

Assessment of Nurses' Knowledge and Practice Regarding Care of Children Undergoing Liver Surgeries

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Abstract

Aim: The study aims to assess nurses' knowledge and practice regarding care of children undergoing liver surgeries. **Research design:** A descriptive study design was used. **Setting:** The study was conducted at Pediatric Surgery Unit in the Children's Hospital that affiliated to Ain shams university hospitals and Liver Surgeries Unit that affiliated to Air Force Specialized Hospital / Cairo/ Egypt. **Sample:** A purposive sample of 50 nurses, from the previously mentioned setting during the period of six months. **Tools:** two tools were used to collect data namely: A structured interviewing questionnaire and standardized observational checklists adopted from (*Perry et al., 2018*) to assess nurses' knowledge and practice regarding care of children undergoing liver surgeries. **Results:** showed that near quarter of the studied nurses had satisfactory total knowledge levels regarding care of children undergoing liver surgeries, and only 28% of them had competent total practice regarding care of children undergoing liver surgeries. There were statistically significant differences between nurses' knowledge and practices regarding care of children undergoing liver diseases and surgeries and their socio-demographic characteristics. **Conclusion:** Nurses' knowledge and practice regarding care of children undergoing liver surgeries were unsatisfactory by majority of the studied sample. **Recommendation:** Adopt nursing intervention based on actual need assessment of nursing regarding care of children undergoing liver surgeries.

Key words: Liver surgeries, Pediatric, Nurses knowledge, Nurses Practice.

Introduction

Pediatric liver disorders are particularly important since a number of childhood illnesses are risk factors for adult chronic liver diseases such cirrhosis and hepatocellular carcinoma Children's hepatobiliary disorders commonly go undiagnosed due to a general lack of awareness of the symptoms, which increases the risk of morbidity and mortality as the condition develops to end-stage liver disease (*Della Corte, 2016*).

Liver illness can affect anyone, regardless of their age, gender, location, or race. Cirrhosis is a frequent result of several liver diseases and can have a wide range of clinical signs and effects, but many circumstances are urgent. The information that was available indicated that around 15,000 children in the USA are hospitalized each year due to liver issues (*D'Antiga, 2019*).

Pediatric patients who are seriously impaired and immune compromised require treatment

from a qualified multi-professional team as well as a complete hospital infrastructure. One of the trickiest operations in modern surgery is liver surgery (these from researcher point view). In an effort to enhance their quality of life and achieve an activity and health level comparable to that of a kid of the same age who does not have liver disease, pediatric patients with end-stage liver disease (ESLD) undergo liver surgeries (*Subramaniam & Sakai, 2017*).

Nursing interventions, which span all facets of preoperative, postoperative, and follow-up care, are thought to be the most crucial management method for pediatric liver surgeries. The pediatric patient's preparation for surgery is essential, and the nursing staff's input impacts how successfully the procedure proceeds. Therefore, the nurses are in responsible of planning and executing the care provided to pediatric patients and their families during the liver surgery process (*Mendes et al., 2015*).

Significance of the study

Nurses play a crucial role in recognizing physiological and psychological needs, which are essential skills for the pediatric surgical nurse who should interpret them in the form of nursing intervention through providing care both preoperatively and postoperatively. So, it is important to assess nursing performance for the care of pediatric patients undergoing liver surgeries (*Robin et al., 2017*).

Aims of the study:

The present study aimed to assess nurses' knowledge and practice regarding care of children undergoing liver surgeries through the followings:

- Assessing nurses' level of knowledge regarding care of children undergoing liver surgeries.
- Assessing nurses' level of practice regarding care of children undergoing liver surgeries.

Research questions:

1. What is the level of nurses' knowledge and practices regarding care of children undergoing liver surgeries?
2. Is there a relation between characteristics of the nurses at pediatric surgery units and their knowledge and practice regarding care of children undergoing liver surgeries?

Subject and Methods:

Research Design: Descriptive design was used in the current study.

Setting: This study was conducted at Pediatric Surgery Unit in the Children's Hospital affiliated to Ain Shams University hospitals and Liver Surgeries Unit affiliated to Air Force Specialized Hospital / Cairo/ Egypt.

Subject: A purposive sample that consisted of 50 nurses, who employed in the previously mentioned setting and were responsible for care of the children undergoing liver surgeries pre and post operatively regardless their socio-demographic characteristics.

Inclusion criteria:

- Nurses working in liver surgeries units.

- All available children undergoing liver surgeries in the previously mentioned settings.

Tools for data collection:

1- A predesigned interviewing questionnaire format: It was developed by the researcher based on related literature review and covered the following parts:

Part 1: Characteristics of the nurses (age, qualification, years of experience and previous training related liver surgeries).

Part 2: Nurses' knowledge regarding liver diseases, liver surgeries and nursing care for children undergoing liver surgeries.

Scoring system: As regards the scoring system for questionnaire format that composed of 56 questions in the form of open and close ended questions: According to nurses' answers a scoring system was followed to estimate the level of nurses' knowledge. Where each complete correct knowledge was scored 2, and each incomplete correct knowledge was scored 1 and wrong or don't know was scored zero. Then the total knowledge was classified into two levels: Satisfactory knowledge (>85%) or unsatisfactory knowledge (<85%).

2- Standardized observational checklists: Observational checklists were used to assess nurses' practices for caring of children undergoing liver surgeries as regards to infection control precautions, caring of the urinary catheter, central venous catheter care, post-operative care and wound care.

Scoring system: Where each complete correct practice was scored 2, and each incomplete correct practice was scored 1 and not done was scored zero. Then the total practices were classified into two levels: competent level (> 90%) or incompetent level (< 90%).

Content validity and reliability: The study tools were assessed by 3 jury of experts in the field prior its actual use in data gathering phase to confirm its validity.

Pilot study:

Before performing the actual study, a pilot study was carried out, which included (10%) nurses in the previously-mentioned setting to test the clarity and applicability of the study tools and the time needed to fill each one. The nurses involved in the pilot study were included in the main study sample.

Field work:

The researcher started by introducing herself to the studied nurses and giving them a brief idea about the aim of the study. The researcher was available 2 days weekly (Sunday, Monday) in Ain Shams University hospital and 2 days weekly (Tuesday, Thursday) in Air Force Specialized hospital to assess nurses' knowledge and actual practice. The predesigned questionnaire sheet was filled by each nurse.

Ethical considerations:

The ethical research committee, the nursing faculty, and Ain Shams University all approved the study. The study's objective and purpose are made apparent to each subject by the researcher, and it is safe. The researcher protects

the subjects' privacy and anonymity. Subjects have the freedom to participate or not at any time without consequence.

Statistical design:

Data were revised, coded, tabulated and analyzed using number and percentage distribution using SPSS (Statistical Package for Social Sciences) software. Proper statistical tests

Results:

Table (1): Distribution of the studied nurses according to their socio-demographic characteristics (n=50).

Nurses' characteristics	No.	%
Age in years:		
20-≤ 25	10	20.0
25-≤ 30	16	32.0
30-≤ 35	24	48.0
X̄±SD	29.40±5.59	
Gender:		
Male	33	66.0
Female	17	34.0
Marital status:		
Single	14	28.0
Married	31	62.0
Divorced	2	4.0
Widow	3	6.0
Qualifications:		
Technical nursing diploma	19	38.0
Technical nursing diploma and specialist in nursing	5	10.0
Bachelors in nursing science	23	46.0
Postgraduate studies	3	6.0

Table 1 showed that, 48% of the studied nurses were aged 30-≤ 35 years. Regarding their gender, it was found that 66% of them were males. In relation to qualifications, it was found that 46 % of them had bachelor in nursing science.

were used to determine whether there was a significant statistical difference or not.

Significance of results:

- At P < 0.05, there was a statistically significant difference.
- At P > 0.05, there was no statistically significant difference.

Figure (1): Distribution of the studied nurses regarding to their years of experience.

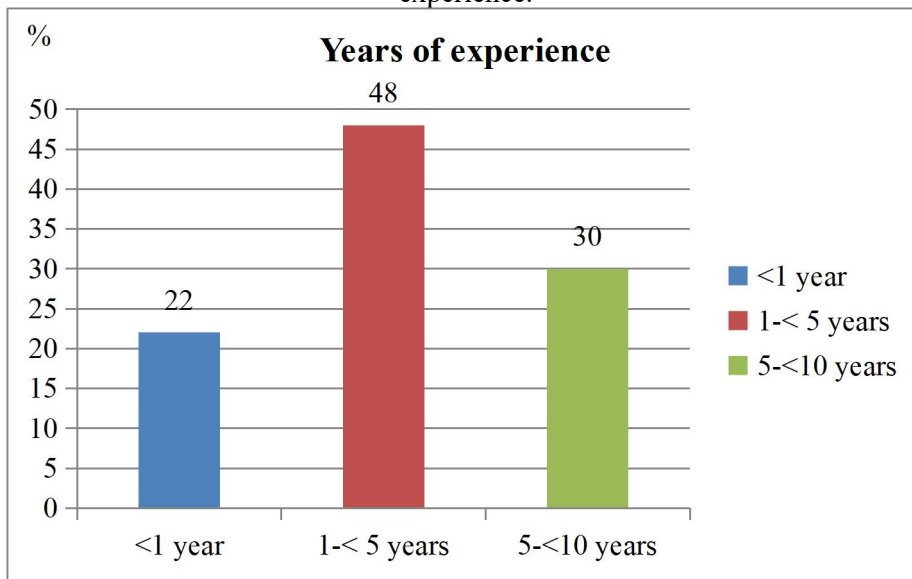


Figure 1 illustrated that near half (48 %) of the studied nurses reported 1<5 years of experience in pediatric surgery units.

Figure (2): Distribution of the studied nurses regarding to their attendance of training program.

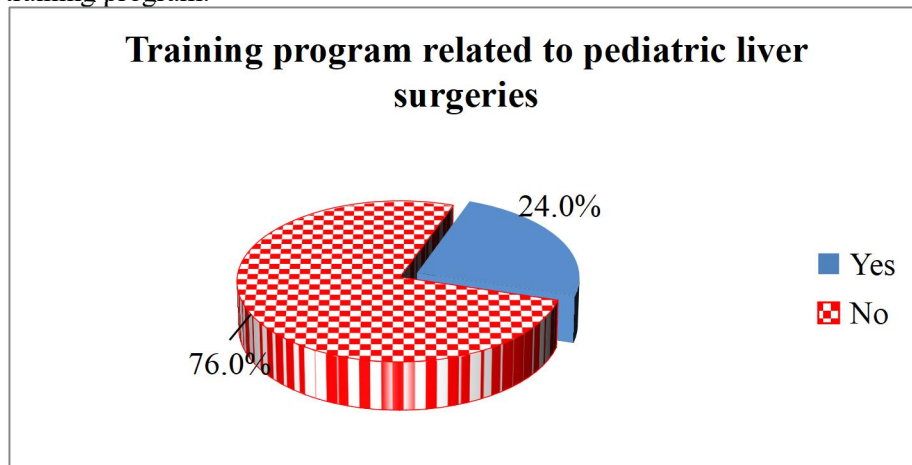


Figure 2 concerned to the attendance of previous training program; this figure clarified that more than one quarter of the studied nurses (76%) hadn't previous training in pediatric liver surgeries.

Table (2): Distribution of the studied nurses' total knowledge regarding liver diseases and its surgeries (n=50).

Total knowledge	No.	%
Satisfactory	12	24
Unsatisfactory	18	76

Table 2 showed that 76% of the studied nurses had unsatisfactory levels of total knowledge regarding liver diseases and its surgeries.

Table (3): Distribution of the studied nurses' total practices regarding care of children undergoing liver surgeries (n=50).

Total practice	No.	%
Competent practice	14	28
Incompetent practice	36	72

Table 3: showed that 72% of the studied nurses had incompetent total practices regarding liver diseases and its surgeries.

Table (4): Relation between the studied nurses’ socio-demographic characteristics and their total knowledge regarding care of children undergoing liver surgeries (n=50).

Characteristic data	Total Knowledge				Test of significance	
	Satisfactory (n=12)		Unsatisfactory (n=38)		X ²	P-value
	No.	%	No.	%		
Age (years):						
20-≤ 25	3	25.0	7	18.4	0.338	0.845
25-≤ 30	4	33.3	12	31.6		
30-≤ 35	5	41.7	19	50.0		
Gender:						
Male	8	66.7	25	65.8	0.086	0.769
Female	4	33.3	13	34.2		
Qualification						
Technical nursing diploma	4	33.3	15	39.5	0.333	0.954
Technical nursing diploma and specialist	1	8.3	4	10.5		
Bachelor in nursing science	6	50.0	17	44.7		
Postgraduate studies	1	8.3	2	5.3		
Years of experience						
≤1	3	25.0	8	21.1	0.209	0.901
1-≤ 5	6	50.0	18	47.4		
5-≤10	3	25.0	12	31.6		
Attending training program related to liver surgeries:						
Yes	3	25.0	9	23.7	0.087	0.768
No	9	75.0	29	76.3		

Table 4 showed the relation between total studied nurses’ knowledge and their socio-demographic characteristics. It is clear that there was no statistically significant difference between studied nurses’ total knowledge and their socio-demographic characteristics namely (age, gender, qualification, years of experience and attending training program related to pediatric liver surgeries) regarding care of children undergoing liver surgeries (x² = 0.338, 0.086, 0.333, 0.209, 0.087 and P-value = 0.845, 0.769, 0.954, 0.901 and 0.768) respectively.

Table (5): Relation between the studied nurses' socio-demographic characteristics and their total practice regarding care of children undergoing liver surgeries

Characteristic data	Total Practice				Test of significance	
	Competent (n=14)		Incompetent (n=36)		X ²	P-value
	No.	%	No.	%		
Age (years):						
20-≤ 25	3	21.4	7	19.4	0.107	0.948
25-≤ 30	4	28.6	12	33.3		
30-≤ 35	7	50.0	17	47.2		
Gender:						
Male	9	64.3	24	66.7	0.03	0.863
Female	5	35.7	12	33.3		
Qualification						
Technical nursing diploma	5	35.7	14	38.9	0.468	0.926
Technical nursing diploma and specialist	2	14.3	3	8.3		
Bachelor in nursing science	6	42.9	17	47.2		
Postgraduate studies	1	7.1	2	5.6		
Years of experience						
≤1	3	21.4	8	22.2	0.032	0.984
1-≤ 5	7	50.0	17	47.2		
5-≤10	4	28.6	11	30.6		
Attending training program related to liver surgeries:						
Yes	3	21.4	9	25.0	0.011	0.918
No	11	78.6	27	75.0		

Table 5 showed the relation between total nurses' practices and their socio-demographic characteristics. It is clear that there was no statistically significant difference between nurses' total practices and their socio-demographic characteristics namely (age, gender, qualification, years of experience and attending training program) regarding care of children undergoing liver surgeries ($x^2 = 0.107, 0.03, 0.468, 0.032, 0.011$ and P-value = 0.948, 0.863, 0.926, 0.984 and 0.918) respectively.

Discussion

The current descriptive study aimed to assess nurses' knowledge and practice regarding care of children undergoing liver surgeries. In the present study, the socio-

demographic characteristics of the studied nurses revealed that near half of them were in age group of 30 to 35 years. These results agreed with that of a study done by **Abo El-Ata et al. (2021)**, about

"Nurses' knowledge and practice regarding nursing care of patients with liver cirrhosis" in Egypt, and found that more than half of the studied nurses were in age group older than 30 years. Also, agreed with **Ibrahim & Khudhair's (2022)**, who studied the "Effectiveness of an instructional program for nurses about nursing documentation at pediatric surgical wards" in Baghdad and reported that near half of the studied nurses were between the ages of 30 and 39 years.

Concerning the gender of the studied nurses, the current study revealed that about two thirds of them were males. This result was inconsistent with the study of **Karaly & Abo Elfetoh (2019)**, "Effect of an educational guideline on nurses' performance caring for patients post liver transplantation" in Egypt which illustrated that the majority of the studied nurses were females. This may assure the idea that the males nurses preferred working in surgical units.

Regarding the studied nurses' qualification, it was found that near half of them had bachelor in nursing science. This result disagreed with that of a study carried out by **Karaly & Abo El-Fetoh (2019)**, who reported that most of the studied nurses graduated from secondary school nursing. This may reflect the fact that nurses had bachelor in nursing science are more qualified to work in liver surgery units.

Regarding the studied nurses' years of experience, the current study showed that near half of them had 1-5 years of experience

in pediatric surgical unit. This finding was similar to the findings of **Ibrahim & Khudhair's (2022)**, who found that near half of nurses had years of experience from 6 -10 years, while less than quarter of them had 1-5 years of experience. Also, this result is in the same line with that of **Paul et al., (2017)**, who studied the "Knowledge, attitude and practice of staff of 4 hospitals in Yaoundé on the prevention of vertical transmission of hepatitis B." in Cameroon and found that the majority of health care givers have a more than five years working experience.

From the researchers' point of view, the years of experience had a significant effect on the nurses' knowledge and practices, which resulted in improving the quality and consistency of care provided to the children undergoing liver surgeries.

Regarding the attendance of previous training program related to pediatric liver surgeries, the current study results showed that the majority of the studied nurses did not attend any training program related to pediatric liver surgeries. These findings were supported by **Abo El-Ata et al. (2021)**, who found that the majority of the studied nurses did not attend any training courses related to liver cirrhosis. Also, this result is in the same line with that of **Karaly & Abo El -Fetoh (2019)**, who reported that the majority of the studied nurses did not attend training courses about liver transplantation.

The researcher believes that attending training programs by

nurses, especially in the pediatric liver surgeries is crucial to provide proper quality of nursing care for children undergoing liver surgeries.

Regarding nurses' total knowledge about liver diseases and its surgeries, the results of this study clarified that the majority of them had unsatisfactory knowledge regarding liver diseases. These results in the same line with **Abo El-Ata et al. (2021)**, who found that more than half of nurses had unsatisfactory knowledge regarding liver cirrhosis.

The current study's results showed that the majority of the studied nurses had unsatisfactory total knowledge regarding pre & post-operative nursing care for children undergoing liver surgeries. These results were agreed with the study of **Karaly and AboElfetoh (2019)**, which revealed that all of the studied nurses had unsatisfactory score regarding their total knowledge about liver transplantation.

The researcher believes that the absence of studied nurses' knowledge regarding pediatric liver surgeries can be explained due to the lack of training programs.

Regarding nurses' total practices about caring of urinary catheter, the present study showed that more than half of studied nurses had incompetent practices. These results agreed with **Algarni et al. (2019)**, who studied "Nurses' knowledge and practices toward prevention of catheter-associated urinary tract infection", in King Abdul-Aziz university/Jedda/Saudi Arabia Kingdom and revealed that

the majority of nurses had a poor level of practices.

More than half of the studied nurses had incompetent total practices regarding central venous catheter care. This result is in an agreement with **Karaly & Abo El-Fetoh (2019)**, who reported that more than one third of the nurses under the study had unsatisfactory score of practice regarding central venous catheter care at pre-educational guidelines implementation.

From the researchers' point of view, these results may be related to that the majority of the studied nurses had unsatisfactory knowledge regarding care of central venous catheter care.

The present study showed that more than half of studied nurses had incompetent total practice regarding postoperative care. This result is not in the same line with **Chaney et al. (2016)**, who studied "Role development of nurse practitioners and physician assistants in liver transplantation" and revealed that the majority of nurses under the study had a satisfactory level of practice regarding immediate care of patients with liver transplantation in the postoperative period.

Concerning studied nurses' total practices regarding wound care post- liver surgeries, the finding of the present study revealed that about two third of them had incompetent practices. This result is not in the same line with **Tegegne, et al. (2022)**, in a study entitled "Knowledge and practice of wound care and associated factors among nurses

working in South Wollo Zone Government Hospitals" in Ethiopia. They found that more than half of the nurses had good practices about wound care.

There was no statistically significant relation between nurses' total knowledge and their socio-demographic characteristics. These results were disagreed with **Youssef & Ali (2022)**, findings from their study "Assessment of nurses' knowledge regarding management of patients post liver transplantation" in Egypt who's found there were statistically significant relation between total nurses' knowledge and their socio-demographic characteristics.

Also, there were no statistically significant relation between nurses' total practices and their socio-demographic characteristics. These results were in the same line with **Mohamed (2016)**, who conducted a study about "assessment performance of nurses caring for patients with kidney transplantation" on nurses who had been working in unit of transplantation affiliated to Ghonim Center at Mansoura University in Egypt and found that there were no statistically significant differences between educational level and total level of practical knowledge among nurses under the study.

Conclusion:

Nurses' knowledge and practice regarding care of children undergoing liver surgeries were unsatisfactory by majority of the studied sample.

Recommendation:

Adopt nursing intervention based on actual need assessment of nursing regarding care of children undergoing liver surgeries.

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