this study will contribute to the model of thyroidectomy patients' health promotion and health intervention strategies and useful information for health educators.

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