

## EFFECT OF CONTINUOUS NURSING INTERVENTION ON REHABILITATION AFTER CORONARY ARTERY BYPASS GRAFTING IN ELDERLY PATIENTS WITH CORONARY HEART DISEASE

GUOYAN ZHAO

Operating Room, Zhongnan Hospital of Wuhan University, Wuhan City 430071, China

### ABSTRACT

**Objective:** To explore the effect of continuous nursing on the rehabilitation of elderly patients with coronary artery disease who had undergone non-stop coronary artery bypass grafting; to discuss the feasibility and effectiveness of health education and postoperative guidance after coronary artery bypass grafting for patients through continuous nursing and routine nursing and comparing the results; to know the feasibility of different nursing methods in clinical practice.

**Method:** 72 elderly patients with coronary artery disease who underwent non-stop coronary artery bypass grafting were selected and divided into control group and intervention group by random number table method, and each group had 36 cases. The control group received routine outpatient visits, while the intervention group adopted continuous nursing. Two groups of elderly patients with coronary heart disease were observed and compared for a year, to understand the rehabilitation of two groups of patients undergoing coronary artery bypass surgery, and to explore and analyze the effect of continuous nursing intervention on the rehabilitation of elderly coronary heart disease patients after coronary artery bypass grafting.

**Results:** 1. by comparing and analyzing the scores of social functional defects screening scale (SDSS) after intervention in two groups, the total score of the intervention group was significantly lower than that of the control group; 2. through the comparison and analysis of the scores of Chinese cardiovascular patients' quality questionnaire (CCQQ) before and after the intervention of two groups of patients, it was found that the quality of life of the patients in the intervention group was improved; 3. by comparing the complications of two groups of patients, it was found that the intervention group was significantly lower than the control group.

**Conclusion:** the continuous nursing mode can improve the cognitive ability of the patients after the operation, improve the quality of life of the elderly patients after operation, and can effectively reduce the incidence of postoperative complications. It is feasible to take continuous nursing in clinical practice.

**Keywords:** continuous nursing, elderly patients with coronary heart disease, non-stop coronary artery bypass grafting, rehabilitation.

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### Introduction

The center of continuous nursing is the patient. It is through a series of designs and education that the patient can be taken care of at different levels in different health situations and care places, and this kind of care is cooperative and continuous. This usually refers to the tracking type of quality care service continuing from the hospital to the patient's home, including the hospital discharge plan, the referral and so on, which continues until the patient comes home<sup>(1)</sup>. But continuous nursing does not emphasize the long-term care of the patient after the patient is discharged from the hospital. It refers to the ability to help patients and their families improve the patient's ability to care.

The guidance of the patient is evidence-based, which usually includes the guidance of the drug, such as the awareness of the drug name, the adverse reaction to the drug, the method of taking medicine and how to coordinate the drug use; dietary guidance, such as providing more individualized guidance based on the patient's disease, eating habits, and ability to pay. It also covers the management and identification of symptoms, the identification and response of the symptoms of the illness after discharge, the corresponding suggestions to the home environment assessment, the use of some auxiliary appliances and rehabilitation training, the use of community resources and the care of the patients and their families in need.

Continuous nursing is very useful for the timely mastery of the first-hand information after the discharge of the patient. It can provide face-to-face communication for the medical staff and patients and their families, and guide the life style and quality of life of the patients and their family members, which is beneficial to the popularization and the promotion of health knowledge<sup>(2)</sup>. With the development of society, the social environment is also changing. Due to the influence of a variety of external factors, the incidence of coronary heart disease has always been high, among which the proportion of myocardial infarction is as high as 31%-54%. Especially in the elderly, because of the age and the deterioration of various physical functions, the incidence of this disease is in the elderly population is relatively high. All these have brought serious impact and trouble to the patients and their families<sup>(3)</sup>.

In recent years, with the continuous development of medical technology, the continuous promotion of nursing model, nursing content is also constantly improved and enriched.

In the Department of Cardiology of our hospital, 36 cases of coronary heart disease patients with coronary artery bypass grafting were treated with continuous nursing after discharge from hospital. Good results were achieved, and the data were compared with 36 patients who had taken routine out-patient visits, and the feasibility report was obtained.

## Data and method

### Source of data

72 elderly patients with coronary artery disease who underwent non-stop coronary artery bypass grafting in Zhongnan Hospital of Wuhan University from April 2016 to May 2017 were selected, a total of 72 cases. All the subjects have signed informed consent and have been approved by the ethics committee of Zhongnan Hospital of Wuhan University.

### Standard of sample selection:

- Patients whose age is greater than or equal to 60 years, which is consistent with the diagnostic criteria of coronary heart disease;
- Patients who underwent coronary artery bypass surgery and had been cured and discharged;
- Patients who voluntarily participated in the study and followed the principle of informed consent;

- Patients who had or are now suffering from a family history of mental illness or psychosis, severe cerebral temperament disorders, malignant tumors and other major diseases are excluded.

## Method

### Sampling and grouping method

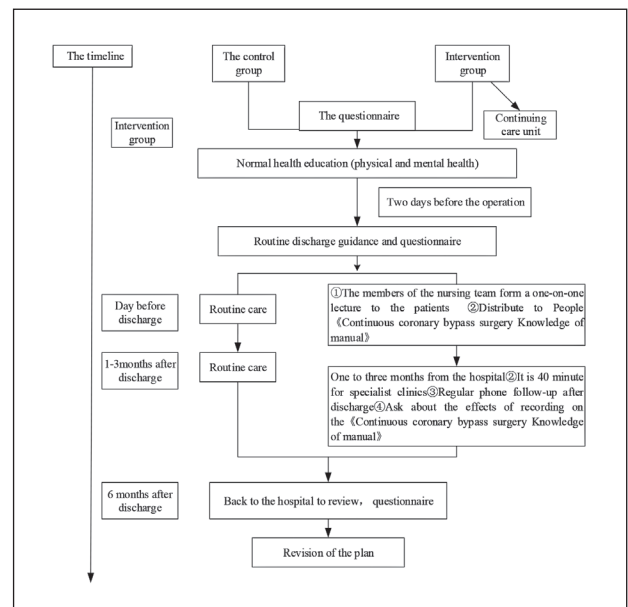
72 cases of eligible elderly patients with coronary heart disease from April 2016 to May 2017 were selected and randomly divided into control group and intervention group, with 36 cases in each group.

The control group consisted of 24 males and 12 females, aged 60-81 years, with an average age of (70.2±6.5) years and an average duration of (6.5±1.5) years. Patients in this group were given regular outpatient visits.

The intervention group consisted of 27 males and 9 females, aged 61-81 years, with an average age of (71.3±6.8) years and an average duration of (6.7±1.6) years. Patients in this group were given continuous care.

There was no significant difference in the gender and age between the two groups of elderly patients with coronary heart disease ( $P>0.05$ ).

## Technical route



**Fig. 1:** Technical route of postoperative continuous care for elderly patients with coronary heart disease.

For the eligible elderly patients with coronary heart disease, medical care was not blindly carried out. On the contrary, a gradual approach was applied to nurse and help the elderly patients with

coronary heart disease. The technical route taken is shown in Figure 1.

**Two groups of nursing methods**

**Control group nursing method (routine health care)**

First, actively publicize the knowledge of coronary heart disease. Publicity brochures were issued to explain the causes of coronary heart disease and the matters needing attention in clinical practice.

Second, make psychological counseling. Psychological counseling was conducted for patients, and maintaining a harmonious relationship with the family members of the patients. Under the positive coordination with the family members, psychological concerns of patients could be eliminated and psychological burden and pressure could be reduced.

Third, do pre-operation preach. The matters that should be noted before operation were explained mainly, such as prohibition of drinking and fasting, removing metal objects, changing clean underwear, introducing the environment of operation room and guardianship, explaining the precautions and risks to the patients and their families, signing the contract for risk consent, and improving the related examination, such as skin test and blood preparation.

Fourth, do post-operation preach. Encourage patients to get out of bed early after operation and observe whether there is bleeding. Remind patients to actively exercise lung function, eat easily digestible, low-salt and low-fat food, control the amount of drinking water, measure blood pressure, rationally use drugs, and control the blood pressure in the normal range.

Fifth, do discharge preach. Avoid severe exercise three months after surgery, take rest as the major work, and after discharge, fix the chest band for three months until the wound heals. Eat foods that are digestible, nutritious and high-fiber. Take medicine according to the doctor’s advice and observe whether there is bleeding condition. Do a comprehensive examination at 4-6 months after discharge. Regularly release coronary heart disease related knowledge and precautions to help families better care for patients.

Sixth, carry out telephone follow-up after discharge. On the one hand, remind patients to review in time; on the other hand, communicate with patients in time for health education. Help patients deal with problems encountered during rehabilita-

tion, so as to promote better physical and mental rehabilitation of patients.

**Nursing method in intervention group (adopting continuous nursing)**

First, set up a dedicated continuous nursing group. After training, 2 responsible and kind-hearted nurse-in-charge, primary nurses and nurses were selected, and the group was set up. Researchers need informed consent, and to be familiar with the contents and methods of the experiment, and they need to meet specialist nurses to be competent for health education.

Second, carry out health education before the patient is discharged from hospital. 1 day before the hospital discharge, the researchers should do health preach for the patients based on the patient’s own actual situation and the Handbook of Rehabilitation Knowledge after Non-Stop Coronary Artery Bypass Grafting Surgery, and the time is stipulated to half hour. During this period, patients may ask questions or suspend their education at any time. According to the personal information of the patient, the relevant files should be set up, including the name, gender, age, date of admission, medication, type of illness, address, contact phone and the contact period of preference. It must be objective and true to fill in the reservation record.

Third, make evaluation. The basic situation of patients, education, medication, etc. were assessed, according to the overall situation of the patient’s body and mind, the implementation of continuous nursing should be targeted.

Fourth, hand out handbooks and recordings in time. After the patient accepts the preach, the researchers need to hand out the manuals and recordings to the patients in time.

**Content of intervention: Handbook of Rehabilitation Knowledge after Non-Stop Coronary Artery Bypass Grafting Surgery**

The continuous nursing content of patients undergone non-stop coronary artery bypass grafting after operation in the intervention group is shown in Table 1.

Items	Risk factors of coronary heart disease	Review	Nutrition	Sports	Drug management	Wound management	Knowledge of preventive health care
Handbook	√	√	√	√	√	√	√
Recordings	√	√	√	√	√	√	√

**Table 1:** Continuous nursing content of patients undergone non-stop coronary artery bypass grafting after operation in the intervention group.

### ***Ways of continuous nursing after non-stop coronary artery bypass grafting***

Continuous nursing is mainly based on specialist nurses, followed by telephone follow-up.

- Education in the nursing outpatient department. The effectiveness consolidation after the discharge is embodied in many aspects<sup>(4)</sup>. At the time of each reexamination of the patient, the patient's physician must be there, and he actively communicates with the patients in the process of reexamination. The communication is focused on the recovery of the patients after the discharge and the problems appearing in the home recovery, and the problem needs to be solved in time. The patient's wound healing, the drug use, and the measurement of the vital signs were checked, the electrocardiogram should be done if necessary, the problem of the patient was selected, and the doctor was informed, and then the doctor gave the correct treatment. There may be a patient who cannot tell his own problem accurately. At this time, a specialist nurse asks the patient and summarizes the patient's condition. It can not only catch the key, but also shorten the time for the doctor to inquire the patient's condition, and give the doctor plenty of time to diagnose and treat the patient.

*The steps of the specific operation are as follows:*

First of all, it is necessary to answer the questions raised by the patients, and then evaluate the behavior of each part of the patient. This assessment includes nutrition, medication management, sports, wounds and so on.

Secondly, the doctor is informed of the patient's symptoms, vital signs and specific problems now appear, and the doctor will give the correct treatment.

Again, the patient's reading and understanding of the Handbook of Rehabilitation Knowledge after Non-Stop Coronary Artery Bypass Grafting Surgery is checked. Ask them problems when they are reading, and tell patients to read the manuals in time.

Finally, remind the patient to go to the hospital regularly.

- Health education for the family members of the patients. Health education was made for the family members who take care of the patients. In particular, for the families of those who are unable to take care of themselves, improve their awareness of the disease, which affects the recovery of the patients after the operation. Educate the family members who take care of the patients to discov-

er the abnormal condition of the patients and give help to them. In particular, after the rehabilitation of the patients, the families who care for the patients should master the method of postoperative rehabilitation exercises so that they can play the role of supervision, and record the patient's exercise. Instruct the family members to urge patients to take the medicine on time and take patients to the hospital regularly. In addition, the family members of the patient can also pay attention to the We-Chat of Department, because there will be related knowledge and attention of the continuous nursing team regularly issued coronary heart disease, so as to help families to better care for patients.

- Telephone follow-up. After the patient was discharged from the hospital, the patient was carried out with telephone follow-up. It can remind the patient to recheck in time and can also communicate with the patient in time, help the patient to deal with the problems in the condition of the disease, and can promote the patient to recover better and faster. The specific guidance for telephone follow-up is the Handbook of Rehabilitation Knowledge after Non-Stop Coronary Artery Bypass Grafting Surgery. The follow-up time was about 20 minutes each time. The follow-up staff should study and be familiar with the patient's related files before the follow-up. The follow up needs to be consistent with the content of the care outpatient.

- Recording and playing. The Handbook of Rehabilitation Knowledge after Non-Stop Coronary Artery Bypass Grafting Surgery is made into a recording form and sent to each patient and their family members to remind them to listen regularly. It is expected that the patient can learn the knowledge of health education after listening and reading the handbook to meet the needs of different elderly people.

- End of the follow-up. After that, it is supposed to make a good record so as to confirm the next follow-up date.

### **Evaluation tools and data analysis methods**

#### ***Evaluation tools***

- The social function defect screening scale (SDSS)<sup>(5)</sup> was adopted to assess the social function of the patients 6 months before and after the intervention. SDSS has 4 subscales, 28 items and 0-7 points, and 0 point indicated normal. The higher the score was, the less active and social interaction the patients had, the more dependent they were on



their surroundings, and the worse their social functions were.

• The Chinese cardiovascular patients' quality of life questionnaire (CCQQ)<sup>(6)</sup> was adopted, and there were six items, including 24 problems: general living function, social psychological function, medical condition, physical strength, work condition and disease condition. The higher the score was, the higher the quality of life was<sup>(7,8)</sup>. The objective truth of the questionnaire was relatively high, and the Cronbach's  $\alpha$  factors of each group were all  $\geq 0.76$ .

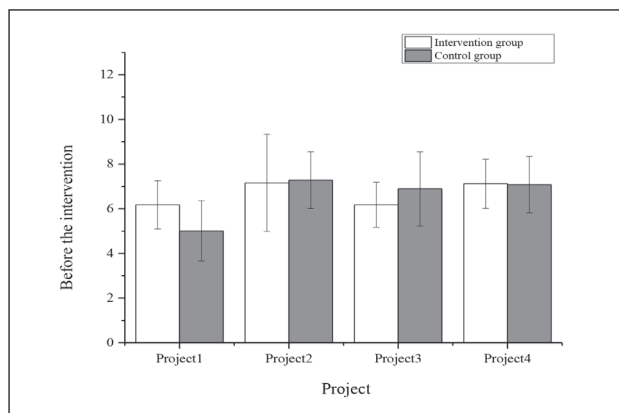
**Data analysis methods**

SPSS17.0 software package was used to count and analyze the data.

- The scores of SDSS and CCQQ were compared between the two groups.
- The incidence of complications in the two groups was compared by  $\chi^2$  test.

**Results**

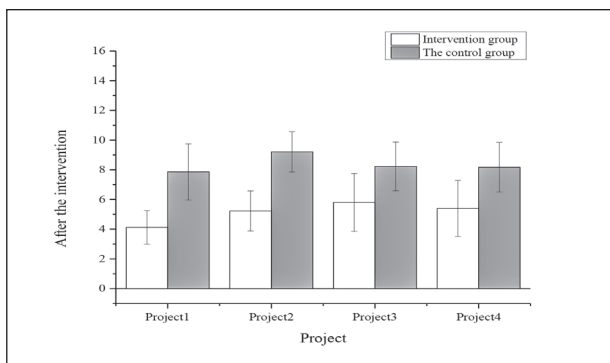
• Before the intervention, the scores of SDSS of two groups of patients were compared (Project1 indicated the current symptoms, Project2 expressed activity symptoms, Project3 suggested social ability, and Project4 denoted dependence), specifically shown in Figure 2:



**Fig. 2:** Social function defect, two groups of patients before screening scale (SDSS) score.

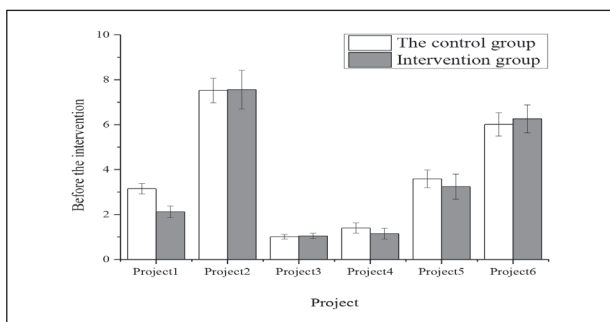
• The scores of SDSS of two groups of patients were compared after the intervention (Project1 indicated the current symptoms, Project2 expressed activity symptoms, Project3 suggested social ability, and Project4 denoted dependence), specifically shown in Figure 3:

Compared with before intervention,  $P < 0.05$ ; two groups were compared,  $P < 0.05$ .



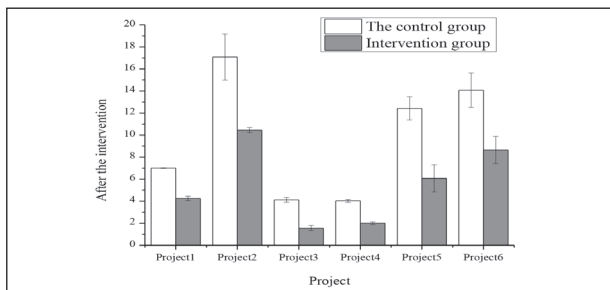
**Fig. 3:** Comparison of social dysfunction screening scale (SDSS) score between the two groups.

• The scores of CCQQ of two groups of patients were compared before the intervention (Project1 expressed general living function, Project2 indicated social and physiological functions, Project3 represented working condition, Project4 suggested medical condition, Project5 denoted body force, and Project6 referred to illness), specifically shown in Figure 4.



**Fig. 4:** Intervention of two group of patients was compare with that score of the life quality assessment questionnaire (CCQQ) in China.

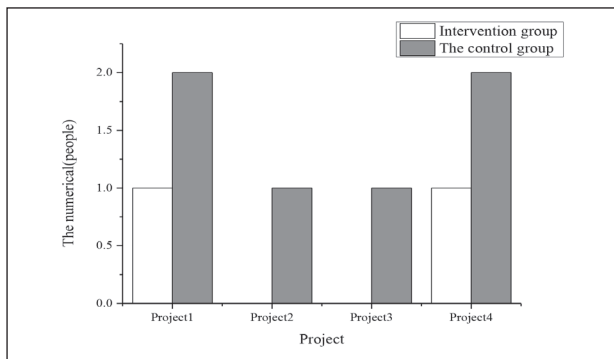
The scores of CCQQ were compared in the two groups of patients after the intervention (Project1 expressed general living function, Project2 indicated social and physiological functions, Project3 represented working condition, Project4 suggested medical condition, Project5 denoted body force, and Project6 referred to illness), specifically shown in Figure 5.



**Fig. 5:** The two groups after intervention in patients with Chinese cardiovascular patient life quality evaluation questionnaire (CCQQ) scores more.

Two groups of patients compared with before the intervention,  $P < 0.05$ ; compared with the control group,  $P < 0.05$ .

During the follow-up period, 3 months after discharge, there were complications, 2 in the intervention group and 6 in the control group, as shown in Figure 6. The incidence rate of the intervention group was 5.6% and the incidence rate of the control group was 16.7%<sup>(9,10)</sup>. The postoperative complications of the two groups were analyzed, and the intervention group was obviously better than the control group<sup>(11,12)</sup>. It showed that the continuous nursing had a positive effect on the incidence of prevention of complications after non-stop coronary artery bypass grafting.



**Fig. 6:** Two groups of patients with complications after intervention.

## Discussion

The incidence of complications was compared by using SDSS, CCQQ, and the  $\chi^2$  test. Through comparative analysis, it was found that the quality of life, rehabilitation, physiological function and overall health of the intervention group were better than those of the control group.

A reasonable grouping of cases was carried out in the course of the study, and a scientific research method was used. A proper study cycle was selected to make a more accurate comparison of the impact of continuous nursing and non-continuous nursing. However, limited to some objective factors, there were still some shortcomings in the size of the sample and the length of the study cycle. For example, if the size of the sample was too small, it made the results of the study not representative; if the research cycle was not long enough, it would cause the research results lacking a certain depth.

Compared with other related studies in the industry, the case selection of this study was strongly targeted and only selected patients with coronary heart disease after coronary artery bypass sur-

gery. In addition, in the continuous nursing used, the study also detailed the methods of nursing, the means of nursing and the detailed content of nursing, which could be carried out in a full range of care according to the nursing plan. However, in the selection of case samples, this study is not thoughtful, which only made limitation in the age and condition of the case. It is necessary to strengthen the screening of other conditions, and strive to strengthen the reliability of the results of the study. In general, because of the use of the production of histogram in the process, compared to other studies, the results of this study were obvious, easy to understand. The significant differences between the intervention group and the control group before and after intervention could be more intuitively reflected, and it provided materials for further research in this direction.

The results fully showed that through continuous nursing for patients, it can improve the patient's self-care ability, reduce the anxiety and depression of the patients, and reduce the clinical symptoms caused by negative emotions. It can also effectively improve the social function and quality of life of the patients. It is important to improve the clinical efficacy and promote the physical and mental recovery of the patients.

Continuous nursing refers to the continuous provision of an orderly, favorable and coordinated professional and informal medical service for patients in different health service systems and different conditions, to meet the actual needs of patients after hospitalization. Continuous nursing provides relevant medical information for patients and their families, and integrates doctors, nurses, family members and patients into a whole to strengthen communication. Through the coordination of family members, nurses know the patient's condition more comprehensively, provide the patients with high-quality service, master the social adaptation skills, and reflect the humanistic nursing mode. In the meanwhile, it can expand the field of nursing service, and enrich the connotation of nursing service, which is worth being popularized and applied widely in clinical.

In summary, some positive results have been achieved in the study of continuous nursing in the Hongkong region of China and abroad. However, the related research on continuing care in China has just started. The continuous nursing practice model suitable for the national conditions of China has not been formed. It is necessary to learn from

foreign experience, and the content, way, object, and duration of service, as well as access qualifications, quality and effectiveness evaluation of service providers, and funding compensation mechanisms need to be further studied.

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*Corresponding Author:*  
Email: zhaoguoyan815@163.com  
(China)