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A Report of Coronary Artery Bypass Graft Patients Receiving Telehealth Program Monitoring

Nattaya Sanonoi, MSN

Cardio Vascular Thoracic Surgery Department, King Chulalongkorn Memorial Hospital, Pratumwan Bangkok Thailand, Bangkok, Thailand

A Report of Coronary Artery Bypass Graft Patients Receiving Telehealth Program Monitoring*

Nattaya Sanonoi¹; Usavadee Asdornwised²; Seri Singhatanadgige³

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¹ Student of Master degree.(Adult nursing).Faculty of Nursing, Mahidol University, Register nurse , King Chulalongkorn Memorial Hospital, The Thai Red Cross Society

² Associate Professor, Faculty of Nursing, Mahidol University, Bangkok, Thailand

³ Associate Professor, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Corresponding Author: Associate Professor Usavadee Asdornwised, Faculty of Nursing, Mahidol University, Bangkok, Thailand

Keywords

Telehealth Program / Monitoring / coronary artery bypass graft

Background: Coronary Artery Bypass Graft patients had co-morbidities such as diabetes mellitus, hyperlipidemia and hypertension. NYHA functional Class 3 was the most frequently encountered assessment, accounting for 71.9% percent of the subjects. Ejection fraction ranged between 40-60 percent with a mean of 48.4 percent. Telehealth programs was implemented in CABG patients using application via smartphone during the first month after discharge from hospital in collaborative with multidisciplinary team. Monitoring CABG Patients with telehealth program was successful improving functional status and reducing rehospitalization rate within 1 month. Early identification of patients'health problem and management was very important and key to successful.

Cases presentation: The cases of the experimental group receiving telehealth program monitoring and providing knowledge through infographic image via smartphone application. Telehealth program tracks patient by monitoring the pulse, blood pressure, body weight, abnormalities sign and symptom. Telehealth was promoting exercise according to the guidelines for cardiac rehabilitation. Patients sent the health information to nurses via smartphones. Patient information has been analyzed by team and consulted doctor owner.

According to studies, 32 patients received telehealth program as the experimental group and 32 others received the usual care as a control group. It has been found that rehospitalization cause related to heart-lung and operation wound, a total of 5 patients in intervention group (15.62%). The control group was 12 patients (37.50%). Emergency room visit was found 2 patients in the control group and 1 patient in the experimental group. OPD visit was found 5 patients in the control group and 4 patient in the experimental group. Readmission was found 5 patients in control group, no found in experimental group. **The management of patients problem as follows:**

The management of patients problem by Telehealth Team

Patient problem	Management	Outcome
1. Patient weight gain over 3 kg in 1 week with tiredness during exercise.	Researcher reported patient symptoms to medical team, patients receiving diuretics drug 1 tablet daily morning.	Patient weight was reduction from diuretic. Swelling has decreased with no fatigue.
2. Care giver report to telehealth team that patient has walking disturbance, low blood pressure but normal pulse rate.	Patient was recommended to the emergency department of the hospital.	Patient was done CT scan and admitted at Stroke unit for 1 week then discharged from hospital to home.
3. Patient sent the photo of redness at sternum wound site with had some fluid drainage.	Researcher consulted physician by telephone. The physician recommend patient to dressing wound once a day at a clinic nearest home.	Operation wound site was improved.

The management of patients problem by Telehealth Team

Patient problem	Management	Outcome
4. Patient sent the photos that shown pus discharge from operation wound left arm.	Researcher reported to the medical team. The doctor gave him an oral antibiotics and recommended that the wound be dressing once a day at a clinic nearest home.	The operation wound was dry and getting normal in 7 day.
5. Caregiver called for consult on low peripheral blood sugar (POCT 26 mg%).	Researcher recommended patient to drink milk and repeated the sugar level to 40 mg%. It is recommended that patients need to see doctor at emergency room.	Patient was admit in hospital to adjust blood sugar level for 2 day then he can discharge to home.
6. Care giver sent patient data shown that blood pressure was low to 80/50 mmHg. He had slightly dizziness.	Researcher checked the patient's medication found that he had beta-blocker. It's effect to lower blood pressure. (Patients taking caratrend (6.25), one morning and one evening) - reported to medical team. - The doctor ordered to stop caratrend and see doctor before	- No harm from low blood pressure. Blood pressure returned to normal after stop medication.

an appointment with blood taken, chest x-ray done.

7. Patient had presented with difficulty breathing, normal blood pressure.	Researcher advised patient met doctor at emergency department. He received intravenous diuretic.	He was observed sign and symptoms at emergency room then he was discharged to home.
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The management of patients problem by Telehealth Team

Patient problem	Management	Outcome
8. Patient sent photo with operation wound doner site at right leg had swelling, redness, and it had some discharge drainage from wound.	Researcher notify the doctor. He ordered patient to dressing wounds at the hospital near the home.	It was no infection in the operation wound doner site at right leg.
9. Patient had bloody defecation.	- Researcher checked medication found that he had aspirin (81) 1 tablet daily. -Doctor ordered him to stop aspirin and recommended that he need to see doctor at Gastrointestinal Tract Department	Patient was follow up at Gastrointes- tinal Tract Department. GI bleeding was improved.
10. Patient with swelling of the operation wound and around left arm.	Researcher advised patient to lift their arms at bedtime. Researcher notify the medical team.	The swelling of the arm decreases in a few days.

Telehealth program provides patients with counseling when symptoms occur. This can solved the problem before the violence and reduce the chances of rehospitalization. However, some dangerous symptoms such as cardio vascular stroke. This is an adverse event for patients after coronary artery bypass surgery that can not be prevented. It's necessary to readmission to prevent disability or death.

Rehospitalization with surgical wound redness, swelling, and wound infection is a chance to happen for patients with post coronary artery bypass surgery (Paul et al., 2007). A retrospective study of CABG patients with surgical wound infections Most of the cases occurred when the patient left the hospital and found high 3-11% (Atkins & Wolfe, 2012; Berg et al., 2011). Although the preoperative low ejection fraction was predicted postoperative health status in negative outcome (Oliveira, Westphal, & Mastroeni, 2012; Waiwaree, Sindhu, Utriyaprasit, & Slisatkorn, 2017; Chayaporn Chotiyawong & Kamol Thiphong Phupungkit, 2558). Patients were also high risk to rehospitalization especially in the first week after discharge from the

hospital. (Lomivorotov, Efremov, Kirov, Fominskiy, & Karaskov, 2017; Price et al, 2013). Telehealth monitoring enhances individual assessment abnormal symptoms and follow the patients according to the actual situation. Promoting cardiac rehabilitation via smartphone was maintain consistency of exercise and self monitoring. (Bikmoradi, Masmouei, Ghomeisi, Roshanaei, & Masiello, 2017).

Conclusions: Coronary Artery Bypass Graft patients in transitional care period after discharge from hospital requires the telehealth program monitoring. The communication between patients and healthcare teams by using smartphone was effective in getting information and promoting exercise. Patients' health data were evaluated and resolved before the severe symptoms occur. Telehealth Program using smartphone is a convenient and effective way for developing countries.

Title:

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Keywords:

Monitoring, Telehealth Program and coronary artery bypass graft

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Abstract Summary:

A report of the coronary artery bypass graft patients receiving telehealth program monitoring and providing knowledge through infographic image via smartphone application. This is present a patient health problem. Management was very important and key to successful.

Content Outline:

Background: Coronary Artery Bypass Graft patients had co-morbidities such as diabetes mellitus, hyperlipidemia and hypertension. NYHA functional Class 3 was the most frequently encountered assessment, accounting for 71.9% percent of the subjects. Ejection fraction ranged between 40-60 percent with a mean of 48.4 percent. Telehealth programs was implemented in CABG patients using application via smartphone during the first month after discharge from hospital in collaborative with multidisciplinary team. Monitoring CABG Patients with telehealth program was successful improving functional status and reducing rehospitalization rate within 1 month. Early identification of patients' health problem and management was very important and key to successful.

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First Primary Presenting Author

Primary Presenting Author

Nattaya Sanonoi, MSN
King Chulalongkorn Memorial Hospital
Cardio Vascular Thoracic Surgery Department
Register Nurse
King Chulalongkorn Memorial Hospital
Faculty of nursing
Bangkok
Thailand

Author Summary: Mrs. Nattaya Sanonoi (MNS,RN) Register nurse at Cardiovascular Thoracic Surgery, King Chulalongkorn Memorial Hospital, Bangkok , Thailand, Master Degree MNS, Faculty of Nursing, Faculty of Graduate Studies, Mahidol University, Bangkok, Thailand