Original Article :

Nurses' knowledge about the discharge plan for patients after cardiac surgery at the Sudan Heart Institute

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Abstract

Background & Aims:
Discharged patients from the hospital to home after cardiac surgery require planning, guidance, and recommendations from health care providers that the patient must follow to avoid expected complications. The current study aimed to assess nurses' knowledge about the discharge plan for patients after cardiac surgery at the Sudan Heart Institute.

Methods:
This is a descriptive cross-sectional study enrolled 85 nurses and was conducted at the Sudan Heart Institute from January to May 2019. Data were collected using a structured self-designed questionnaire containing different aspects of the discharge plan to assess nurses' knowledge using multiple-choice questions.

Results:
The results of this study showed that 70% of the study population were females from 26–30 years old, 83% of the participants were single, and most nurses had a Bachelor's degree (75%). There was a significant difference between the participants' experience and the nurses' knowledge level about the discharge plan (p=0.01). Overall, the nurses' knowledge about the discharge plan was good at 78%.

Conclusion:
This study showed the participants had good knowledge of the discharge plan programs for patients after cardiac surgery.

Keywords:
nurses, knowledge, discharge plan, cardiac surgery

الملخص

الخلفية والاهداف:
خطة الخروج هو عملية يتم فيها تحديد احتياجات المرضى ، وخطة يتم تشكيلها لنقل المريض من مكان إلى آخر. تهدف الدراسة الحالية إلى تقييم معرفة الممرضين حول خطة الخروج من المستشفى بعد جراحة القلب المفتوح في مستشفي جراحة القلب، السودان

طريقة البحث:
أجريت هذه الدراسة الوصفية المستندة إلى المستشفى ، وتم جمع البيانات عن طريق الاستبيانات. وتم تحليلها باستخدام الحزمة الإحصائية للعلوم الاجتماعية (الإصدار ٢٣) ، تم استخدام (اختبار-ت) في اختبارات الدلالة عند مستوى (٠ .٠٥) . تم العر بواسطة الجداول، صمم الباحث الاستبيان ليشمل (٢٣) سؤالاً موزعة في قسمين رئيسيين ، وزعت على (٨٥) من الممرضين يعملون في مستشفي جراحة القلب عبر تقنية أخذ العينات العشوائية.

النتائج:
أظهرت نتائج هذه الدراسة المعرفة العامة للممرضات على خطط الخروج من المرضى بعد جراحة القلب المفتوح تظهر إحصائيات مهمة (قيمة ب = .٠٥). الذين شاركوا في الدراسة كان لديهم معرفة كافية ببرامج خطة الخروج ، تكشف الدراسة الحالية أن أكثر من نصف عينة الدراسة (٧٠ ٪) كانت من الإناث ، ومتوسط عمر المشاركين بين (٢٠ - ٢٥) ، أظهرت الدراسة أيضا أن الغالبية عدد الممرضين الحاصلات على البكالوريوس (٧٥ ٪)

الخلاصة:
أظهرت نتائج الدراسة الحالية أن الممرضين الذين شاركو في الدراسة لديهم معرفة كافية ببرامج خطة الخروج للمرضى بعد جراحة القلب المفتوح.

الكلمات المفتاحية:
معرفة، الممرضين، خطة الخروج

Introduction

Open heart surgery is required to treat congenital or acquired heart diseases. Heart surgery is performed to treat coronary artery blockage. Valve repair or replacement is performed in patients with the valvular disorders, and other types of cardiac surgery correct cardiac diseases [1]. Cardiac surgery is a significant event in a patient's life. For revascularization surgery, patients have the chance for a successful surgery, but they also have fears about discomfort and surgical pain and concerns about fatigue and sleep disorders, loss of appetite, return to normal life and activities post-surgery, drug addiction, cardiac monitoring, duration of hospital stay, and hospitalization costs [2].

Discharge planning is a key element in patient care. It involves outlining the routine and health needs that should be expected upon exit from the facility, which is a link between functioning in the community and hospitalization [3]. Ideally, discharge planning occurs when patients are admitted for cardiac surgery. Discharge instructions after cardiac surgery include instructions about taking medications, activity restrictions, healthy diet and nutrition, wound care (including bandages, if appropriate, suture removal, bathing), and follow-up appointments (cardiologist, primary health care provider) [4]. This planning helps patients to communicate with health care professionals and primary care providers about the best way to manage their chronic needs after leaving the hospital [5]. The discharge instructions for cardiac surgery patients include monitoring for signs of swelling, checking the sleeping conditions, and observing the patient's appetite. The discharge instructions also educate the patient and urge them to pay attention to the following points: patients' activities post-cardiac surgery, nutrition, complication post-cardiac surgery, methods of preventing infection, and outpatient follow-up[6]. Discharge planning is determined as a part of all patients' management. All patients should be referred to their cardiologist with an appointment about 1 month after surgery. They should return to see the primary surgeon within 1 week. Patients should be instructed on wound care, which includes daily bathing with antibacterial soap and water. Application of ointments, salves, or lotions is to be avoided. Patients should walk as much as tolerated, and they can go up and down steps as tolerated [7].

Educating the patient and family is the responsibility of the nursing staff, and it is an important aspect of patient preparation for discharge that should take place during the hospital stay rather than waiting until the patient is being discharged. Every day,

patients must be educated about drugs, including pain medication, predictions about activity levels, diet, sternal precautions, care of incisions, signs, and symptoms of infection. Patients should be involved in their care as much as possible. Families should participate when possible, particularly family members who will take care of patient at home [8].

Methods

Study design

This is a descriptive cross-sectional study. It was conducted to assess nurses' knowledge about discharge plans for patients after cardiac surgery at the Sudan Heart Institute in Khartoum state from January to May 2019.

Study area

The study was performed at the Sudan Heart Institute in Khartoum State. This hospital provides outpatient and inpatient services for people living in this area, and it is open all the day and receives patients from different settings in Sudan.

Study population

The study population is nurses work at Sudan Heart Institute Hospital. The sample of registered nurses for this study was randomly selected from lists of the nurses based on the inclusion and exclusion criteria.

Inclusion criteria

The inclusion criteria were as follows: nurses from different surgical sections in the hospital (included nurses working in the operating room, cardiac catheters, and intensive care unit); and male or female staff nurses who were 20 years to 40 years of age with at least 1 year of job experience.

Exclusion criteria

The exclusion criteria were as follows: head nurses, student nurses, or staff nurses who were less than 20 years or over 40 years of age with less than 1 year of experience.

Sample size and sampling technique

Random sampling was used in this study, and the sample size was calculated according to the following equation: n = N/1+N (d2)

where n = sample size, N = population size, d = degree of accuracy desired (the accepted margin of error was 0.05).

n = 120/1+120(0.05)2 = 120/1.3 = 92

Thus, the sample size should be 92 nurses, but there were 85 nurses who completed the questionnaire.

Methods of data collection

A self-administered questionnaire was used for data collection. The questionnaire was designed according to [9], which assessed nurses' attitudes towards patient perceptions of hospital discharge, to deter-

mine their level of knowledge. The questionnaire was also shared with two professors who specialized in nursing from Al Baha University and Taibah University in Saudi Arabia to express their opinion on the content. A pilot study was conducted, and it was performed with 15 nurses at the Sudan Heart Institute hospital. The participants provided their opinions about the results of the pilot study using a questionnaire, and the final questionnaire was prepared by the author. Participants in the pilot study were excluded from the main study. The first part of the questionnaire included the participant's demographic characteristics and the second part included 16 questions about their knowledge of the discharge plan.

Score grading

A common grading method was used for each variable in the questionnaire, as follows: one point for the correct option, and zero points for the incorrect answer in the knowledge section. The scoring range for the questionnaire was 0 to 16 (lowest to highest score). For knowledge about the discharge plan, a score of < 8 was considered to be poor, 8–12 was considered to be average, and 13–16 was considered to be adequate. The total nurses' knowledge scores about the discharge plan were calculated.

Statistical analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS, version 21). Descriptive statistics were used, and the data were presented as the frequencies and percentages. Data were analyzed using the Chi-square test, and presented by cross-tabulation. $P < 0.05$ was considered to be statistically significant.

Ethics approval statement

The study was approved by the Sudan Heart Institute in Khartoum, Sudan. Participants who were willing to participate received a letter explaining the purpose and outcome of the study, and they were assured that their participation was voluntary.

Results

Table1. Shows the demographic character-

Table 1: Interpretation of score according to the knowledge level (maximum score = 16)

	Knowledge level	Score	Range (%)
1	Excellent	14–16	82–100
2	Good	11–13	64–81
3	Average	8–10	45–63
4	Below average	4–7	20–44
5	Poor	0–3	0–19

Table 2: Distribution of socio-demographic characteristics (N = 85)

		Frequency (n)	Percentage (%)
Gender	Male	25	30
	Female	60	70
Age category	20–25 years	13	15
	26–30 years	62	73
	30 years and over	10	12
Marital status	Single	70	83
	Married	13	15
	Divorce	2	2
Qualification	PhD	0	0
	BSc	64	75
	Diploma	21	25
Experience in the cardiac surgery section	Less than 5 years	55	65
	5–10 years	20	23
	More than 10 years	10	12
Training course	Yes	53	62
	No	32	38

istics of the participants. Most of the subjects (73%) were 26–30 years old. The majority of subjects (70%) were female, most of participants regarding qualification are They had a Bachelor's degree (75%). Regarding marital status most of the subjects were single (83%)

Table 3: Distribution of correct and incorrect answers by nurses regarding knowledge about the discharge plan, Sudan Heart Institute hospital (N = 85)

	Correct N %	Incorrect N %
Nurses' knowledge regarding a patient's activities post-cardiac surgery	75 (88)	10 (12)
Nurses' knowledge regarding nutrition	59 (69)	26 (31)
Nurses' knowledge regarding indications for cardiac surgery	52 (61)	33 (39)
Nurses' knowledge regarding different types of cardiac surgery	66 (78)	19 (22)
Nurses' knowledge regarding important complications post-cardiac surgery	65 (77)	20 (23)
Nurses' knowledge regarding the methods of preventing infection	75 (88)	10 (12)
Nurses' knowledge regarding outpatient follow-up	77 (91)	8 (9)
Nurses' knowledge regarding the importance of exercise after cardiac surgery	59 (69)	26 (31)
Total nurses' knowledge about the discharge plan	66 (78)	19 (22)

Table 3. illustrates the nurses' knowledge of discharge plan. 88% know about knowledge regarding a patient's activities post-cardiac surgery. The participants of the study were asked about knowledge regarding nutrition for which 69% of the participants their correct answers. The majority of the nurses has a good knowledge of

knowledge regarding outpatient follow-up 91% their correct answers.

Table 4: Association between demographic characteristics and nurses' knowledge level about the discharge plan, cross-tabulation (N = 85)

	Knowledge level					Total	Chi-Square	P value
	Excellent	Good	Average	Below Average	Poor			
Gender								
Male	3	6	6	3	7	25		
Female	6	24	10	3	17	60	03.08[a]	0.55
Total	9	30	16	6	24	85		
Age category								
20–25 years	1	4	3	1	4	13		
26–30 years	7	33	10	3	9	62	13.25[a]	0.10
30 years and over	0	2	1	2	5	10		
Total	8	39	14	6	18	85		
Qualification								
PhD	0	0	0	0	0	0		
BSc	5	34	11	3	11	64	08.16[a]	0.09
Diploma	2	5	3	2	9	21		
Total	7	39	14	5	20	85		
Experience								
Less than 5 years	1	7	4	7	36	55		
5–10 years	3	7	5	1	4	20	23.10[a]	0.01
More than 10 years	1	3	3	1	2	10		
Total	5	17	12	9	42	85		
Training course								
Yes	2	26	20	1	4	52	06.83[a]	0.15
No	4	15	6	2	5	32		
Total	6	41	26	3	9	85		

Table 4. showed the statistical Differences between Nurses Knowledge and their socio-demographic characteristics. The results of study showed there was high significant relationship between nurses level of knowledge and level of experience of nurses at P = P ≤ 0.05 level.

Discussion

In the current study, the socio-demographic characteristics indicated that most of the participants were female (70%). This result was consistent with another study that found that 81% of the participants were female [10]. In our study, participants were mostly 26–30 years of age (73% of participants), which was consistent with another study that found that the largest age group in the study sample was less than 30 years of age [11].

For marital status, 83% of participants

were single. This result varies compared with another study which found that most of the nurses were married [12].

Regarding the nurses' qualification level, more than half (75%) of the nurses in the sample had a Bachelor's degree. This finding is consistent with another study that found that most nurses in their study held a Bachelor's degree [13].

For the nurses' experience in the cardiac surgical unit, we found that 65% of the nurses had less than 5 years of experience. This result was consistent with a study that found that the performance of newer graduates was more effective than that of others with more experience [14].

We found that 62% of the participants attended training courses. This result agrees with the results of another study that found that most of the nurses (88%) had attended a training course about the discharge plan[15].

For the nurses' knowledge about the methods of preventing infection, the results showed that 88% of the study sample knew about infection control. This result was consistent with another study that found that most of the nurses were knowledgeable about infection control methods [16].

We found that 91% of nurses had knowledge about the importance of outpatient follow-up after discharge. This result was different from that of another study that was conducted at an Iraqi center hospital, which showed that only a small proportion of nurses (36%) had this knowledge [17].

Nurses' knowledge about routine activity post-cardiac surgery was shown to be 88%. This finding in the present study was consistent with evidence from another study that showed that the level of this knowledge level was high [17].

Nurses' knowledge regarding nutrition was 69%. This result was supported by a study that was conducted at an Iraqi hospital, which found that the nurses had good knowledge of the nutrition system after discharge from the hospital [17].

Information that was given to the patients before discharge included signs and symptoms of complications and nutrition. The results showed that the participants had knowledge about these areas (69%, 77%, and 69% respectively). This result agrees with a study that found that nurses' knowledge about providing discharge information for the patient following cardiac surgery, including information on the discharge plan, was good [18].

There were no differences between demographic characteristics and the knowledge level of nurses about the discharge plan in the current study for gender, age category, qualification, and training courses. These results are consistent with other studies that also did not show a significant differ-

ence between the nurses' age or gender and their practices [19, 20].

Study limitations and strength

The limitations of the study are the small sample size. The strength of this study is that it is the first study in Sudan on the discharge plan for a patient's post-cardiac surgery. The study was widely accepted and the study participants' responses were good.

Conclusions

The results of this study showed that most of the participants had 5 years of experience in the cardiac surgical section. The only domain that had an average rate of correct answers of 61% was the nurse's knowledge regarding indications for cardiac surgery. The study participants had good knowledge of all sections and aspects of the discharge plan for patients who underwent cardiac surgery.

The study recommends holding courses and educational sessions for nurses who are working in cardiac surgery to increase their knowledge, and educational leaflets should be provided to the patients after cardiac surgery. A special unit that is responsible for the patient's discharge plan and providing adequate information and knowledge should be created.

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