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The Relationship between Paediatric Nurses' Knowledge, Attitude, and Practice about Atraumatic Care of Hospitalized Children in Indonesia

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ABSTRACT

Background: The main stressors of the hospitalised children's are separation from family, loss of control, pain, and the unfamiliar hospital environment. Atraumatic care is therapeutic care provided through interventions that eliminate or reduce the psychological and physical distress experienced by children and families. **Objective:** The objective of this study was to describe the Indonesian nurses' knowledge, attitudes, and practices regarding atraumatic care for hospitalised children and to identify the factors affecting the nurses' practice of atraumatic care. **Methods:** This descriptive correlation study was held in a regional general hospital. Totally, 70 of 44 nurses in paediatric wards and 26 nurses in the Pediatric Intensive Care Unit (PICU) completed a 20-question multiple-choice scale of knowledge about atraumatic care and a 30-item scale of attitude towards atraumatic care. The behaviours were observed using a 25-item Nurses' Practice Scale for Atraumatic Care. **Results:** Compared to their colleagues in other units, the nurses in the PICU (12.65±2.79) had the best knowledge, and the nurses in the paediatric wards had the best attitude (98.19±9.76) and practice (63.09±10.64) toward providing atraumatic care. Hierarchical linear regression revealed that nurses who were working in the paediatric wards (B = 7.826, SE = 3.254, p = 0.019) and females (B = 9.814, SE = 3.481, p= 0.006) had better knowledge (B = 1.068, SE = 0.622, p = 0.010) and attitude (B = 0.237, SE = 0.139, p = 0.029) and significantly better practice scores in providing atraumatic care than those who were working in the PICU and male. **Conclusion:** Trainings regarding the provision of atraumatic care for hospitalised children should be developed for the nurses to improve their knowledge and attitude so they can provide optimal care to minimise the impact of hospitalisation on children.

Keywords: Attitude to Health; Knowledge; Nurse, Paediatric; Professional Practice

INTRODUCTION

The population of children who are hospitalised is increasing (Hockenberry, Rodgers & Wilson, 2020). The percentage of children experiencing signs of illness was 43.6% in 2023, according to the data from the Central Statistics Agency in Indonesia, with almost 16% requiring hospitalisation, 13% greater than the year before (Kemenkes, 2023a). More than 45% of all children would experience disease and illness, including symptoms like cough, fever, diarrhoea, nausea, and vomiting (Kemenkes, 2023b). Hospitalisation is a crisis for children, whether planned or unexpected incidents (Potter & Perry, 2022). Moreover, changes in daily routines can contribute to fear and anxiety for children during hospitalisation (Sartain, Clarke & Heyman, 2000). Although science and technology have advanced rapidly in the diagnosis and treatment of childhood illness, frequent therapeutic interventions induced for children with illness can result in trauma, pain, anger, anxiety, and fear (Rokach, 2016). In Indonesia, it was reported in 2018 that the rate of children who were hospitalised experiencing the feeling of anxiety was approximately 57%, and it has been increased to 63% in 2019. The

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figure illustrates that more than 40% of hospitalised children experience stress along the process during their treatment trajectory (Kemenkes, 2023a).

The stress as the result of hospitalisation can affect children differently, depending on their age, previous experiences of the hospitalisation, acceptance of their situation, coping skills, and level of support from their parents (Hockenberry, Rodgers & Wilson, 2020). The stress may, in turn, lead to negative behaviours in children, such as crying, being aggressive, or loss of control in their cooperation and compliance in treatment and procedure necessary for their disease and illness (Hockenberry, Rodgers & Wilson, 2020; Norton-Westwood, 2012). The main stressors that children must confront during hospitalisation include separation from family, trauma, pain, and the hospital environment itself, which is unfamiliar to children (Paliadelis *et al*., 2005; Rollins, Drescher & Kelleher, 2011). If these negative experiences cannot be addressed, they can result in the child's psychological health, which can impede growth and development.

Atraumatic care is therapeutic care provided through interventions that eliminate or reduce the psychological and physical distress experienced by children and families (Hockenberry, Rodgers & Wilson, 2020). Moreover, atraumatic care, which is a component of paediatric nursing, refers to minimising the impact of hospitalisation (Huff *et al*., 2009). Nurses have primary responsibilities in providing atraumatic care include reducing or preventing the impact of separation from the family, improving parents' ability to care for hospitalised children, preventing potential psychological injuries and pain, and arranging a physical environment that is close to the children's personal preference, such as toys and comfort measures (Wong *et al*., 2018). One research study stated that applying atraumatic care to children in hospitals could reduce the experience of trauma confronted by children and parents during hospitalisation (Biresaw, Asfaw & Zewdu, 2020).

Nursing interventions in decreasing the effect of trauma during hospital admissions include clear explanation of hospital procedures, the disease, and treatment to parents and children by applying appropriate communication methods or tools in helping the child adjust to new and previous experiences (Rollins, Drescher & Kelleher, 2011). Nurses can also encourage and organise support for the child from the family and provide therapeutic toys during treatment (Pratiwi, 2013). Nurses play major role in improvement of the health outcome of individuals at family and community level. They are the key functionaries who are responsible for providing services in the healthcare system and interacts directly with the community at large for sustainable outcome. Nurses are often the front-line and direct care providers and need to attain the knowledge and skills necessary to understand, interact with and implement excellent care for Hospitalized Children (Mandal, Basu & De, 2020; Basak & Srimani, 2020). In addition, multisensory devices may aid communication, for example, dolls, books, and videos, and using games as tools to illustrate aspects of hospitalisation (Biresaw, Asfaw & Zewdu, 2020). Paediatric nurses, in particular, need specific skills and knowledge, for example, a deeper understanding of children's growth and development than other health workers, in order to tailor nursing plans to children and families, helping them adapt to conditions that affect both internal and external growth and development (Shilpashree *et al.*, 2021; Yubonpunt *et al*., 2021).

The factors influencing nurses' ability to carry out atraumatic care in hospitals are based on person-focused perceptions, knowledge, beliefs, desires, motivations, intentions, and attitudes for the outcomes of rational behaviour in children with acute illness (Achora & Labrague, 2019; Rollins, Drescher & Kelleher, 2011). Paediatric nurses must perform care based on a foundation of atraumatic care. The knowledge is required to help children receive the best possible care while in the hospital (Peng *et al*., 2020; Rehn *et al*., 2019). Attitude can be seen as a relatively long-lasting organisation of the motivational, perceptual, and cognitive processes that are relatively permanent in how a person deals with aspects of life (Hossain, 2010). Furthermore, nursing practice is an independent action of professional nurses in providing nursing care within a work environment where nurses have authority and responsibility in collaboration with patients and other health workers to restore health and deliver care (Rollins, Drescher & Kelleher, 2011). Therefore, nurses need to have the knowledge, professional attitudes, and accountable practice with a combination of technical and interpersonal skills to meet the needs of patients; to put it another way, the capacity of nurses to provide atraumatic care depends on their knowledge and attitudes (Utami, 2013). Implementing atraumatic care can result in a higher level of children's satisfaction in care (Islam, 2009).

Although an Indonesian study has found that the majority of Indonesian nurses (89%) had a positive

attitude and supported the implementation of atraumatic care for sick children who are hospitalised, the knowledge of atraumatic care was insufficient among half of those nurses (Huff *et al*., 2009). Moreover, in the study of Mediani, Hendrawati and Shidqi (2019) nurses, despite their understanding of atraumatic care in children, indicated that they may have partially incorporated methods of atraumatic nursing into the care they had provided to children in hospitals, such as involving parents in the care of the child in hospital and applying measures for reducing the adverse emotional reactions of the children while hospitalised (de Breving, Ismanto & Onibala, 2015). There are many areas needed to be addressed in paediatric nursing practice of atraumatic care, including the deficiencies in nursing education, training, and preparation in relation to atraumatic care for children, as well as a lack of opportunities for continuing professional development and a lack of studies examining the nurses' knowledge in this field (Crable, Highfield & Patmon, 2021; Wang & Lo, 2006; Wong *et al.*, 2018). In addition, inadequate nursing knowledge, practice, and negative attitudes toward atraumatic care for children can contribute to a greater incidence of anxiety and unnecessary trauma for children while hospitalised (Twamley *et al*., 2014).

Previous studies in Indonesia have focused on nurses' knowledge and attitudes (Efendi & Kurniati, 2021; Huff *et al*., 2009; Islam, 2009); however, little has been known about the relationship between nurses' knowledge, attitudes, and practice concerning atraumatic care for hospitalised children. As a result, it was crucial to explore the level of knowledge, attitude, and practice of nurses regarding atraumatic care for hospitalised children and the relationship between their knowledge and attitude and their practice. This study examines the relationship between hospitalised children's atraumatic care knowledge, attitude, and practice among nurses. The study identifies and explains correlations between variables and demonstrates the relationship between the independent variables, nurses' knowledge and attitude, and thus the dependent variable, hospitalised children's atraumatic care practices.

METHODOLOGY

Study Design and sample

This study employed a cross-sectional with descriptive correlation design in the Wongsonegoro Regional General Hospital, a hospital located in Semarang, Central Java. The research was carried out from June 7 to August 7, 2022. The G*Power version 3.1.9 was used to estimate the necessary sample size (Faul *et al*., 2009), with significance set at 0.05 and a power of 0.95 with a moderate effect size of 0.25, and a 30% attrition rate was taken into account to make up for the possible loss of subjects (Huff *et al*., 2009; Utami, 2013). Thus, the final study sample comprised 70 nurses (45 in the two paediatric wards and 25 in the PICU); the inclusion criteria are the nurses who work in the paediatric wards and PICU. The head nurse and student nurses will be excluded.

Data Collection Instrument

Nurse Knowledge about Atraumatic Care

The knowledge scale was developed by Mediani, Hendrawati & Shidqi (2019) to determine nurses' level of knowledge regarding atraumatic care in paediatric clinical settings. The knowledge scale consists of 20 multiple choices. After getting the revised instrument, an I-CVI score of 1 and an S-CVI score of 1. This study's Kuder-Richardson 20 (KR-20) was 0.779.

Nurse attitude about Atraumatic Care

The nursing attitude scale was developed by Mediani, Hendrawati & Shidqi (2019) and adapted to describe the overall implementation of atraumatic care with a 30-item scale. After receiving the revised instrument, an I-CVI score of 1 and an S-CVI score of 1. This study's Cronbach's alpha value is 0.910.

Nurses' Practice about Atraumatic Care

The original with 30 items was developed by Utami (2013). Panel experts suggested deleting five items (items 3, 5, 6, 12, and 29) that might not be observed routinely in one shift. Some items were rephrased positively rather than negatively. After receiving the revised instrument, I had an I-CVI score of 1 and an S-CVI score of 1. Only 25 items could be adapted for observation. This study uses Cohen's Kappa to report inter-rater reliability with four research assistants, RA_1 0.823, RA_2 0.858, RA_3 0.908, and RA_4 0.881.

Procedures

The data were collected from June 7 to August 7, 2022. Following approval, the purpose and procedure of the study were explained to the nurses who met the study's eligibility requirements. After obtaining consent, the knowledge and attitude questionnaires were provided to the nurse participants in a private room in the hospital for about 30 minutes and returned to the researcher in a sealed manila envelope. In the practice part, the researchers informed the participants that they were observed in their day shift (working from 7 a.m. to 2 p.m.) caring for children. The researcher followed each research assistant as they observed one paediatric nurse using the observation checklist to ensure consistency in coding. All data were stored in a locked file cabinet. All the participants received a gift from the researcher for their participation.

Data Analysis

Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to describe and summarise the data. Shapiro-Wilk tests were performed and showed that the distribution of variables departed significantly from normality ($p<0.05$); therefore, non-parametric tests were used. Mann-Whitney U tests and Kruskal-Wallis tests were used to assess the differences among the groups, while Spearman's rank correlation coefficient was used to evaluate the relationship between the study variables; a $p<0.05$ was considered significant. In order to investigate which factors affect nurses' practice, a hierarchical linear regression with three models was conducted. The demographic characteristics were entered in model one, nurses' knowledge added in model two, and nurses' attitude added in model three. All analyses were performed in SPSS v26 (IBM SPSS, Chicago, IL), and p-values < 0.05 were regarded as significant.

Ethical Considerations

The present study obtained ethical approval from the research ethics committee of the Wongsonegoro Hospital, Indonesia, with reference number B/10420/070/XII/2022 on 16th December, 2022.

RESULTS

Table 1: Descriptive Statistics of The Nurses' Demographic Data, Knowledge, Attitude, and Practice in Providing Atraumatic Care to Hospitalized Children

Variables	Categories	n(%)	Mean ± SD
Department of work	Paediatric wards	44(62.9)	
	PICU	26(37.1)	
Duration of work			4.89±4.15
Age (Years)			29.84±4.37
Gender	Male	11(15.7)	
	Female	59(84.3)	
Marital Status	Married	40(57.1)	
	Single	30(42.9)	
Education	Diploma	37(52.9)	
	Bachelor	33(47.1)	
Atraumatic Care Training	Yes	0(0.0)	
	No	70(100.0)	
Nurses' Knowledge*			12.23±2.10
Nurses Attitude*			95±10.20
Nurses Practice*			60.94±10.58

*Note: SD (standard deviation); *Scales on Atraumatic Care of Hospitalized Children.*

The 70 nurses who participated were mainly from Paediatric ward (62.9%), and their duration of work ranged from 1 to 20 years (M= 4.89, SD=4.15) (Table 1).

Compared to their colleagues in other units, the nurses in the PICU had the best knowledge and the nurses in the paediatric wards had best attitude and practice toward providing atraumatic care. The 70 of nurses' knowledge work of the atraumatic care of hospitalized children was found statistically associated with age (r=0.265, p=0.02) and duration of work (r=0.330, p<0.001) had significant positive correlations with nurses' knowledge. However, there was no statistically significant relationship between nurses' knowledge about atraumatic care and their department of work, gender, marital status, and education. The department they worked in Paediatric wards was statistically associated their attitude of atraumatic care for hospitalized children (z=-4.452, p<0.001), and nurses who married had significant higher (z=0.805, p=0.02). Mann-Whitney Test showed that nurses who were working in the paediatric wards (z=0.805, p=0.02), female (z=-4.624, p<0.001), and married (z=-2.273, p=0.02) had significantly higher practice scores in providing atraumatic care than those who were working in the PICU, male, and single. Both age (r=-0.30, p<0.001) and duration of work (r=-0.32, p<0.001) had significant negative correlations with nurses' practice. The Spearman Rank correlation analysis indicated that nurses with better levels of knowledge tended to have better attitudes, and those who had better attitudes were more likely to implement atraumatic care. Nurses with higher levels of knowledge are more likely to translate their knowledge into practice (Table 2).

Table 2: Association between the Nurses' demographic Characteristics and their Knowledge, Attitude, and Practice of Atraumatic Care for Hospitalized Children

Characteristics	Nurses' knowledge		*P*	Nurses' attitude		*P*	Nurses' practice		*P*
	M±SD	z/r		M±SD	z/r		M±SD	z/r	
Department of work[a]		-1.583	0.11		-4.452	<0.001		0.805	0.02
Paediatric Wards	11.98±2.56			98.19±9.79			63.09±10.64		
PICU	12.65±0.79			89.61±8.62			62.46±10.24		
Age (years) [b]	29.05±4.11	0.265	0.02	31.19±4.52	-0.165	0.17	32.38±5.24	-0.300	<0.001
Gender[a]		-0.183	0.85		-1.434	0.15		-4.624	<0.001
Male	11.91±2.11			89.81±8.58			55.64±11.50		
Female	12.29±2.11			95.97±10.25			61.93±10.20		
Marital Status[a]		-1.100	0.26		-2.150	0.03		-2.273	0.023
Married	12.61±2.47			94.49±9.50			61.67±11.08		
Single	12.41±2.20			97.30±9.90			59.97±9.97		
Education[a]		-0.910	0.35		-0.411	0.67		-0.677	0.502
Diploma	12.80±2.16			95.86±9.21			61.67±10.53		
Bachelor	12.15±2.67			94.63±10.49			60.12±10.75		
Duration of work[b]	3.73±3.84	0.330	<0.001	6.85±3.97	-0.133	0.27	7.98±4.88	-0.328	<0.001
Nurses' Knowledge[b]					0.317	<0.001		0.377	<0.001
Nurses' Practice[b]					0.428	0.03			

Note: [a]Mann Whitney Test, [b]Rank Spearman Correlation

Hierarchical linear regression revealed that nurses who were working in the paediatric wards and female, had better knowledge and attitude had significantly better practice scores in providing a traumatic care than those who were working in the PICU and male. The paediatric wards and female, had better knowledge and attitude had significantly better practice scores in providing a traumatic care. In model one, the nurses who were working in Paediatric wards (B=6.020, SE=3.114, p=0.008) and female (B=10.859, SE=3.687, p=0.004) had significantly higher nurses' practices scores in providing a traumatic care than those who were working in the PICU and male, with 14.9% variance explained. After nurses' knowledge was included in model two, the nurses who were working in paediatric wards (B=5.413, SE=2.978, p=0.034) and female (B=10.367, SE=3.520, p=0.005)

remained significant. Also, the higher the nurses' knowledge (B=1.534, SE=0.567, *p*=0.009), the greater the nurses' practice in providing atraumatic care, and the explained variance was 9.5% for nurses' knowledge alone. After nurses' attitude included in model 3, the nurses who were working in Paediatric Wards (B=7.826, SE=3.254, *p*=0.019) and female (B=9.814, SE=3.481, *p*=0.006), had better knowledge (B=1.068, SE=0.622, *p*=0.010) and attitude (B=0.237 SE=0.139, *p*=0.029) in providing atraumatic care were significantly related to better nurses' practice. In addition, the explained variance for nurses' attitude alone was 1.1% Table 3.

Table 3: Hierarchical Regression Analysis of Factors Affecting the Nurses' Practice of Atraumatic Care for Hospitalized Children (n=70)

Characteristics	Model 1				Model 1				Model 1					
	B	*SE*	*T*	*P*	*B*	*SE*	*T*	*p*	*B*	*SE*	*T*	*P*	R^2	*VIF*
Department of work[a]													0.149	1.088
Paediatric Wards	6.020	3.114	-1.071	0.008	5.413	2.978	-1.423	0.034	7.826	3.254	-1.666	0.019		
PICU														
Age (years) [b]	-0.352	0.504	-0.699	0.487	-0.357	0.480	-0.742	0.461	-0.254	0.477	-0.532	0.597		
Gender [a]														
Female	10.859	3.687	2.946	0.004	10.367	3.520	-0.123	0.005	9.814	3.481	2.819	0.006		
Male														
Marital Status[a]														
Married	-0.149	2.800	-0.053	0.958	-0.327	2.671	2.946	0.903	-0.372	2.630	-0.141	0.888		
Single														
Education[a]														
Diploma	-3.557	2.720	-1.308	0.196	-3.002	2.601	-1.162	0.250	-3.369	2.570	-1.311	0.195		
Bachelor														
Duration of work [b]	-3.557	2.720	-1.308	0.288	-0.786	0.552	1.818	0.160	-0.915	0.549	2.405	0.101		
Nurses' Knowledge [b]					1.534	0.567	2.703	0.009	1.068	0.622	1.718	0.010	0.244	1.314
Nurses' Practice [b]									0.237	0.139	1.710	0.029	0.255	1.560

Note: B = unstandardized coefficient; SE = standard error of unstandardized coefficients

DISCUSSION

This study used sources of information and observations of how 70 nurses actually practiced atraumatic care. The study results regarding the questionnaire show that most work in paediatric wards, the average age is 22 to 46, and the majority are female and married (68.4%). This finding is similar to the Human Resources for Health Country Profile of Indonesia, which reported approximately 31.5% of nurses in Indonesia are between 22 and 40 years of age, with 70.1% female (WHO, 2024). Moreover, in that report, 25% of nurses were under 30 years old, and the gender distribution among nursing professionals and nursing associate professionals was predominantly female, at 67.8% and 70.1%, respectively (Efendi & Kurniati, 2021). Other studies have likewise found that Indonesian paediatric nurses providing atraumatic care to child patients are overwhelmingly female, at 84.8%, and most were young adults between the ages of 22 and 39 (Suminar, Yulianti & Kurnaesih, 2022). These studies show that in Indonesia, paediatric nurses who practice atraumatic care are more likely to be young, reflecting the fact that atraumatic care is a new concept.

Most nurses in this study held a diploma (70%), and their work experience ranged from 1 to 20 years. Furthermore, practically every participant (100%) in this study had received no training in atraumatic treatment. However, 100% of this study's participants had no atraumatic care training (Huff *et al*., 2009). This finding is roughly consistent with another recent study in Indonesia, in which 60% of practicing nurses obtained a diploma degree, 42% had worked in a hospital for more than ten years, and none had received any atraumatic care training. The demographic characteristics of nurses in this study also approximate other studies of nursing personnel in other Indonesian cities (Handayani & Daulima, 2020; Suminar, Yulianti & Kurnaesih, 2022). It is possible that no atraumatic care content was taught in the curriculum (Hossain, 2010; Suminar, Yulianti & Kurnaesih, 2022). None of the nurses had received training in atraumatic care, no matter how briefly or how long they had worked in the profession, as it is not part of the required nursing curriculum.

Two prior Indonesian studies found a poor level of knowledge about atraumatic care. One found that the

majority (90.9%) of nurse respondents had a poor level of knowledge about atraumatic care, some nurses showed a negative attitude towards the use of atraumatic care (9.1%), and many nurses did not perform atraumatic care well (37.3%) (Suminar, Yulianti & Kurnaesih, 2022). In a study from a different hospital and province, 50% of nurses had insufficient knowledge of atraumatic care and 11% had a poor attitude toward providing atraumatic care for hospitalised children. In this study a revised version of the knowledge and attitude scales was used in a different province and city. The range of scores for nurses' knowledge was a mean of 12.55, a relatively low score. The mean score of 95.38 for nurses' attitudes towards providing atraumatic care was quite positive. Unlike the previous studies, nurses who practice providing traumatic care were observed. The results showed that they performed better in real life than their knowledge scores would suggest. Their practice mean score was 60.94. Evidently, although they did not receive formal instruction on the theory and definition of atraumatic care, they did learn some of the practices in their prior training and were actively using them. Another study indicated that 90.9% have insufficient knowledge about atraumatic care, some have a negative attitude (9.1%), and many aren't applying it well (37.3%) (Alotaibi, Higgins & Chan, 2019).

This study found that PICU nurses were significantly more knowledgeable than paediatric ward nurses in providing atraumatic care. Trauma-informed treatment, including pain management and distress reduction, was familiar to PICU nurses (Ekim & Ocakci, 2013). In a fast-paced work environment, they may have frequent opportunities to gain and improve the skills necessary to reduce patients' tension (Lerwick, 2016). They may need to provide atraumatic care and emergent procedures to comfort paediatric patients and their parents. In nurses' PICU, more research is needed to observe their clinical practice in delivering atraumatic treatment. Nurses working in paediatric wards had a better attitude toward providing atraumatic care than nurses in the PICU. Nurses in paediatric wards had more positive attitudes than clinicians at either PICUs or NICUs regarding paediatric pain management (Alotaibi, Higgins & Chan, 2019; Tagele, Berhe & Lema, 2023; Pascareli-Carlos *et al.*, 2021). Nurses working in paediatric care settings may have a greater focus on and awareness of paediatric patients' unique needs and sensitivities (Surastiningsih, Hayati & Waluyanti, 2014). This specialised environment and exposure to paediatric patients likely contribute to developing more positive attitudes in atraumatic care. In this study, education and atraumatic care training did not affect knowledge and attitudes. 57% of nurses lacked atraumatic care training, indicating insufficient knowledge and that the high patient-to-nurse ratio interferes with its implementation (Rahmah & Santoso, 2014). According to Indonesian nursing research, nurses' unfamiliarity with atraumatic care is due to education and a lack of training or seminars (Huff *et al*., 2009; Islam, 2009; Rahmah & Santoso, 2014).

Hierarchical linear regression analysis showed that nurses' knowledge and attitude toward atraumatic care in hospitalised children were predictors of their practice. As nurses learn more about atraumatic care, their attitudes and practice improve (Ayello & Meaney, 2003; Islam, 2009). Hospitalised children had more anxiety and trauma due to nurses' poor understanding, practice, and negative attitudes (Cırık, Ciftcioglu & Efe, 2019). To provide atraumatic care for hospitalised children, nurses must understand child development, age-appropriate communication, and pain and anxiety management (Alotaibi, Higgins & Chan, 2019; de Breving, Ismanto & Onibala, 2015). Paediatric ward nurses scored higher in atraumatic care than PICU nurses, although work time did not affect their practice. 84.3% of nurses were female and provided more atraumatic care. Paediatric nurses with more experience and training in workshops and professional courses manage pain better (Pancorbo-Hidalgo *et al*., 2007). 78.3% of nurses did not attend any continuing education, and the mean score was 45.3%. To deliver high-quality treatment, paediatric nurses must be highly educated and experienced in clinical practice (Anyasor & Oluwatoyin, 2017; Hagos *et al*., 2014). Females being more likely to comprehend the nursing care intervention (Deng *et al*., 2018; Doiron & Peck, 2022; Vincent, 2020). Gender is a complicated social construct, and most nurses are women. It does not determine a person's abilities or competencies.

CONCLUSION

There is a significant correlation between the department of work in the PICU and nurses' knowledge of providing atraumatic care. There was a significant correlation between nurses' attitudes toward the paediatric ward and marital status in providing atraumatic care. These findings suggest that the greater the nurse's

knowledge and attitude toward providing traumatic care to hospitalised children, the better the practice of providing traumatic care. The main findings demonstrated that nurses who worked in paediatric wards and females had considerably superior practice scores in providing atraumatic care than nurses who worked in the PICU and were male. Nurses should receive training on providing atraumatic care for hospitalised children to enhance their knowledge and disposition and enable them to give the best care possible to reduce the negative effects of hospitalisation on children. More intervention studies ought to be carried out to raise the level of practice, attitude, and knowledge of nurses.

Recommendation

The hospitals should also have training programs in atraumatic care, especially in paediatric patient units. It is necessary to offer these nurses an up-to-date understanding of atraumatic care that may be applied in practice. Hospital rules and standards are required to adopt the concept of atraumatic treatment of hospitalised children and build a friendly environment to reduce the stressor of hospitalised children. Regardless of the degree program, nursing schools should include the atraumatic care contents in their paediatric nursing courses. Further intervention studies should be performed to improve the nurses' knowledge, attitude, and practice level. The researcher suggests the potential for longitudinal studies to track changes in nurses' knowledge, attitudes, and practices over time following targeted interventions. Also, consider future research comparing practices across different hospitals or countries to identify broader trends and best practices in atraumatic care.

Limitations

The three scales used in this study have been modified from the original scales, which made descriptive results that could not be compared to other studies. Also, the instruments may need further validation. Furthermore, every participant responded that they did not have any training experience in "atraumatic care." Since the concept of atraumatic care includes a series of contents, whether they did not have any training related to the contents or were unaware of the trainings they had was unknown. In the future, the items of atraumatic care training need to be specified clearly in the instrument.

Conflict of Interest

The authors declare that they have no competing interests.

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