

# Pediatric Nurses' Perceived Competencies toward Palliative Care for Terminally Ill Children

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## Abstract

**Introduction:** Paediatric palliative care involves the physical, psychological, and spiritual well-being of terminally ill children and their families. Competency in palliative care centred on personal traits and attributes, key abilities to satisfy professional duty through practise, and knowledge of palliative care. **Objective:** Is to identify paediatric nurses' perceived Competencies toward Palliative Care for Terminally Ill Children. **Method:** Used was a descriptive research design. The sample included 72 nurses who worked at neonatal, pediatric intensive care units (NICU, PICU) in four hospitals affiliated to Universal Health Insurance (UHI) in Port Said City, namely ( El Nasr, El Salam, El Hayah, and pain outpatient clinic at El Tadamon) hospital. The structured questionnaire and the nursing palliative care quiz are the first tools used to evaluate sociodemographic characteristics. Data were gathered using a second tool, the Nurses' Core Competencies in Palliative Care questionnaire. **Results:**Based on the study, 56.9% of nurses had adequate knowledge, and 47.2% of paediatric nurses agreed that they had some extendable palliative care competences. It can be summarized that more than slightly half of the studied sample have adequate knowledge while the rest of the studied sample have inadequate knowledge, with statistically significant relationship between nurses' overall perceived competence and overall knowledge. **Conclusion:** The relationship between nurses' overall perceived competence and overall knowledge was very statistically significant. The Recommendation study's findings highlight the urgent need of creating an evidence-based programme for competency training in palliative care, which should be available in every hospital and adhered to all paediatric nurses.

**Keywords:** Nurses' competency- Palliative care- Terminally ill children

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## Introduction

Children and their families are impacted physically, emotionally, and spiritually by terminal illnesses, necessitating the provision of holistic end-of-life (EOL) care by nurses that goes beyond simple factual information and manual labour (Ward, 2017). The definition of paediatric palliative care is an active and comprehensive approach to treatment that includes physical, emotional, social, and spiritual components. It includes managing distressing symptoms, offering respite, and providing care during illness, death, and grief. It focuses on improving the child's quality of life and providing support for the family (Radwan et al., 2022).

Integrated people-centered health services (IPCHS) include palliative care as a critical component. Palliative care may therefore be required and incorporated at all

levels of care, regardless of the illness that is causing the suffering, such as cancer, major organ failure, drug-resistant tuberculosis, severe burns, end-stage chronic illness, acute trauma, extremely premature birth, or extremely advanced age (Ozano, 2022). In order to meet the Sustainable Development Goals of the 2030 Agenda, governments must create palliative care policies to address the 40 million people worldwide who need help for their palliative care needs, a number that includes at least 20 million carers. A comprehensive palliative care system integrates not only official care like home and community care but also informal care such care provided by family and community volunteers. (Radbruch et al., 2020).

Nursing performance competency is described as a performance competency that satisfies the requirements for potential competencies. It is a holistic and integrated notion built from complicated actions. The ability

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to understand people, apply knowledge, develop interpersonal relationships, provide people-centered care, provide nursing care, practise nursing ethics, collaborate with other professionals, and improve nursing quality are among the seven elements that make up nursing perceived competency (Fukada, 2018). Core competencies needed to perform one's duties as a nurse are included in the category of nursing competency. It is crucial to define nursing competency precisely in order to lay the groundwork for nursing education curricula. Although the ideas underlying nurse competency are crucial for raising the standard of nursing care, they have not yet reached their full potential. Issues with defining and structuring nursing competency, the competency requirements for nursing practitioners, training approaches, and other issues still exist (Boman et al., 2020).

Three major components also include the ability to expand one's professional capacity and ensure the provision of high-quality care. Assessment, diagnosis, and treatment of human responses to real or potentially life-limiting illness are all a part of palliative care nursing, which calls for a strong, compassionate bond with the patient and family in order to lessen suffering (Mikan et al., 2016).

Nurses have an essential role to deliver high-quality palliative care services for populations around the world, health system leaders, interdisciplinary partners, and policy makers must encourage nurses to practise to the full extent of their training and licencing. They received training in a wholistic and patient-centered model of care that naturally fits with the integrative viewpoint of the palliative care area. They also received training in policy advancement and relationships with international academic health centres. Each area's best practise models are offered, describing contemporary projects that encourage cooperation with interdisciplinary stakeholders (Rosa et al., 2022).

Nurses must be skilled in caring for children with life-threatening illnesses and assisting patients in making the best decisions because they are expected to give the most appropriate information to children and their families in critical situations. Nurses should prioritise enhancing children's comfort and easing their physical suffering. However, they should be aware of how to help the child and their families decide whether palliative care is appropriate (Dehghani et al., 2020).

### *The Study's Significance*

For effective patient care and nursing practise, paediatric palliative nursing care, which is both demanding and gratifying, calls for coping skills, confidence, and other qualities. This author confirmed the need for studies to clarify the needs of paediatric patients who are dying and their families, as well as the needs of nurses who are caring for them, through a thorough review of the literature, clinical workshops, direct observations in paediatric palliative care settings, and personal nursing experience in neonatal intensive care, paediatric intensive care, and oncology wards (Duffy, 2022). A lack of knowledge of paediatric palliative care, and consequently a lack of confidence in oneself, can result in reluctance to

provide paediatric palliative care. Paediatric palliative care is increasingly recognised as a specialised type of care that requires specific skills and knowledge. The knowledge, abilities, and self-assurance paediatricians and paediatric nurses require to offer children and their families with high-quality end-of-life care are best acquired through education (Yu et al., 2020).

Improvements in symptom management, parental adjustment, and getting ready for the end-of-life care period are all made possible by integrating palliative care. Nurses are more likely to believe that their treatment was of a good calibre if they have the chance to prepare for the end-of-life phase, including learning what to expect (D'Aoust & Rossiter, 2021).

The main goal of this educational framework was to equip professionals with the skills necessary to deliver paediatric palliative care with competence. We further designed a training programme aimed at professionals who are more regularly involved in end-of-life care based on this approach. Children and families receiving palliative care in hospitals may experience an improvement in quality of life and satisfaction thanks to nurses who are knowledgeable, experienced, and comfortable doing (Cheng et al., 2021). So this study was conducted to identify paediatric nurses' perceived competencies toward Palliative care for terminally ill children.

### *Research Question*

What are the Pediatric Nurses' Perceived Competencies toward Palliative Care for terminally ill children?

## **Materials and Methods**

### *Research design*

A Descriptive design was conducted in the present research.

### *Subjects*

Participants in the current study included 72 Paediatric nurses that operate in neonatal, paediatric intensive care units (NICU, PICU), and pain out patient clinic in four hospitals affiliated to Universal Health Insurance (UHI) in Port Said City, namely (El Nasr, El Salam, El Hayah, and El Tadamon) hospitals. They were selected based on a convenient sampling technique.

### *Settings*

The present study was conducted at neonatal, paediatric intensive care units (NICU, PICU), and pain out patient clinic in four hospitals affiliated to Universal Health Insurance (UHI) in Port Said City, namely (El Nasr, El Salam, El Hayah, and El Tadamon) hospitals

### *Sampling*

A convenience sample of 72 nurses who work in general hospitals' neonatal, paediatric intensive care, and pain outpatient departments. All 72 nurses were participated in the study collocation data process with complete response rate.

### *Inclusion criteria*

- Male and female nurses worked in all previous settings.
- All nurses who were available during data collection.
- Having a minimum of 1-year experience in caring for patients.
- Providing direct care to their patients.

#### *Excursion criteria*

- Nurses who disagree to participate in the study.

#### *Tools of the study*

##### *Tool I: Structured Questionnaire tool*

##### *Part I :Socio-demographic characteristics of studied nurses*

- It comprises Personal characteristics as age, sex, marital status, education level, and professional characteristics as years of experience, department of employment, and previous Palliative care training programmes.

##### *Part II: Palliative Care Quiz of Nursing (PCQN)*

This is a self-administered questionnaire consisting of 20 multiple-choice questions . (True/False) of end-of-life care are covered by the PCQN: (i) philosophy and principles of palliative care (4 items), (ii) management of pain and other symptoms (13 items), and (iii) psychosocial aspects of care (3 items). (Ross et al.1996).

##### *Scoring system of Palliative Care Quiz of Nursing*

The answers were labelled as correct or incorrect. Each true answer was given one point. Incorrect answers received a score of zero. The mean and standard deviation were computed and then translated to a percent score. Total scores varied from 0 to 20, with higher values indicating a higher level of understanding.

##### *Tool II: Nurses' Competencies in Palliative Care questionnaire*

The original NCPC questionnaire was used to evaluate nurses' competences in palliative care. The final NCPC questionnaire consisted of 26 questions covering the following five competence domains.

##### *1. Knowledge of Symptom Management*

This domain was assessed using five items: dealing with pain, nausea, anxiety/restlessness, fatigue, and mouth dryness.

##### *2. Systematic Use of the Edmonton Symptom Assessment System (ESAS)*

This domain was measured using six items: the usage of ESAS in dealing with pain, nausea, anxiety/restlessness, exhaustion, dry mouth, and wellbeing while receiving unpleasant news.

##### *3. Teamwork Skills*

This domain was assessed using five items: pain collaboration, nausea, anxiety/restlessness, weariness, and mouth dryness. Intercollegial collaboration can occur between professionals from the same or different disciplines, or between professionals from the same or

different services.

##### *4. Interpersonal Skills*

This domain was measured using three variables: interpersonal skills with patients (three items), interpersonal skills with young relatives (two items), and interpersonal skills with adults (two items).

##### *5. Life Closure Skills*

This domain was measured using three items: the palliative care philosophy, being a human being, and dying in comfort and dignity.

##### *Scoring system for Nurses' Competencies in Palliative Care questionnaire*

Each item in the questionnaire was assessed on a 5-point Likert scale, and the questions included descriptors for all of the numbers, ranging from 1 to 5, as follows: 1 = entirely disagree; 2 = disagree to some extent; 3 = agree to some extent; 4 = completely agree; and 5 = not relevant (Adriaansen et al., 2005).

##### *Reliability and validity of the questionnaire*

The authors of this study scoured the literature on "Pediatric Nurses' Perceived Competencies toward Palliative Care for Terminally Ill Children" that was previously published in order to create the questionnaire. Up until March 20, 2023, a number of databases, including EMBASE, Cochrane Library, and PubMed, as well as the CDC, WHO, and Google Scholar websites, were used to search published research. Using the most relevant literature, the questionnaire was developed. The questionnaire's content validity was evaluated using the translation back-translation method. To maintain uniformity and minimize bias, a multilingual expert back-translated the questionnaire from English into Arabic (the regional language). Seven pediatrics and public health researchers who are experts in the relevant fields also confirmed the veracity of the information. To make sure there were no unclear questions, the survey was piloted with 7 Pediatric Nurses' (the results were not included in the final analysis). By utilizing Cronbach's alpha to assess the questionnaire's internal consistency, it was discovered that it had a respectable level of reliability (Cronbach's alpha=0.89).

##### *Pilot study*

In order to evaluate the effectiveness of the instructions, the completeness of the response sets, the time needed to complete the questionnaire, and the efficiency of the data collection technique, a pilot study was carried out with seven paediatric nurses who were included in the study at neonatal, paediatric intensive care units, and pain outpatient clinics in general hospitals. On the questionnaire's applicability and appropriateness (validity), pilot participants were questioned. There was no need to clarify any questions because they were all answered. The questionnaire for the pilot study's participating nurses took 30 minutes to complete. ness (validity), pilot participants were questioned. There was no need to clarify any questions because they were

all answered. The questionnaire for the pilot study's participating nurses took 30 minutes to complete.

#### Field work

The study was approved by the Dean of the Faculty of Nursing at Port Said University, and official permission was obtained from the Director of Hospitals to perform it. The paediatric nurses were interviewed in a specialised room. The investigator completed the interview questionnaire for each nurse. Data was collected five days per week for one month during the academic year 2023, until the required sample was collected.

#### Statistical Analysis

The current study's raw data were coded. SPSS version 20 was used for data analysis and interpretation. Frequency, distribution, mean, standard deviation, and Pearson correlation coefficient were all used as statistical measures. To compare between variables of the studied groups, Independent group's t-test was applied for numerical measurements. The statistical significance p-value < 0.05 was considered (Krzywinski & Altman, 2013).

## Results

Table 1 demonstrates the personal characteristics of paediatric nurses. The table reveals that 73.6% of the nurses are in the age group of 22–30 years. The mean score was 27.196.3. The majority of the sample (86.1%) were female, compared to 13.9% of them who were male, and nearly two-fifths of the sample's (41/7%) education was in nursing institutes. On the other hand, regarding the working characteristics, 44.4% of them worked in the neonatal intensive care unit, while 58.3% of them reported having less than 5 years of experience. Finally, 97.2% of the nurses did not attend any palliative care training courses.

Palliative care knowledge among nurses is shown in Table 2. The table reveals that 56.9% of the nurses had the correct answer about palliative care; on the other hand, 43.1% of the nurses had the incorrect answer about palliative care. As for specific incorrect answers, all of the studied sample (100%) answered incorrectly for the question asking if anxiety or fatigue lowers the pain threshold, and the majority of the studied nurses (94.4%) had incorrect answers for the question asking if addiction is a major problem with prolonged use of morphine in the treatment of pain, followed by men coping with grief more easily than women (91.7%).

Paediatric nurses' perceived competences towards palliative care are shown in Table 3. The table reveals that 47.2± 1.5 of the paediatric nurses had tendencies to agree to some extent with perceived competences towards palliative care. Table 4 shows the relation between the total knowledge and the total paediatric nurses' perceived competencies of the nurses surveyed. It reveals that there is a statistically significant relationship between total knowledge and total paediatric nurses' perceived competencies at P≤0.05.

The relationship between the paediatric nurses'

perceived competencies and the socio-demographic characteristics of the studied nurses is shown in Table 5. It reveals that, there is a statistically significant relationship between paediatric nurses' perceived competencies and all socio-demographic characteristics of the studied nurses at P≤ 0.05.

## Discussion

Palliative care is an umbrella word for a philosophy of care that aims to lessen a patient's suffering and improve their quality of life from the time of their life-threatening diagnosis. Facts, information, and abilities acquired via education, experience, or investigation constitute knowledge. Palliative care should not be used to hurry or postpone death, but rather to accept death as a natural process. PC should incorporate the patient's and family's psychological requirements and assist the patient in living as actively as feasible till death. In nursing, competency is an ongoing process that is part of continuing education and certification programmes, as well as a need for licencing testing (Ferrell et al., 2020).

Nursing competencies are generally regarded as a dynamic combination of fundamental or specialised knowledge, skills (assessment, communication, critical thinking, time management, customer service, technical skills, and teaching), and abilities (caring, character, and professional presentation) that contribute to

Table 1. Distribution of study sample according to Socio-demographic characteristics (No=72)

Characteristics	No	%
Age		
Less than 22 years	4	5.6
22-30 years	53	73.6
more than 30 years	15	20.8
Mean ± SD	27.19±6.3	
Gender		
Male	10	13.9
Female	62	86.1
Education		
Nursing diploma	22	30.6
Nursing institute	30	41.7
Faculty of nursing	15	20.8
Master or PDh degree	5	6.9
Setting		
Neonatal care unite	32	44.4
Pediatric intensive care	30	41.7
Pain out patient clinic	10	13.9
Experiences		
Less than 5 years	42	58.3
5-10 years	15	20.8
More than 10 years	15	20.8
Courses		
Yes	2	2.8
No	70	97.2

Table 2. Distribution of Study Sample According to Their Knowledge (No=72)

Themes	Wrong		Right	
	No	(%)	No	(%)
<b>Theme 1:Philosophy and principle of palliative care</b>				
Palliative care is appropriate only in situations where disease exacerbation and deterioration is evident	34	47.20	38	52.80
Providing palliative care requires emotional detachment	35	48.60	37	51.40
The philosophy of palliative care is compatible with treatment activities	38	52.80	34	47.20
Burnout due to the accumulation of losses is inevitable for those working in palliative care	38	52.80	34	47.20
<b>Theme 2:Psychosocial and spiritual care</b>				
It is very important that family members are with the patient when death occurs	49	68.10	23	31.90
Men cope with grief more easily than women	66	91.70	6	8.30
Losing a person we are not close to is easier to bear than losing a close person	10	13.90	62	86.10
<b>Theme 3:Management of pain and other symptoms</b>				
Morphine is the standard used to compare the analgesic effect of other opioids	38	52.80	34	47.20
The extent of the disease determines how the pain is treated	34	47.20	38	52.80
Adjuvant therapy is essential in the treatment of pain	0	0	72	100
In the last days of one’s life, drowsiness associated with electrolyte imbalance reduces the need for sedation	4	5.60	68	94.40
Addiction is a major problem with prolonged use of morphine in the treatment of pain	68	94.40	4	5.60
People who take opioids must also take laxatives	48	66.70	24	33.10
Drugs that can cause respiratory depression are suitable for the treatment of severe dyspnea in the terminal phase of the disease	2	2.80	70	97.20
The use of placebo is appropriate in the treatment of some types of pain	7	9.70	65	90.30
In large doses, codeine causes more nausea and vomiting than morphine	2	2.80	70	97.20
Suffering and physical pain are one and the same	39	54.20	33	45.80
Dolantin is not an effective drug in the treatment of chronic pain	46	63.90	26	36.10
The manifestation of chronic pain is different from that of acute pain	5	6.90	67	93.10
Anxiety or fatigue lowers the pain threshold	72	100	0	0
<b>Total%</b>	<b>31</b>	<b>43.10</b>	<b>41</b>	<b>56.90</b>

Table 3. Distribution of Pediatric Nurses’ Perceived Competences toward Palliative Care (No=72)

Statement	Disagree All No (%)	Disagree some No (%)	Agree Some No (%)	Agree All No (%)	Nont revelent No (%)
Knowledge in Symptom Management.	2 (2.8%)	5 (6.9%)	65 (90.3%)	0 (0%)	0 (0%)
Systematic Use of the (ESAS)	17 (23.6%)	5 (6.9%)	39 (54.2%)	11 (15.3%)	0 (0%)
Teamwork Skills.	2 (4.2%)	50 (2.8%)	0 (0%)	20 (22.2%)	0 (0%)
Interpersonal Skills.	2 (2.8%)	2 (2.8%)	66 (91.7%)	2 (2.8%)	0 (0%)
Life Closure Skills	2 (2.8%)	42 (58.3%)	0 (0%)	28 (38.91%)	0 (0%)
<b>Total scores</b>	<b>7.4± 16</b>	<b>28.9± 3.12</b>	<b>47.2± 1.5</b>	<b>16.9± 4</b>	<b>0</b>

understanding. According to a WHO survey, nearly 80% of palliative care patients live in low- and middle-income countries; 96% are adults, with the remaining being children. Despite the fact that juvenile cancer is not one of the six primary causes of palliative care, 98% of all

children require palliative and end-of-life care (Zalenski et al., 2017). Therefore, the aim of current study was to identify the Pediatric Nurses’ Perceived Competencies toward Palliative Care for terminally ill children.

In the context of total nursing knowledge, the current survey found that more than half of nurses possessed enough knowledge. While nearly one-third of nurses had inadequate knowledge, this is consistent with the findings of Morsy (2014), who conducted a study in Harari Regional State of Ethiopia on “Palliative Care of Nurses Towards Knowledge, Attitude, and Practise in Harari National Development Countries Regional State, Eastern

Table 4. Relation between the Total Knowledge and Total Pediatric Nurses’ Perceived Competencies

Areas	Perceived Competencies	
Total knowledge	r	P-value
	0.433	0.000*

\*Significance at P≤0.05.

Table 5. Relation between the Pediatric Nurses' Perceived Competencies and Socio- Demographic Characteristics of the Studied Nurses

Socio-demographic characteristics	Pediatric Nurses' Perceived Competencies		Significance
	n=92	Mean±SD	
Age(years)			
Less than 22 years	4	9.00±1.15	F= 8.796
22-30 years	53	9.24±1.85	P=0.000*
more than 30 years	15	6.73±2.76	
Gender			
Male	10	7.20±2.52	t= -2.338
female	62	8.95±2.14	P=0.022*
Education			
Nursing diploma	22	7.90±2.20	
Nursing institute	30	8.43±2.29	F= 4.141
Faculty of nursing	15	9.66±1.83	P=0.009*
Master or PDh degree	5	11.0±1.22	
Setting			
Neonatal care unite	32	7.31±2.05	F= 22.29
Pediatric intensive care	30	10.3±1.62	P=0.000*
Pain out patient clinic	10	8.30±1.25	
Experiences			
Less than 5years	42	9.30±1.93	F= 8.921
5-10 years	15	9.00±1.46	P=0.000*
More than 10years	15	6.73±2.76	
Training			
Yes	2	10.0±.000	t= 4.85*
No	72	8.67±2.28	P=0.000

\*Significance at P≤0.05

Ethiopia.” And indicated that 56% were well-versed in palliative care.

On the other hand, research has revealed that NICU nurses are unaware of NPC. According to Ahern (2013), who conducted the study titled What neonatal intensive care nurses need to know about neonatal palliative care in the Australian NICU, NICU nurses need knowledge about caring for the dying neonate as nurses, as well as knowledge about the ethnicity and grief of the dying neonates. Furthermore, practitioners concentrate themes related to fundamental abilities such as understanding what to say, managing symptoms, and recording. Similarly, Gallagher (2012) discovered that 93% of those who participated in their study titled “A training needs analysis of neonatal and paediatric health-care staff in a tertiary children’s hospital” had little or no understanding of NPC.

In addition, Gu et al. (2022), who studied barriers to and facilitators of neonatal palliative care among neonatal professionals in China, found that most of the nurses in the study had no knowledge of any NPC policies or guidelines in their unit. In a different approach, Kilcullen and Ireland (2017) studied palliative care in the neonatal unit: neonatal nursing staff perceptions of facilitators and barriers in a regional tertiary nursery.

The current study’s finding in knowledge that evaluated the management of pain and other symptoms

is that less than two-thirds of nurses expressed sufficient knowledge. This study contradicts Chin et al. (2021), who conducted a study on neonatal nurses’ perceptions of palliative care in the neonatal intensive care unit, and Peng et al. (2013), who evaluated neonatal nurses’ educational needs regarding neonatal palliative care and discovered that the nurses reported a lack of knowledge regarding neonates’ end-of-life care, specifically in the management of symptoms.

The current study’s findings on knowledge that analyses psychosocial and spiritual care reveal that more than half of the nurses reported having inadequate knowledge of psychosocial and spiritual care. This could be because, in order to support the transition stage of palliative care for newborns, nurses may need to be trained in the skills of team leader, facilitator, breakdown, and coordination with other specialties such as social workers, psychologists, psychiatrists, and palliative care specialists.

Similarly, Chin (2021) and Peng et al. (2013) described feeling very worried when a neonatal patient appeared to be in agony and the family required spiritual assistance. Furthermore, nurses reported having a negative experience offering spiritual assistance to families of dying neonates. Spirituality in Islam, according to Khraisat et al. (2019, page 5), is described as “how individuals pursue and communicate meaning and purpose through their relationship with Allah.” Spirituality has long been considered as an important component of patient care. In addition, according to Khraisat et al. (2019), nurses must be educated and trained in order to provide spiritual care. More research is needed to determine the competence, distribution, accessibility, and necessity of neonatal palliative care in Saudi Arabia.

Nurses with little experience delivering end-of-life care may feel inept and are more prone to experience burnout, inadequacy, and discomfort. Therefore, the majority of nurses receive inadequate formal training in end-of-life care, despite the existence of standards regarding the requirement for instruction in caring for terminally ill neonatal patients throughout training (Khraisat et al., 2017; Salmani et al., 2018).

Together, our findings provide strong support for the need for formalised training in neonatal end-of-life care; other research had suggested lower means (Peng et al., 2013; Chin, 2020). In conclusion, research revealed that NICU nurses may lack some knowledge of NPC. This indicates that in order to improve their knowledge of NPC, nurses and other healthcare professionals need more training and education. The results of the current study show that nurses are not sufficiently skilled in the foundations of delivering palliative care for newborns. Understanding the educational requirements for nurses to provide high-quality palliative care for babies may lead to the development of interventions.

Inexperienced nurses may feel less qualified to provide end-of-life care and are more likely to feel burnt out, inadequate, and uncomfortable. Despite the fact that there are criteria requiring instruction in caring for terminally ill neonatal patients throughout training (Khraisat et al., 2017; Salmani et al., 2018), the majority of nurses receive insufficient formal training in end-of-life care.

In conclusion, the study's findings demonstrated that paediatric nurses had good knowledge in managing pain and other symptoms in palliative care, but that they lacked it when it came to understanding psychosocial and spiritual care. However, there was consensus that some extend in perceived palliative care competencies. The overall perceived competence and total knowledge of nurses were substantially statistically related. Unfortunately, the knowledge gleaned from these outcomes was insufficient to immediately design a teaching tool. The research's findings led to the conclusion that neonatal palliative care must be included in hospital staff development programmes and guidelines, but that this needs to be done with more care.

#### Recommendations

On the light of the current study findings the following recommendations are suggested:

- Urgent need for updating paediatric nurses' knowledge and skills through the implementation of continuing education programmes about palliative care and cooperation with other organisations and institutions.
- The nursing curriculum should include palliative care, and more study is needed in this area.
- Creating an evidence-based programme for palliative care that all hospitals should have and require all paediatric nurses to adhere to. advice for paediatric nurses working in palliative care should be created and distributed appropriately.
- Train nurses in a variety of locations and institutions to support their educational needs and maintain a stable nursing workforce.
- Further research studies should be conducted including larger sample size in different settings including both governmental and private sectors to enhance knowledge, practices and competences of Pediatric Nurses toward Palliative Care for Terminally Ill Children.

#### Limitation of the study

The present study has some limitations that should be acknowledged. Firstly, the study was conducted in a single institution, which may limit the generalizability of the findings to other settings. Secondly, the study relied on self-reported data, which may be subject to social desirability bias. Thirdly, As a cross-sectional study, our research was subject to biases that commonly affect this type of study, such as recall bias. Finally, the study did not assess the impact of other factors, such as cultural or religious beliefs; on knowledge and attitudes towards Palliative Care for Terminally Ill Children. Despite these limitations, the present study provides valuable in-sights into the importance and necessity of pediatric nurses to possess good knowledge and acceptable competencies level while providing care to terminally ill pediatric patients.

#### Author Contribution Statement

The study was conceptualized and designed by all authors, who also carried out the research and collected the data. Data were examined and interpreted by AMI and

MMS. The article's first and last drafts were written by all authors, who also helped with the logistics. The content and similarity index of the paper are the responsibility of all authors, who also gave the final text a critical assessment and approval.

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#### Availability of data

Data are available upon official request from the corresponding author.

#### Ethical approval

The Scientific Research Ethics Committee provided official approval for the proposed study's conduct with code number NUR (2/4 /2023 (24). Before giving their informed consent, subjects were fully told about the study and their role in it. Subjects had the option to decline participation, and participation in the study was completely optional. The study's nature and aim had to be made clear, participants had the option to withdraw at any time, and the material had to be kept private so that no one else could access it without their consent. These were all ethical considerations. Respect was shown for morals, values, culture, and beliefs. All paediatric nurses employed in the aforementioned setting were informed of the study's goal.

#### Conflict of interest

There is no conflict of interest to be declared.

#### References

- Adriaansen MJ, Van Achterberg T, Borm G (2005). Effects of a postqualification course in palliative care. *J Adv Nurs*, **49**, 96-103.
- Ahern K (2013). What neonatal intensive care nurses need to know about neonatal palliative care. *Adv Neonatal Care*, **13**, 108-14.
- Boman E, Lev Malmberg R, Fagerström L (2020). Differences and similarities in scope of practice between registered nurses and nurse specialists in emergency care: an interview study. *Scand J Caring Sci*, **34**, 492-500.
- Cheng Q, Zhang Q, Liu X, Chen Y (2021). Initial exploration of training for palliative care specialist nurses in mainland China. *Nurse Educ Today*, **101**, 104869.
- Chin SDN, Paraszczuk AM, Eckardt P, Bressler T (2021). Neonatal nurses' perceptions of palliative care in the neonatal intensive care unit. *MCN Am J Matern Child Nurs*, **46**, 250-7.
- Chin SDN (2020). Neonatal Nurses' Perceptions of Providing Palliative Care in the Neonatal Intensive Care Unit (Doctoral dissertation, Molloy College).
- D'Aoust RF, Rossiter AG (2021). Caring for Veterans and Their Families: A Guide for Nurses and Healthcare Professionals. Jones and Bartlett Learning.
- Dehghani F, Barkhordari-Sharifabad M, Sedaghati-Kasbakh M, Fallahzadeh H (2020). Effect of palliative care training on perceived self-efficacy of the nurses. *BMC Palliat Care*, **19**, 63.

- Duffy JR (2022). Quality caring in nursing and health systems: Implications for clinicians, educators, and leaders. Springer Publishing Company.
- Ferrell BR, Chung V, Koczywas M, Smith TJ (2020): Dissemination and Implementation of Palliative Care in Oncology. *J Clin Oncol*, **38**, 95-1001.
- Fukada M (2018). Nursing competency: Definition, structure and development. *Yonago Acta Med*, **61**, 001-7.
- Gallagher K, Cass H, Black R, Norridge M (2012). A training needs analysis of neonatal and paediatric health-care staff in a tertiary children's hospital. *Int J Palliat Nurs*, **18**, 197-201.
- Gu L, Li ZZ, Peng NH, et al (2022). Barriers to and facilitators of neonatal palliative care among neonatal professionals in China. *Am J Hosp Palliat Med*, **39**, 695-700.
- Abd-Elrahman Radwan SAE, El-KhedrAbd-Elgawad SM, Younis AR, Abo-El-Azm A (2022). Effect of Educational Program on Nurses' Competency Regarding Providing Palliative Care for Children with Advanced Stage of Cancer. *Tanta Sci Nurs J*, **24**, 384-411.
- Khraisat OM, Alkhalwaldeh A, Abuhammad S (2019). Spirituality-focused end-of-life care among paediatric patients: evidence from Saudi Arabia?. *Int J Palliat Nurs*, **25**, 610-6.
- Khraisat OM, Hamdan M, Ghazzawwi M (2017). Palliative care issues and challenges in Saudi Arabia: knowledge assessment among nursing students. *J Palliat Care*, **32**, 121-6.
- Kilcullen M, Ireland S (2017). Palliative care in the neonatal unit: neonatal nursing staff perceptions of facilitators and barriers in a regional tertiary nursery. *BMC Palliat Care*, **16**, 1-12.
- Krzywinski, Altman N (2013). Points of significance: Significance, P values and t-tests. *Nat Method*, **10**, 809-10.
- Mikan F, Wada M, Yamada M, et al (2016). The association between pain and quality of life for patients with cancer in an outpatient clinic, an inpatient oncology ward, and inpatient palliative care units. *Am J Hosp Palliat Med*, **33**, 782-90.
- Morsy WYM, Elfeky HA, Mohammed SE (2014). Nurses' knowledge and practices about palliative care among cancer patient in a university hospital-Egypt. *Med Decision-Making*, **24**.
- Ozano K (2022). Cross country study on integration of HIV, TB and Malaria in Uganda, Nigeria, Mozambique, DRC, Zimbabwe and Tanzania.]
- Peng NH, Chen CH, Huang LC, et al (2013). The educational needs of neonatal nurses regarding neonatal palliative care. *Nurse Educ Today*, **33**, 1506-10.
- Radbruch L, De Lima L, Knaut F, et al (2020). Redefining palliative care—a new consensus-based definition. *J Pain Symptom Manag*, **60**, 754-64.
- Rosa WE, de Campos AP, Abedini NC, et al (2022). Optimizing the global nursing workforce to ensure universal palliative care access and alleviate serious health-related suffering worldwide. *J Pain Symptom Manag*, **63**, e224-36.
- Ross M, McDonald B, McGuinness J (1996). The palliative care quiz for nursing (PCQN): the development of an instrument to measure nurses' knowledge of palliative care. *J Adv Nurs*, **23**, 126-37.
- Salmani N, Rassouli M, Mandegari Z, Bagheri I, Tafti BF (2018). Palliative Care in Neonatal Intensive Care Units: Challenges and Solutions. *Iran J Neonatol*, **9**.
- Ward BN, Ward EN (2017). Nursing students' knowledge and attitudes toward care of the dying.
- Yu J, Song IG, Kim CH, et al (2020). Perceptions of pediatric palliative care among physicians who care for pediatric patients in South Korea. *J Palliat Med*, **23**, 346-52.
- Zalenski RJ, Jones SS, Courage C, et al (2017). Impact of palliative care screening and consultation in the ICU: a multihospital quality improvement project. *J Pain Symptom Manag*, **53**, 5-12.



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