

Assessment of Nurses' knowledge and Practices regarding Children with Acute Pancreatitis.

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Abstract

Background Acute pancreatitis is an emerging problem in pediatrics, with most cases resolving spontaneously. It is characterized by inflammation of the pancreas, the presence of interstitial edema, infiltration, necrosis and haemorrhage. **The study aim was** to assess nurses' knowledge and practice regarding children with acute pancreatitis. **Design:** A descriptive research design was utilized **Subjects:** All nurses (79) who were working in Paediatric Medical Department of Tanta Main University Hospital and (51) from Paediatric Department and Paediatric Intensive Care Unit of Kafer-Elsheikh University Hospital. **Tools:** two tools were utilized. **Tool I:** knowledge Structured questionnaire. **Tool II:** Observational Checklist about nurses' practice regarding acute pancreatitis. **Results:** nearly two thirds of the studied nurses had high level of knowledge about acute pancreatitis, while more than three quarters of them had satisfactory practice level. **Conclusion:** pediatric nurses had high level of knowledge and satisfactory level of practice regarding acute pancreatitis in children. **Recommendations:** Implementing regular and continuous educational program about children's acute pancreatitis to increase nurses' knowledge and practice for those children. **Keywords:** Acute Pancreatitis, Assessment, Children, Nurses and Practices.

Introduction

Acute pancreatitis (AP) is one of the most common reasons for gastrointestinal hospitalization. It's Incidence is 13 per 100,000 children. It is an emerging problem in pediatrics, with most cases resolving

spontaneously. Approximately 10% to 23%, however, are believed to develop "severe acute pancreatitis.(Roark et al., 2020).

Acute pancreatitis is defined as the histological presence of inflammation of the pancreatic parenchyma. It is a

reversible process characterized by the presence of interstitial edema, infiltration by inflammatory cells and variable degrees of cellular apoptosis, necrosis and hemorrhage. The recurrent fibrotic and inflammatory processes may cause different degrees of dysfunction in the endocrine and exocrine pancreas or in both (**Thapa et al., 2022**)

The causes of AP in children include biliary disease, metabolic disease, drug-induced AP, idiopathic AP, systemic diseases and trauma, infectious diseases, pancreas divisum and hereditary. (**Iannuzzi et al., 2022**).

The most common risk factor of AP in children include physical injury as bicycle handlebar injuries, certain medications such as antiepileptic or blunt trauma, gallstones, or problems in the anatomy of the ducts in the liver or pancreas. or blunt trauma to the mid-upper abdomen can cause AP, chemotherapy agents and certain antibiotics (**Saeed, 2020**).

Clinical manifestations of AP include severe abdominal pain which is the major symptom of pancreatitis that causes the pediatric patient to seek medical care. Abdominal pain and tenderness and back pain result from irritation and edema of the inflamed pancreas that stimulate the nerve endings. Increased tension on the

pancreatic capsule and obstruction of the pancreatic ducts also contribute to that pain.

Typically, the pain occurs in the mid-epigastrium. Pain is frequently acute in onset, occurring 24 to 48 hours after a very heavy meal, and it may be diffuse and difficult to localize and not relieved by antacids. Pain may be accompanied by abdominal distension; a poorly defined, palpable abdominal mass; and decreased peristalsis. Pain caused by pancreatitis is accompanied frequently by nausea and vomiting that don't relieve the pain (**Huang, et al., 2025**). Management of AP in children relies on supportive measures and volume replacement in specific cases, as well as in the early introduction of enteral nutrition, depending on the pediatric, clinical conditions, in order to reduce morbidity associated with the disease. The early diagnosis and the proper management can contribute to better outcomes of children and prevent immediate and late related complications (**Hines & Pandol, 2024**).

The complications observed in children with AP can be immediate or late. Immediate complications include hypovolemic and septic shock associated with dysfunction of multiple organs and systems. Renal dysfunction and cavity effusions, such as ascites and pleural effusion, as well as acute

respiratory distress, may also complicate the child's condition. The most common late complications include pancreatic necrosis and formation of pseudo cysts. Early recognition and diagnosis of pancreatitis is key to prevent disease progression and associated complications **(Lal et al., 2020)**.

Nursing management of the child with AP include providing pain relief medications and emotional support. In addition to monitoring the child for signs of local or systemic complications. The child must be closely monitored for signs and symptoms of pancreatic infection, which include increased abdominal pain and tenderness, fever, and increased white blood cell count **(Mehany, Belal, Mohamed &Shaaban, Abdel Hamid, (2022)**.

Acute pancreatitis in children is a serious condition that requires prompt and effective nursing care to prevent complications. Nurses play a critical role in the management of pediatric patients with AP, necessitating a strong foundation of knowledge and practice. Management of AP in children relies on supportive measures and volume replacement in specific cases, as well as in the early introduction of enteral nutrition, depending on the pediatric clinical conditions, in order to reduce morbidity associated with the disease.

The early diagnosis and the proper management can contribute to better outcomes of children and prevent immediate and late related complications **(Hines & Pandol, 2024)**.

Pediatric nurses play an important role in the management of AP. Nurses must be able to take complete detailed history in order to correctly identify pancreatitis, and to eliminate differential diagnosis of similar presentation. Nurses must be able to identify risk factors associated with AP, have assessment skills, and know what diagnostics tests are needed. In order to prevent disease progression the cause of pancreatitis must also be identified **(Mehany et al., (2022)**.

Nursing intervention include relieving pain and discomfort, improving breathing pattern, nutritional status, skin integrity, monitoring and managing potential complication, promoting home and community-based care, continuing care and measuring blood glucose level and nursing of nasogastric tube. **(Sarin & Kaur, 2022)**.

Significance of the study

Acute pancreatitis is started to be diagnosed more often in children. It affects children of all stages, but the mortality rate associated with It increases with age. The incidence of multiple organ failure increases with

age, possibly as a result of the gradual decline in the physiological function of the major organs with age. Closely monitoring the function of the main organ (i.e., lungs and kidneys) is necessary, and aggressive treatment is necessary to reduce death from AP in children. Therefore, the aim of this study was to assess nurses' knowledge and practice regarding children with AP. Therefore, the aim of this study was to assess nurses' knowledge and practice regarding children with AP (Valverde-López, Martinez-Cara, & Redondo-Cerezo, 2022).

Subjects and Methods

Research design

A descriptive research design was used to conduct this study.

Setting

The study was conducted at the Pediatric Medical Department of Tanta Main University Hospital which includes 7 wards every ward contains 6 beds, Pediatric Medical Department of Kafer-Elsheikh University Hospital that includes 3 wards, every ward includes 3 beds and Pediatric Intensive Care Unit at Kafer-Elsheikh University Hospital that includes 8 beds.

Subjects

All nurses who were working in the previously mentioned settings (79) from Pediatric Medical Department of Tanta Main University Hospital and

(51) nurse from Pediatric Department and Pediatric Intensive Care Unit at Kafer-Elsheikh University Hospital were participating in the study.

Tools of data collection

Tool I: knowledge structured questionnaire:

It was developed by the researcher after reviewing recent related literature (Morton, Bowers, Wessels, Koen & Tobias, 2020) & (Hinkle, White, Weisburd & Kuen, 2023); to assess nurses' knowledge regarding acute pancreatitis in children. It consisted of two parts:

Part (1): Socio demographic characteristics of nurses such as age, marital status, qualifications, years of experience and previous attendance of training courses related to acute pancreatitis in children.

Part (2): Nurses' knowledge about acute pancreatitis. It involved 8 items as definition of acute pancreatitis, causes, pathophysiology, clinical manifestations, classification, and criteria for predicting severity of pancreatitis, complications and nursing management.

Scoring system

Nurses' knowledge was scored as following:

Correct and complete answer was scored (2)

Correct and incomplete answer was scored (1)

Wrong answer and don't know was scored (0)

Total scoring system for nurses' knowledge was categorized as the following:

- High level of knowledge from 80% and more.
- Moderate level of knowledge from 80% to 60%.
- Low level of knowledge less than 60%.

Tool II: Observational checklist about nurses' practice regarding acute pancreatitis : The check list was adopted and based on the identified guidelines care (Berman AT et al .,2023) &(Niciol .,2020) It was used to assess nurses' practices regarding children diagnosed with acute pancreatitis.

It consisted of the following procedures:

- Monitoring blood glucose level.
- Monitoring fluid intake and output.
- Care of nasogastric tube.

The scoring system for each step of nurses' practice was scored as following:

- Done was scored as (1)
- Not done was scored as (0)

Total scoring system for nurses' practice was classified as follow:

- Less than 80% was considered unsatisfactory
- From 75% and more was considered satisfactory

Method

1. An official permission was obtained from the dean Faculty of Nursing and the responsible authorities of selected setting explaining the aim of study.

2. Ethical and legal considerations: -

- Ethical approval was obtained from Scientific Research Ethical Committee at Tanta University, Faculty of Nursing to conduct the study with code No.: (20-12-21).
- Nature of the study did not cause any harm or pain to the entire sample.
- Privacy and confidentiality were taken into consideration while data collection.
- Nurses were reassured that their participation is voluntary and that they can withdraw from study at any time and their consent to participate was obtained.

3. Content validity had been confirmed by a jury of five expertise in the field of Pediatric Nursing before conducting the study.

4. A Pilot study was carried out on 10% of nurses to test feasibility and clarity of tools, which was excluded from the study. Accordingly necessary modification was done. The pilot study was excluded from the study.

5. Cronbach's alpha for knowledge score was 0.806 (high reliability). It was 0.791 for practice score that is indicate good reliability and 0.873 for

attitude score that is indicate high reliability.

6. The aim of the study was explained to the studied nurses.

7. The researcher met studied nurses to establish their trust and cooperation by out lining the study's aim.

8. A written consent was taken from the studied nurses.

9. The researcher interviewed the studied nurses at the previously mentioned settings 3 days per week in the morning shift and every interview took about 20 minutes.

10. The knowledge questionnaire was translated into Arabic language by researchers and filled by participated nurses in the presence of researcher to clarify any point to them.

11. The researcher observed pediatric nurses while applying care to children as monitoring blood glucose level, monitoring fluid intake and output and providing care for nasogastric tube.

12. The data was collected over period of 6 months from July 2022 to December 2022.

Results and Statistical analysis

Table (1): shows percentage distribution of studied nurses' socio-demographic characteristics; it was observed that more than one third of the studied nurses(36.9%) aged from 20 to less than 25 years old with a mean and standard deviation 33.49 ± 12.09 . Regarding their marital status, about

two thirds of them (64.6%) were married, while more than half of them (53.8%) had less than 5 years of experience.

Regarding their educational qualifications, about half of them (50.8%) had Bachelor of Nursing. In addition, most of them (93.8%) didn't attend training courses related to acute pancreatitis in children.

Table (2): illustrates percentage distribution of the studied nurses' knowledge regarding acute pancreatitis; It was found that more than two thirds of studied nurses (63.1%) reported correct and complete answers related to definition of acute pancreatitis while more than half of them(56.2%) reported correct and complete answers regarding causes of acute pancreatitis.

Regarding functional changes associated with acute pancreatitis, it was observed that half of studied nurses (50.8%) had correct and complete answers. Concerning symptoms of acute pancreatitis, less than three quarters of them(70.8%) reported correct and complete answers. At the same time, nearly two thirds of them (62.5%,61.2%) reported correct and complete answers regards classification and complications of acute pancreatitis respectively.

In addition to 59.2 % and more than two thirds of them (66.2%) reported

correct and complete answers relating to characteristics of severe pancreatic inflammation and nursing care for children with acute pancreatitis respectively.

Figure(1): illustrates percentage distribution of studied nurses' total knowledge level regarding acute pancreatitis in children. The table clarified that less than two thirds of studied nurses (61.3%) had high level of knowledge regarding acute pancreatitis while 24.1% of them had moderate level of knowledge compared to only 14.6% of them who had low level of knowledge with mean and standard deviation of total knowledge score = **42.01 ±13.38**.

Table (3): illustrates percentage distribution of studied nurses' total practice level regarding acute pancreatitis in children. The table announced that 80.5% of studied nurses had satisfactory practice level regarding care of children with acute pancreatitis, while slightly less than one fifth of them (19.5%) had unsatisfactory practice level with mean and standard deviation of the total nurses' practices score **Mean ± SD28.14 ±10.47**

Table (4): shows the correlation between the studied nurses' total knowledge score and their total practice score regarding acute pancreatitis; it was found that there was

a positive statistically significant correlation between total knowledge score and total practice score of studied nurses regarding acute pancreatitis where as $p=(0.026)$ and $r=(0.739)$

Table (5): determines that 35.0% of studied nurses whose age was between 25 to less than 30years old, had high level of knowledge while 41.9% of those nurses who were between 20 to less 25years had moderate level of knowledge and there was statistically significant relation between nurses' age and their knowledge where $p=(.043)$

In the same direction, 40.0% of studied nurses who had less than 5years of experience, had high level of knowledge and nearly three quarters of them (74.2%) had moderate level of knowledge beside, there was statistically significant relation between years of experience and nurses' knowledge whereas $p=(0.01)$. As regards, nurses' educational qualifications; it was clear that more than two thirds of studied nurses (66.3%) who had bachelor of nursing demonstrated high level of knowledge and there was statistically significant relation between nurses' educational qualifications and their knowledge whereas $p=.000^{**}$ Finally, all studied nurses (100.0%) who didn't attend training courses related to acute pancreatitis in children demonstrated

low level of knowledge and there was significant relation between nurses' knowledge and attendance training courses related to acute pancreatitis where as $p = .000^{**}$

Table (6): clarifies that 39% of nurses who were between 25 to less than 30 years old, had satisfactory level of practice where $p = (0.03)$. In addition, nearly two thirds of studied nurses (64.8%) who had less than 5 years of experience had satisfactory level of practice and there was statistically significant relation between years of experience and their level of practice as $p = (0.001)$.

The table also clarified that majority of nurses (96.0%) who didn't attend training courses related to acute pancreatitis in children had unsatisfactory level of practice and there was statistically significant relation between attendance training courses related to acute pancreatitis in children and nurses' practice as $p = 0.09$.

Table (1): Percentage distribution of studied nurses' socio-demographic characteristics (n=130)

Socio-demographic characteristics	No.	%
Age		
20<25	48	36.9
25<30	43	33.1
30<35	12	9.2
35<40	7	5.4
40<45	13	10.0
More than 45	7	5.4
Mean ± SD	33.49 ±12.09	
Marital status		
Single	35	26.9
Married	84	64.6
Divorced	2	1.6
Widower	9	6.9
Years of experience		
<5 years	70	53.8
5 < 10 years	22	16.9
10 < 15 years	13	10.0
> 15 years	25	19.3
Qualifications		
Nursing Diploma	22	16.9
Technical Institute of Nursing	42	32.3
Bachelor of Nursing	66	50.8
Attendance courses related to acute pancreatitis in children		
Yes	8	6.2
No	122	93.8
Workplace		
Tanta University Hospital	78	60.0
Kafrelsheikh University Hospital	52	40.0

Table (2): Percentage distribution of studied nurses' knowledge regarding acute pancreatitis (n=130).

Item related to acute pancreatitis knowledge	The studied nurses (n=130)					
	Correct and complete answers		Correct and incomplete answers		Incorrect Answers	
	No.	%	No.	%	No.	%
Definition of Acute pancreatitis	82	63.1	33	25.4	15	11.5
Causes of acute pancreatitis	73	56.2	46	35.4	11	8.4
Functional changes associated with acute pancreatitis	66	50.8	39	30.0	25	19.2
Symptoms of acute pancreatitis	92	70.8	22	16.9	16	12.3
Classification of acute pancreatitis	81	62.3	30	23.1	19	14.6
Characteristics of sever pancreatic inflammation	77	59.2	25	19.2	28	21.5
Complications of acute pancreatitis	80	61.5	31	23.8	19	14.6
Nursing care for children with acute pancreatitis	86	66.2	25	19.2	19	14.6

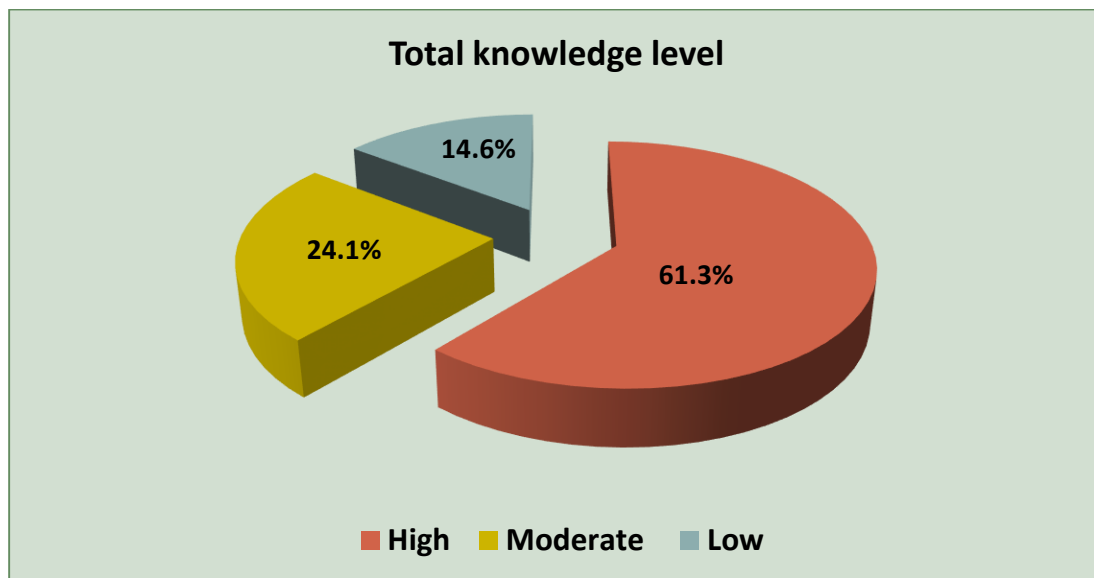


Figure (1): Total nurses' knowledge about acute pancreatitis in children (n=130).

Table (3): percentage distribution of the studied nurses' total practices level regarding acute pancreatitis (n=130).

Total practices level	No.	%
Satisfactory	105	80.5
Unsatisfactory	25	19.5
Total Mean \pm SD	28.14 \pm 10.47	

Table (4): Correlation between total nurses' knowledge and their total practice score related to acute pancreatitis in children.

Total knowledge Score	Total practices score	
	R	p-value
	0.739	0.026*

P<0.05 (statistically significance) R=0.739, P=0.026

Table (5): Relation between nurses' knowledge and their socio-demographic characteristics.

Socio demographic characteristics	Total knowledge level						Test of significanc X ² e	p-value
	High (n=80)		Moderate (n=31)		Low (n=19)			
	No.	%	No.	%	No.	%		
Age/ Years								
20<25	24	30.0	13	41.9	11	57.9	12.549	.043*
25<30	28	35.0	10	32.3	5	26.3		
30<35	7	8.8	4	12.9	1	5.3		
35<40	4	5.0	2	6.5	1	5.3		
40<45	10	12.5	2	6.5	1	5.3		
More than 45	7	8.8	0	0.0	0	0.0		
Marital status								
Single	17	21.3	10	32.3	8	42.1	10.848	.093
Married	57	71.3	17	54.8	10	52.6		
Divorced	0	0.0	2	6.5	0	0.0		
Widowed	6	7.5	2	6.5	1	5.3		
Years of experience								
<5 years	32	40.0	23	74.2	15	78.9	19.054	.001**
5 < 10 years	17	21.3	4	12.9	1	5.3		
10 < 15 years	9	11.3	2	6.5	2	10.5		
> 15 years	22	27.5	2	6.5	1	5.3		
Qualifications								
Nursing Diploma	11	13.8	9	29.0	2	10.5	24.961	.000**
Technical Institute of Nursing	16	20.0	17	54.8	9	47.4		
Bachelor of Nursing	53	66.3	5	16.1	8	42.1		
Attendance Training courses related to acute pancreatitis in children								
Yes	6	7.5	2	6.5	0	0.0	20.560	.000**
No	74	92.5	29	93.5	19	100.0		

*Statistically significant $p < 0.05$ **High statistically significant $p < 0.001$

Table (6): Relation between total nurses' practice and their socio-demographic characteristics.

Socio demographic characteristics	Total practices level				X ²	p-value
	Satisfactory (n=105)		Unsatisfactory (n=25)			
	No.	%	No.	%		
Age/year						
20<25	31	29.5	17	68.0	17.836	.003**
25<30	41	39.0	2	8.0		
30<35	9	8.6	3	12.0		
35<40	5	4.8	2	8.0		
40<45	13	12.4	0	0.0		
More than 45	6	5.7	1	4.0		
Marital status						
Single	26	24.8	9	36.0	3.338	.342
Married	71	67.6	13	52.0		
Divorced	2	1.9	0	0.0		
Widowed	6	5.7	3	12.0		
Years of experience						
<5 years	68	64.8	2	8.0	19.915	.001**
5 < 10 years	19	18.1	3	12.0		
10 < 15 years	8	7.6	5	20.0		
> 15 years	10	9.5	15	60.0		
Educational Qualifications						
Nursing Diploma	19	18.1	3	12.0	18.420	.000
Technical Institute of Nursing	25	23.8	17	68.0		
Bachelor of Nursing	61	58.1	5	20.0		
Attendance Training courses related to acute pancreatitis in children						
Yes	7	6.7	1	4.0	17.561	.009*
No	98	93.3	24	96.0		

*Statistically significant $p < 0.05$ **High statistically significant $p < 0.001$

Discussion

Acute pancreatitis has been increasingly diagnosed in children in recent decades. A variety of etiologies can cause it in children, including structural/anatomic, obstructive/ biliary, trauma, infections, toxins, metabolic, systemic illness, inborn errors of metabolism, and genetic predispositions. Acute Pancreatitis in children is a complex and potentially severe condition that requires prompt and effective management. Despite its increasing incidence, there is a notable gap in pediatric-specific management guidelines, often relying on adult-based protocols (**Bhanot et al., 2022**).

Understanding nurses' current knowledge and practice is crucial for improving pediatric patient outcomes and ensuring that children with AP receive the best possible care (**Barros et al., 2023**). So this study aimed to assess nurses' knowledge and practice regarding children with acute pancreatitis.

Regarding the studied nurses' knowledge about acute pancreatitis, the result of the current study revealed that more than three fifths of studied nurses reported correct and complete answers related to definition of acute pancreatitis, while more than half of them reported correct and complete answers regarding causes of acute pancreatitis. This may be due to the fact that the definition and causes of acute pancreatitis are foundational aspects often covered in basic nursing education and about half of

the studied nurses had Bachelor of Nursing, making them more familiar and easier for nurses to recall.

This result was in accordance with a study carried out by **Uysal, (2024)**, who stated that more than half of nurses demonstrated good knowledge about the definition and causes of acute pancreatitis. Conversely, (**Mohammed, Mohamed, Me hany, (2019)**) whose study about effect of educational program on nurses' performance regarding patients with acute pancreatitis, reported that the majority of studied nurses had incorrect answers related to definition and causes of acute pancreatitis before implementation of an educational program.

Additionally, the present study displayed that less than three quarters of the studied nurses reported correct and complete answers regarding symptoms of acute pancreatitis. Besides, nearly two thirds of them gave correct and complete answers regarding classification and complications of acute pancreatitis, respectively. This result was in agreement with **Rijal, (2019)** who noticed that more than half of studied nurses reported correct answers about symptoms of pancreatitis. On the contrary, a study conducted by (**Maiber, Ismail, Frag Ibrahim, (2024)**) found that more than half of nurses reported low level of knowledge about classifications and complications of pancreatitis before

implementation of an educational program.

Moreover, the current study indicated that almost three fifths and about two thirds of the studied nurses reported correct and complete answers relating characteristics of sever pancreatic inflammation and nursing care for children with acute pancreatitis, respectively. In the same line, a study carried out by **Mangsbacka & Gustavell, (2022)** indicated that the highest percentage of the studied nurses reported correct and complete answers toward characteristics of severe pancreatitis. In contrast, to **Zhang & Yang, (2022)** who argued that most of the studied nurses had incorrect answers about nursing care for acute pancreatitis.

Pertaining the studied nurses' total knowledge level regarding acute pancreatitis, the present study demonstrated that about two thirds of the studied nurses had high level of knowledge regarding acute pancreatitis. From the research point of view, this may be due to higher education of those nurses where about half of them had Bachelor of Nursing and the fact that acute pancreatitis in children is a critical condition that requires nurses to have a solid knowledge base to ensure effective care, which may lead to their prioritization of acquiring and retaining such knowledge. This finding was in harmony with a study conducted by **Giamouris et al., (2024)** who found that most of the studied nurses had high level

of knowledge about pancreatitis in children. On the other hand, this result contradicted with a study carried out by, **(Mohammed et al., (2019))** who explained that more than two thirds of the studied nurses had insufficient total level of knowledge regarding acute pancreatitis. This may be due to that most of the studied nurses didn't attend training courses related to acute pancreatitis.

Regarding the studied nurses' total practices level regarding acute pancreatitis, the current study highlighted that most of the studied nurses had satisfactory level of practice regarding care of children with acute pancreatitis. This may be due to the fact that most of the studied nurses had a Bachelor of Nursing degree and about two-thirds of them had a high level of knowledge regarding pancreatitis, which typically provides a strong foundation in theoretical and practical knowledge, enabling them to deliver competent care. This finding was supported by, **Hamed, Amin&Elsayed (2021)**, who noticed that most of pediatric nurses had satisfactory level of practice about pancreatitis care. The present study result was against **Mohamed, Zaki, Mohamoud&AbdElhamed, (2023)** who indicated that majority of nurses had unsatisfactory level of practice regarding pancreatitis care.

This result was inconsistent with the findings of **Maiber et al., (2024)** who observed that more than half of the studied

nurses had an unsatisfactory level of practice about pancreatitis care. At the same time, **Eltesh et al., (2024)** reported in their study about Nurses' Perception regarding Artificial Pancreas among Type I Diabetes Mellitus at the National Diabetic Institute that more than half of studied nurses had incompetent level of practice regarding care of children with pancreatitis.

Regarding correlation between total nurses' knowledge and total practice score related to acute pancreatitis, the present study illustrated that there was statistically significant positive correlation between total knowledge and total practice score regarding acute pancreatitis. This may be due to the fact that an increase in nurses' knowledge equips them with a better understanding of the theoretical and practical aspects of managing acute pancreatitis in children, enabling them to apply evidence-based practices effectively.

Correspondingly, study carried out by **Hamed et al., (2021)**, who reported that there was a strong positive correlation between nurses' total knowledge and total actual practice regarding care of children undergoing gastrointestinal surgeries. In contrast

to **(Reyad, Mahmoud & Eldriny, (2022))** who noted that, no statistically significant differences were found between total nurses' practice mean scores and their total knowledge score. They added that, these alarming findings revealed that

nurses may not follow the best recommended practices, even if they are available.

The result of the current study displayed that there was highly statistically significant relation between nurses' knowledge and their years of experience, qualifications and attending training courses related to acute pancreatitis in children. This can be explained this can be attributed to the findings of newly graduated nurses who had bachelor degree and less than 5 years of experience are still have fresh knowledge has the desire to learn and more powerful newly graduated and about two fifth of studied nurses had less than 5 years of experience and two thirds of them had bachelor of nursing this means that combined high educational with less years of experience allow them to still having fresh up to date information which in turn results in high level of knowledge. Also, all of studied nurses who didn't attend training courses demonstrated low level of knowledge.

This may be due to the accumulation of practical experience, advanced theoretical knowledge from higher qualifications, and targeted updates gained through specialized training courses. These factors collectively enhance nurses' understanding and management of acute pancreatitis in children. This result was consistent with **Mohamed et al., (2023)** who stated that educational qualification and training courses had a high-frequency positive effect on the knowledge score.

Conversely, findings of a study conducted by **(Wangari,Omondi&Maina,(2024))** who found that level of qualification and work experience were not significantly associated with the levels of knowledge. In addition, the current study portrayed that there was a statistically significant relation between nurses' age and their knowledge level. This can be explained as more than one third of studied nurses whose age was between 25 to less than 30 years old, had high level of knowledge. This may be attributed that those nurses with young age get more opportunities for continuous education through attending workshops besides still having fresh updated information regarding acute pancreatitis.

In addition nurses might have accumulated more professional experience, exposure to diverse clinical situations, which contribute to their higher knowledge levels. On the other hand, **(Alaa, Ahmed, Syam&Ali, (2023))** argued that, there was no statistically significant relationship between the nurses' knowledge level and their age. Also, **(Kareem, Shraida&Razzaq (2022))** whose study reported that there was a non-significant association between the overall nurses' knowledge and their age.

As regards relation between total nurses' practice and their socio-demographic characteristics, the present study showed that there was highly statistically significant relation with their age and their

years of experience. This can be interpreted as more than one third of nurses who were between 25 to less than 30 years old, had satisfactory level of practice. As well, nearly two thirds of them who had less than 5 years of experience had satisfactory level of practice.

As regards nurses with high educational level with less years of experience allow them to still having fresh up to date information they are more likely to develop advanced practical skills and a deeper understanding of their roles. In addition, as reported by study results more than one third of studied nurses had high level of knowledge which in turn increases their level of practice. This result was in accordance with **Zhaoet al., (2023)** whose study found that there was significant association between nurses' age and years of experience and their level of practice. In contrast, a study conducted by **Eltesh, (2024)** who reported that there was no statistically significant relation between nurses' total reported practices level and their age and their years of experience.

Moreover, the current study reflected that there was statistically significant relation between nurses' attendance training courses related to acute pancreatitis in children and work place and their level of practice. Where majority of nurses who didn't attend training courses had unsatisfactory level of practice. Also, nearly two thirds of nurses who were

working at Tanta university hospital demonstrated satisfactory practice level compared to only more than one third who were working at Kafr Elsheikh university hospital.

This may be attributed to the fact that attending training courses enhanced nurses' knowledge and skills, equipped them with the necessary competencies to provide optimal care. Additionally, the influence of the workplace could reflect variations in access to resources, support systems, and institutional priorities that either facilitate or hinder opportunities for professional development. This result was compatible with **Sheng et al., (2019)** who found that there was significant association between nurses' practice and attending training courses. Conversely, **Abdulsamea et al., (2023)** noticed that there was no significant relation between nurses' practice score and attending continues training and place of work.

Conclusion

Based on the results of the present study, it can be concluded that

Less than two thirds of the studied nurses had high level of knowledge about acute pancreatitis, while majority of them had satisfactory level of practice regarding care of children with acute pancreatitis. In addition, there was a positive statistically significant correlation between total nurses' knowledge score and their total practice score related to acute pancreatitis.

Recommendations

Based on the findings of the current study, it can be recommended that

1. Regular and continuous educational programs about acute pancreatitis in children, should be conducted for pediatric nurses to increase their knowledge while caring for those children.
2. Further research should be conducted on a large sample to achieve generalizability.
3. Including acute pancreatitis in the curriculum for undergraduate and graduate nursing education.

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