



# Comprehensive nursing care after coronary intervention operation

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## Abstract

To explore and discuss the clinical effect of postoperative comprehensive nursing care to the patients receiving the coronary intervention operation (CIO). Patients with CIO often have some complications, which needs comprehensive nursing care work. 160 cases of patients receiving the CIO were divided into observation group and control group, with 80 patients included in each group; the patients from the observation group received the postoperative comprehensive nursing care, the patients from the control group received the usual nursing care. The patients from the observation group after receiving the postoperative comprehensive nursing care had an obviously lower incidence of postoperative complications than those from the control group, and also these patients had a significantly higher satisfaction with the nursing care than those from the control group, and the comparative difference of these two groups was of statistical significance ( $P < 0.05$ ). The postoperative comprehensive nursing care to the patients receiving CIO could help to effectively reduce the incidence of postoperative complications, enhance the therapeutic effect of patients, improve the patient satisfaction.

**Keywords:** coronary intervention operation; comprehensive nursing care; clinical effect; and complication.

**Practical Application:** Nursing Care After Operation.

## 1 Introduction

With the continuous progress of medical level, interventional therapy has appeared and obtained a rapid development, and coronary intervention operation, as an important treatment method of coronary heart disease, has been widely applied in clinical treatment for its small treatment damage, significant clinical therapeutic effect, and high acceptance by patients (Wei & Chunxia, 2014). However, as coronary intervention operation is a minimally invasive surgery, the patients after operation often will have some complications, mainly including postoperative hypotension, puncture position hemorrhage and errhysis, chest pain, venous embolism, uroschisis, vasovagal reflex, severe arrhythmia, subcutaneous hematoma and false aneurysm, after the patients receive the coronary intervention operation, the nursing personnel should always stay alert to the postoperative physical conditions of the patients, and do well in comprehensive nursing care work, to try to avoid the complications and reduce the incurrance of complications, so as to improve the survival and life quality of patients (Hongying et al., 2012). In this paper, the patients receiving coronary intervention operation in recent one year from our hospital were selected for receiving comprehensive nursing care, and the results showed that the patients after receiving the comprehensive nursing care had a significantly reduced incidence of postoperative complications, obvious therapeutic effect, and higher satisfaction. Now, following specific report is given according to the research above.

## 2 Data and methods

### 2.1 General data

160 cases of patients receiving the coronary intervention operation in recent one year from our hospital were selected, including 90 male patients and 70 female patients, in which, the youngest one was 50 years old, and the oldest one was 85 years old, with the average age of ( $69.88 \pm 10.53$ ). The selected patients all had no severe organic or histologic diseases of organs, like kidney and liver, and also the patients were in normal mental state, without mental disorders, and they could autonomously communicate and exchange with the medical care personnel, and actively assist in the research this time, moreover, before this research, the related personnel of our hospital had told the plan and content of research to the patients, and after knowing the conditions, the patients were voluntary to accept this research, and the patients taking part in the research should receive treatment in our hospital in the entire process, in order to guarantee the accuracy of research results. In this research, 160 patients were divided into observation group and control group at random, with 80 cases included in each group, and the two groups of patients had no significance differences ( $P > 0.05$ ) in gender, age, clinical symptom and other general clinical data, and they were comparable.

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## 2.2 Method

### Control group

The patients from the control group received the routine basic care, as well as routing medication guidance according to the doctor's advice, postoperative health knowledge education and dietary guidelines, they were told of the matters needing attention in the process of postoperative recovery treatment, and the data of various indicators of patients were recorded regularly, and also the recorded data was timely sorted up.

### Observation group

In addition to the routine basic care to the patients from the observation group, a special treatment group should be established based on the physical conditions of patients to be responsible for postoperative comprehensive nursing care to the patients from the observation group, and also the data should be recorded regularly, and the therapeutic effect should be analyzed and evaluated. The specific contents of nursing care are shown as follows.

### Propaganda and education of daily basic care health knowledge

The nursing personnel establish a special group based on the patient conditions, and the nursing personnel in charge of health propaganda and education explain to the patients and their families based on the possible complications and conditions in other aspects of the patients after receiving coronary intervention operation by use of model, self-made brochure for propaganda and education, and knowledge lecture; the nursing personnel should actively communicate with the patients and their families, to know their problems and suggestions of postoperative comprehensive nursing care, and grasp their basic conditions, so as to jointly formulate the plan of postoperative comprehensive nursing care, and also the plan should be told to the patients and their families in details, so that they would actively cooperate with the research work in the future nursing process, to reach the best therapeutic effect. Moreover, some simple training of nursing knowledge would be organized to the families of patients, so as to deal with the emergency conditions of patients as well as provide simple daily nursing, to help the patients to regain their health as soon as possible.

### Preventive nursing of postoperative complications

Postoperative hypotension is a kind of common postoperative complication, and as to this complication, the nursing personnel should enjoin the patients not to eat too full before operation; and the patients should use diuretics with prudence within 4 hours after operation; as hypovolemia is most likely to appear within 4 hours after operation, the transfusion volume given to a patient within 4 hours after operation should reach 1/3 of total transfusion volume within 24 hours, especially within one hour after operation, if the patient's urine volume and cardiac function are normal, 300-500ml body fluid could be supplemented rapidly to this patient, and the transfusion ratio of crystal and colloid should be 2:1, and the total transfusion

volume in 24 hours should be determined based on each patient's cardiac function situation and quantity of contrast agent used in operation; it is the critical period of nursing care within 4h after operation, and the nursing personnel should pay close attention to the patient's blood pressure change conditions, measure the blood pressure once every 30 minutes, and observe whether the patient has dizziness, cold sweat, arrhythmia, nausea and other symptoms, and a timely report should be given to the doctor in case of occurrence of any symptom above, and corresponding therapeutic measures should be taken.

Hemorrhage and errhysis of puncture position are a common postoperative complication (Xin, 2012), and there are many reasons, including excessive application of heparin during operation, premature activity of patient, and sufficient time and strength of pressure dressing in the puncture position. Moreover, such complication also may be caused by constipation, too high abdominal pressure, and long-term severe coughing. Therefore, the nursing personnel should press the arteria cruralis onto the thighbone above the puncture position, to guarantee no hemorrhage, and then conduct pressure dressing by use of bandage and in the way of "8" locally for 10 hours, and also tell the patient to stay in bed for more than 24 hours (Shengli, 2000), the braking time of affected limb should be greater than 12 hours, and during the period when the patient stays in bed, the patient should turn over on time to prevent constipation, and press the puncture position with hand while coughing or relieving the bowels, to prevent the puncture position from massive haemorrhage; the patient is told to take appropriate activities 24 hours later after operation, and the patient should sit up slowly on the bed, and will be allowed to get out of bed to exercise in the impatient ward after feeling no dizziness and gathering strength. In the process of exercise, the patient should move gently, and not squat suddenly or have a greater range of motion, to avoid affecting the physical recovery (Dingfeng & Fenfen, 2011). Moreover, it is required to closely monitor the patient's illness state, observe the patient's local wound and dressing around for errhysis, pain, and swelling phenomena, mark the conditions discovered with marking pen, to facilitate to observe whether the hemorrhage and hematoma ranges change, also, the patient's wound dressing should be kept dry and clean, when any contamination is discovered, the dressing should be replaced immediately, to protect the wound from infection. When blood sheath is kept, it is required to notice whether there is errhysis around the blood sheath, in case of obvious errhysis, the sheathing canal should be pulled out timely.

The patient may suffer the complications like chest pain due to myocardial ischemia, anoxia and even necrosis for coronary arteries spasm is caused by cardiac acceleration due to sympathetic nerve or acute occlusion occurs to the dilated blood vessels after coronary intervention operation. In this case, the nursing personnel should pay attention to keeping electrocardiograph monitoring to the patient for 24hours after operation, to closely monitor the patient's various vital signs as well as cardiac rhythm and heart rate change conditions, and timely observe whether the patient's ECG has ST segment depression or elevation, so as to timely grasp the myocardial ischemia, and further diagnose out whether acute occlusion occurs, and the patient should receive emergency coronary angiogram or catheter directed

thrombolysis when necessary. In addition, the nursing personnel also need to frequently inquire these patients, to understand whether they have chest pain, palpitation, and chest distress conditions, should extend the monitoring time of the patient with arrhythmia and drop of blood pressure properly, and give analgesia, mitigation, oxygen inhalation, and other therapies to patients as required by the doctor.

After coronary intervention operation, as the patient's blood and lipid viscosity are abnormal, the patient's blood is in hypercoagulable state or the pressing time of puncture position is too long, or too limited, or the braking time is too long or the age is too old, the complications like venous embolism are likely to be caused, therefore, the nursing personnel should pay attention to the use of appropriate anticoagulant and anti-platelet therapy to patients after operation (Lianfang et al., 2005), if needed, the nursing personnel also should take the treatment means like thrombolysis and improvement of microcirculation, or place an intravenous filter in the patient's lower cavity. The blood coagulation time should be monitored, and in the period of anticoagulant therapy, it is required to closely observe whether there are low condensation states like hemorrhage of puncture position and gingival bleeding, and also observe the changes of color of urine and feces, blood pressure, pupil, and awareness, so as to discover the hemorrhage as early as possible, and timely report to the doctor for taking corresponding therapeutic measures.

After the patient receives coronary intervention operation, due to stay in bed and long braking time of affected limb, and also, the patient is nervous and uneasy after operation and uncomfortable with urination in bed, uroschisis may be caused, therefore, the nursing personnel should strengthen the ideological enlightenment and exercise of defecation on the bed to each patient, and when a patient is discovered to have uroschisis after operation, it is required to timely massage and apply hot compress to the patient's bladder region and belly, listen to the sound of water, reduce the visits to the patient, conduct psychological counseling, realize urination via abdominal pressure, and take other measures, when necessary, urinary catheterization via catheter is needed to the patient under the sterile environment.

Vasovagal reflex is a kind of infrequent but severe complication (Ma & Gai, 1998), which is mainly caused for the artery sheath catheter needs to be pulled out after coronary intervention operation, and pain occurs due to improper local press when the artery sheath catheter is pulled out, resulting in myotatic reflex of blood vessels (Ying & Fanglei, 1999). In this case, the nursing personnel should conduct propaganda and education to patients before catheter removal, to make the patients fully know the required way and time of press after catheter removal, and tell the possible discomfort in the process of catheter removal to the patients, to make them be psychologically prepared, alleviate or eliminate their anxious and nervous moods. Before catheter removal, the nursing personnel should help to empty the patient's urine, guarantee the venous channel to be normal after early preparations, connect the ECG monitor, prepare atropine, dopamine and other first-aid medicines as well as the articles required for catheter removal, so as to actively assist the doctor in catheter removal. In the process of catheter removal, the action should be slow and gentle, and it is required to

communicate with patients more, to divert their attention, and as for the pain-sensitive patients, 2% lidocaine may be injected to the place around catheter removal. After catheter removal, the skin puncture position should be pressed with left index and middle fingers for 15~20 minutes, to guarantee no bleeding, and then an elastic bandage will be used for pressure dressing, the binding should be not too tight, then the puncture position is pressed with a sandbag for 6 hours, and the punctured limb shall be braked for 24 hours to prevent the hemorrhage. The nursing personnel should, in the period of catheter removal, process of hemostasis by compression, and within 3 hours after catheter removal, pay close attention to the patient's facial complexion, blood pressure, heart rate, and intraoperative parapodium back arteriopalmus conditions, and frequently inquire the patient for chest distress, dizziness, and nausea, only when a patient has above symptoms or suffers decreased heart rate, cold sweat, or drop of blood pressure, a timely report should be made to the doctor, and this patient should immediately receive medium-volume oxygen uptake, and intravenous injection of atropine 1-2mg, when this patient has no increased heart rate and rise in blood pressure in 1-2 minutes, the injection of atropine should be continued, and also the transfusion of dextran or low molecular dextran is needed, if this patient's blood pressure is still not recovered, it is required to timely add 100-200mg dopamine into 250ml 5% glucose solution for intravenous drip, until this patient's blood pressure returns to normal (Xiaoting et al., 2012).

Arrhythmia is a relatively dangerous complication after coronary intervention operation, and severe arrhythmia is an important reason for death of patients after receiving coronary intervention operation (Shundi et al., 2005). Therefore, continuous electrocardiograph monitoring is needed after operation, and the nursing personnel should closely observe the patient's heart rate within 72 hours after operation, strictly observe the patient's cardiac rhythm change as well as the frequent premature ventricular contraction, ventricular fibrillation and ventricular tachycardia, and also notice the change of ST-T, so as to facilitate to discover myocardial ischemia and re-infarction as early as possible, therefore, preventing and discovering the complications as soon as possible.

As repeated venipuncture during operation is likely to cause arteriovenous fistula, subcutaneous ecchymosis, and subcutaneous hematoma, and femoral artery pseudoaneurysm may be caused in severe conditions, the nursing personnel should use trocar tube for venipuncture during operation, to avoid repeated puncture, and after operation, it is required to observe the conditions of puncture position, and hematoma should be treated as soon as possible once it is discovered, to avoid it from developing into femoral artery pseudoaneurysm. After pressure dressing to the patients, the patients should be told that their hematomas will be absorbed slowly, and their daily life in the future will be not affected, so as to relieve or eliminate their nervous and anxious moods. The nursing personnel also should pay constant attention to the emotions of patients, and pacify them, so as to avoid the occurrence of aneurysm rupture caused by vasoconstriction and blood pressure rise of whole body due to sympathetic nerve hyperexcitation and catecholamine elevation caused by uneasy mood.



### *Mental nursing of patients*

After the patients receive coronary intervention operation, they will feel anxious and scared due to the physical pain and the mental burden, and their recovery will be affected if they are in bad mood for a long time, and some postoperative complications will be caused. Therefore, the nursing personnel should frequently communicate and exchange with patients, and may talk about some interesting things to disperse their attention (Chunxia, 2015); tell the patients that the possible discomforts after operation are normal, and also may find some cases that once received the coronary intervention operation to exchange the experience of postoperative recovery with them, so as to help them to alleviate or quell fears, build the confidence to defeat diseases, and the nursing personnel may, based on the circumstances, give a proper injection of sedative to the excessively nervous patients if any.

### *Dietary guidelines*

Due to use of abundant iodine contrast agents in operation, too long stay of iodine contrast agents in the human body may cause damages to kidneys, so, apart from fluid replenishing after operation, the nursing personnel also should warn the patients to drink more water, so as to accelerate the discharge of iodine contrast agents (Qing & Fengxian, 2006). In diet, professional nutritionists should be invited by the hospital to work out a reasonable food matching table for patients based on their illness conditions, dietary habits, and nutrition conditions and give a detailed explanation to patients and their families, to make them accept the food matching given, and also the bad dietary habits of patients should be corrected, and it is required to tell the patients and their families to not eat too full, and the patients are recommended to have more meals a day but less food at each, to avoid causing heart burdens, and the patients and their families are reminded to take food in strict accordance with the given recipe, so as to avoid constipation and some other unnecessary conditions.

### *Maintenance of ward environment*

As the patients after operation need to stay in bed for a longer time, they may have a pain in the back and waist, and also they are not comfortable with defecation in the bed, so, the patients are likely to have a poor sleep quality or cannot sleep. In this cause, the nursing personnel should create a comfortable and quiet sleep environment for patients, strictly control the number of time of visits, forbid making noise in the inpatient ward, to guarantee sufficient sleeping of patients; moreover, the patients may be asked to do some things helpful to sleep, for example, listening to light music and taking foot bath. Besides, the nursing personnel should clean the tidy the ward every day, regularly disinfect the ward, to keep it clean and avoid causing cross infection and further causing some other types of diseases.

### **2.3 Elevation indicators**

The occurrence conditions of postoperative complications of two groups were recorded respectively, the various indicators and data were timely sorted up, and then the two groups were compared for occurrence ratio of complications. The patients taking

part in the research this time were investigated for satisfaction in the form of anonymous questionnaire. A questionnaire was distributed to each participant patient, and based on the questionnaire results, the patient satisfaction was classified into: "Satisfied and Dissatisfied", and the two groups were compared through statistics of their overall satisfaction.

### **2.4 Statistical approach**

SPSS17.0 statistical software was used for statistical analysis of this research, and the obtained data was described by n (%), and the comparison between groups was tested by  $\chi^2$ , and the difference of the two groups would be of statistical significance when  $P < 0.05$ .

## **3 Results**

### **3.1 Comparison of two groups in postoperative complications**

The nursing personnel sorted up the recorded data of postoperative recovery conditions of patients in two groups to obtain Table 1: among the patients from observation group, 11 patients suffered complications after receiving comprehensive nursing care, with the complication rate of 13.8%: while among the patients from control group, 24 patients suffered complications after receiving the routing nursing care, with the complication rate of 30%. Through comparison, the difference of comparison in postoperative complication rate between the two groups was of statistical significance ( $P < 0.05$ ). The specific contents of calculation are shown as follows:

According to the data given in Table 1, the data was analyzed concretely through  $\chi^2$  test given in SPSS17.0 statistical software, to obtain the related conclusions. The specific operating steps are shown as follows:

#### *Data entry*

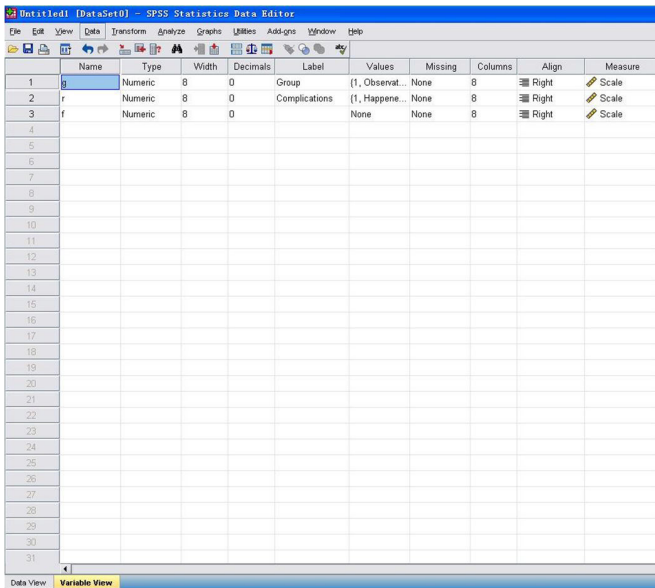
Open the data editor in SPSS software, click "Custom View" button to define the variables to be input, in which, g indicates grouping variable (1: observation group, 2. control group), r indicates complication conditions (1. occurred, 2. not occurred), and f indicates the frequency; and then click "Data View" button to input the data (as shown in Figure 1 and Figure 2).

#### *Data analysis*

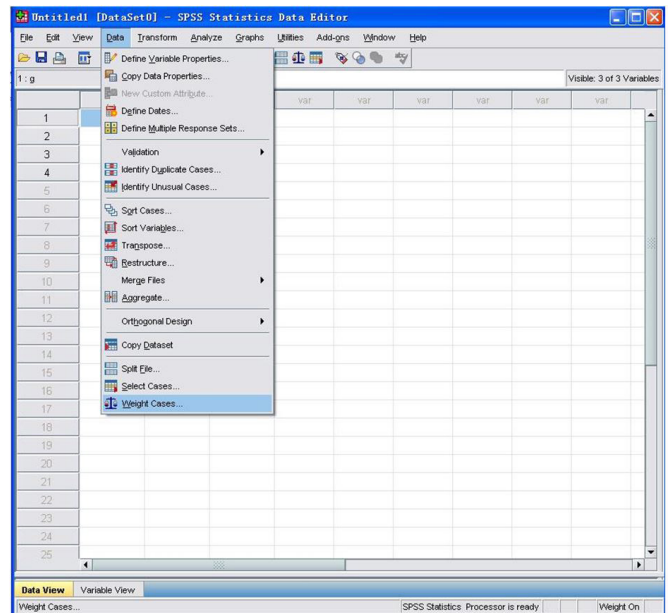
Firstly, click "Data", select "Weight Cases", after entry into "Weight Cases", define the weight, then select the weight variable as f, and finally submit it for run (as shown in Figure 3 and Figure 4); click "Analyze" and select the "Crosstabs" under "Descriptive Statistics", and after entry into "Crosstabs", define the row variable as g, column variable as r (as shown in Figure 5 and Figure 6); open the calculation statistics sub-dialog, tick chi-square test, and click "Continue" to return to the main dialogue (as shown in Figure 7); open cell display form dialog, define the percentage of output line, and click "Continue" to return to the main dialogue (as shown in Figure 8); finally, click "OK" to execute the analysis (as shown in Figure 9).

**Table 1.** Number of people with postoperative complications in two groups, n.

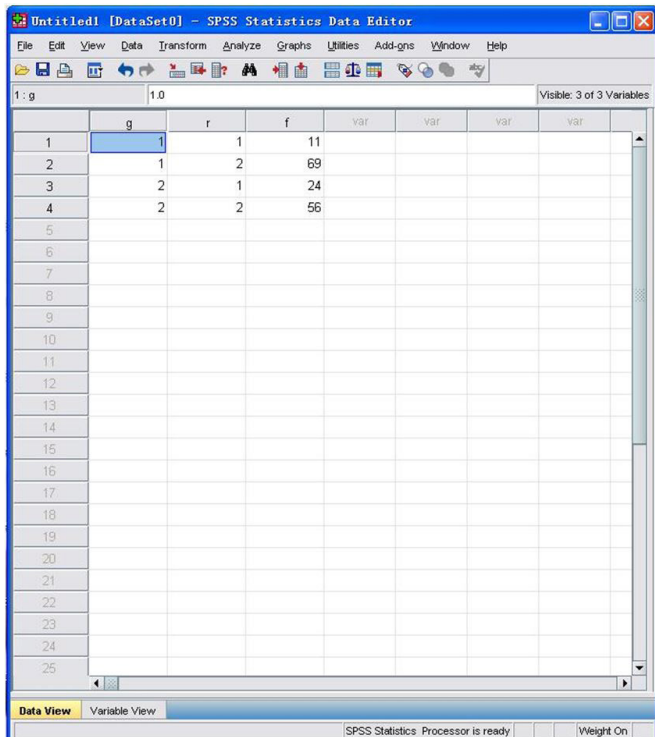
Group	Number of people (n)	Postoperative hypotension	Puncture position hemorrhage and errhysis	Chest pain	Venous embolism	Uroschisis	Vasovagal reflex	Severe arrhythmia	Subcutaneous hematoma and false aneurysm	Total
Observation group	80	2	1	1	1	1	2	2	1	11
Control group	80	3	2	3	2	4	4	3	3	24



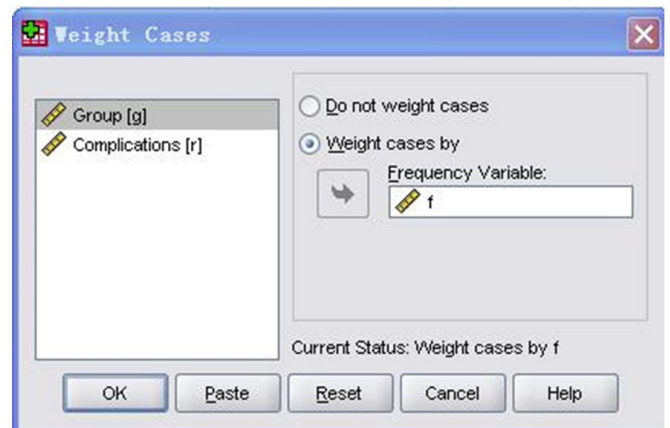
**Figure 1.** Define three variables: g, r and f.



**Figure 3.** Selection of data weight case.



**Figure 2.** Input of two groups of comparable data.



**Figure 4.** Select weight variable f Dialog box of weight case.

*Output of analysis results*

After execution of analysis in 2.1.2, we obtain Table 2 and Table 3.

According to Table 1 and Table 2, we can sort up and obtain the comparison of two groups in postoperative complications, as shown in Table 4.

According to Table 4, we could obtain that the two groups with different nursing care methods respectively had a complication probability of 13.8% and 30.0%;  $\chi^2=6.181$ ,  $P=0.013$ , if  $\alpha=0.05$

was taken as test criterion, the difference of comparison of two groups of patients in postoperative complication probability was of statistical significance.

### 3.2 Comparison of two groups of patients in satisfaction with postoperative nursing care

According to the data of satisfaction questionnaire of all the patients taking part in the research, we obtained that: the patient satisfaction with nursing care in the observation group was 90.0%, and the patient satisfaction with nursing care in the control group was 75.0%, and the difference of comparison between the two groups in patient satisfaction with postoperative nursing was of statistical significance ( $P < 0.05$ ). The specific

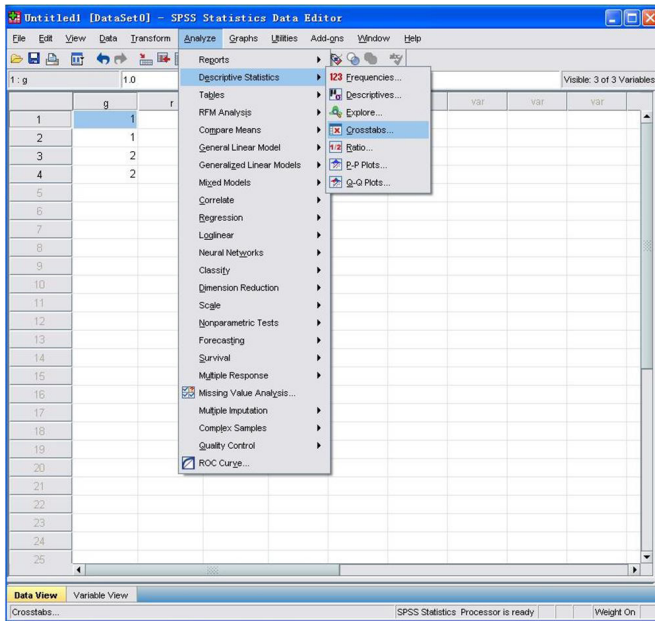


Figure 5. Select Chi-squared Test dialog box.

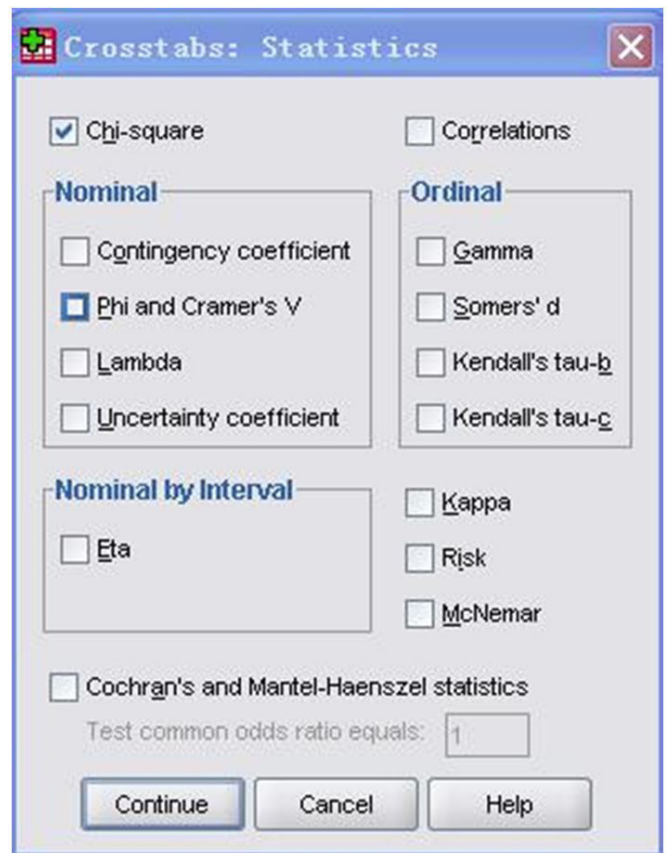


Figure 7. Statistics sub-dialog box.



Figure 8. Cell Display sub-dialog box.

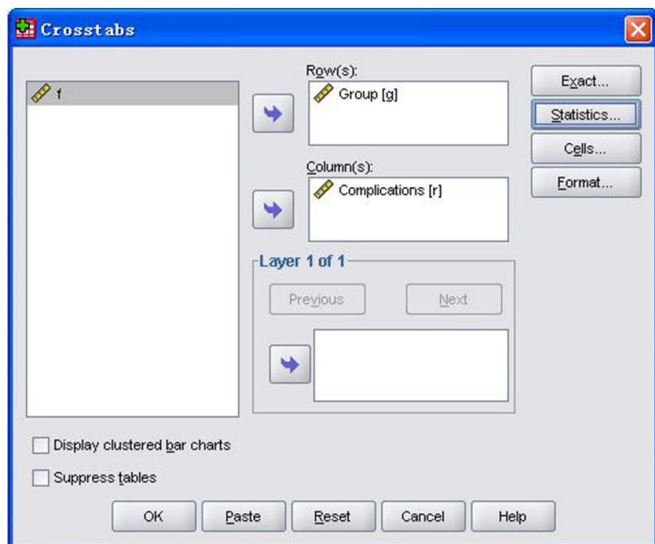


Figure 6. Main dialog box of Chi-squared Test.

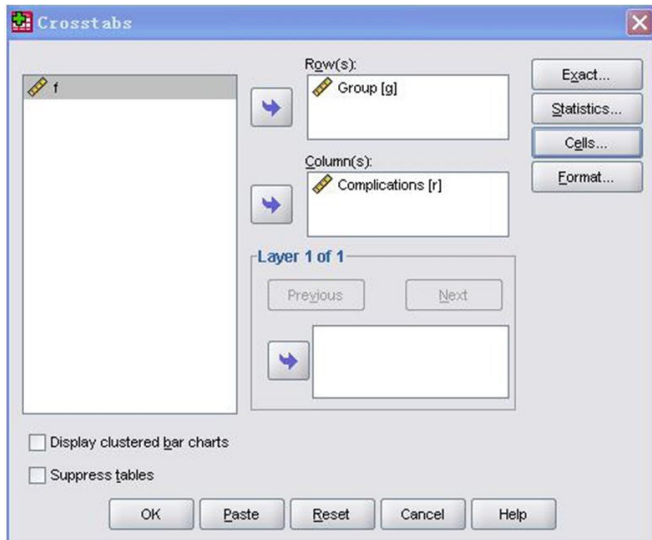


Figure 9. Execution Analysis.

calculation steps were same as those given in 2.1, and finally, Table 5 was obtained through calculation.

According to the data given in Table 5, we could know that the patients in two groups of patients respectively had a satisfaction with postoperative nursing care of 90.0% and 75.0%;  $\chi^2=6.234$ ,  $P=0.013$ , if  $\alpha=0.05$  was taken as test criterion, the difference of comparison of two groups of patients in satisfaction with postoperative nursing care in this research was of statistical significance.

#### 4 Conclusion

Coronary heart disease is a kind of heart disease caused by myocardial ischemia, anoxia or necrosis due to vascular stenosis or obstruction for atherosclerosis of coronary artery blood vessels. According to the investigation in recent years, coronary heart disease incidence has grown year by year and showed a younger-age trend, and there is a very high probability of

Table 2. Group \* complication conditions Crosstabulation.

		Complication occurrence conditions			Total
		Occurred	Not occurred		
Group	Observation group	Count	11	69	80
		% within group	13.8%	86.3%	100.0%
	Control group	Count	24	56	80
		% within group	30.0%	70.0%	100.0%
Total		Count	35	125	160
		% within group	21.9%	78.1%	100.0%

\* Representing the product sign "x", and this table is a 2 x 2 crosstab.

Table 3. Chi-Square Tests.

	Value	df	Asymp.Sig.(2-sided)	Exact Sig.(2-sided)	Exact Sig.(1-sided)
Pearson Chi-Square	6.181 <sup>a</sup>	1	.013		
Continuity Correction <sup>b</sup>	5.266	1	.022		
Likelihood Ratio	6.301	1	.012		
Fisher's Exact Test				.021	.010
Linear-by-Linear Association	6.142	1	.013		
N of Valid Cases	160				

df: Degree of freedom; N: sample size; a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.00; b. Computed only for 2x2 table.

Table 4. Comparison of two groups in number of people with postoperative complications n (%).

Group	Number of people (n)	Occurred	Not occurred
Observation group	80	11(13.8)	69(86.3)
Control group	80	24(30.0)	56(70.0)
$\chi^2$		6.181	
P		0.013	

P: Bilateral probability.

Table 5. Comparison of two groups of patients in satisfaction with postoperative nursing care n (%).

Group	Number of people (n)	Satisfied	Dissatisfied
Observation group	80	72(90.0)	8(7.5)
Control group	80	60(75.0)	20(25.0)
$\chi^2$		6.234	
P		0.013	

P: Bilateral probability.



causing patient disability. If the patients cannot be treated timely and effectively, a serious influence will be caused to the prognosis and living quality of patients (Yanling et al., 2016). Coronary intervention operation, as an important treatment method of coronary heart disease, has been widely applied in clinical treatment for its small treatment damage, significant clinical therapeutic effect, and high acceptance by patients. However, as coronary intervention operation is a minimally invasive surgery, the patients after operation often will have some complications, so that they will be affected physically and psychologically. Therefore, to make the patients know the operation conditions and adapt to the side effects brought out by operation as soon as possible, improve the clinical treatment effect and postoperative living quality of patients, and reduce the occurrence of postoperative complications, the hospital should arrange special nursing personnel to provide postoperative comprehensive nursing care for the patients receiving coronary intervention operation, so as to reduce the occurrence of postoperative complications as much as possible (Huimin et al., 2015; Cuifang, 2013).

Through this research, we obtained that, the patients from the observation group after receiving the postoperative comprehensive nursing care had an obviously lower postoperative complication rate and a significantly higher satisfaction with nursing care than those from the control group, and the difference of comparison of two groups was of statistical significance ( $P < 0.05$ ). In conclusion, the postoperative comprehensive nursing care to the patients receiving the coronary intervention operation could help to effectively reduce the incidence of postoperative complications, enhance the therapeutic effect of patients, improve the patient satisfaction, improve the postoperative living quality of patients, and have a role in promoting the clinical research, therefore, it should be emphasized and extensively applied clinically.

## References

- Chunxia, Q. (2015). Influence of nursing intervention on postoperative living quality of patients receiving percutaneous coronary stent implantation. *Modern Journal of Integrated Traditional Chinese and Western Medicine*, 24(13), 1460-1462.
- Cuifang, H. (2013). Influence of rehabilitation nursing intervention on living quality of patients with coronary heart disease after receiving coronary intervention operation. *Journal of Liaoning Medical College*, 34(1), 91-93.
- Dingfeng, J., & Fenfen, J. (2011). Influence of nursing intervention on depression in perioperative period of patients receiving percutaneous coronary intervention. *Journal of Qilu Nursing*, 17(30), 31-32.
- Hongying, T., Lingxiao, W., & Xue, C. (2012). Influence of comprehensive rehabilitation nursing intervention on living quality of patients with aged coronary heart disease after reviewing treatment of coronary intervention. *Nursing and Rehabilitation Journal*, 11(3), 211-213.
- Huimin, L., Xinghui, Z., Weiwei, C., Guiling, L., & Jing W. (2015). Research on influence of clinical nursing path on negative effect of patients receiving coronary intervention operation via transradial approach. *Journal of Hebei Medical University*, 36(5), 562.
- Lianfang, C., Hongqiu, L., Xiaoling, Y., & Jingfei, Z. (2005). Nursing of coronary heart disease treated by paclitaxel-coated stent implantation. *The Missouri Nurse*, 11(13), 1013.
- Ma, C., & Gai, L. (1998). *Interventional cardiology* (pp. 2-5). Beijing: Beijing Science and Technology Press.
- Qing, L., & Fengxian, H. (2006). Nursing in perioperative period of interventional therapy of coronary heart disease. *Journal of Practical Medicine*, 22(14), 1696.
- Shengli, Y. (2000). Postoperative nursing of coronary stent implanting. *Chinese Journal of Nursing*, 35(2), 82-84.
- Shundi, W., Yuqin, Z., & Jing, C. (2005). Nursing experience of postoperative complications of coronary heart disease of interventional therapy. *Journal of Clinical Medicine in Practice*, 9(2), 11.
- Wei, X., & Chunxia, Z. (2014). Influence of Psychological Nursing Intervention on Anxiety and Depression Patients with Coronary Heart Disease and Selective Percutaneous Coronary Intervention. *Chinese Journal of Evidence-Based Cardiovascular Medicine*, 6(4), 448-449.
- Xiaoting, Y., Cuijuan, W., & Fei, Y. (2012). Nursing of postoperative complication vasovagal reflex of coronary intervention. *Modern Journal of Integrated Traditional Chinese and Western Medicine*, 21(28), 3173-3174.
- Xin, Y. (2012). Observation and nursing of postoperative complications of percutaneous coronary intervention. *World Health Digest*, 9(3), 324-325.
- Yanling, C., Guihua, T., Yuhua, Y., Qiuju, Z., & Jiang, Z. (2016). Influence of comprehensive nursing intervention on PCI operation of coronary heart disease. *Hebei Medicine*, 22(3), 517-519.
- Ying, Z., & Fanglei, X. (1999). Nursing of acute myocardial infarction after percutaneous transluminal coronary angioplasty. *Chinese Journal of Nursing*, 34(6), 68-69.