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Research Article

Assessment of Knowledge and Practice of Staff Nurses regarding the Care of Children with Open Heart Surgery at Sher-i-Kashmir Institute of Medical Sciences, Soura, Srinagar

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I N F O

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A B S T R A C T

Background: Open-heart surgery is any type of surgery where the chest is cut open and surgery is performed on the muscles, valves, or arteries of the heart and the heart is connected to a heart-lung bypass machine, or by pass pump during surgery. The heart gets stopped when it is connected to this machine.

Objectives: The objectives of the study were to assess the knowledge and practice scores of staff nurses, find the association of their knowledge and practice scores with selected demographic variables, and the correlation between their knowledge and practice scores.

Methodology: A quantitative research approach with a descriptive correlational design was used. 60 staff nurses working at SKIMS, Soura were selected by non-probability purposive sampling. Assessment of knowledge and practice was done by using a 'self-structured knowledge questionnaire' and 'non-participatory checklist' respectively.

Results: The study showed that the majority of the study subjects had good knowledge regarding the care of children with open heart surgery and the majority of the study subjects had a good practice. There was no statistically significant association was found between the knowledge score of study subjects and their selected demographic variables and between their practice score and demographic variables

Conclusion: The study findings revealed that the % of practice score (93.3%) of study subjects was more as compared to the knowledge score (85.0%), which shows that there is a gap between knowledge and practice regarding the care of children with open heart surgery, So it is concluded that there is need to organize seminars and workshops regarding the nursing care of children with open heart surgery to bridge the gap between knowledge and practice.

Keywords: Knowledge, Practice, Open Heart Surgery

Introduction

Congenital Heart Disease "CHD" is the most common birth defect and the number one cause of death for children under the age of one. In total half of the children born with CHD will need to be treated either by surgery or catheter procedures.[1] The evolution of cardiac surgery after the Second World War was driven by 2 major objectives: to correct congenital heart defects and to restore the function of heart valves affected by Rheumatic Heart Disease (RHD).[2] The repair of many cardiac defects and complex anomalies requires the use of a cardiopulmonary bypass, stopping the heart and opening the heart. Most pediatric heart procedures are open-heart procedures.[3] Open-heart surgery is any type of surgery where the chest is cut open and surgery is performed on the muscles, valves, or arteries of the heart. The term "open heart surgery" means that the heart is connected to a heart-lung bypass machine, or bypass pump during surgery. The heart gets stopped when it is connected to this machine.[4] About 1.3 million babies are born every year with CHD and 93% do not have access to free cardiac care.[1] With advanced medical care, more children born with CHD are surviving and because of recent advances in diagnostics, medical treatment, and surgical techniques over the last two decades, the mortality rate of children with CHD has decreased.[5] The effect of a child with a serious heart defect on the family is complex. Parents need guidance to recognize the eventual hazards of continuing dependency and protectiveness as the child grows older, and the nurse can assist parents in learning ways to foster optimum development.[2] High-quality nursing care for children with heart surgeries demands professional nursing knowledge and practical skills, due to its specificity and complexity. A thorough nursing assessment to identify signs and symptoms provides data critical to identifying nursing-sensitive human responses, and their etiologies which are the clinical indicators of nursing diagnoses.[2] To reduce mortality and morbidity from CHD, it is imperative to focus on comprehensive newborn and infant cardiac care. According to a publication in 2005, less than 5% of babies born with critical CHD undergo cardiac surgery or any other form of intervention in India.[6] The 2007-2009 World Society for Paediatric Heart Surgery Manpower Survey 11 noted that about 75% of the world's population has no access to cardiac surgery.[7] In the United Kingdom, the countrywide number of actually performed operations for CHD under-19-year-old patients was 4.5 per 1,000 live births in 2015. In Africa alone, of the 50 million live births annually at least 335000 will have CHD. Less than 5 % have access to cardiac care. Without the availability of cardiac care, one in three children born with CHD dies within the first month of birth.[8] It is estimated that 15 million children die annually of potentially treatable or preventable cardiac disease. Paediatric cardiovascular services are highly specialised and require significant financial resources.[9]

At the Abou El-Resh Talabh hospital in Egypt, Salah, Tantawi, and Eltahan N (2017) 10 did a descriptive study to evaluate the paediatric nurses' knowledge and expertise regarding the treatment of children undergoing open heart surgery. 80 nurses were chosen as a purposeful sample. An observational checklist and a questionnaire sheet were used to gather the data. According to the report, more than half of nurses between the ages of 20 and 30 are married and have not attended any training programmes. While the majority of them (77.5) had competent performance (22.5%), more than half of them (61.3%) had unsatisfactory knowledge, (and 38.7%) had satisfactory knowledge and unsatisfactory performance regarding the care of children undergoing open heart surgery.

In Sulaimani city, Kurdistan region, Salih Mohammed (2017)11 conducted a descriptive study on the standard of nursing care for heart disorders in the intensive care unit of the paediatric teaching hospital. A non-probability sampling procedure was used, and the study included a convenience sample of 1055 paediatric patients with congenital heart disease and a purposeful sample of 35 nurses. An evaluation strategy was used with a quantitative design. The results indicate that only 9.5% of nurses practised complete care management at a good level, with the overall % at a reasonable level (90.5%).

In order to meet these problems, it is necessary to have a sufficient supply of educated individuals, clinical evidence relevant to the local circumstances, improved nursing and medical education, research, and quality improvement efforts. Furthermore, it is becoming more widely acknowledged that the absence of sustainable pediatric cardiac services in low- and middle-income nations contributes to a staggering number of avoidable fatalities and chronic suffering. For neonates and infants, open heart surgery and catheter procedures demand a significant increase in resources, infrastructure, and knowledge among doctors, nurses, paramedics, and families.[9]

Methodology

A quantitative research approach with a descriptive correlational design was selected to carry out this study. It was conducted from 11th May to 10th June 2022. The researcher selected the study subjects as per the inclusion criteria (staff nurses who were, available at the time of the study and willing to participate in the study) and exclusion criteria (staff nurses who were, not available during data collection and not willing to participate) and after taking permission from the Medical Superintendent, SKIMS, and HOD, C.V.T.S SKIMS. Ethical approval for the current study was obtained from the Ethics Committee of SKIMS Deemed University. Data were collected from 60 staff nurses working at Sher-i-Kashmir Institute of Medical Sciences Soura, Srinagar through a non-probability purposive

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sampling technique. Assessment of demographic data of study subjects was done through a 5-item questionnaire related to their age, gender, professional qualification, work experience, and in-service programme attended regarding the care of children with open heart surgery. Assessment of knowledge of the care of children with open heart surgery was done through a 48-item self-structured knowledge questionnaire and assessment of practice was done through a 55-item non-participatory checklist. Each correct and incorrect response was given a score of one (1) and zero (0) respectively. The knowledge and practice were categorised into various levels, if the score was >66% (33-48), it was considered good knowledge; if the score was 33-66% (17-32), it was considered average knowledge, and if the score was <33%, (0-16), it was considered poor knowledge. For practice, if the score was >65 (37-55), it was considered good practice; if the score was 33-65% (19-36), it was considered average practice, and if the score was <32 (0-18), it was considered poor practice. The data collected was analysed and interpreted by descriptive and inferential statistics.

Table 1.Description of Demographic Variables

n=60

Demographic Variables		Freq.	Pct.
Age	Above 50 years	5.0%	3
	41-50 years	11.7%	7
	31-40 years	43.3%	26
	20-30 years	40.0%	24
Gender	Male	16.7%	10
	Female	83.3%	50
Professional Qualification	P.H.D nursing	0.0%	0
	M.sc nursing	33.3%	20
	B.sc nursing	60.0%	36
	G.N.M	6.7%	4
Work-Experience	Above 20 years	13.3%	8
	11-20 years	8.3%	5
	5-10 years	45.0%	27
	Less than 5 years	33.3%	20
In-service Program Attended	Yes	8.3%	5
	No	91.7%	55

Results

The findings of the present study showed that a maximum of study subjects 26(43.3%) belonged to the age group of 31-40 years, the majority 50(83.3%) of study subjects were females, maximum of 36(60%) study subjects were B.sc nursing, maximum 27(45%) study subjects have 5-10years, of experience, and majority 55(91.7%) of study subjects have not attended any in-service programme related to the care of children with open heart surgery as depicted in Table 1.

Table 2.Frequency & % Distribution of Knowledge Score of Study Subjects

n=60

Category score	Frequency	Percentage
Good knowledge (33-48)	51	85.0%
Average knowledge (17-32)	9	15.0%
Poor knowledge (0-16)	0	0.0%
Total	60	100%

Knowledge regarding the Care of Children with Open Heart Surgery

The data presented in Table 2, shows that majority of the study subjects 51(85%) had good knowledge, 9(15%) had average knowledge, and none (0%) of the study subjects had poor knowledge regarding the care of children with open heart surgery. The mean knowledge score of study subjects was 38.03±5.91 with a median of 39.50. The minimum score was 19 and the maximum was 46 with a range of 27.

Table 3.Frequency & % Distribution of Practice Score of Study Subjects

n=60

Category score	Frequency	Percentage
Good practice (37-55)	56	93.3%
Average practice (19-36)	4	6.7%
Poor practice (0-18)	0	0.0%

Practice regarding the Care of Children with Open Heart Surgery

The majority 56(93.3%) of the study subjects had a good practice, 4(6.7%) study subjects had average practice and (0.0%) had poor practice as depicted in Table 3. The mean practice score of study subjects was 45.05±4.918 with a median of 45.5. The minimum score was 31 and the maximum was 55 with a range of 24.

Table 4.Co-Relation between Knowledge and Practice Scores of Study Subjects

n=60

Pearson's Correlation	Knowledge score	Practice score
Mean	38.03	45.05
Sd	5.915	4.918
n	60	
Correlation r	0.069	
Table value	0.254	
P value	0.599	
Result	Not significant	

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Co-relation between Knowledge and Practice Scores of Study Subjects

There was no significant correlation (r=0.069, p=0.599) between the knowledge and practice scores of study subjects regarding the care of children with open surgery as depicted in Table 4.

Table 5.Association of Knowledge Score of Study Subjects with their Selected Demographic Variables

Demographic Variables		n= 60			Association with Knowledge Score				
Variable	Opts	Good knowledge	Average knowledge	Poor knowledge	Chi-test	P-value	df	Table Value	Result
Age	Above 50 years	3	0	0	1.661	0.646	3	7.815	Not Significant
	41-50 years	5	2	0					
	31-40 years	22	4	0					
	20-30 years	21	3	0					
Gender	Male	10	0	0	2.118	0.146	1	3.841	Not Significant
	Female	41	9	0					
Professional Qualification	P.H.D nursing	0	0	0	0.784	0.676	2	5.991	Not Significant
	M.sc nursing	18	2	0					
	B.sc Nursing	30	6	0					
	G.N.M	3	1	0					
Work-Experience	Above 20 years	6	2	0	2.164	0.539	3	7.815	Not Significant
	11-20 years	5	0	0					
	5-10 years	22	5	0					
	Less than 5 years	18	2	0					
In-service program attended	Yes	4	1	0	0.107	0.744	1	3.841	Not Significant
	No	47	8	0					

Association of Knowledge Score of Study Subjects with their Selected Demographic Variables

There was no statistically significant association between the knowledge scores of study subjects with demographic variables like age (p=0.646), gender(p=0.146), professional qualification (p=0.676), work experience (p=0.539), and in-service programs attended (p=0.744), as depicted in Table 5.

Table 6.Association of Practice Score of Study Subjects with their Selected Demographic Variables

Demographic Variables		n= 60			Association With Practice Score				
Variable	Opts	Good practice	Average practice	Poor practice	Chi-test	P-value	df	Table Value	Result
Age	Above 50 years	3	0	0	1.307	0.727	3	7.815	Not Significant
	41-50 years	6	1	0					
	31-40 years	25	1	0					
	20-30 years	22	2	0					
Gender	Male	10	0	0	0.857	0.355	1	3.841	Not Significant
	Female	46	4	0					

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Professional Qualification	P.H.D nursing	0	0	0	3.750	0.153	2	5.991	Not Significant
	M.sc nursing	20	0	0					
	B.sc Nursing	33	3	0					
	G.N.M	3	1	0					
Work-Experience	Above 20 years	7	1	0	1.533	0.675	3	7.815	Not Significant
	11-20 years	5	0	0					
	5-10 years	26	1	0					
	Less than 5 years	18	2	0					
In-service program attended	Yes	5	0	0	0.390	0.533	1	3.841	Not Significant
	No	51	4	0					

Association of Practice Score of Study Subjects with their Selected Demographic Variables

There was no statistically significant association between the practice scores of study subjects with demographic variables like age (p=0.727), gender (p=0.355) professional qualification (p=0.153), work experience (p=0.675), and in-service programs attended (p=0.533) as depicted in Table 6.

Discussion

The results of the present study revealed that the majority of the study subjects 51(85%) had good knowledge, followed by 9(15%) who had average knowledge, and none (0%) of the study subjects had poor knowledge regarding the care of children with open heart surgery. The majority 56(93.3%) of the study subjects had a good practice, only 4(6.7%) study subjects had average practice and (0.0%) had poor practice. These findings are consistent with the findings of a study conducted by Mahil 2011[12] (n=50) to assess the knowledge and practice of the staff nurses regarding the post-operative nursing care of children with congenital heart disease at Narayana Hrudayalaya Institute of Cardiac Sciences, Bangalore, Karnataka. The results revealed that a maximum of 29(58%) of the study subjects had average knowledge, 21(42%) of them had good knowledge, and none (0%) of them had poor knowledge scores. A maximum of 31(62%) study subjects had average practice, 19(38%) had a good practice and none (0.0%) of them had poor practice.

The results of the current study showed that there was no correlation between the knowledge and practice scores of study subjects i.e.,(r=0.069, p=0.599) regarding the care of children with open surgery. However, a study conducted by Salah, Tantawi, and Eltahan 2017[7] (n=80) assessed the pediatric nurse's knowledge and skills regarding the care of children undergoing open heart surgery at Abou El-ReshTalabh hospital in Egypt. It was found that there was a positive correlation between the knowledge and practice of staff nurses regarding open heart surgery with statistically significant differences at (p< 0. 0001).

The results of the current study showed that there was no statistically significant association between the knowledge scores of study subjects with demographic variables like age (p=0.646), gender(p=0.146) professional qualification (p=0.676), work experience (p=0.539), and in-service programs attended (p=0.744). The results also showed that there was statistically no significant association between the practice of study subjects with their selected demographic variables like age (p =0.727), gender (p= 0.355), professional qualification (p=0.153), work experience (p=0.675), and in-service programmes attended (p=0.533). A similar descriptive study was conducted by Mahil 2011[12] (n=50) to assess the knowledge and practice of the staff nurses regarding the post-operative nursing care of children with congenital heart disease at Narayana Hrudayalaya Institute of Cardiac Sciences, Bangalore, Karnataka. The results showed that there was a significant association between knowledge scores with their selected demographic variables such as age (p<0.001), educational qualification (p<0.001), and experience(p<0.001) and there was a significant association between practice scores and selected demographic variables such as age (p<0.001), educational qualification(p<0.01), and experience(p<0.001).

Conclusion

The study findings revealed that the % of practice score (93.3%) of study subjects was more as compared to the knowledge score (85.0%), which shows that there is a gap between knowledge and practice regarding the care of children with open heart surgery, so from the above statement, it was concluded the administration needs to organize seminars and workshops regarding the nursing care of children with open heart surgery to bridge the gap between knowledge and practice.

From the study findings, the researcher felt the need to distribute an information booklet to study subjects working

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at Sher-i-Kashmir Institute of Medical Sciences, (SKIMS), regarding the care of children with open heart surgery, so that the knowledge level of staff nurses will enhance.

Limitations of the Study

The small sample size from a single institution and non-probability purposive sampling technique limits the generalization. The assessment was done using a self-report questionnaire, thus there is a possibility of misreporting, due to the disinterest of staff because of their busy schedule.

Recommendations

Interventional studies can be done to find the effectiveness of interventions like structured teaching programmes on the knowledge of nurses regarding the care of children with open heart surgery.

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Conflicts of Interest: None

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