An Experimental Model of an Information System to Prevent Recurrence in Patients with Bladder Cancer

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Abstract. This paper is to develop the experimental model of an information system to prevent recurrence in patients with bladder cancer. The subjects of this paper were 130 patients who had visited a hospital which located in Metropolitan area. The pairwise t-test was done to compare the before and after intervention by information systems for measurement of health promoting practice in patients with bladder cancer. As a result, in terms of urinary frequency in the bladder state, subjects’ score (69.64±0.57) after application significantly decreased than subjects (98.26±3.16) before application (t=0.86, p=.002). In conclusion, this information system will contribute to reduction of costs, improvement of bladder status, symptoms, operational efficiency, and mostly fundamental recurrence of bladder cancer.

Keywords: Experimental model, Information system, Bladder cancer, Patients, Recurrence

1 Introduction

Bladder cancer is the 9th leading cause of cancer with 440,000 new cases and 166,000 deaths occurring in 2014. Five-year survival rates in the United States are around 77%. Globally, in 2010, bladder cancer resulted in 170,000 deaths up from 114,000 in 1990. In patients with recurrent bladder malignancy, they were significantly higher than in patients with no recurrence, and the patients with recurrent bladder cancer were also increased in patients who subsequently died. In the United States, bladder cancer is the fourth most common type of cancer in men and the ninth most common cancer in women. More than 50,000 men and 16,000 women are diagnosed with bladder cancer each year. Smoking can only partially explain this higher incidence in men. One other reason is that the androgen receptor, which is much more active in men than in women, plays a major part in the development of the cancer[1],[2].

Bladder cancer is any of several types of cancer arising from the epithelial lining of the urinary bladder. Rarely the bladder is involved by non-epithelial cancers, such as lymphoma or sarcoma, but these are not ordinarily included in the colloquial term of bladder cancer. It is a disease in which abnormal cells multiply without control in the bladder. The most common type of bladder cancer recapitulates the normal histology of the urothelium and is known as transitional cell carcinoma or more properly
urothelial cell carcinoma. Bladder cancer characteristically causes blood in the urine. This blood in the urine may be visible to the naked eye or detectable only by microscope. Hematuria is the most common symptom in bladder cancer. It occurs in approximately 80-90% of the patients[3],[4]. Other possible symptoms include pain during urination, frequent urination, or feeling the need to urinate without being able to do so. These signs and symptoms are not specific to bladder cancer, and are also caused by non-cancerous conditions, including prostate infections, over-active bladder and cystitis. There are many other causes of hematuria, such as bladder or ureteric stones, infection, kidney disease, kidney cancers and vascular malformations. Patients with advanced disease refer pelvic or bony pain, lower-extremity edema, or flank pain. Rarely a palpable mass can be detected on physical examination[2][5].

To overcome this situation, we need to develop the information system and ultimately to analyze the effects through its application. Therefore this research is to estimate the experimental model of an information system to prevent the recurrence in patients with bladder cancer. This will take advantage of basic data for researcher and indicate the direction of their information system to prevent recurrence in patients with bladder cancer.

2 Materials and Methods

2.1 Study Materials

Study participants were 130 patients who were diagnosed with bladder cancer by urology of a general hospital in Metropolitan area. This program has been divided into experimental and control groups. The two groups are compared to know the difference of factors which affects health behaviors. In order to estimate the system efficiency, a follow-up test had been done the health status for 90 days.

2.2 Study Methods

Basic information of study subjects was measured by percentage and number. The pairwise t-test was done to compare health promoting behaviors before and after information systems. And then average and standard deviate were obtained.
3 Results

3.1 Basic Information of subjects in this study

Table 1 presents basic information of subjects in this study. In terms of gender, male (47.7%) of the experimental group showed a lower rate than male (56.9%) of the control group. Age groups were divided into four groups for two groups. That is, it divided less than 40 years, 40 to 49 years, 50-59 years, 60 years or more. It was higher in control group (21.5%) than in experimental group (39.3%) among those aged 50-59 years. In a marital status, married respondents (78.5%) of the experimental group were significantly higher rate than respondents (60.0%) of the control group (X²=4.39, p<0.05).

3.2 Bladder Status After Application of Information Systems

Table 2 represents bladder status before and after application of information systems. In terms of urinary frequency in the bladder state, subjects’ score (69.64±0.57) after application significantly decreased than subjects (98.26±3.16) before application (t=0.86, p=.002). On the other hand, for practice factors, there was a significant difference in practicing the healthy lifestyle of daikon intake after application of the information system (t=-0.25, p=.000).

3.3 Changes of Health Promoting Behaviors in Patients with Bladder Cancer

Fig 1 shows the changes in health promoting behaviors in patients with bladder cancer between two groups after application of an information system. For physical status, the follow-up survey showed higher level in the experimental group than the control group, regardless of the time elapsed of 50 days after application as compared with previous status. In the other hand, for dietary status, experimental group showed a rapid decrease as time elapsed of 50 days than control group after application.

4 Discussion

The study is to develop an experimental model of an information system to prevent recurrence in patients with bladder cancer. Through the experimental model, the symptoms in patients with bladder cancer was markedly decreased symptoms such as hematuria, pain, and then multiple approaches were effective in reducing the recurrence in patients with bladder cancer.

As a result of this study, the message strategy, health practice on activities of daily living diminished the recurrent rate of bladder cancer. The finding makes a difference to the previous studies on the bladder cancer [3],[6]. This study suggests that patients...
with bladder cancer should be focused on real application testing to prevent the incidence of disease. Based on the result obtained by the study, it is anticipated that this may be used as an effective data for developing and intervening model for the patients with bladder cancer. However, in order to prevent recurrence in patients with bladder cancer, the results show that long-term education programs are more successful than short-term program. After the experiment, the experimental group which experienced information application level on optimum model showed the effectiveness of hematuria in patients with bladder cancers.

In comparison with the mean of urinary frequency, the experimental group’s change was more decreased by information application, and there was significantly higher than control group. The follow-up survey was also markedly increased in the experimental group than control group in the ending of the time elapsed of 50 days after the application of the information system. In comparison with the average of bladder status through analysis of the previous studies, the experimental group’s change was similar to previous studies[5,7].

As is stated above, we ascertained that experimental group of the application of daily activities has been effective for reducing the recurrence of bladder cancer and pain. And the improvement was a significant satisfactory. The finding was similar with the results of previous researches[8,9]. Therefore, it is believed that the application of experimental group is a unique useful program for self-improvement of subjects. And it is structured to a new ways of information system for bladder cancer patients. This research will contribute to develop a new model of information system and ultimately to prevent recurrence of bladder cancer patients.

5 Conclusion

The study is to develop an experimental model of an information system to prevent recurrence in patients with bladder cancer. The result of the study after apply the information system, there was a significant decrease at hematuria (p<0.05). In conclusion, this experimental study will be used frequently for the verification of new research. This information system will contribute to reduction of costs, improvement of bladder status, symptoms, operational efficiency, and mostly fundamental recurrence of bladder cancer

References