



Effectiveness of a Discharge Planning Program on Health Literacy and Prevention Behaviors of Coronavirus Disease 2019 Among Coronavirus Disease 2019 Patients in the Community Hospital, Bo Thong District, Chonburi Province

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Abstract

Background and Aim: Discharge planning allowed patients to take appropriate care of themselves. This research was a quasi-experimental study to take appropriate care of themselves. The objectives were to study the effectiveness of a discharge planning program on health literacy and prevention behaviors of Coronavirus disease 2019 among Coronavirus disease 2019 patients.

Materials and Methods: The study included coronavirus patients admitted to Bo Thong Hospital in Chonburi Province in 2019. 70 people were included by the purposive sampling method. Each group was divided into experimental and control groups. The research tools were the discharge planning program and an online questionnaire that consisted of personal factors, health literacy for health prevention of coronavirus disease 2019, and coronavirus disease 2019 prevention behavior. The data were analyzed using descriptive statistics and t-test statistics.

Results: The experimental group had a higher health literacy score on coronavirus disease 2019 prevention and a higher level on coronavirus disease 2019 prevention behavior after the trial, with a statistical significance level of .001. Furthermore, with a statistical significance level of .001, the experimental group had a higher health literacy score on coronavirus disease 2019 prevention and a higher level on coronavirus disease 2019 prevention behavior after the trial than the control group. Implementing a discharge planning program focused on health literacy and prevention behavior for the 2019 Coronavirus disease will benefit health workers caring for patients in both hospitals and communities.

Conclusion: The experimental group had a higher health literacy on coronavirus disease 2019 prevention and a higher level of coronavirus disease 2019 prevention behavior after the trial than the control group.

Keywords: Coronavirus Disease 2019; Discharge Planning Program; Health literacy; Prevention Behaviors

Introduction

SARS-CoV-2, a brand-new coronavirus, is the disease that causes Coronavirus Disease 2019 (Covid-19). It was first discovered on December 31, 2019, in Wuhan, China (WHO, 2021). The global situation has accumulated more than 270 million infected cases and more than 5 million deaths. Thailand is one of the countries where the coronavirus disease epidemic of 2019 has accumulated more than 2 million cases and caused more than 21,169 million deaths (Department of Disease Control, 2021). Chonburi Province had the highest number of COVID-19 patients in the country. There were more than 100,000 cumulative patients, and the cumulative death rate reached 776. Besides, 1,810 patients were still hospitalized (Chonburi provincial public health office, 2021). Approximately 80% of patients had COVID-19 symptoms but were not hospitalized. About 20 percent of patients had serious illnesses and needed oxygen. COVID-19 complications led to death, including respiratory failure, acute respiratory distress syndrome, septic shock, multiple organ failure, and injuries to the heart, liver, or kidneys (WHO, 2021). Patients who have mild symptoms can develop serious diseases and comorbidities. Hospitalization was required in isolation for at least 14 days from the date of symptom onset until symptom improvement (COVID-19 Regulatory Commission, 2021).





Bothong hospital in Chonburi province reported that more than 22 million baht was spent on COVID-19 patient care during the outbreak (Bothong hospital, 2021). To reduce the burden and cost of treatment, patients should be supported in preventing and caring for themselves. Health literacy for COVID-19 prevention was more effective in improving COVID infection prevention behaviors. The assessment of health literacy for Thai people consisted of six components: (1) access; (2) cognitive; (3) communication skills; (4) decision skills; (5) self-management skills; and (6) media literacy skills. (Department of Health Service Support, 2021). According to a previous study, discharge planning was one of the strategies that supported patients to receive the appropriate care after being discharged from the hospital and returning home. Knowledge Management Center, Faculty of Medicine, Siriraj Hospital, Mahidol University, 2021). A discharge planning program on health literacy and COVID-19 prevention behavior among COVID-19 patients has not been found in community hospitals. As a result, researchers want to look into the impact of a discharge planning program on health literacy and prevention behaviors among COVID-19 patients at a community hospital in Chonburi province's Bo thong district.

Objectives

1. To compare the health literacy and behavior in the prevention of COVID-19 among the experimental group before and after the implementation of the planning program in the Bo Thong community hospital in Chonburi province.
2. To compare health literacy and COVID-19 prevention behavior in the experimental and control groups at the Bo Thong community hospital in Chonburi province.

Conceptual Framework

The idea of discharge planning (D-M-E-T-H-O-D) was used as a conceptual framework for this study (Hucy et al., 1986, cited in the nursing division, 2021). D was knowledge about the disease, M was the drugs used and treatment guidelines, E was the environment and economy, T was noticing unusual symptoms, H was health care prevention of complications and illnesses, O was an outpatient referral, and D was diet in the form of infographics. In 2019, the patient was able to receive information about health literacy and Coronavirus disease prevention thanks to the discharge planning. The study's conceptual framework is shown in Figure 1.

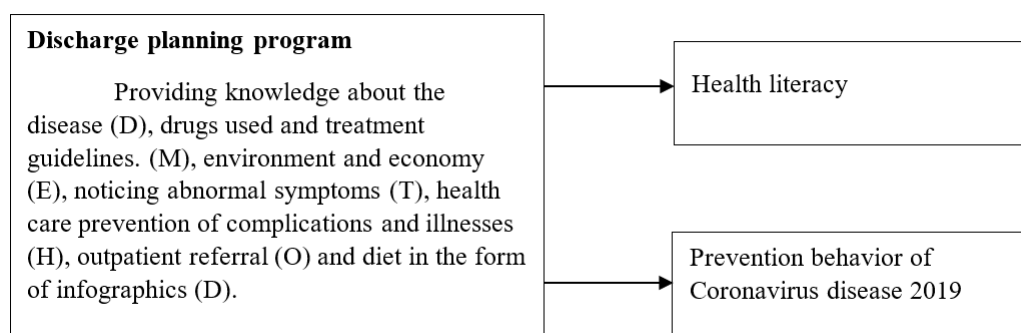


Figure 1 Conceptual framework

Methodology

Research design: To answer the research objectives, the researcher then conducted quasi-experimental research. This study used a two-group pretest-posttest design.

Population and sample: Coronavirus disease patients admitted to Bo Thong Hospital in Chonburi Province in 2019 comprised the population and sample. The sample group was selected by the purposive sampling method. The following criteria were used to reach a conclusion: (1) good consciousness, ability to communicate in Thai, (2) ability to use the line application, (3) COVID-19 patients discharged to home, and (4) willingness to participate in this study. The exclusion criteria were



patients who had serious complications during the study. The sample size was calculated from the study on the effectiveness of a discharge planning program on the self-care knowledge and behavior of peripheral arterial occlusion patients at Songkhla Nakharin hospital (Salim, R., Wongvisanuphong, N., & Traiprakong, S., 2014). The effect size was .80, the sampling error was .05, and the power of the test was .80. The sample size was calculated at a total of 20 patients per group. To prevent patient dropout, this study included a total sample of 70 patients and 35 patients in each group, which were divided into experimental and control groups. (Jirawatkul, A., 2015).

The protocol of this study was approved by the Human Research Ethics Committee of Chonburi Provincial Public Health Office on March 28, 2022 (Project No. 011-2565).

Research instrument: A discharge planning program on health literacy and prevention behavior of Coronavirus disease 2019 and questionnaires based on literature reviews were used in this study as research instruments. In 2019, a discharge planning program (D-M-E-T-H-O-D) on health literacy and Coronavirus disease prevention behavior will be implemented. This planning program was developed from the concept of discharge planning (Hucy et al., 1986, referenced in the nursing division, 2021). D was providing knowledge about the COVID-19 disease, M was the drugs used and treatment guidelines, E was the environment and economy, T was noticing abnormal symptoms, H was health care prevention of complications and illnesses, O was an outpatient referral, and D was diet in the form of infographics. Based on an extensive literature review, the three-part online questionnaire was created to assess health literacy and prevention behaviors for the 2019 coronavirus disease. The first part included questions about personal data, such as age, gender, education level, occupation, and congenital disease. The second part of the questionnaire focused on COVID-19 prevention health literacy, including health information access skills and health services, media literacy skills, cognitive skills, communication skills, decision-making skills, and self-management skills. There were a total of 25 questions. The quality of the questionnaire in this part had a CVI value of between 0.90 and 0.74. The third section included five items: questions about coronavirus disease prevention behaviors in 2019 created by the researcher covering the topic of DMHTT at the Ministry of Public Health. The quality of the questionnaire in this part had a CVI value of between 0.96 and 0.87.

Data collection: The researcher explained the details, objectives, and process to participants who had COVID-19 patients and were planning to discharge them to their homes. Participants were willing to sign consent forms for this study.

The sample group was divided into two groups: control and experimental. The experimental groups received the Covid-19 planning program on health literacy and prevention behavior that was divided into 3 phases. First, the first phase (Day 1). Participants in this group completed online questionnaires before starting the program. The second phase (Days 1–7) provides knowledge about discharge planning according to the D-M-E-T-H-O-D concept. Thirdly, the discharge phase: all participants in this group answered the online questionnaire about health literacy in the prevention of COVID-19 before being discharged to their homes. They completed an online questionnaire about COVID-19 prevention behavior two weeks after discharge. The control group received the usual care for COVID-19 treatment. Before and after this planning program, all patients in the control group completed a questionnaire about health literacy and the prevention of COVID-19, and after being discharged for two weeks, they answered the online questionnaire about the prevention behavior of COVID-19. After this study was completed, participants in this group received the same information as the experimental group.

Data analysis: Descriptive statistics such as frequency, percentage mean, and standard division were used to analyze personal data, health literacy, and COVID-19 prevention behavior. The comparison of the mean scores of health literacy and behavior on the prevention of COVID-19 between the experimental group and the control group was done using independent t-test statistics. The comparison of the mean scores of health literacy and behavior on the prevention of COVID-19 before and after the intervention program among the experimental group was analyzed by dependent t-test statistics. Statistical significance was designated as having a p-value of less than 0.05. All analyses were carried out using SPSS software version 20. (IBM, Armonk, New York, USA).





Results

The general data of the sample

According to the personal data of the experimental group, it was indicated that more than half of the participants were female (57.1%), and the mean age was 35.5 years old. The minimum age was 18 years old, and the maximum age was 61 years old. 40% of participants graduated from high school and were farmers. Most of them were without the underlying disease (77.1%).

The research results based on the research objectives

To answer the research objective that to compare the health literacy and behavior in the prevention of COVID-19 among the experimental group before and after the implementation of the planning program in the Bo Thong community hospital in Chonburi province. From the data analysis, the mean scores of health literacy on the prevention of COVID-19 among the experimental group after the planning program implementation (88.7 ± 3.7) were significantly higher than before the planning program implementation (61.7 ± 9.2) with a p-value of less than 0.01. Besides, the mean scores of prevention behavior in COVID-19 after the planning program implementation (21.4 ± 2.2) were significantly higher than before the planning program implementation (18.5 ± 2.5) with a p-value of less than 0.01. As shown in Table 1:

Table 1 The comparison of the mean scores of the health literacy and behavior on the prevention of Covid-19 among the experimental group before and after the planning program implementation. (n = 35).

Outcomes	Before		After		t	p-value
	M	SD	M	SD		
-Health literacy on the prevention of Covid-19	61.0	9.2	88.7	3.7	-18.2	<.001
-Health information access skills, health services, and media literacy skill	12.6	2.8	19.9	2.1	-13.7	<.001
-Cognitive	14.5	3.6	22.2	2.2	-12.3	<.001
-Communication skill	13.4	3.4	19.9	2.2	-11.5	<.001
-Decision skill	10.0	2.4	13.0	1.0	-7.6	<.001
-Self-management skill	10.5	1.9	13.6	1.2	-8.6	<.001
-Prevention behavior of Covid-19	18.5	2.5	21.4	2.2	-7.0	<.001

p-value \leq 0.05

To answer the research objective that to compare health literacy and COVID-19 prevention behavior in the experimental and control groups at the Bo Thong community hospital in Chonburi province. From the data analysis, the mean score of health literacy on the prevention of COVID-19 in the experimental group was 88.7 ± 3.7 while the mean score of health literacy on the prevention of COVID-19 in the control group was 62.7 ± 8.2 . The mean score of health literacy on the prevention of COVID-19 in the experimental group was significantly higher than the control group with a p-value of less than 0.01. Moreover, the mean scores of the prevention behavior of COVID-19 in the experimental group were 21.4 ± 2.2 while the mean score of the prevention behavior of COVID-19 in the control group was 18.3 ± 2.5 . The mean score of the prevention behavior of COVID-19 in the experimental group was significantly higher than the control group with a p-value of less than 0.01. As shown in Table 2:



Table 2 The comparison of the mean scores of health literacy and behavior on the prevention of Covid-19 between the experimental group and the control group. (n = 70).

Sample group/ Factors	n	Before		After		t	p-value
		M	SD	M	SD		
<i>Health literacy on the prevention of Covid-19</i>							
-Experimental groups	35	61.0	9.2	88.7	3.7	17.1	<.001
-Control groups	35	60.7	8.5	62.7	8.2		
<i>Prevention behavior of Covid-19</i>							
-Experimental groups	35	18.5	2.5	21.4	2.2	5.5	<.001
-Control groups	35	17.9	2.1	18.3	2.5		

p-value ≤ 0.05

Discussion

The findings showed the success of the discharge planning program on health literacy and prevention behavior in COVID-19. The experimental group had higher health literacy and COVID-19 prevention behavior than the control group. Similarly, several studies have shown that the effectiveness of the discharge planning program can improve health literacy and self-care behaviors in patients (Saensupha, K., Dangthun, L., & Prachanban, P., 2018, Sawangdee, K., 1996, Ritkla, L., 2018). This discharge planning program was applied by D-M-E-T-H-O-D to support the knowledge of health literacy in the prevention of COVID-19 for self-management. Besides, participants received information about drugs, treatment, health, the outpatient referral system, and nutrition (Hucy et al., 1986, referenced in the nursing division, 2021). After two weeks, participants were evaluated on their COVID-19 prevention behavior. The result revealed that the behavior on the prevention of COVID-19 was obviously improved, so the health literacy improvement affected the increase in good behavior on the prevention of COVID-19. Furthermore, COVID-19 patients who are discharged to their homes can help to prevent COVID-19 infection in others in their community. According to a study conducted by the Ministry of Health's Nursing Division, the discharge planning program should be used to develop the health service system by coordinating between the multidisciplinary hospital team and the community team (Kritsada Sawangdee, 1996). COVID-19 patients should be given information and knowledge about how to prevent COVID-19 infection after being discharged home. Moreover, they should be continuously followed up through COVID-19 (Nursing Division, 2021; Hospital Quality Accreditation Institute, a public organization, 2021). The cooperation between COVID-19 patients, healthcare professionals in the hospital, and the community for discharge planning was a strong strategy in the healthcare system. Patients needed a holistic continuity of care plan enabling them to access vital follow-up healthcare services. Effective discharge planning decreased the odds that patients were readmitted by ensuring they received adequate care and supportive services during recovery. Discharge planning should also take into account the patient's social determinants of health, which can have a tremendous impact on a patient's life and impact their ability to heal or access the care they need. (Thammikboon, S., 2011).

The findings of this study provided evidence for governments and hospitals to enhance the COVID-19 preventive behavior of patients. the discharge planning program could be directly beneficial for the hospital to improve health literacy on coronavirus disease 2019 prevention during and after the pandemic.

Conclusion

The experimental group had a higher health literacy on coronavirus disease 2019 prevention and a higher level of coronavirus disease 2019 prevention behavior after the trial than the control group.



Recommendation

The discharge planning program in this study was an effective program to increase the health literacy and prevention behaviors of COVID-19 patients. Therefore, healthcare workers should implement the discharge planning program for caring for COVID-19 patients in both hospitals and communities. For practice implications, healthcare professionals should promote COVID-19 preventive behavior in schools and communities for people to increase COVID-19 preventive behaviors. At the policy level, this program should be developed to be an online course for specific groups of the population to promote preventive behaviors. Further study is recommended on online programs for self-learning to enhance COVID-19 preventive behavior of people in the community.

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