

# Changes in Nurses after Online Workshops Using the Pediatric Nursing Care Model

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## Abstract

This study aimed to clarify the changes in nurses' cognition about the rate and likelihood of implementation of daily ethical nursing items used in pediatric care before and after attending online workshops using the Pediatric Nursing Care Model (PNCM). A 1.5-hour online workshop was held twice over two weeks. A total of nine nurses participated in the program. These online workshops using PNCM helped achieve the original goals and the results revealed a positive outcome of the workshops. We should devise an educational program to arouse participants' interest and comprehension to make the most of online competency.

## Keywords

Pediatric Nursing Care Model, Workshop, Online, Nurse

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## 1. Introduction

In order to allay the fears and anxieties of children undergoing medical procedures and their families, nurses practice various types of patient care, paying special attention to psychological preparation.

It is important to ensure the quality and expertise of pediatric nursing across various pediatric medical care facilities. According to a survey conducted by Japan's Ministry of Health, Labour and Welfare (2019), pediatric clinics constitute 19% of all general clinics, while 35% of all general hospitals have pediatric departments [1]. Due to the decreasing birth rate in Japan, the number of mixed wards catering to both pediatric and adult patients has increased rapidly since 1994, with about 70% of hospitals in 2013 providing pediatric care in mixed wards [2]. The trends for short-term hospitalization and mixed wards in medical facilities across Japan reveal a gap in pediatric nursing expertise, as is obvious from not only the differences in ethical nursing practices among nurses who are unsure about how to in-

teract with children and families, but also quality issues related to caring for children and the lack of adequate pediatric nursing training in each hospital. Therefore, systematic training programs specific to pediatric nursing for new nurses, pediatric nursing beginners in mixed wards, and those who have nursing experience in other departments are urgently required. Only when education programs are implemented not only in pediatric wards but also for pediatric nurses in various other facilities—such as mixed wards and community clinics—will the effect be clear. In addition, educational programs specific to pediatric nursing should be verified. Moreover, because nursing professionals have busy schedules and diverse work patterns, these programs need to be short and easy to understand to attract maximum participation [3] [4].

In this study, we proposed a feasible education program to strengthen ethical nursing practices across all kinds of pediatric nursing. This program was conducted as online workshops based on the Pediatric Nursing Care Model (PNCM), demonstrating basic attitudes toward ethical practices in nursing. Their aim was to interpret the meaning of the responses of children and their families, reflect on daily nursing practice, exchange information about the nursing practices followed at other hospitals, and help participants promote ethical practices in pediatric nursing.

## 2. Background

The Convention on the Rights of the Child was ratified by Japan in 1994. In 1999, the Japan Nursing Association advocated the necessity of easy-to-understand explanations for children and guardians regarding the nursing duty standards of pediatric nursing. Japan's basic nursing education system comprises only a general nursing course [5]. However, there are no systematic educational programs after graduation for beginners in pediatric nursing practice. In addition, several reports have highlighted the need for practical education on ethical nursing practices for children and families to be implemented by nurses after their graduation [6] [7].

The original PNCM, which was developed in 1997, concisely describes typical examples of ethical nursing practice for not only pediatric patients who undergo examinations and treatment, but also their families. The prototype, containing over 40 items, was introduced to clinical nurses, who clearly showed an improvement in terms of the recognition of ethical nursing practice [8]. In 2012, we developed a simplified version of the PNCM—the PNCM self-checklist—to investigate whether nurses' implementation rate and likelihood of implementing ethical nursing items and the descriptive forms completed based on their practical examples were used in educational programs for nine nurses in order to reinforce their ethical practices. This educational program had held three two-hour workshops over one and a half months. It was suggested that the frequency of implementation improved for most items of the PNCM, which was also useful as a method to reflect on daily nursing practice [5]. In 2017, the educational program using the PNCM checklist was implemented among 22 nurses with less than five years'

experience in pediatric nursing. An initial session consisted of a 30-minute face-to-face mini-lecture. During the second month, reflection was conducted by mail; during the third month, the nurses were asked to describe changes in their behavior by mail. Implementation of the PNCM was recognized as easy to execute immediately after the initial session and basic ethical nursing practices were found to have improved after two months; after three months, changes of nurses who participated corresponded to the components of children's assent as information provision, supportive care, observation of pediatric patients and their families, and promotion of patients' emotional expressions [9]. Furthermore, in 2018, an educational program for 21 nurses with varied nursing experience using the PNCM checklist was conducted; it consisted of an initial face-to-face mini-lecture of about one and a half hours and a subsequent program conducted by mail. The findings revealed that 16 PNCM items had increased in frequency 5 months later [7], suggesting a reinforced effect on ethical pediatric nursing practice for patients and their parents. Because of the continuing impacts of COVID-19 in 2021, the educational program using the PNCM checklist should be conducted as online workshops with content specific to pediatric nursing for nursing professionals with busy, diverse work patterns. The effect of online workshops can then be clarified and the findings applied to future educational programs.

### **3. Objective**

This study aimed to clarify the changes in nurses' cognition about implementation rate of daily ethical nursing items in pediatric care through the educational program—conducted as online workshops using PNCM—to ascertain the likelihood of nurses implementing the items.

### **4. Method**

#### **4.1. Participants**

Nurses working at the pediatric departments of about 100 medical institutions across west Japan were informed by mail about the online workshops. A total of nine nurses who voluntarily applied by the deadline participated in the program. All nurses who completed the application procedure for the workshop were included as participants.

#### **4.2. Online Workshops and Data Collection**

Pediatric nurses working at medical institutions participated voluntary in the one-and-a-half hour online workshops held twice across two weeks. Each session consisted of a 60-minute online lecture and an interactive session with participants and a lecturer. Before the second workshop, participants were asked to complete an online descriptive form recording practical examples of the PNCM items. The changes in nurses' practices were investigated based on the responses mentioned in the online form, the implementation rate of 24 PNCM items at the first workshop, and the likelihood of implementing the same items at the end of the second

workshop.

### 4.3. Analysis

Each item of the PNCM checklist was rated on a 4-point Likert scale (“always” to “never”), and recorded on Microsoft Excel (Microsoft Corporation, Santa Rosa, CA). Regarding an implementation rating scale, preliminary tests ( $n = 39$ ) were conducted to assess item consistency (Cronbach’s  $\alpha = 0.973$ ). Each rate of implementation at the first workshop and the likelihood of implementation at the end of the second workshop were compared with the number of participants. Distribution of values of each item was compared and the Mann-Whitney U test was performed, using SPSS Ver. 22 (IBM, Chicago, IL).

### 4.4. PNCM Checklist

The PNCM checklist comprised the following 24 items:

- (1) You greet children and introduce yourself to them, informing them that you are the nurse in charge;
- (2) One of the physicians, nurses, or parents provides children with explanations of medical examinations/procedures or confirms them in advance;
- (3) You ask children in advance when they want to be informed about medical examinations/procedures;
- (4) You inform children about when medical examinations/procedures will be conducted;
- (5) When deciding whether or not parents should accompany their children (at the time of providing explanations/conducting medical examinations and procedures), you take into consideration the requests of children and their parents;
- (6) You ensure that both parents and children know where the parents will wait;
- (7) You provide parents with explanations and describe the content of the methods prescribed for children;
- (8) You explain medical examinations/procedures (including their purposes and methods) to children, using easy-to-understand expressions, even when their parents are present;
- (9) If children resist, you wait patiently until they change their minds;
- (10) You do the best you can to prevent children from being fearful;
- (11) You provide children with explanations and talk to them at each stage of medical examinations/procedures;
- (12) You appropriately respond to children’s questions and remarks;
- (13) When children cry, you implement other appropriate measures instead of forcing them to obey;
- (14) You allow children to bring in their favorite things;
- (15) You distract children’s attention away from medical examinations/ procedures in cases of distress;

(16) When it is taking longer than expected to conduct medical examinations/procedures, you inform parents of their progress;

(17) You avoid chatting with other health care professionals about topics not related to medical examinations/procedures;

(18) When medical examinations/procedures have not yet been completed, you avoid using expressions that may cause children and their parents to mistakenly believe that they have been completed;

(19) You verbally inform children and their parents that medical examinations/procedures have been completed;

(20) You praise children for having been brave;

(21) You acknowledge the feelings of parents, saying “you must have been worried”;

(22) You encourage parents to praise their children for having been brave;

(23) After medical examinations/procedures have been completed, you provide children with instructions to be followed;

(24) You check the responses of children following the implementation of medical examinations/procedures.

## 5. Ethical Considerations

Participation was voluntary. At the beginning of the workshop, the study purpose was explained to the participants, who provided their informed consent to participate. Participants were assured of anonymity. This study was approved by the research ethics review committee of the Prefectural University of Hiroshima.

## 6. Results

### 6.1. Participant Characteristics

A total of nine nurses participated in the program and all provided valid responses. The participants' characteristics are shown in **Table 1**.

**Table 1.** Characteristics of participants.

Participants	Characteristics	
	Pediatric nursing experience	Overall nursing experience
A	1 - 3 years	4 - 6 years
B	4 - 6 years	11 - 20 years
C	4 - 6years	11 - 20 years
D	4 - 6 years	11 - 20 years
E	4 - 6years	11 - 20 years
F	7 - 10 years	11 - 20 years
G	7 - 10 years	Over 21 years
H	11 - 20 years	11 - 20 years
I	11 - 20 years	11 - 20 years

All participants could access the online media smoothly and completed both sessions of the workshop. They reported their practical examples through the online descriptive form following the PNCM items until the second workshop. The practical examples were of children aged 1 - 14, with asthma-like bronchitis, cryptorchidism, epilepsy, and those undergoing operation; they were also related to giving an enema, blood sampling, intravenous drip, and orally taking medicine.

## 6.2. Positive Changes in the Rate and Likelihood of Implementation

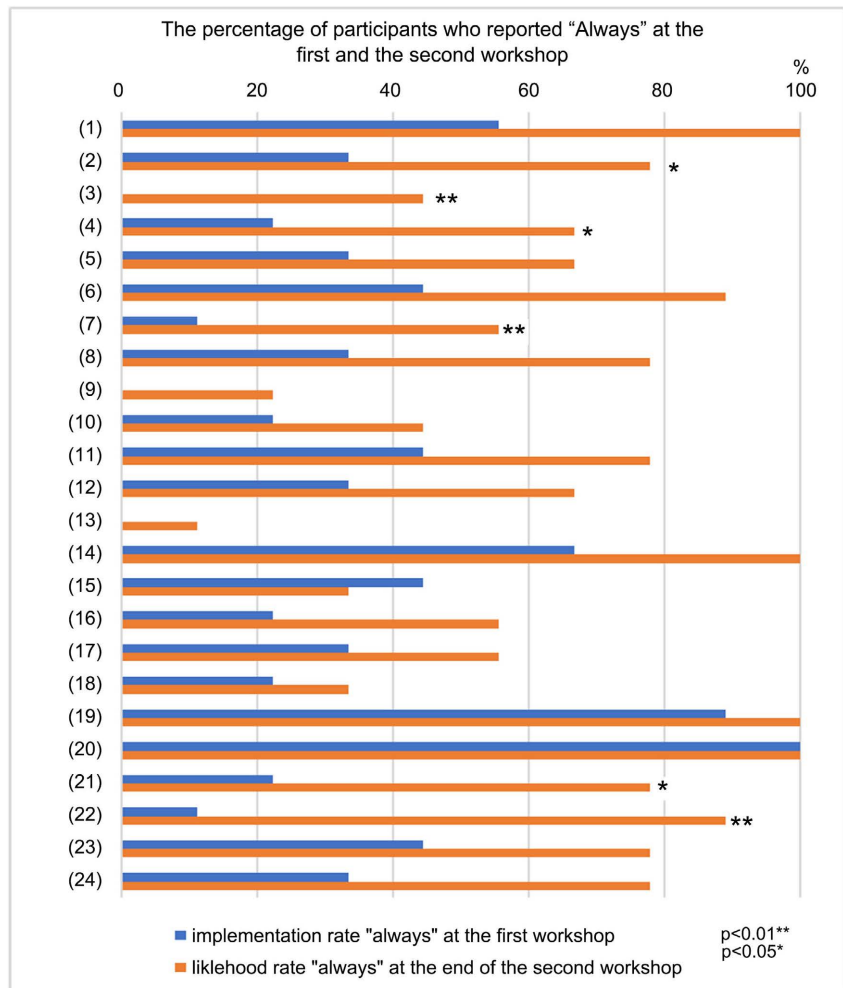
A comparison of the responses revealed that the likelihood of the implementation of PNCM items at the end of 2nd workshop increased compared to the implementation rate before the workshop. A comparison of the average responses showed the same results. In particular, the total number of participants who reported that they would “always” implement the PNCM items at the end of 2nd workshop was almost double compared to before the workshop. The total number of participants who reported that they would “rarely” or “never” implement the PNCM items at the end of 2nd workshop also significantly reduced compared to before the workshop (Table 2).

A comparison of the percentage of participants who reported that they would “always” implement the PNCM items at the end of 2nd workshop showed that the likelihood increased in almost items of PNCM (Figure 1). For item (20), the percentage of participants who reported “always” was 100% at both the first and after the second workshop.

Distribution of values of each item was compared and six items showed significant differences, as shown below. Regarding the implementation of item (2), 33.3% of participants reported “always” at the first workshop, but that percentage increased to 77.8% after the second workshop. With regard to item (3), the percentage of participants who reported “always” was 0% at the first workshop but increased to 44% after the second. For item (4), the percentage of participants who reported “always” was 22.2% at the first workshop but increased to 66.7% after the second. For item (7), the percentage of participants who reported “always” was 11.1% at the first workshop but increased to 55.6% after the second. Similarly, for item (21), the percentage of participants who reported “always” was 22.2% at the first workshop but increased to 77.8% after the second. For item (22), the percentage of participants who reported “always” was 11.1% at the first workshop but increased to 88.9% after the second.

**Table 2.** Comparison of the responses (n).

		Always	Almost always	Rarely	Never
Total number of responses	Implementation before workshop	74	88	41	13
	Likelihood of implementation at the end of the 2nd workshop	144	67	5	0
Average number of responses	Implementation before workshop	3.08	3.67	1.71	0.54
	Likelihood of implementation at the end of the 2nd workshop	6.00	2.79	0.21	0.00



**Figure 1.** Comparison between the number of participants who answered “always” about the rate of implementation at the first workshop and likelihood of implementation at the end of the second workshop.

### 6.3. Insufficient Changes in the Rate and Likelihood of Implementation

There were no significant differences in statistic test however, follow four items seems insufficient changes in the rate and likelihood of implementation. Regarding implementation for item (9), the percentage of participants who reported “always” was 0% at first workshop but only increased to 22.2% after the second. For item (13), the percentage of participants who reported “always” was 0% at the first workshop but only increased to 11.1% after the second. For item (18), the percentage of participants who reported “always” was 22.2% at the first workshop, but only increased to 33.3% after the second. Regarding item (15), the percentage of participants who reported “always” was 44.4% at the first workshop but decreased to 33.3% after the second.

## 7. Discussion

The results revealed the positive outcome of the workshops on 20 PNCM items.

This suggested a change from the uncertain implementation rate of PNCM items pre-program to the likelihood of implementing the items post-program.

Especially, items (2) (3) (4) with significant differences in statistic test were related to information provision for children, (7) (21) (22) were related to involve with parents. It is said that warm and supportive family interactions foster resilience through their cumulative impact on children's emotional and physiological stress response systems [10]. Emphasizing only Family centered care could be missed out child's needs. Child health care based on their age and developmental stage are important to practice both family and child centered care concurrently [11]. Both viewpoints are important for pediatric nursing care, these positive results are suggested significant meaning and usefulness of this educational program.

However, changes related to 4 items—especially (9) and (13)—were insignificant, perhaps because participants felt that it would be difficult to wait until children change their minds depending on their level of mental development. In these cases, pediatric nurses learn how to distract children's attention away from medical procedures in cases of distress and implement it. Distraction is a skill that diverges children's attention, alleviates the pain of a painful procedure, and appeals to their sense. Active distraction (e.g., games, electronic media, imagination, relaxation, respiratory method) is suitable for school aged children who can comprehend tool manipulation; passive distraction (e.g., sounds, music, TV) is suitable for younger children [12]. In this online workshop, item (15) did not elicit much change, with only 33.3% of participants acknowledging the likelihood that they would implement this. The skill of distraction should, thus, be reinforced and depicted in a more practical way (e.g., through videos or virtual media) to see real changes in children's responses.

The findings of the same program conducted in 2018 revealed that the implementation rate of 16 PNCM items had increased after 5 months [7]. Therefore, PNCM items that showed a positive changed should continue to be implemented in the clinical setting after the program.

Online learning in nursing education has had a great impact on the role of the nurse educator; however, a transition to online teaching was required for developing the curriculum after the COVID-19 outbreak [13]. Online teaching, including cooperative learning, discussions, case studies, and remote work, are methods without direct face-to-face interaction that were found to be useful for promoting professional socialization [14]. The online learning methodology is useful and significant the current era of social distancing, although there are some challenges, such as the need for a safe and efficient internet network, as well as the dependence on the learners' and educators' digital knowledge [15]. While online teaching can enhance a learner's perception of participation, increase retention, and satisfaction, it lacks face-to-face interactions, peer interactions, faculty feedback, and a sense of community. Arousing learners' interest is essential for learning and promoting learners' satisfaction [16]. Both learners and educators need to develop a



digital environment and foster online teaching skills to take advantage of most the competency in this educational program. In the future, we will attempt to hold more workshops by improving their content and methods of online learning.

## 8. Conclusion

As a result of these online workshops using PNCM, the original goals were accomplished. Furthermore, the results revealed a positive outcome of the workshops. This suggests that we should devise educational programs to arouse participants' interest and comprehension in order to make the most of online learning. Holding effective workshops by improving the content and methods would contribute to the advancement of the quality of pediatric nursing.

## 9. Limitation

There are some limitations in this study. First, the sample number was small as only nine nurses participated in the program. However, all of them work in the pediatric departments of hospitals, suggesting that the results would be representative. In the future, it is advised to accumulate the number of participants who attend this online workshop to generalize this result. Second, these results were self-reported by nurses. The positive changes are cognitive and need practical observation of children and their families.

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## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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