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The Level of Nurses' Knowledge of Discharge Planning for Pediatric Congenital Heart Disease

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ABSTRACT

Objective(s): To assess the level of nurses' knowledge concerning discharge plan for children with congenital heart diseases and find out the relationship between knowledge and their socio-demographic characteristics.

Methods: A descriptive correlational design study was applied on 50 nurses' who are working at open heart surgery ward in Ibn Al-Nafees Hospital for Cardiovascular Medicine and Surgery and from Ibn Al-Bitar Center for Cardiac Surgery in Baghdad City, Iraq. The study started from September 7th, 2022 to June 7th, 2023, utilizing a non-probability (convenience) sample. The data was collected from nurses through a constructive instrument (Likert scale), and analyzed through the application of descriptive and inferential statistical approaches which applied by using SPSS version 26.0.

Results: The results showed that most nurses were female 78% and the majority of them (58%) were between the ages of 20 and 25 years and two-thirds (64%) of nurses held a diploma degree in nursing. Most of nurses (52%) were unmarried and (62%) of them were employees for (1-5) years in nursing in open-heart departments. The findings of the current assessment revealed that nurses have a poor level of knowledge about discharge plans based on the achieved mean score (1.60) for children with congenital heart disease. The study's findings showed an existent statistical relationship between nurses' knowledge and their nursing qualification (P value=0.023).

Conclusion: The current study concluded that nurses had a poor level of knowledge, which leads to the inefficiency of the nursing discharge plan and showed a significant relation between nurses' knowledge and their nursing qualification.

Recommendation: The study recommended conducting educational program to broaden nurses' knowledge about improve their methods of implementation the discharge plan for children with congenital heart diseases, and thus, improving patient care standard offered by nurses and reducing hospitalization of children.

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مستوى معارف الممرضين المتعلقة بخطة الخروج للأطفال المصابين بأمراض القلب الخلقية

المستخلص

الأهداف: هدفت هذه الدراسة إلى إيجاد مستوى معارف الممرضين بخطة الخروج للأطفال المصابين بأمراض القلب الخلقية وإيجاد العلاقة بين هذه المعارف وخصائصهم الديموغرافية.

المنهجية: اجريت دراسة وصفية ارتباطية بين ٥٠ ممرضاً من العاملين بقسم القلب المفتوح في مستشفى ابن النفيس التخصصي لطب وجراحة القلب والأوعية الدموية ومستشفى ابن البيطار التخصصي لجراحة القلب في مدينة بغداد، العراق وقد اجريت الدراسة بين ٧ ايلول ٢٠٢٢ إلى ٧ حزيران ٢٠٢٣. واختيرت عينة الدراسة بطريقة غير احتمالية (متوافرة)، جمع البيانات من الممرضين من خلال بناء أداة الدراسة باستخدام (مقياس ليكرت)، حيث قام الممرضين بملء استمارة الاستبيان بشكل مستقل وتحليلها من خلال تطبيق الأساليب الإحصائية الوصفية والاستدلالية التي يتم تطبيقها باستخدام برنامج SPSS الإصدار ٢٦,٠.

النتائج: أظهرت نتائج الدراسة الحالية ان غالبية عينة الدراسة من الاناث وتتراوح اعمار المشاركين بين ٢٠ الى أقل من ٢٥ سنة معظم عينة الدراسة حاصلين على شهادة الدبلوم في التمريض .فيما يتعلق بالحالة الزوجية تقريبا أكثر من نصف الممرضين غير متزوجين، ولديهم سنوات خبرة في مهنة التمريض تراوحت ما بين ١ إلى أقل من ٥ سنوات، أشارت نتائج الدراسة بأن معارف الممرضين المتعلقة بخطة خروج الاطفال المصابين بأمراض القلب الخلقية ذات مستوى ضعيف بناء على مجموع مربعات الوسط الحسابي لمعارفهم (١,٦٠) وأظهرت نتائج الدراسة وجود علاقة إحصائية استدلالية بين معرفة الممرضات والتحصيل الدراسي في التمريض.

الاستنتاجات: استنتجت الدراسة الحالية ان معارف الممرضين كانت ضعيفة مما يؤدي إلى عدم كفاءة خطة الخروج التمريضية وقد تزيد من مدة بقاء الاطفال في وحدة امراض القلب وزيادة العبء المادي على المؤسسة الصحية والعائلة. وأظهرت النتائج وجود علاقة كبيرة بين معرفة الممرضات والمستوى التعليمي فقط.

التوصيات: توصي الدراسة بإجراء برنامج تعليمي لزيادة معارف الممرضين وتحسين الممارسات في تنفيذ خطة الخروج للأطفال المصابين بأمراض القلب الخلقية، وبالتالي تحسين جودة العناية التمريضية المقدمة للأطفال المرضى وتقليل فترة المرضى في المستشفى.

الكلمات المفتاحية: معارف الممرضين، خطة الخروج، أمراض القلب الخلقية، الممرضين.

Introduction

Pediatric congenital heart diseases (CHDs) are disorders that affects the newborn's heart's structure and function, a condition that affects the development of the heart and major blood arteries [1,2].

There are two types of congenital heart disease: cyanotic and a cyanotic, and CHD being further divided into 3 different types of lesions: right heart obstructive lesions, left heart obstructive lesions, and mixing lesions[3].

Early detection of CHD has become more crucial as to the significant mortality and morbidity that are caused by the disease, as well as the benefits of early treatment [4].

Also, critical cardiac disease (CHD) can be fatal in unavailable treatment in the past, but in modern times surgical, catheter, and drug advancements have significantly increased life expectancy [5].

Nursing care for the children with CHD includes understanding of the condition's anatomy and physiology as well as possible complications associated with its surgical correction [6].

The process of preparing a child for hospital discharge and home care at the time of admission includes a child evaluation and the setting of both short- and long-term objectives to address the physical and emotional requirements of the child[7].

Discharge planning was acknowledged as an important part of hospital treatment; yet, governmental hospitals have primarily focused on older adults, with very little attention provided to infants and children [8].

Prior to hospital discharge, excellent coordination between nurses and other professionals is essential when on the admitted and there are safeguarding concerns about the child. [9].

A nursing discharge plan ought to focus on the biological, psychological, and social situations of the child patient with (CHD) and family. They should also simply and clearly describe all the operations that were carried out throughout the hospital stay [10].

Therefore, accurate information transmission and continuity of care between various care settings are made easier with a useful NDP and enhance the ability to early recognize hazards [11].

Early discharge clearly has undoubted benefits but postoperative complications tend to occur within the first month of surgery and frequently in the first week following surgeries [12].

Accordingly, a discharge plan is composed of information about medication, symptom, weight, diet management, wound care, physical activity, vaccination and other precautions [13]. Additionally, if arranged before the discharge date, NDPs may favor lowering the length of stay and hence, readmission rates [11]. Thus, this study aimed to assess the correlation between nurses' knowledge of discharge planning for children with congenital heart disease and their socio-demographic attributes.

Methods

Study Design and Setting

A descriptive correlational design the research was conducted to identify the relationship between nurses' knowledge concerning discharge plan for children with congenital heart diseases and their socio-demographic characteristics. It was carried out in order to accomplish the goals of the present study. The research began from 7th September, 2022 to7th June, 2023. The research was done at the specialized Ibn Al-Nafees Hospital for Cardiovascular Medicine and Surgery in AL- Russafa and from Ibn Al-Bitar Center for Cardiac Surgery in AL-Karkh in Baghdad City, Iraq. These hospitals attended by a large number of children with congenital heart diseases, from Al-Karkh and Al-Russafa sectors in Baghdad City, as well as children's referrals from other Iraqi cities.

Sample and Sampling

The study utilized a non-probability "convenience", sampling of (50) nurses working in the open-heart surgeries department.

Data Collection and the Study Instrument

The data was collected from the nurses through the utilization ofa constructed instrument. Each nurse spends approximately (20-25) minute to have the answer completed.

To assess the level of nurses' knowledge concerning discharge plans for children with congenital heart diseases, the study used a constructed questionnaire which was completed by the participant. A written consent was obtained from all recruited nurses in the hospitals. Inclusion criteria include nurses working in the open-heart department of children with different nursing qualifications. The data collection begun from January 29th, 2023 to February 23rd, 2023. Data was collected through using the Arabic version of the questionnaire. It was developed by the analysis and reviewing of previous relevant literatures about the topic. The questionnaire primarily had two sections namely: socio-demographic characteristics, which include "sex, age, nursing qualification, marital status, number of years of service in

pediatric cardiac wards". The second part was the nurses' knowledge questionnaire concerning discharge plan for children with congenital heart diseases, which composes of (15) items. Participant was answering the question based on a 3-point Likert (I know, I'm not sure and I don't know) to determine nurses' responses to the items. The responses for knowledge questions are scored and rated on three levels scale; (3) points for I know choice, (2) point for I'm not sure choice and (1) I don't know choice.

Validity and Reliability of Instrument

The early produced instrument's content validity was established by using a panel of experts to examine the content and assess the questionnaire's clarity, relevance, and appropriateness in order to meet the study's objectives. A questionnaire was designed and presented to (13) experts in medical fields. They were (6) faculty members from College of Nursing/ University of Baghdad, (1) faculty/members from College of Nursing /University of Babylon, (2) faculty members from College of Nursing /University of Kerbala, (1) specialized physician from Ibn Al- Bitar, specialist in cardiovascular diseases and (3) specialized physicians from Ibn Al-Nafees Hospital for Cardiovascular Medicine and Surgery. These experts were given a copy of the study tool and requested to review and assess it for its content clarity and suitability.

The internal consistency and reliability were performed to ensure the stability of the knowledge questionnaire. The computation of Alpha Correlation Coefficient for test-retest reliability between time 1 and time 2 of evaluation of the performance score was 0.789, which means that the study instrument is reliable in measuring the study phenomenon at any time in the future.

Ethical Considerations

Submitted official requests were sent to the College of Nursing, University of Baghdad for study approval, and to the Ministry of Health. Nurses in all selected hospitals were requested to sign an informed consent form with an information about the study objectives and their rights to refuse participation. All participants provided verbal consent to participate in the survey and their participation and attendance was voluntary.

Patients' collected information was kept confidential and their privacy was maintained.

Data Analysis

Data were analyzed using the IBM SPSS Statistics for Windows, version 26. The study data was analyzed using descriptive statistics (frequencies, percentages, and the mean of scores and standard deviation) and statistical inferential correlation coefficient.

Results

Table 1. Nurses Socio-demographic characteristics (N=50)

Socio-Demographic Characteristics	Groups	Study group	
		F.	%
Age	20-24 Years	29	58.0
	25-29 Years	10	20.0
	30- 34 Years	5	10.0
	35-40 Years	6	12.0
Sex	Male	11	22.0
	Female	39	78.0
Marital Status	Single	26	52.0
	Married	19	38.0
	Divorces	3	6.0
	Separated	2	4.0
Nursing Qualification	Nursing high school	13	26.0
	Diploma in nursing	32	64.0
	Bachelor in nursing	**5**	10.0
Years of experience	1-5 years	31	62.0
	6- 10 years	14	28.0
	11- 15years	5	10.0

F= frequency, **%=** percentage.

Table (1) shows that most nurses (78%) were females, (58%) of them were between (20- 25) years old, (52%) of them were single. (64%) of them held diplomas in nursing. Additionally, 62% of the nurses having (1-5) years of experience in the open-heart department.

Table 2. Nurses' knowledge on discharge plan for children with congenital heart diseases (N=50).

No	Item	M	SD	Ass
1.	The discharge plan helps prevent the child from re-entering the hospital in the future and makes moving home as safe as possible.	1.40	.571	L
2.	It is necessary for the child's families to know the efficacy of the drug, its timing and side effect.	1.84 0	.791	M
3.	Avoid schoolchildren and adolescents lifting weights or pushing or pull anything heavier than 2-4 kg using the upper part of the limbs for at least 4-6 weeks after the operation.	2.0	.880	M
4.	The child's parents should seek medical advice in the event of local warming with swelling and redness in the wound location.	1.78	.910	M

5.	Avoid restriction or tight clothes.	1.42	.498	L
6.	The child prefers to use a toothbrush with soft bristles.	1.32	.512	L
7.	It is necessary to encourage the child's parents to adhere to balanced food while drinking sufficient fluids depending on the child's age.	1.56	.674	L
8.	A child's good diet (getting enough calories) helps with healing and growth.	1.56	.732	L
9.	One of the signs of wound inflammation is the discharge of pus from the place of operation.	1.84	.791	M
10.	Educate the child's parents if they forget the dose do not try to double the next dose of the drug.	1.48	.646	L
11.	Educate the child's parents that they should be given medication before the child eats.	1.76	.846	M
12.	Awareness of child parents if the child receives blood products affects the timing and type of vaccinations.	1.76	.870	M
13.	The need for the child's family to communicate with the doctor in case the child feels a breathing problem, fainting, not waking up from sleep.	1.72	.757	M
14.	The need to protect the child's chest muscles and bones during each activity for 6 weeks after surgery.	1.48	.677	L
15.	The need for the child's family to communicate with the doctor in the event of a change in the child's behaviors such as irritation, or severe sleepiness.	1.16	.370	L
	Total Mean of nurses' knowledge regarding Discharge plan	1.60	.710	L

M= mean of score**, SD=** stander deviation**, Ass =High; (2.34 – 3) M. = Moderate (1.67 – 2.33); L. = Low (1.0 – 1.66).**

Table 3. indicated that nurses had knowledge deficits with low to moderate level. The total mean score of nurses' knowledge concerning discharge was low at (M= 1.60).

Table 3. Relationship between Nurses' knowledge and their Socio-demographic Characteristics

No	Items	Colorations co.	P. value	Significant
1	Age	0.013	0.927	NS
2	Sex	0.125	0.386	NS
3	Marital status	0.193	0.178	NS
4	Nursing qualification	0.321	0.023	Significant
5	Experiences	0.218	0.128	NS

Colorations co. = correlation coefficient; $p < 0.05$; NS= Not Significant; Sig = Significance**.**

Table (3) revealed a significant correlation between nurses' knowledge and their nursing qualification only. Furthermore, there is no relationship between nurse's knowledge, and their other socio-demographic characteristics such as age, sex, marital status, and years of experience.

Discussion

Nurses` Socio-demographic Characteristics.

Regarding to nurses age, the findings of the study indicated that nurses were in the age group ranging from 20-25 years. This result agreed with the results of a previous study conducted in Iraq indicated that (40%) of nurses were aged between (20-25) years [14]. Also, another Iraqi study found that (50%) of nurses were among the age group of (20-25) years old [15].

Regard to nurses' sex, females were dominant with (78%) of the sample. This result is consisted with previous study results from Iraq showed that females represented the majority of nurses [11]. In addition, more studies from Iraq found that females nurses have the majority of the study sample [16].

This study reveals that more than half of nurses were single. This outcome consistented with study results from Iraq indicated that 70% of nurses were single [17]. In addition, another study from Saudi Arabia found that more than half of nurses were single among sixty-three percent of them [18].

The current study also revealed that more than half of nurses qualified with diploma in nursing. This result agreed with previous study results from Iraq found that 56.7% of nurses had a diploma degree [19]. Also, a study conducted in Sulaimani, Iraq found that 50% of nurses qualified with diplomas in nursing [20]. Conversely, another indicated that 60% of the nurses have Bachelor's degree [21]. It's implied that in the past few years, more nurses earn diplomas degree in nursing than bachelor or other postgraduate degrees.

Furthermore, this study found that more than 50% of the nurses had one to five years of experience. This finding is supported by a previous study from Iraq showed that 68.8% of the nurses had one to five years of experience [22]. In addition, another study from Iraq showed that the majority of nurses had less than five years of experiences [23]. However, another previous study finding contradicts the current findings and stated that half of nurses had between one and ten years of hospital experience [24].

The Level of nurses' knowledge

The study results showed that nurses had low to moderate levels of knowledge discharge plan for children with congenital heart diseases, which was with unacceptable low total mean score (1.60). These results are similar to the findings of previous study from Jordan showed that nurses' knowledge of discharge plan was very low. They also indicated that approximately more than half (52.1%) of nurses had a negative perception toward discharge plan and about (50%) of them had poor practices [25]. Also, the current study findings supported by a previous study at the Egyptian reveals that more than three quarters (77%) of nurses Knowledge deficit of the total elderly discharge plan [26]. The knowledge deficits might be due to the unavailability of discharge guidelines.

The nurses had not acquired sufficient knowledge about discharge planning because it is not included by the Ministry of Health to be applied in heart hospitals. Also, this is attributed to the lack of courses and conferences related to discharge instilled by the healthcare institutes not preparing courses and conferences on discharge planning. As a result, the nurses only depend on knowledge acquired from the academic and practice.

Relationship between nurses' knowledge and their socio-demographic characteristics

The results of the study revealed a relationship between nurses' knowledge and their nursing qualifications. This finding is supported by a previous study revealed a statistically significant relationship between nurses' knowledge and their levels of education, years of hospital employment, and training courses [27]. However, a previous study from Baghdad, Iraq indicated that there were statistical differences (highly significant) between nurses' knowledge and

their age (P= 0.05) [28]. This result implied that there is a close correlation between the level of education and the ability to learn, which means that the higher the level of education, the greater the individual's desire to gain new information and knowledge. On the other hand, the longer period work in the open-heart department, the accumulated knowledge will increase regarding discharge planning.

Conclusion

This study shed the light to the knowledge deficit among nurses with the lack the information necessary to develop effective discharge plans for children with congenital heart diseases. This might increase children hospital stays and readmission rates for them. The study suggested implementing particular training programs relevant to the discharge plan guidelines based on evidence-based international programs. There is a need to encourage pediatric nurses to participate in the training courses and conferences on the discharge plan as well as lectures to update and develop their knowledge and skills.

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Conflict of interest

None to declare.

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Data availability

The data supporting the findings of this study are not publicly available due to ethical and privacy considerations but may be made available from the corresponding author upon reasonable request and with appropriate approval.

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