

Korean nurses' knowledge, opinions and current practice of trauma-informed pediatric nursing care in South Korea: a descriptive study

Kyung-Sook Bang¹, Sun Woo Hong², Hwal Lan Bang³, Ji-Hye Choe⁴, Sinyoung Choi⁴

¹Professor, College of Nursing, Research Institute of Nursing Science, Seoul National University, Seoul, Korea

²Professor, Department of Paramedicine, Daejeon University, Daejeon, Korea

³Associate Professor, Department of Nursing, Andong National University, Andong, Korea

⁴Graduate Student, College of Nursing, Seoul National University, Seoul, Korea

Corresponding author

Sun Woo Hong

Department of Paramedicine, Daejeon University, 62 Daehak-ro, Dong-gu, Daejeon 34520, Korea
TEL: +82-42-280-2938
FAX: +82-42-280-2945
E-MAIL: swhong@djju.kr

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Purpose: This study aimed to investigate the knowledge, opinions, competence, and barriers of nurses providing trauma-informed care (TIC) to children in hospitals. **Methods:** Data were collected from 198 nurses nationwide using the TIC Provider Survey developed by the Center for Pediatric Traumatic Stress in July, 2024. Descriptive statistics, t tests, and one-way ANOVA were conducted using the IBM SPSS Statistics software (ver. 23.0, IBM Corp.). **Results:** Of the 13 items assessing knowledge of TIC, seven had a correct response rate of over 90%. However, the correct response rate for these three items were less than 30%. Regarding opinions on the TIC, more than 90% of participants agreed with five of the seven items. In self-rated competence in providing TIC, they were not competent in responding to a child's (or parent's) questions about whether the child is going to die or understanding how traumatic stress may present differently according to developmental stages. The major barriers to providing TIC were time constraints, lack of training, and organizational support. Items with relatively low performance rates were 'teach parents what to say to their child after a difficult/sick/scary experience, and teach child or parents the specific ways to cope with unpleasant experiences'. **Conclusion:** This study suggests that it can contribute to the development of specific guidelines for nurses to effectively apply TIC in pediatric and family nursing practice, emphasizing the need for educational programs to support this implementation.

Keywords: Child care; Family; Knowledge; Nurses; Stress disorders, post-traumatic

INTRODUCTION

Nurses frequently encounter patients who have experienced accidents or severe illnesses that can cause physical or psychological trauma. Although these patients may experience acute stress due to such incidents or illnesses, not all develop long-term post-traumatic stress disorder (PTSD). However, individuals who face adversity during childhood are more likely to develop mental health issues in adulthood [1].

Historically, childhood trauma has primarily been associ-

ated with major accidents or severe abuse. However, recent understanding acknowledges that various factors can contribute to childhood trauma, including serious illnesses experienced during childhood, chronic stressors, adverse childhood experiences (ACEs), and the COVID-19 pandemic [2,3]. Studies have indicated that these adverse experiences can have detrimental effects on a child's developmental process and lifespan [4], highlighting the importance of timely and appropriate care (nursing) for children in distressing situations.

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Trauma-informed childcare refers to the provision of care that integrates an understanding of PTSD with the aim of reducing PTSD experienced by pediatric patients in clinical settings [5]. Trauma-informed care (TIC) involves empathizing with and supporting individuals affected by trauma, recognizing its impact, and evaluating social connections and support systems to appropriately utilize family, friends, spiritual, and community resources [6]. The six principles of the TIC are safety, trustworthiness and transparency, peer support, collaboration and mutuality, empowerment, voice, and choice, and consideration of cultural, historical, and gender issues [6]. In healthcare settings where nurses, doctors, therapists, and other health support professionals are present, multidisciplinary collaboration and communication among professionals are crucial for effective TIC. Knowledge of TIC is essential for understanding children who have experienced trauma and providing individualized care that meets their physical and emotional needs. Opinions and awareness of TIC are crucial in creating a safe and therapeutic environment for traumatized children, facilitating better assessments and promoting recovery through multidisciplinary collaboration [5,6]. Therapeutic interventions used in clinical practice, such as play therapy, animal-assisted therapy, biofeedback, and art activities, can reduce children's stress and prevent re-traumatization [4].

In other countries, various research and practical applications of TIC have already been implemented, whereas in South Korea, TIC is a relatively new concept, with limited recognition and application. According to a recent scoping review, TIC studies in children have increased rapidly since 2017, and more than 95% of them have been conducted in Western countries, and in the case of Asian countries, there is no other than one study conducted in the United Arab Emirates [7]. However, as research on TIC in the field of nursing has been found to be the most active, the interest in and importance of TIC for children is also expected to increase in the future.

Nurses often work with pediatric patients experiencing severe illnesses, depending on their specific units, such as high-risk neonates, pediatric oncology patients, pediatric intensive care units, emergency rooms, and psychiatric and general wards. Nurses caring for children are responsible for recognizing and assessing trauma across the continuum of care from birth to adolescence. They provide care to pediatric patients in complex and diverse healthcare settings, focusing on the importance of promoting health and resilience [2]. Partic-

ularly, when a child experiences a serious illness, the process can be highly threatening and requires absolute support and meticulous care by nurses.

In this study, we would like to compare nurses' knowledge, opinions, and self-rated competencies related to TIC according to demographic characteristics such as sex, age, child status, work unit, type of hospital, and period of clinical career in the children's ward. This will help reveal differences in the levels of knowledge, opinions, and self-rated competencies related to TIC based on nurses' general and job-related characteristics, which will be an important consideration in the development of relevant educational programs in the future.

This study aims to assess the knowledge, opinions, competence, practices, and barriers related to TIC among nurses caring for children in diverse hospital settings and environments. By identifying these factors, this study seeks to determine the necessary level of education and provide foundational data for developing strategies to offer holistic nursing care in the future. The specific objectives are as follows: (1) to assess the knowledge, opinions, and competence levels of the participants regarding TIC; (2) to examine the differences in TIC knowledge, opinions, and competence based on general characteristics; (3) to evaluate the actual practice levels of TIC; and (4) to identify barriers to the implementation of TIC.

METHODS

Ethical statements: This study was approved by the Institutional Review Board (IRB) of Seoul National University (IRB No. 2403/002-011). Informed consent was obtained from all participants.

1. Study Design

This study is a descriptive survey that examines the knowledge, opinions, competence, barriers, and practices of pediatric ward nurses in South Korea regarding trauma-informed child care. This study was conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines.

2. Samples

The inclusion criteria for participants in this study were

nurses who had been working for more than 6 months in the pediatric wards of medical institutions in South Korea. When calculating the sample size for a one-way ANOVA, since it was difficult to find similar studies, the effect size was set to .25 (medium), with a power of .8, a significance level of .05, and 4 groups. The total sample size was determined to be 180. Considering an anticipated dropout rate of 10%, a maximum of 200 participants were recruited. Two hundred respondents completed the Google Survey, of which 198 were included in the final analysis.

3. Measurement

1) Demographic variables

Data on participants' general and job-related characteristics were collected using 12 items. These items included sex, age, marital status, whether they had children, religion, current ward of employment, previous wards of employment, the region and type of medical institution where they worked, current position, total nursing work experience, and work experience in pediatric wards.

2) Trauma-informed care provider survey pediatric version

In this study, the TIC Provider Survey developed by the Center for Pediatric Traumatic Stress (CPTS) [8] was used. The pediatric version of the TIC Provider Survey comprises 48 items in five categories: 13 items on knowledge about trauma-informed child care, seven items on opinions about trauma-informed child care, 12 items on self-rated competence in trauma-informed child care, seven items on perceived barriers to performing trauma-informed child care, and nine items on recent practices in trauma-informed child-care. Each item for knowledge, opinions, competence, and barriers is rated on a 3- or 4-point Likert scale with anchors appropriate for the category (e.g., competence was rated as "not competent", "somewhat competent", or "very competent"). Items of practice are rated on a dichotomous scale of "yes" or "no". Summary scores were generated for each of the three item categories—knowledge, opinions, and competence—by combining together the survey item ratings (ranging from 1 to 3 or 1 to 4) within each category. Higher scores indicated greater knowledge, more favorable opinions, and higher self-rated competence.

The Korean version of the TIC Provider Survey was assessed for face and content validity through internal review by experts. To use this tool with Korean nurses, approval

was first obtained by the research team from the CPTS that developed the original tool. The research team then translated the English items into Korean, reviewed the translation for accuracy, and made necessary modifications to reflect the characteristics of Korean nurses. The final translation was approved by the researchers. The Korean version of the survey was translated back into English by a professional translation service. The research team compared and reviewed the back-translated version with the original tool to ensure accuracy and found no changes in meaning. The final Korean version of the questionnaire was then confirmed. Cronbach's alpha of the original tool was .66 for knowledge, .60 for opinions, .90 for self-rated competence, .80 for recent practice, and .69 for barriers [6]. In this study, the Cronbach's alpha was as follows: knowledge, .64; opinion, .43; self-rated competence, .89; practice, .84; and barriers, .69.

4. Data Collection and Research Procedures

After obtaining IRB approval, data were collected from 200 participants using an online Google survey conducted from July 2 to 14, 2024. The participants were recruited using convenience sampling. After obtaining cooperation from relevant stakeholders, the researchers posted recruitment notices on online communities frequently used by nurses in Korea, including advanced general hospitals, general hospitals, and small hospitals.

The first page of the online survey explained the study's purpose and ethical considerations, and participants were required to indicate their consent by selecting "agree" to proceed with the survey. To maintain anonymity and confidentiality, the personal identification information of the study participants was assigned a separate unique number, and all collected data were stored on a computer that required a password to be accessible only to the researchers. The survey consisted of 60 questions and took approximately 20 min to complete. The participants who completed the survey received a mobile coffee coupon as a token of appreciation.

5. Data Analysis

Data were analyzed using IBM SPSS Statistics (vers. 23.0, IBM Corp.). General and work-related characteristics of the participants and their knowledge, opinions, barriers, and practice of trauma-informed pediatric care were analyzed using descriptive statistics, including means, standard devia-

tions, and percentages. Differences in variables according to participant characteristics were analyzed using independent t-tests and one-way ANOVA. Post-hoc analysis was conducted using Scheffe's test.

RESULTS

1. Characteristics of the Participants

Of the 200 nurses who participated in this study, 198 were included in the final analysis after excluding one who had response errors and one who did not meet the inclusion criteria. Of the 198 nurses included in the analysis, most were female (97.5%), with an average age of 33.86 years. Regarding job positions, 152 (76.8%) were staff nurses, 28 (14.1%) were charge nurses, and 18 (9.1%) were head nurses or higher managers. The nurses had an average of 9.73 years of clinical experience and 6.41 years of clinical experience in pediatric wards. The most common type of hospital in which they worked was a tertiary hospital (67.7%). The current working units were pediatric and neonatal intensive care units (39.9%), cancer wards (5.6%), internal and surgical wards (29.3%), and others (e.g., psychiatric ward, emergency room, operating room/anesthesiology, outpatient) (25.3%) (Table 1).

2. Comparisons According to Demographic Characteristics of Participants

Knowledge of TIC did not differ based on the participants' demographic characteristics. Opinions on TIC were more positive among those with children ($t=2.00, p=.048$), those working in advanced general hospitals ($F=3.70, p=.027$), and those with over 5 years of experience in pediatric wards ($t=-2.01, p=.046$). Competence in TIC showed significant differences depending on the type of hospital in which participants worked ($F=5.47, p=.005$). Post hoc analysis revealed that the advanced general hospital group (mean [M]=8.84) and general hospital group (M=8.86) had significantly higher competence scores than the hospital and other groups (M=5.80); however, no significant differences were found between the other groups (Table 1).

3. Knowledge and Opinions regarding Trauma-Informed Care

Of the 13 items assessing knowledge of TIC, seven items

had a correct response rate of >90%. However, three items had very low correct response rates, below 30% (ranging from 9.6% to 27.3%). These items were: 'It is inevitable that most children and families who experience a life-threatening illness or injury will experience severe post-traumatic stress or PTSD' (9.6%; $M\pm SD=1.83\pm 0.58$), 'Children who are more severely injured or ill generally have more serious traumatic stress reactions than children who are less severely injured or ill' (21.2%; $M\pm SD=2.02\pm 0.65$), and 'Children and families with severe post-traumatic stress reactions usually show obvious signs of distress' (27.3%; $M\pm SD=2.12\pm 0.68$). Notably, the correct answer for all three items was "disagree."

Regarding opinions on TIC, over 90% of the participants agreed with five of the seven items. The remaining two items, 'Service providers should focus on medical rather than mental health services for hospitalized children' and 'I have colleagues who can help a child or family experiencing severe traumatic stress,' were rated favorably by only 59.1% and 66.2% of participants, respectively (Table 2).

4. Self-Rated Competence in Providing Trauma-Informed Care

Among the items in the self-rated competence in providing TIC, more than 50% of participants rated themselves as "very competent" or "somewhat competent" on nine out of 12 items. The item with the highest percentage of participants reporting themselves as very or somewhat competent was 'Respond to the distress, emotional needs, and support needs of colleagues' (85.9%; $M\pm SD=1.05\pm 0.58$). Conversely, the items with the highest percentage of participants rating themselves as "not competent" were 'Respond to a child's (or parent's) questions about whether the child is going to die' (61.6%; $M\pm SD=0.43\pm 0.59$), 'Understand how traumatic stress may present differently in young children, school-aged children, and adolescents' (56.6%; $M\pm SD=0.51\pm 0.63$), and 'Educate a child and family about common traumatic stress reactions and symptoms' (55.6%; $M\pm SD=0.51\pm 0.62$) (Table 3).

5. Potential Barriers to Implementing Trauma-Informed Care

More than half of the respondents rated time constraints, lack of training, and lack of organizational support as "significant barriers" to providing TIC to children and families. All factors were rated as at least "somewhat of a barrier." The

Table 1. Comparison of Knowledge, Opinions, and Self-Rated Competence According to Demographic Characteristics (N=198)

Variables	Categories	n (%)	M±SD	Knowledge		Opinions		Competence	
				M±SD	t or F (p)	M±SD	t or F (p)	M±SD	t or F (p)
Sex	Female	193 (97.5)		35.77±2.32	0.10 (.929)	21.23±1.93	0.49 (.624)	8.24±5.02	-1.21 (.229)
	Male	5 (2.5)		35.60±3.91		20.80±1.30		11.00±6.44	
Age (year)	23–35	132 (66.7)		35.77±2.41	0.02 (.983)	21.19±1.80	-0.29 (.774)	8.38±4.94	0.28 (.782)
	36–55	66 (33.3)		35.76±2.27		21.27±2.16		8.17±5.32	
Marital status	Unmarried	104 (52.5)		35.76±2.28	-0.02 (.985)	21.07±1.69	-1.14 (.255)	8.34±4.52	0.08 (.935)
	Married	94 (47.5)		35.77±2.45		21.38±2.15		8.28±5.62	
Child status	Yes	68 (34.3)		35.88±2.44	0.52 (.606)	21.62±2.18	2.00 (.048)	8.87±5.74	1.06 (.293)
	No	130 (65.7)		35.70±2.32		21.01±1.74		8.02±4.66	
Religion	Yes	75 (37.9)		35.80±2.38	0.17 (.862)	21.17±1.76	-0.25 (.803)	8.20±5.02	-0.23 (.815)
	No	123 (62.1)		35.74±2.35		21.24±2.02		8.37±5.10	
Current working unit	Pediatric and neonatal intensive care unit	79 (39.9)		35.86±2.40		21.63±2.04		8.35±5.38	
	Cancer ward	11 (5.5)		36.64±2.87		21.36±2.69		9.64±5.32	
	Internal/surgical ward	58 (29.3)		35.69±2.02	0.77 (.191)	21.09±1.57	2.72 (.073)	7.62±4.24	0.73 (.358)
	Others (psychiatric ward, emergency room, operating room/anesthesiology, outpatient, etc.)	50 (25.3)		35.50±2.55		20.68±1.80		8.74±5.38	
Current working area	Metropolitan	159 (80.3)		35.63±2.21		21.16±1.84		8.15±4.75	
	Gangwon/Chungcheong	8 (4.0)		36.75±2.76	1.31 (.273)	21.00±1.51	1.92 (.128)	5.75±3.24	1.83 (.143)
	Gyeongsang	20 (10.1)		36.50±3.00		21.05±2.42		10.30±6.55	
	Honam/Jeju	11 (5.6)		35.64±2.77		22.55±2.11		8.82±6.68	
Type of hospital	Advanced general hospital ^a	134 (67.7)		35.81±2.47		21.40±1.94	3.70 (.027)	8.84±4.83	5.47 (.005)
	General hospital ^b	29 (14.6)		36.38±2.23	2.50 (.085)	21.35±2.14	(a,b > c) ^b	8.86±5.59	(a,b > c) ^b
	Hospital/Other ^c	35 (17.7)		35.09±1.85		20.43±1.42		5.80±4.84	
Position	General nurse	152 (76.8)		35.61±2.30		21.10±1.87		8.22±5.21	
	Charge nurse	28 (14.1)		35.82±2.14	2.63 (.075)	21.29±1.78	0.29 (.104)	7.43±3.71	2.08 (.128)
	Manager (≥ Head nurse)	18 (9.1)		36.94±2.90		22.11±2.35		10.44±5.23	
Period of clinical career in the children's ward (year) ^{a)}	< 5 years	97 (49.5)		35.69±2.34	-0.44 (.664)	20.96±1.76	-2.01 (.046)	8.25±4.97	-0.40 (.689)
	≥ 5 years	99 (50.5)		35.84±2.41		21.51±2.04		8.54±5.07	
Total clinical career (year)	< 10 years	118 (59.6)		35.75±2.24	-0.12 (.903)	21.10±1.79	-1.03 (.305)	8.48±5.00	0.59 (.556)
	≥ 10 years	80 (40.4)		35.79±2.53		21.39±2.10		8.05±5.16	

^{a)} Excluding non-responses; ^{b)} Scheffe's test; M, mean; SD, standard deviation.

Table 2. Nurses' Knowledge and Opinions Regarding Trauma-Informed Care (N=198)

Knowledge items	Nurse ratings				Correct responses n (%)	Score (M±SD)
	Strongly agree	Agree	Disagree	Strongly disagree		
	n (%)	n (%)	n (%)	n (%)		
1. Almost all people who are seriously injured or ill experience a traumatic stress response at least once in the immediate aftermath of the event.	50 (25.3)	138 (69.7)	9 (4.5)	1 (0.5)	188 (95.0)	3.20±0.53
2. It is inevitable that most children and families who experience a life-threatening illness or injury will experience severe post-traumatic stress or PTSD. (Disagree)	52 (26.3)	127 (64.1)	19 (9.6)	0 (0.0)	19 (9.6)	1.83±0.58
3. Children who are more severely injured or ill generally have more serious traumatic stress reactions than children who are less severely injured or ill. (Disagree)	39 (19.7)	117 (59.1)	41 (20.7)	1 (0.5)	42 (21.2)	2.02±0.65
4. Children who believe they might die at some point during a traumatic event are at greater risk of post-traumatic stress reaction.	71 (35.9)	123 (62.1)	4 (2.0)	0 (0.0)	194 (98.0)	3.34±0.52
5. Many children and families cope well on their own after a severe illness or injury.	6 (3.0)	63 (31.8)	113 (57.1)	16 (8.1)	69 (34.8)	2.30±0.66
6. The psychological effects of an injury or illness often last longer than the physical symptoms.	62 (31.3)	129 (65.2)	7 (3.5)	0 (0.0)	191 (96.5)	3.28±0.52
7. Children and families with severe post-traumatic stress reactions usually show obvious signs of distress. (Disagree)	33 (16.6)	111 (56.1)	52 (26.3)	2 (1.0)	54 (27.3)	2.12±0.68
8. I am aware of the common signs and symptoms of traumatic stress in children and families.	6 (3.0)	126 (63.7)	61 (30.8)	5 (2.5)	132 (66.6)	2.67±0.58
9. Some initial traumatic stress reactions in children and families may be part of a healthy emotional recovery process.	19 (9.6)	162 (81.8)	17 (8.6)	0 (0.0)	181 (91.4)	3.01±0.43
10. There are measures service providers can take to prevent long-term post-traumatic stress in sick and injured children and families.	45 (22.7)	139 (70.2)	13 (6.6)	1 (0.5)	184 (92.9)	3.15±0.54
11. There are effective screening tools for providers to use in practice to assess traumatic stress.	14 (7.1)	80 (40.4)	89 (44.9)	15 (7.6)	94 (47.5)	2.47±0.74
12. Healthcare workers themselves may experience signs of physical and/or emotional distress related to their work.	39 (19.7)	140 (70.7)	17 (8.6)	2 (1.0)	179 (90.4)	3.09±0.56
13. The risk of distress in employees is strongly influenced by both personal and workplace factors.	60 (30.3)	135 (68.2)	3 (1.5)	0 (0.0)	195 (98.5)	3.29±0.49
Opinions items						
14. Service providers should focus on medical rather than mental health services for hospitalized children.	6 (3.0)	75 (37.9)	109 (55.1)	8 (4.0)	N/A	2.60±0.62
15. Healthcare delivery can be modified to reduce stress for a child and family.	40 (20.2)	153 (77.3)	5 (2.5)	0 (0.0)	N/A	3.18±0.44
16. Providers can teach families how to cope with trauma.	28 (14.1)	152 (76.8)	15 (7.6)	3 (1.5)	N/A	3.04±0.53
17. Healthcare professionals should regularly assess for symptoms of traumatic stress.	41 (20.7)	145 (73.2)	11 (5.6)	1 (0.5)	N/A	3.14±0.51
18. It is necessary for healthcare providers to have information about the mental health of pediatric patients to provide appropriate services.	60 (30.3)	135 (68.2)	3 (1.5)	0 (0.0)	N/A	3.29±0.49
19. I have colleagues who can help a child or family experiencing severe traumatic stress.	14 (7.1)	117 (59.1)	63 (31.8)	4 (2.0)	N/A	2.71±0.62
20. Healthcare organizations should address how working with patients and families affects staff.	54 (27.3)	142 (71.7)	2 (1.0)	0 (0.0)	N/A	3.26±0.46

For knowledge items 2, 3, and 7, 'disagree/strongly disagree' represented a correct response; For opinion item 14, 'disagree/strongly disagree' represented an opinion favorable to trauma-informed care; M, mean; SD, standard deviation; N/A, not applicable.

Table 3. Nurses' Self-Rated Competence in Specific Aspects of Trauma-Informed Care (N=198)

Specific aspects of trauma-informed care	Nurse ratings			Score (M±SD)
	Very competent n (%)	Somewhat competent n (%)	Not competent n (%)	
1. Interact with the traumatized child and family members so that they feel comfortable talking to you or are comforted by you.	27 (13.7)	107 (54.0)	64 (32.3)	0.81±0.65
2. Respond calmly and non-judgmentally to a child or family's intense emotional distress.	28 (14.2)	127 (64.1)	43 (21.7)	0.92±0.60
3. Elicit details of the traumatic event from a child or family, but in a way that does not re-traumatize them.	21 (10.6)	94 (47.5)	83 (41.9)	0.69±0.66
4. Educate a child and family about common traumatic stress reactions and symptoms.	13 (6.5)	75 (37.9)	110 (55.6)	0.51±0.62
5. Change or modify situations in the hospital that a child or family may experience as traumatic.	16 (8.1)	84 (42.4)	98 (49.5)	0.59±0.64
6. Respond to a child's (or parent's) questions about whether the child is going to die.	10 (5.1)	66 (33.3)	122 (61.6)	0.43±0.59
7. Assess a child's or family's distress, emotional needs, and support system immediately following a traumatic event.	14 (7.1)	88 (44.4)	96 (48.5)	0.59±0.62
8. Provide basic trauma-focused interventions (assess symptoms, normalize, provide guidance on expectations, and support coping).	18 (9.1)	84 (42.4)	96 (48.5)	0.61±0.65
9. Understand how traumatic stress may present differently in young children, school-aged children, and adolescents.	14 (7.1)	72 (36.3)	112 (56.6)	0.51±0.63
10. Understand the scientific or empirical basis of assessments and interventions for traumatic stress.	14 (7.1)	93 (46.9)	91 (46.0)	0.61±0.62
11. Respond to the distress, emotional needs, and support needs of colleagues.	38 (19.2)	132 (66.7)	28 (14.1)	1.05±0.58
12. Managing your work-related stress or distress.	41 (20.7)	115 (58.1)	42 (21.2)	1.00±0.65

M, mean; SD, standard deviation.

item most frequently rated as 'not a barrier' was personal stress and distress levels (9.6%; M±SD=1.23±0.61), which was the highest among the seven factors (Table 4).

6. Implementation of Trauma-Informed Practices

In a report on trauma-informed practices performed for children and their parents over the past 6 months, the item with the highest performance rate among the nine items was 'Assess and manage personal emotional and physical health' (67.7%; M±SD=0.68±0.47), followed by 'Utilize organizational support for yourself and your team' (62.6%; M±SD=0.63±0.49). Items with relatively low performance rates (<40%) were 'teach parents what to say to their child after a difficult/sick/scary experience' (35.9%; M±SD=0.36±0.48) and 'teach a child or parents the specific ways to cope with unpleasant experiences' (37.9%; M±SD=0.38±0.49) (Table 5).

DISCUSSION

This study investigated the knowledge, opinions, and competencies of nurses caring for children at hospitals regarding TIC, their actual practices, and the barriers they face. Based on these results, the discussion, along with a review of previous studies, is as follows:

Providing care to support the adaptation and psychological stability of children and their families facing medically challenging situations or traumatic events is not new for nurses caring for children. This is especially true in pediatric nursing, where family centered care has long been emphasized [9]. Marsac et al. [10] described the commonalities between family-centered care and TIC as well as their differences. Apart from these situations, numerous findings showed that nurses generally do not have accurate knowledge or information about PTSD [11,12]. In addition, various types of trauma may not be apparent without appropriate assessment.

In this study, we compared the differences in the scores of knowledge, opinions, and self-rated competencies related to

Table 4. Nurses-Reported Barriers to Trauma-Informed Care Implementation (N=198)

Barriers to providing trauma-informed assessment and intervention	Nurse ratings			Score (M±SD)
	Significant barrier	Somewhat of a barrier	Not a barrier	
	n (%)	n (%)	n (%)	
1. Time constraints	104 (52.5)	92 (46.5)	2 (1.0)	1.52±0.52
2. Scope of practice constraints	92 (46.5)	101 (51.0)	5 (2.5)	1.44±0.55
3. Lack of training	124 (62.6)	73 (36.9)	1 (0.5)	1.62±0.50
4. Confusing or unclear information about trauma-informed care	98 (49.5)	97 (49.0)	3 (1.5)	1.48±0.53
5. Concern about upsetting or traumatizing patients further	70 (35.4)	121 (61.1)	7 (3.5)	1.32±0.54
6. Lack of organizational support	111 (56.1)	86 (43.4)	1 (0.5)	1.56±0.51
7. Personal stress/distress levels	64 (32.3)	115 (58.1)	19 (9.6)	1.23±0.61

M, mean; SD, standard deviation.

Table 5. Nurses' Report of Specific Trauma-Informed Practices Performed in the Past 6 Months (N=198)

Specific trauma-informed practice	Have done this in past 6 months	Score (M±SD)
	n (%)	
1. Ask a child questions to assess symptoms of distress.	97 (49.0)	0.49±0.50
2. Ask parents to assess symptoms of pain.	93 (47.0)	0.47±0.50
3. Teach a child or parents the specific ways to manage pain and anxiety during the procedure.	98 (49.5)	0.50±0.50
4. Teach a child or parents the specific ways to cope with unpleasant experiences.	75 (37.9)	0.38±0.49
5. Encourage parents to utilize their social support system (family, friends, etc.).	101 (51.0)	0.51±0.50
6. Teach parents what to say to their child after a difficult/sick/scary experience.	71 (35.9)	0.36±0.48
7. Provide parents with information about emotional or behavioral responses that may indicate their child may need help.	99 (50.0)	0.50±0.50
8. Assess and manage personal emotional and physical health.	134 (67.7)	0.68±0.47
9. Utilize organizational support for yourself and your team.	124 (62.6)	0.63±0.49

M, mean; SD, standard deviation.

TIC according to the demographic variables of the participants. There were no differences in the TIC-related knowledge scores across demographic variables. This indicates that the level of knowledge regarding TIC does not vary according to factors such as nurses' age, religion, current work unit, type of hospital, or clinical experience in children's wards. The opinion scores regarding TIC were significantly higher among nurses with more than 5 years of clinical experience in children's wards compared to those with less than 5 years of experience and among nurses with children compared to those without children. This suggests that nurses with extensive clinical experience in children's wards or those with children have more positive opinions about TIC.

Additionally, there were significant differences in opinion and self-rated competency scores according to the type of hospital (advanced general hospitals, general hospitals, and hospitals). The advanced general hospital group had significantly higher opinion and self-rated competency scores than the hospital and the other groups. However, there were no significant differences in opinions or self-rated competency scores between the advanced and general hospital groups.

These findings reflect the influence of the hospital type on nurses' opinions and self-rated competency levels regarding TIC in Korean hospitals. In a study examining the knowledge, confidence, and intention to perform basic life support (BLS) guidelines for nurses in small and medium sized hospitals in Korea, nurses' knowledge and confidence were lower than their intention to perform BLS [13]. This is consistent with the results of this study, which showed that the TIC self-rated competence of hospital/other group nurses was lower than that of nurses in advanced general hospitals. Therefore, it is necessary to strengthen various nursing education programs for nurses in small and medium sized hospitals and increase their confidence in nursing practice by conducting continuous re-education.

In this study, pediatric nurses' knowledge of TIC was assessed. While approximately seven out of 12 items had a high correct response rate of >90%, three items exhibited very low correct response rates (below 30%), indicating persistent misunderstandings about PTSD. Specifically, these items revealed that many nurses believed that severe injury or serious illness inevitably leads to more PTSD and that

PTSD symptoms are always very distinct and obvious. This finding shows even lower correct response rates compared with a similar study conducted with American nurses using the same measurement tool [6]. The TIC emphasizes the importance of carefully assessing the condition of children and families who have experienced difficult situations and preventing further trauma [14]. The misconception that clear PTSD symptoms will appear based on the intensity of the experience overlooks the fact that it might be unveiled and that nurses can play a proactive role in assessing and preventing these symptoms.

Furthermore, when looking at opinions on TIC in this study, disagreement with the statement that ‘Service providers should focus on medical services rather than mental health services for hospitalized children’ indicates a positive stance on TIC. However, approximately 40% of the participants believed that focusing on medical treatment was more important than mental health services. From the perspective of nurses who frequently care for critically ill patients, it is challenging to completely dismiss this view. This aligns with the observed incorrect knowledge, wherein severe illness is often associated with inevitable PTSD. Furthermore, only 66.2% of the participants in this study viewed the statement ‘I have colleagues who can help a child or family experiencing severe traumatic stress’ favorably, indicating a perceived shortage of nurses capable of addressing severe traumatic stress. This result is consistent with the recognition of lack of training and organizational support as major barriers to TIC.

The results of this study showed that although some items showed confidence in self-rated competence in providing TIC, questions regarding talking about patient death and understanding how trauma responses appear at different developmental stages in children were considered very difficult. This may be because, although they feel that TIC are necessary and should be performed, they are not well versed in how to support and care for children and families in various situations and according to the child’s age, where understanding and responses differ. As explained in a previous study, if appropriate nursing education is provided on how pediatric nurses should respond to the sleep, diet, and bowel movements of children with trauma, and the behavioral symptoms at different developmental stages of children with trauma [4], nurses caring for children could perform with greater confidence.

Such education on TIC must to be implemented starting with undergraduate programs. According to a study con-

ducted on nursing students in Turkey regarding their awareness of trauma-informed pediatric nursing care and family-centered care, except for one question about TIC, which had a correct response rate of 25.7%, the remaining questions showed a relatively high correct response rate of 77.4%-93.9% [15]. This rate was higher than that reported in the present study. However, in terms of competence, most respondents indicated only a moderate level of confidence in most items, and similar to this study, they showed the least confidence in talking about the death of a patient [15]. Additionally, students who had been hospitalized during childhood had a positive view of these research findings. However, even among these students, the overall rate of trauma-informed practice is very low, leading researchers to emphasize the need for practical experience and educational opportunities focused on pediatric care [15].

A scoping review examining education for TIC providers found that despite being a relatively recent study, the content of education varied greatly depending on the academic field, such as nursing, medicine, and social work [16]. For nurses and doctors, education is particularly lacking owing to time constraints [16]. It seems difficult to present standardized TIC education guidelines in the nursing field at present, and educational programs need to be developed to suit the specific circumstances of each country and hospital.

In this study, the participants identified three major factors that could hinder the provision of TIC to children and their families: time constraints, lack of training, and lack of organizational support. Time and lack of support are commonly mentioned barriers in various clinical nursing practices [17-22]. Moreover, nurses recognized the lack of opportunities for education and training in TIC. The TIC emphasizes the creation of an organizational culture that prioritizes it. To measure this, the University of Buffalo in the United States introduced the Trauma-Informed Climate Scale and the Trauma-Informed Organizational Change Manual, emphasizing TIC on a larger scale [23]. Establishing it requires not only education for healthcare professionals in one field but also efforts from all members of the organization to share these values and improve organizational culture [24]. When applying this to the culture of Korean nursing organizations, it is important to create a work environment that prioritizes the safety of nurses, fosters a collaborative organizational environment based on trust among colleagues, grants nurses choice and empowerment, and enables their participation in decision-making processes based on the five core principles

and values proposed by Harris and Falot [25] to prevent re-traumatization: safety, trustworthiness, choice, collaboration, and empowerment. Establishing a nursing organizational culture and work environment based on TIC could also positively impact nursing performance and productivity.

In this study, reporting on trauma-informed practices with pediatric patients and their parents over the past 6 months and assessing and managing an individual's physical and emotional state had the highest performance rate. However, this rate did not exceed 70% despite the essential role of nurses. In particular, items with a relatively low performance rate of <40% included educating children and parents on how to cope with adversity and teaching parents how to talk to their children. This indicates a lack of confidence in actively engaging with children and families experiencing trauma as well as a tendency to avoid necessary nursing tasks due to other priorities.

Therefore, to more actively apply TIC in pediatric nursing practice, it is necessary to provide specific and appropriate education on TIC to nurses, healthcare professionals, and hospital staff. Additionally, it is essential to create an organizational culture that recognizes the importance of TIC and willingly implements it. South Korea is currently facing a significant challenge, with low birth rates and a severe shortage of hospital care for children. Nurses need to keep this in mind in their practice to ensure that children, who are the future of the country, and their families can enjoy a higher quality of life. Efforts should also be made to change organizational culture.

The limitations of this study include the fact that it involved nurses not only from wards exclusively for children but also from wards with both adult and pediatric patients, emergency rooms, and psychiatric wards. Consequently, the study targeted nurses who had experience in caring for children rather than exclusively pediatric nurses. Therefore, it is important to note that there may be differences between studies that target only pediatric ward nurses. Additionally, approximately 70% of the participants worked in advanced general hospitals; therefore, it is not appropriate to generalize the findings to all nurses caring for children. However, this limitation was mitigated by comparing the differences in knowledge, opinions, and self-rated competencies according to hospital type. Furthermore, some reliability coefficients of the tool were confirmed as low. In particular, opinions on TIC showed low reliability. It can be inferred that the concept measured by this tool was a new concept unfamiliar to Kore-

an nurses, and this background influenced the response consistency. In future studies, it will be necessary to consider ways to improve reliability by verifying the validity of the measurement tool in various ways for Korean nurses and correcting it to a more appropriate question or by adjusting the number of items on the tool.

This study is significant because it identified the current TIC status that nurses should consider in pediatric and family nursing by targeting nurses who provide nursing care to children in various hospitals and wards. This is especially important, given the scarcity of TIC studies focusing on these nurses in Korea. It is expected that future studies related to the development of TIC education programs for nurses caring for children will be conducted by applying factors such as symptoms and risk factors of trauma seen by hospitalized children and their families and methods of clinically implementing the principles of TIC such as safety, trust, choice, and collaboration.

CONCLUSION

This study aimed to investigate the knowledge, opinions, competence, actual practices, and barriers faced by nurses working in pediatric hospital settings regarding TIC to identify directions for enhancing TIC. While nurses demonstrated high accuracy in many knowledge measures, there were areas where correct responses fell below 30%, indicating that their knowledge of TIC was somewhat lacking. However, most nurses recognized the importance of TIC. However, their competence and actual practice of TIC were generally insufficient, highlighting the need for systematic education and support from the staff. The significance of this study lies in its exploration of the overall knowledge, views, practices, and barriers related to TIC among nurses who care for children, particularly in the field of pediatric nursing, where TIC are critically important. These findings provide foundational data for developing strategies to enhance TIC in the future.

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ORCID and ResearcherID

Kyung-Sook Bang <https://orcid.org/0000-0001-9902-9716>
<https://researcherid.com/rid/370842>
Sun Woo Hong <https://orcid.org/0000-0001-8535-4075>
<https://researcherid.com/rid/KYR-4077-2024>
Hwal Lan Bang <https://orcid.org/0000-0003-1115-6484>
<https://researcherid.com/rid/KYR-3999-2024>
Ji-Hye Choe <https://orcid.org/0000-0002-8229-4086>
<https://researcherid.com/rid/KZU-5098-2024>
Sinyoung Choi <https://orcid.org/0000-0001-6539-4475>
<https://researcherid.com/rid/KZU-5059-2024>

REFERENCES

1. Zarse EM, Neff MR, Yoder R, Hulvershorn L, Chambers JE, Chambers RA, et al. The adverse childhood experiences questionnaire: two decades of research on childhood trauma as a primary cause of adult mental illness, addiction, and medical diseases. *Cogent Medicine*. 2019;6(1):1581447. <https://doi.org/10.1080/2331205X.2019.1581447>
2. Goddard A, Janicek E, Etcher L. Trauma-informed care for the pediatric nurse. *Journal of Pediatric Nursing*. 2022;62:1-9. <https://doi.org/10.1016/j.pedn.2021.11.003>
3. Thomas MS, Crosby S. Trauma-informed practices in schools across two decades: an interdisciplinary review of research. *Review of Research in Education*. 2019;43(1):422-452. <https://doi.org/10.3102/0091732X18821123>
4. McDowell BM, Pasek TA, Perlick C, Kostie K. Trauma-informed care: pediatric intensive care nurses at the root of children's safety and trust. *Critical Care Nurse*. 2022;42(6):66-72. <https://doi.org/10.4037/ccn2022215>
5. Kassam-Adams N, Rzucidlo S, Campbell M, Good G, Bonifacio E, Slouf K, et al. Nurses' views and current practice of trauma-informed pediatric nursing care. *Journal of Pediatric Nursing*. 2015; 30(3):478-484. <https://doi.org/10.1016/j.pedn.2014.11.008>
6. Substance Abuse and Mental Health Services Administration (SAMHSA). SAMHSA's concept of trauma and guidance for a trauma-informed approach. SAMHSA; 2014. p. 1-20.
7. Bang KS, Choe JH, Choi S, Jeong Y, Kim S. Trauma-informed care for children: a scoping review. *Stress*. 2024;32(2):94-103. <https://doi.org/10.17547/kjsr.2024.32.2.94>
8. Center for Pediatric Traumatic Stress. Trauma-informed care provider survey [Internet]. 2021 [cited 2024 May 25]. Available from: <https://www.healthcaretoolbox.org/tic-provider-survey>
9. Abdel Razeq NM, Arabiat DH, Shields L. Nurses' perceptions and attitudes toward family-centered care in acute pediatric care settings in Jordan. *Journal of Pediatric Nursing*. 2021;61:207-212. <https://doi.org/10.1016/j.pedn.2021.05.018>
10. Marsac ML, Kassam-Adams N, Hildenbrand AK, Nicholls E, Winston FK, Leff SS, et al. Implementing a trauma-informed approach in pediatric health care networks. *JAMA Pediatrics*. 2016;170(1):70-77. <https://doi.org/10.1001/jamapediatrics.2015.2206>
11. Bang K, Bang HL, Hong SW, Lim J. Validity and reliability of Korean version of post-traumatic stress disorder scale (K-PTSD) measuring attitudes and knowledge of PTSD. *Journal of Korean Academic Society of Nursing Education*. 2020;26(1):47-55. <https://doi.org/10.5977/jkasne.2020.26.1.47>
12. Link KA, Smith LS. Primary care advanced practice RNs' knowledge of posttraumatic stress disorder and screening. *Journal of Psychosocial Nursing and Mental Health Services*. 2017;55(9):23-32. <https://doi.org/10.3928/02793695-20170818-10>
13. Uhm D, Jun M, Park YI. Knowledge, self-confidence, and intention of BLS of clinical nurses who work at small-medium sized hospitals. *Journal of Korean Academic Society of Nursing Education*. 2012;18(3):446-455. <https://doi.org/10.5977/jkasne.2012.18.3.446>
14. Goddard A, Jones RW, Esposito D, Janicek E. Trauma informed education in nursing: a call for action. *Nurse Education Today*. 2021; 101:104880. <https://doi.org/10.1016/j.nedt.2021.104880>
15. Çınar Özbay S, Boztepe H, Kanbay Y. Nursing students' views on trauma-informed pediatric nursing care and family-centered care. *Archives of Psychiatric Nursing*. 2023;44:107-113. <https://doi.org/10.1016/j.apnu.2023.04.012>
16. Jackson ML, Jewell VD. Educational practices for providers of trauma-informed care: a scoping review. *Journal of Pediatric Nursing*.

- 2021;60:130-138. <https://doi.org/10.1016/j.pedn.2021.04.029>
17. Ko MJ, Moon SH. Factors influencing performance of end-of-life care by ICU nurses. *Journal of Korean Academy of psychiatric and Mental Health Nursing*. 2016;25(4):327-337. <https://doi.org/10.12934/jkpmhn.2016.25.4.327>
 18. Joung S, Park KY. Knowledge on blood-borne infections, compliance and barriers on blood-borne infection control among nurses in hemodialysis units. *Journal of Korean Academy of Fundamentals of Nursing*. 2018;25(1):22-32. <https://doi.org/10.7739/jkafn.2018.25.1.22>
 19. Yoo JY, Oh EG, Hur HK, Choi M. Level of knowledge on evidence-based infection control and influencing factors on performance among nurses in intensive care unit. *Korean Journal of Adult Nursing*. 2012;24(3):232-243. <https://doi.org/10.7475/kjan.2012.24.3.232>
 20. Kim JS, Gu MO, Jo SY. Factors influencing evidence-based practice readiness for tertiary general hospital nurses. *Journal of the Korea Academia-Industrial cooperation Society*. 2013;14(6):2945-2957. <https://doi.org/10.5762/KAIS.2013.14.6.2945>
 21. Kim YS, Kim J, Park MM. Factors influencing competency in evidence-based practice among clinical nurses. *Journal of Korean Academy of Nursing Administration*. 2015;21(2):143-153. <https://doi.org/10.11111/jkana.2015.21.2.143>
 22. Hong H, Son HM. Factors influencing developmental care performance among neonatal intensive care units nurses. *Child Health Nursing Research*. 2020;26(2):131-139. <https://doi.org/10.4094/chnr.2020.26.2.131>
 23. Institute on Trauma and Trauma-Informed Care. Trauma-informed organizational change manual [Internet]. 2019 [cited 2024 July 31]. Available from: <https://www.ahrq.gov/nursing-home/resources/trauma-informed.html>
 24. Sun Y, Blewitt C, Minson V, Bajayo R, Cameron L, Skouteris H. Trauma-informed Interventions in early childhood education and care settings: a scoping review. *Trauma, Violence & Abuse*. 2024;25(1):648-662. <https://doi.org/10.1177/15248380231162967>
 25. Harris M, Fallot RD. Using trauma theory to design service systems. *Jossey-Bass*; 2001. p. 3-22.