Original Research Al-Razi Univ J Med Sci 2024;26-32

RUJMS

Al-Razi University Journal of

Medical Sciences

Evaluation of Nurses' Knowledge Regarding Care of Patients with Congenital Heart Diseases at Alshaab Teaching Hospital, Khartoum, Sudan

Saddam Ahmed Al-Ahdal[1], Mokhtar Abdu almoliky[2], Abdulnasser Ahmed Mohammed Hazaa[1], Marzoq Ali Odhah[1], Mohammed Sadeg A. Al-Awar[3], Fatima S. O. Ashmieg[4]

1. Department of Nursing and Midwifery, Faculty of Medicine and Health Sciences, Al-Razi University; Faculty of Medicine and Health Sciences/Sana'a University, Sana'a, Yemen.
2. Medical Surgical Nursing Department, College of nursing, Ha'il University, KSA. Faculty of medicine and health sciences, Taiz University/Yemen.
3. Department of Medical laboratory, Faculty of Medicine and Health Sciences, Al-Razi University; Amran University, Sana'a, Yemen.
4. Department of Medical Surgical, College of Nursing, Qassim University

Abstract:

***Background**: Congenital heart disease refers to a range of heart abnormalities that are present from birth. These defects can affect the structure and function of the heart and surrounding blood vessels. Early detection and proper treatment are crucial for individuals with congenital heart disease to have the best possible outcomes and quality of life. **The aim of study**: To evaluate the Nurses' Knowledge Regarding Care of Patients with Congenital Heart Diseases. **Method:** A descriptive cross-sectional study hospital based, convenience method sampling of nurses; 60 nurses at selecting sitting. One tool was utilized for data collection: Structure interview questionnaire schedule: It consists of two parts, demographic characteristics; and knowledge questionnaire sheet. **Result:** the most (67.0%) of nurses were female, belonged age group Less than 25 Years (36.7%). More than half (53.3%) of them had bachelor degree and (60%) of them had experience less than 5 years. Most (93.3%) of nurses had good knowledge. **Consolation:** Most nurses have good information about caring for patients with congenital heart disease.*

***Keywords**: Nurse, Knowledge, Patients, Congenital Heart Diseases.*

Article Info: Received: 2 June 2024; Revised: 7 June 2024; Accepted: 30 June 2024; Available online: 7 July 2024

Cite this article: -

Al-Ahdal SA, Abdu almoliky M, Hazaa AAM, Odhah MA, Al-Awar MS, Ashmieg FSO. Evaluation of Nurses' Knowledge Regarding Care of Patients with Congenital Heart Diseases at Alshaab Teaching Hospital, Khartoum, Sudan. Al-Razi Univ J Med Sci 2024; 8 (2): 26-32.

Address for Correspondence:

Saddam Ahmed Al-Ahdal: Assistant Professor of Medical Surgical Nursing, Faculty of Medicine and Health Sciences, Al-Razi University; Faculty of Medicine and Health Sciences/Sana'a University, Sana'a, Yemen. Tel- +967-779071115; ***E-mail***: saddams4s4s4@gmail.com.

Introduction

Cardiovascular disease now ranks as the world's top cause of death, causing one third of all deaths globally. Heart disease can no longer be seen as the problem of overworked and overweight middle-aged men in developed countries. In today's world, women and children too are at risk [(1-2).] Already 75% of all CVD deaths occur in the poorer regions of the world and this is likely to increase in the future [(2).]

Well into the first decades of the 20th century, medical opinion held that any surgical attempts to treat heart disease were not only misguided, but also unethical. Despite such reservations, innovative surgeons showed that heart wounds could be successfully repaired. Then, extracardiac procedures were performed to correct patent ductus arteriosus, coarctation of the aorta, and tetralogy of Fallot. Direct surgery on the heart was accomplished with closed commissurotomy for mitral stenosis [(3).]

The congenital heart disease includes abnormalities in heart structure that occur before birth. Such defects occur in the fetus while it is developing in the uterus during pregnancy [4]. 1 in every 100 children has defects in their heart due to genetic or chromosomal abnormalities, such as Down syndrome. The excessive alcohol consumption during pregnancy and use of medications, maternal viral infection, such as Rubella virus, measles (German), in the first trimester of pregnancy, all these are risk factors for congenital heart disease in children, and the risk increases if parent or sibling has a congenital heart defect. These are heart valves defects, atrial and ventricular septa defects, stenosis, the heart muscle abnormalities, and a hole inside wall of the heart which causes defect in blood circulation, heart failure, and eventual death [٥].

Nursing roles in caring for congenital heart disease patient can vary widely from region to region based on factors such as credentials, scopes of practice, regulations, and local culture and tradition. The writing committee of the International society for adult congenital Heart disease (ISACHD) was tasked with reviewing key aspects of the ACHD- Nurse Coordinator's (NC) role in team-based ACHD care. The resulting ISACHD position statement addresses the ACHD-NC's role and skills required in organizing, coordinating, and facilitating the care of adults with CHD, holistic assessment of the ACHD patient, patient education and counseling, and support for self-care management and self-advocacy [٦].

Congenital heart disease is the most common birth defect, and its incidence rate is about 0.8%. It includes a wide spectrum of simple, moderate and severely complex cases. Congenital heart disease is the most common type of congenital malformations, accounting for 28% of all congenital malformations. It refers to the embryonic development of the heart and large blood vessels due to the formation of disorders or abnormalities caused by anatomical abnormalities. The incidence of congenital heart disease cannot be overlooked because it accounts for 0.4% to 1% of living infants [٧].

Aim of the study

To Evaluation the Nurses' Knowledge Regarding Care of Patients with Congenital Heart Diseases.

Research Questions

What is the level of knowledge do nurses have about caring for patients with congenital heart disease?

Materials and Methods

A descriptive cross-sectional study design was utilized. The study was conducted in Alshaab teaching Hospital at Khartoum City for about four months. The nurses were 60 using convenience sampling method. Structure interview questionnaire sheet was utilized for data collection [8]: It consists of two parts:

Part I: demographic characteristics, which Include age (year), sex, marital status, educational level, and years' experience this part continues of (5) questions.

Part II: Knowledge of nurse Regarding Care of Patients with Congenital Heart Diseases, this part continues of (13) questions.

Scoring system

The scores for knowledge regarding Care of Patients with Congenital Heart Diseases, each item was given a score 1 for right responses and make zero for wrong responses, The total scores for the of knowledge regarding Care of Patients with Congenital Heart Diseases (13 scores) and was classified into the following: good knowledge, more than 75%, fair knowledge, more than 50% to 75% and poor knowledge, equal and less than 50%.

Data collection method:

The data was collected during January to April 2020 where a good relationship was maintained throughout the data collection period, the questionnaire was prepared in English and translated from English to Arabic using translation. All nurses received a questionnaire in Arabic. If some of the items in the questionnaire are unclear to a participant, the researcher clarifies the miss understand. The questionnaires were filled out in the presence of the researcher and the participants were free to ask any questions or clarifications. All data collected by researcher was checked daily for completeness. A research panel (5 academic staff nurses) reviewed the questionnaire, who checked the suitability, clarity, and understandable wording in the context. Cronbach's alpha coefficient was used to determine the reliability of the tool and its values for knowledge were (0.78). It was tested in a pilot study with 10% of sample.

Data Processing and Statistical Analysis

Collected data were coded and entered a Statistical Package for Social Sciences (SPSS) version 24 database. Data were analyzed; qualitative variables through descriptive statistics frequency tables and pie chart are used for establishing the data. Mean and standard deviation were used in quantitative variables. Spearman correlation coefficient test was used to analyze the data. The 0.05 level was used as the cut off value for statistical significance.

Ethical Consideration

The researchers obtained consent to conduct research from the faculty of Nursing Sciences, University of Medical Sciences and Technology. The managers of hospitals where the research was conducted. Informed verbal consent was obtained from the participant's confidentiality and privacy concerning all information were ensure anonymity each participant was provided. The purpose and objectives of the study were explained to all study participants and right of participant like those that the right to withdraw any time, in the whole study was used and confidentially.

Results

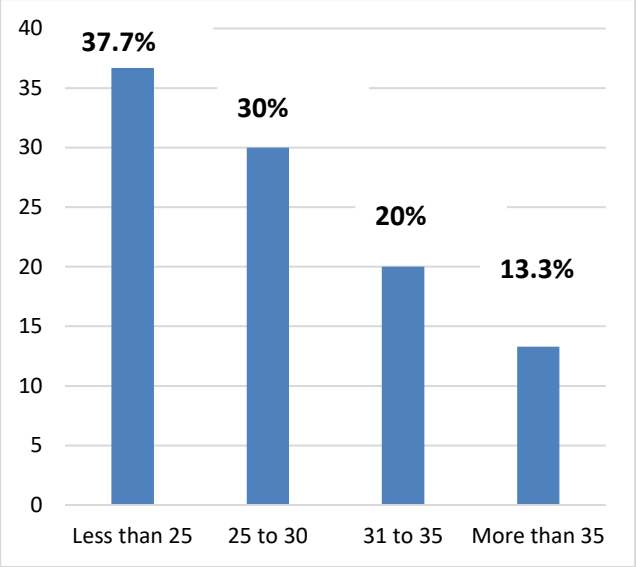

Figure (1): Distribution of samples according to age (n=60)

Figure 1 shows that the age of most of the sample 36.7%, is less than 25 years, while 13.3% were more than 35 years old.

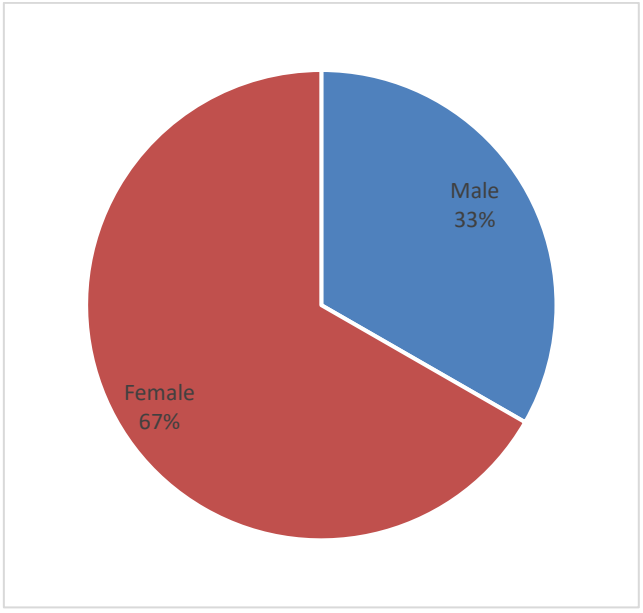

Figure (2): Distribution of samples according to gender (n=60)

Figure 2 shows that the majority of the sample's gender was female (67%), while only (33%) were male.

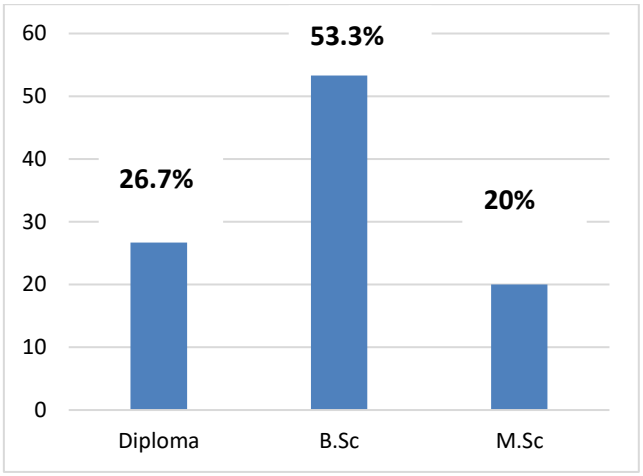

Figure (3): Distribution of samples according to Qualification level (n=60)

Figure 3 shows that the qualification level of most of the samples is a bachelor's degree 53.3%, while only 20% had master's qualifications.

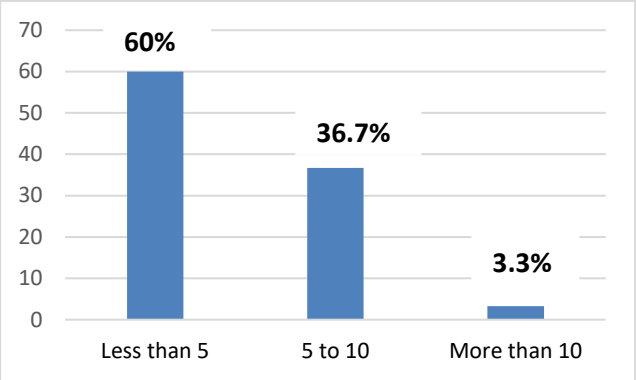

Figure (4): Distribution of samples according to years of experience (n=60)

Figure 4 shows that most of the sample 60%, have less than 5 years of experience, while 3.3% of sample have more than 10 years of experience.

Table (1): Level of nurses' Knowledge about Care of Patient with congenital heart diseases (n=60)

Items	Frequency	Percent
Poor knowledge	4	6.7
Fair knowledge	0	0
Good knowledge	56	93.3
Total	60	100

Table 1 showed that the majority of the sample, 93.3%, had good knowledge about caring of patients with congenital heart diseases, while no nurses had Fair knowledge, at 0%.

Table (2): Correlation between nurses' Knowledge regarding Care of Patient with congenital heart disease and age, qualification and years of experience (n=60).

Items	Significant	Level of Knowledge
Age	Correlation Coefficient	**.525***
	Sig.	**0.003**
	N=	60
Qualification	Correlation Coefficient	0.351
	Sig.	0.057
	N=	60
Years of experience	Correlation Coefficient	**.399***
	Sig.	**0.029**
	N=	60

* Correlation is significant at the 0.05 level.

Table 2 shows that there is a statistically significant relationship between nurses' knowledge about caring of patients with congenital heart diseases and both age at 0.003, and years of experience at 0.029, where the P value = < 0.005.

Discussion

Congenital heart disease is the most common type of congenital malformations, accounting for 28% of all congenital malformations. It refers to the embryonic development of the heart and large blood vessels due to the formation of disorders or abnormalities caused by anatomical abnormalities [1].

This is cross sectional hospital- based study aimed to assess nurses' knowledge regarding congenital heart disease patients' care at alshaab teaching hospital. The sample of the study consist of (60) Nurses.

The results of the current study were presented and discussed as demographics data and patient knowledge.

Demographic data of nurses

The current study documented that the majority 36.7% of nurses in the study sample were within age group (less than 25 years), 30% of them were between 25-30 years old, 20% were between 31-35 years old, while only 13.3% were over 35 years old. This findings disagree with (Richard Hatchett 2015) who mentioned that the majority (43.1%) of his study sample were within age group (26-40 years) [١٠].

In regarding to the gender of the study sample, this result indicates that 67% of nurses were females and (33%) of nurses were male. This result agree with (Richard Hatchett 2015) who mentioned that more than half of study sample were female 58.9% [١٠] and disagree with (Ombashair,2017) who mentioned that (50%) of the study sample were male and (50%) female [11]. According to finding of current study, most of study sample were females because historically women considered caretaker and nursing is caring profession. The reason most nurses are females in our society or country is because of the social culture.

According to the study sample in relation to qualification, most nurses (53.3%) in the study sample were B.Sc., 26.7% of them had a diploma qualification while only 20% had a master's degree in nursing. This result agrees with (shima, 2018). Who mentioned that show most nurses 61 (53%) were Bachelor's degree [١٢].

According to the study sample in relation to the number of years of experience, most nurses (60%) had service with congenital heart disease patients of (less than 5 years of experience). This result disagrees with (Meena P. LaRonde, 2022) who mentioned that the most of the study sample 36% have (6-9) Years of experience providing care to newborns/infants with congenital heart disease [13].

Nurses' knowledge about care of patients with congenital heart disease

According to level of knowledge about care of patient with congenital heart disease, the current study shows that the majority of nurses (93.3) have Good knowledge, (0%) have poor knowledge and just (6.7%) have Poor knowledge. The result of the current study is alignment with (Gaskin, K., & Kennedy, F. 2019) that reported that only 53% of pediatric nurses correctly identified the most common congenital heart defect. Nurses expressed the lowest confidence in caring for patients undergoing complex treatments like heart transplants. ([14]. In the other hand, the result of the current study is disagree with (ALhaib, H. W. R., & Ajil, Z. W. 2023) that reported that there were deficits in numerous domains of the nurses' knowledge regarding discharge plan for children with congenital heart Diseases [15]. Also, disagree with (Campbell, J. M. 2015) that the study found that 40% of nurses felt "not at all prepared" or only "somewhat prepared" to care for adults with congenital heart disease. [16]. The finding of the current study also disagree with (Webb, G., Mulder et al 2015) that the study highlighted significant knowledge gaps among nurses, particularly related to the natural history, treatment options, and comorbidities of congenital heart diseases in adulthood [17].

The finding of the current study indicates that there is no statistical significant relationship between nurses' knowledge and their level of qualification at p value = 0.057%, and that there is statistical significant relationship between nurses' knowledge and their years of experience and their age at P value = 0.029 and 0.003 respectively. This finding alignment with (Hjorth-Johansen, E., Hofoss, D., & Kynø, N. M. 2019) that reported that a positive correlation between years of nursing experience and knowledge about congenital heart defects. Nurses with more than 10 years of experience scored significantly higher on knowledge assessments compared to those with less experience. In the other hand, older nurses, aged 45 and above, tended to have more comprehensive knowledge about congenital heart defects compared to their younger counterparts. That mean there is a statistically significant positive correlation between nurses' age and their scores on knowledge assessments ($r = 0.42$, $p < 0.001$) [١٨].

Conclusion

Most of the samples are female 67%. Half of the study group was holding bachelor degree. The vast majority 93.3% of nurses in the study have Good knowledge about care of patient with congenital heart disease. No one has poor knowledge (0%) and just two nurses (6.7%) have poor knowledge. The study reveals that there is statistical significant relationship between nurses' knowledge and their qualifications and age.

Recommendation

1. Developing specialized training programs for nurses on caring for patients with congenital heart defects.
2. Strengthening coordination between different specialties
3. Establishing an effective system for collecting data on cases of congenital heart defects and therapeutic outcomes.

4. Encouraging researches to develop optimal health care practices for these patients and such diseases.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship and/or publication of this article.

Limitations

The study sample was limited, confined to certain areas only, the findings of the study cannot be generalized and simple techniques were used for analysis.

References

1. Al-Ahdal, S. A., & Abdullah, H. M. A. (2020). Effect of quality of life in rehabilitation patients following cardiac surgery at Sudan heart center, Khartoum, Sudan. Journal of Cardiovascular Disease Research, 11(4), 235-241.
2. Minja, N. W., Nakagaayi, D., Aliku, T., Zhang, W., Ssinabulya, I., Nabaale, J., ... & Kayima, J. (2022). Cardiovascular diseases in Africa in the twenty-first century: gaps and priorities going forward. Frontiers in Cardiovascular Medicine, 9, 1008335
3. Dodge-Khatami, A., Chen, P., & Mavroudis, C. (2023). Tetralogy of Fallot. Pediatric Cardiac Surgery, 431-462.
4. Vladimirovna, S. V., Vladimirovna, M. E., Singh, S., & Bugalia, A. (2023). PREGNANCY WITH CONGENITAL HEART DISEASE. Science and innovation, 2(D4), 127-136.
5. Trevino, C. E., Holleman, A. M., Corbitt, H., Maslen, C. L., Rosser, T. C., Cutler, D. J., ... & Zwick, M. E. (2020). Identifying genetic factors that contribute to the increased risk of congenital heart defects in infants with Down syndrome. Scientific reports, 10(1), 18051.) (Mavroudis, C., Backer, C. L., & Anderson, R. H. (2023). Ventricular septal defect. Pediatric cardiac surgery, 317-360.
6. Christina Sillman, N. P., & Kovacs, A. H. (2023) Access to Specialized Care Across the Lifespan in Tetralogy of Fallot.
7. Zimmerman, M. S., Smith, A. G. C., Sable, C. A., Echko, M. M., Wilner, L. B., Olsen, H. E., ... & Kassebaum, N. J. (2020). Global, regional, and national burden of congenital heart disease, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet Child & Adolescent Health, 4(3), 185-200.
8. De Hosson, M., Goossens, P. J., De Backer, J., De Wolf, D., & Van Hecke, A. (2021). Needs and experiences of adolescents with congenital heart disease and parents in the transitional process: a qualitative study. Journal of pediatric nursing, 61, 90-95.
9. Boyd, R., McMullen, H., Beqaj, H., & Kalfa, D. (2022). Environmental exposures and congenital heart disease. Pediatrics, 149(1), e2021052151.
10. Hatchett, R., McLaren, S., Corrigan, P., & Filer, L. (2015). An evaluation of a specialist nursing service for adult patients with congenital heart disease. International Journal of Nursing Practice, 21(5), 556-565.
11. Sillman, C., Morin, J., Thomet, C., Barber, D., Mizuno, Y., Yang, H. L., ... & Fernandes, S. M. (2017). Adult congenital heart disease nurse coordination: essential skills and role in optimizing team-based care a position statement from the International Society for Adult Congenital Heart Disease (ISACHD). International journal of cardiology, 229, 125-131.
12. Rohit, M., & Shrivastava, S. (2018). Acyanotic and cyanotic congenital heart diseases. The Indian Journal of Pediatrics, 85, 454-460.
13. LaRonde, M. P., Connor, J. A., Cerrato, B., Chiloyan, A., & Lisanti, A. J. (2022). Individualized family-centered developmental care for infants with congenital heart disease in the intensive care unit. American Journal of Critical Care, 31(1), e10-e19.
14. Gaskin, K., & Kennedy, F. (2019). Care of infants, children and adults with congenital heart disease. Nursing Standard, 34(8), 37-42.
15. ALhaib, H. W. R., & Ajil, Z. W. (2023). Nurses' Knowledge Regarding Discharge Plan for Children with Congenital Heart Diseases. Migration Letters, 20(S2), 505-514.
16. Campbell, J. M. (2015). Education and simulation training of pediatric intensive care unit nurses to care for open heart surgery patients. Critical care nurse, 35(3), 76-81
17. Webb, G., Mulder, B. J., Aboulhosn, J., Daniels, C. J., Elizari, M. A., Hong, G., ... & Khairy, P. (2015). The care of adults with congenital heart disease across the globe: current assessment and future perspective: a position statement from the International Society for Adult Congenital Heart Disease (ISACHD). International journal of cardiology, 195, 326-333.
18. Hjorth-Johansen, E., Hofoss, D., & Kynø, N. M. (2019). E-learning or lectures to increase knowledge about congenital heart disease in infants: A comparative interventional study. Nursing open, 6(3), 1143-1149.

تقييم معارف الممرضين فيما يتعلق برعاية المرضى الذين يعانون من أمراض القلب الخلقية في مستشفى الشعب التعليمي، الخرطوم، السودان.

صدام الاهدل[١*] - مختار المليكي[٢] – عبد الناصر القاضي[١] - مرزوق عوضة[١] - محمد صادق الأعور[٣] - فاطمة عشميق[٤]

Saddams4s4s4@gmail.com.

١. قسم التمريض والقباله، كلية الطب والعلوم الصحية جامعة الرازي، كلية الطب والعلوم الصحية/جامعة صنعاء، صنعاء، اليمن.
٢. قسم التمريض الباطني الجراحي، كلية التمريض، جامعة حائل، المملكة العربية السعودية. كلية الطب والعلوم الصحية جامعة تعز/اليمن.
٣. قسم المختبرات الطبية، كلية الطب والعلوم الصحية جامعة الرازي، جامعة عمران، اليمن.
٤. قسم الباطني الجراحي كلية التمريض جامعة القصيم.

الملخص

خلفية الدراسة: يشير مرض القلب الخلقي إلى مجموعة من تشوهات القلب التي تكون موجودة منذ الولادة. يمكن أن تؤثر هذه العيوب على بنية ووظيفة القلب والأوعية الدموية المحيطة. يعد الاكتشاف المبكر والعلاج المناسب أمرًا بالغ الأهمية للأفراد المصابين بأمراض القلب الخلقية للحصول على أفضل النتائج الممكنة وجودة الحياة. **الهدف من الدراسة:** تقييم معارف الممرضين فيما يتعلق برعاية المرضى الذين يعانون من أمراض القلب الخلقية. **منهجية الدراسة:** دراسة وصفية مقطعية طبقت في المستشفى، وأخذ عينات من الممرضين بطريقة ملائمة؛ تم اخذ ٦٠ ممرض وممرضة لتطبيق الاستبيان. تم استخدام أداة واحدة لجمع البيانات وهو الاستبيان بطريقة المقابلة: ويتكون من جزأين، الخصائص الديموغرافية للممرضين؛ واستبيان لمعرفة مستوى المعرفة لدى الممرضين. **نتائج الدراسة**: أكثر العينة (٦٧,٠٪) كن من الإناث، (٣٦,٧٪) من عينة الدراسة ينتمون للفئة العمرية أقل من ٢٥ سنة. أكثر من نصف الممرضين (٥٣,٣٪) حاصلون على درجة البكالوريوس و(٦٠٪) من الممرضين لديهم خبرة أقل من ٥ سنوات. معظم (٩٣,٣٪) الممرضين لديهم معرفة جيدة فيما يتعلق برعاية المرضى الذين يعانون من أمراض القلب الخلقية. **الاستنتاجات**: لدى معظم الممرضان معلومات جيدة فيما يتعلق برعاية المرضى الذين يعانون من أمراض القلب الخلقية.