Journal: Journal for Specialists in Pediatric Nursing 【主論文】

Role Development of Nurses for Technology-Dependent Children Attending Mainstream Schools in Japan

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Acknowledgments. FS designed the study, conducted individual interviews, analyzed the data and interpreted the findings, and drafted and submitted the manuscript. MS supervised the study, analyzed the data and interpreted the findings, and provided guidance.

We would like to thank participants, the staff of the boards of education, and school administrators. We are grateful to Professor Chikage Tsuzuki of Kobe City College of Nursing, Professor Yasuhito Kinoshita of Rikkyo University, and Professor Hitomi Katsuda of Gifu College of Nursing for supervising this study. This study was supported by a grant from the Yuumi Memorial Foundation for Home Health Care.

Disclosure: The authors report no actual or potential conflicts of interest.

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Abstract

Purpose

To describe the role development of nurses caring for medical technology-dependent children attending Japanese mainstream schools.

Design and Methods

Semi-structured interviews with 21 nurses caring for technology-dependent children were conducted and analyzed using the modified grounded theory approach.

Results

Nurses developed roles centered on maintaining technology-dependent children's physical health to support children's learning with each other, through building relationships, learning how to interact with children, understanding the children and the school community, and realizing the meaning of supporting technology-dependent children.

Practice Implications

These findings support nurses to build relationships of mutual trust with teachers and children, and learn on the job in mainstream schools.

Search terms: Mainstream school, modified grounded theory approach, nurse, role development, technology-dependent children

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The importance of inclusive education, in which all children learn together regardless of disability, has been demonstrated worldwide (United Nations Educational, Scientific and Cultural Organization, 2009). In some countries, children dependent on life-sustaining medical technology attend mainstream schools. A technology-dependent (TD) child has been defined as "one who needs both a medical device to compensate for the loss of a vital body function and substantial and ongoing nursing care to avert death or further disability" (United States Congress, Office of Technology Assessment [OTA], 1987). TD children are dependent on mechanical ventilators, intravenous administration of nutritional substances or drugs, tracheotomy tubes, suctioning, oxygen support, tube feedings, urinary catheters, and/or colostomy bags (OTA, 1987). In the United States and the United Kingdom, health care assistants or nurse's aides—who do not have registered nurses' licenses—provide nursing care for TD children during the school day under the supervision of school nurses (Heaton, Noyes, Sloper, & Shah, 2005; Raymond, 2009). Some TD children's participation in school activities is limited because of a shortage of trained care providers in mainstream schools and the difficulty of managing a care schedule on a school timetable (Heaton et al., 2005; Kirk, 2010).

In Japanese elementary and junior high special-needs schools, the number of TD children has increased by 1,000, or 20.5%, between 2008 and 2013 (from 4,882 in 2008; Japan Ministry of Education, Culture, Sports, Science, and Technology [MEXT], 2009; 2014); yet, only 813 TD children attended mainstream elementary and junior high schools in 2013 (data from 2008 is not available for comparison; MEXT, 2014). This number, although currently low, is expected to increase as mainstreaming increases. Each mainstream school usually has one or two school

nurses. Furthermore, in 2012, 102 boards of education—which govern educational matters in mainstream schools—employed 295 nurses without school nurses' licenses as contractual employees to provide nursing care for TD children attending mainstream schools; 46.3% of these boards required the nurses to work as special needs education supporters who assist children with disabilities in studying and school activities, in addition to providing nursing care (Shimizu, 2014). In addition, teachers needed these nurses to maintain TD children's health and safety as well as serve as members of the educational team (Shimizu & Katsuda, 2014). Thus, these nurses were expected to play roles related to education that were unlike any they had experienced before. Nurses are being employed in workplaces that previously had no place for them, and this is similarly expanding their roles and required duties. This indicates a need for nurses to develop their professional roles (All-Party Parliamentary Group on Global Health and the Africa All-Party Parliamentary Group, 2012).

The aim of this study was to describe the role development of nurses who provide nursing care to TD children attending mainstream schools, which occurs through interactions with teachers, school nurses, children, and parents. This study will be useful not only for these nurses but also for policymakers seeking to realize inclusive education who are examining and improving care systems in mainstream schools.

Literature Review

Role development is defined as an emergent process, which can be influenced by pre-defined role expectations, changing organizational requirements, individual needs, and ongoing interactions among actors in a particular role set (Miller, Joseph, & Apker, 2000). Some of the factors that affect nurses' role development include skills, knowledge development (Ellis & Chater, 2012; Rasmussen, Henderson, & Muir-Cochrane, 2014), turbulent interactions (Heitz,

Steiner, & Burman, 2004), personal characteristics, previous experience (Jones, 2005), support from others (Ellis & Chater, 2012; Jones, 2005), and communication (Boström, Hörnsten, Lundman, Stenlund, & Isaksson, 2013). The stages of nurses' role development have been reported, but only among nurses working in hospitals (Benner, Tanner, & Chesla, 2009) and the community (Clancy, Oyefeso, & Ghodse, 2006).

Few reports have detailed the role development of school nurses or nurses caring for TD children in mainstream schools. Simmons (2002) investigated school nurses' perceptions of professional autonomy and found role acquisition to be one important aspect of that autonomy. Furthermore, Simmons reported that experienced school nurses clarified their roles after developing their own philosophies regarding school nursing roles and responsibilities. However, Simmons did not clarify how these nurses came to integrate their knowledge, skill, and personal qualities, which are integral to role development. Few examples could be found that related to the role development of nurses caring for TD children attending mainstream schools.

Methods

Participants

Participants were nurses employed by the local boards of education to provide nursing care to TD children attending Japanese mainstream schools. After obtaining approval for this study from the Medical Ethics Committee of Kyoto University and the boards of education, we telephoned and sent letters to school principals and, after explaining the study, we asked them to pass on the recruitment letter, response sheet, and a return envelope to nurses caring for TD children at their schools. Nurses could indicate their agreement to participate via mail or email. In 2012, the first author surveyed all educational boards in Japan to ascertain the actual conditions of nurses employed to care for TD children attending mainstream schools (Shimizu,

2014). Based on these results, purposive sampling was used to select nurses who fit the inclusion criteria. Nurses' inclusion criteria were (1) having worked for more than 2 years in mainstream schools, (2) working more than 3 days per week at the school, and (3) not being employed as a special education supporter or school nurse. More than 2 years of experience was required because competent nurses have 2–3 years of work experience in the same clinical setting (Benner et al., 2009). In Japan, the efforts of municipal educational boards relating to special needs education differ depending on the municipality type and the size of the municipal jurisdiction (Matsumura et al., 2009); therefore, nurses were selected from different geographical areas, with widely varying municipality types and population sizes. We used theoretical sampling to select nurses employed for the greatest length of time, who provided a variety of nursing care to TD children in various grades.

Ethical Considerations

The Medical Ethics Committee of Kyoto University approved this study (Approval No. E1513) and it conformed to the principles set forth by the Declaration of Helsinki. Before interviewing, we explained the purpose of the study, the research methods, and the way the results would be used, both verbally and in writing, to all participants. Participants were informed that they could withdraw from the study at any time without penalty, and that confidentiality was guaranteed. All participants provided consent for participation both verbally and in writing.

Data Collection

A descriptive qualitative research design was used, and data were collected from December 2012 to October 2013. Individual, semi-structured, open-ended interviews with nurses were conducted by the first author (average duration: 71 min) using an interview guide (see

Figure 1). The first author is a nurse experienced in qualitative research and has cared for TD children in mainstream schools for 5 years. The interview guide was developed using the first author's experience of providing nursing care for TD children in mainstream schools and pilot interviews with two nurses (not included as data in this study). Interviews were conducted in the participants' schools, a room at a community center, or the participants' homes to protect their privacy. The interviews were recorded on digital voice recorders, with the participants' permission, and then transcribed in Japanese. Throughout the process of conducting interviews and analyzing the data, field notes were kept so that ideas and observations could be recorded. When the interviews were conducted in the schools, the first author observed classrooms and the care room and read nurses' records with their permission. For reference, field notes were written on the contents of the observations.

Data Analysis

The modified grounded theory approach (M-GTA; Kinoshita, 2003) was used for analysis. The M-GTA is a qualitative analysis method derived from the original grounded theory approach (Glaser & Strauss, 1967). In the M-GTA, the minimum analytical unit is the concept. Each concept is derived from several pieces of data known as variations. Variations are collected after reading interview transcripts repeatedly and obtaining their meaning. When a concept emerged, similar or antithetical data related to the concept were examined to prevent arbitrary interpretation. The relationships between concepts were examined and categories were deduced from the related concepts. Then, the relationships between the categories were examined, and the data comparison and analysis were repeated. Data analysis and collection were conducted concurrently until theoretical saturation was reached.

This research was supervised by one researcher specialized in pediatric nursing and two

researchers specialized in M-GTA, to ensure trustworthiness and credibility. For member checking, two feedback interviews were conducted. The analysis results were sent to 19 participants, and feedback was received from 15 participants. The feedback indicated that the categories and concepts adequately reflected the perceptions of participants.

All categories, concepts, and quotations were originally in Japanese and analyzed as such. The researcher translated them into English and a native English speaker verified the comprehensibility and accuracy of the translations.

Results

Participant Characteristics

Twenty-one nurses participated; their characteristics are described in Table 1. Nurses heard about these jobs from postings in job information sections of public relations magazines (*n* = 9), through referrals/introductions from someone they knew (*n* = 8), or from the mothers of TD children, who requested they apply for the job (*n* = 4). All nurses were employed by the boards of education as contractual employees to provide nursing care for TD children in mainstream schools. Most nurses (*n* = 19) worked in elementary schools and two worked in junior high schools when the interviews were conducted. Schools were in 12 cities or towns ranging from Hokkaido (in the north) to Kyushu (in the south). Eleven nurses worked every day when school was in session. All nurses had experience working in elementary schools, and five of them had experience working in junior high schools. Sixteen nurses took care of only one TD child and five nurses took care of two or three TD children attending different mainstream schools at the time of interview. In each mainstream school where nurses worked, there were one or two TD children. The TD children needed multiple nursing care procedures including suctioning from tracheotomies, the mouth, or the nose; intermittent catheterizations; tube feeding; intravenous

therapy; oxygen inhalation; stool extraction; colostomy care; intestinal lavage; ventilator therapy; and inhalation.

Analysis

Twelve categories and 37 concepts were derived (Table 2). These categories were divided into three stages: (1) maintaining children's physical health, (2) maintaining children's physical and mental health, and (3) supporting children's learning with each other. The core category was realizing the meaning of supporting TD children. Nurses advanced from stage 1 to stage 2, and then to stage 3. However, when nurses were confused about the nature of nursing care and educational practices in stage 3, they went back to stage 2 in order to learn to interact with children.

Stage 1: Maintaining children's physical health. In this stage, nurses concentrated on maintaining TD children's physical health. However, they often experienced confusion in this practice. This stage contains two categories: maintaining physical health and feeling confused.

Maintaining physical health. Nurses perceived themselves to have this role upon starting to work in mainstream schools. They initially sought to concentrate on providing nursing care, ensuring the safety of the TD children, monitoring the TD children's physical condition, and providing care for rehabilitation in order to maintain the TD children's physical health. Because nurses primarily believed themselves to be medical professionals, their perceived roles did not differ from when they worked in hospitals. A nurse stated, "Basically, I think the role didn't change. I simply don't work at a hospital [anymore]. I'm still a nurse. Therefore, my role is providing nursing care safely and correctly."

Feeling confused. Despite their initial clarity**,** nurses grew increasingly more confused about their roles in the schools. Particularly, they felt confused about the extent and content of

nursing care and educational practices. When nurses were required to act in an educational capacity (e.g., mediating children's quarrels), they hesitated to act in that fashion: "When children quarreled or the situation became unsafe for the TD child, I needed to settle and guide them, but I hadn't acquired an educational perspective. Therefore, I had difficulty." Even after gaining experience, some nurses remained confused about their role. Nurses worked as the sole medical service staff member in the school, which made it difficult to consult anyone regarding their practices; nurses did not always have confidence in their practices. One nurse said, "He [the TD child] wanted to do something, but if he did, his physical condition might worsen. I couldn't decide. At that time, I asked the teacher about that, but I couldn't get an answer that helped me decide."

Stage 2: Maintaining children's physical and mental health. In this stage, nurses attempted to build relationships of mutual trust and learn how to interact with children in order to resolve their confusion. As a result, nurses came to maintain the TD children's physical and mental health in cooperation with teachers. This stage contains seven categories: building relationships of mutual trust, learning how to interact with children, understanding the school community, understanding the children, supporting self-care, becoming a secure base, and bridging.

Building relationships of mutual trust. Nurses communicated positively and attempted to build relationships of trust with teachers, school nurses, children, and parents. As a result, they worked harmoniously in the school community and perceived themselves as members of that community. Nurses realized that in order to work harmoniously in schools, they needed to go beyond their nursing status when building relationships with teachers and children: "If I said, 'I don't do this because I'm a nurse,' I might not build good relationships in the

school." They perceived that harmonizing with the school community was necessary to get information for the TD child and facilitate communication between TD children and other children. One nurse commented, "I thought that if I joined the children's community and became friendly with them, the other children will become friendly with her [the TD child]." Nurses came to love the TD child as if he/she were their own child; nurses then had a desire for greater interactions with the TD child; one nurse stated, "I feel as though he [the TD child] is my own grandchild. Therefore, I want to take care of him more." Nurses listened to and shared concerns with parents in order to build relationships of mutual trust with them: "I tried to put myself in the parents' place and listen to and share parents' concerns, just as in mental health care. A relationship of mutual trust is necessary." After building relationships of mutual trust with teachers, school nurses, parents, and children, nurses felt a sense of security when they practiced.

Learning how to interact with children. Nurses learned how to care for TD children through getting advice from parents and doctors, reading books, and participating in training. They learned how to interact with children in an educational capacity from teachers and parents by watching what teachers and parents did and by getting advice. One nurse said, "The teacher advised me to keep my distance from her [the TD child] to promote her independence. I tended to take care of her more than she really needed. With this advice, I realized [the truth]." Nurses learned how TD children signaled their intentions and physical conditions through interaction with these children and their parents and parents' advice:

> At first, I telephoned her [the TD child's] mother many times to consult about her [the child's] physical condition. When she had a fever and muscle strain, I asked her mother. Her mother told me why she had that physical condition.

As nurses learned how to interact with the TD children and other children, they developed a

deeper understanding of the school community and the TD children.

Understanding the school community. Nurses came to understand the mainstream school context, eventually realizing that education was the priority in mainstream schools. This realization was brought on by advice from teachers to restrict nurses' medically oriented viewpoints: "I was told by the teacher that this isn't a hospital, and actually, this isn't a hospital. I understand, but I tend to pay attention to the child's physical condition and disease." Nurses also realized the unique school community when they needed to adjust the school's timetable in order to provide nursing care. The other nurse said, "She [the TD child] is in a mainstream class. In the class, she needs to join in the lessons together with her classmates. I wonder when I'm able to provide her nursing care."

Nurses came to perceive the limits of their status to care for TD children. Specifically, they came to realize that for TD children in mainstream schools, the teachers are the primary agents of support. A nurse reported, "In the school, the TD child and the teacher are at the center and the nurse is a supporter. On the contrary, in the hospital, the patient and nurse are at the center." However, nurses also understood the teachers' situations; teachers needed to educate all students in the class, not only the TD child, and some teachers did not have experience in educating children with disabilities or who were dependent on technology: "Teachers leave the TD child to the nurses. Therefore they won't know what is dangerous for the TD child unless I tell them."

Understanding the children. This category refers to how nurses come to understand the larger picture regarding the TD children, including not only their physical aspects but also their school and home lives. Nurses understood that the TD children were healthy by monitoring their physical conditions and noticing their abilities and growth: "He [the TD child] is healthy. He has

a tracheotomy, but basically he is healthy physically and mentally even though he has the tracheotomy." Through interacting with the TD children and their parents, nurses came to understand that they desired relationships with other children. Furthermore, nurses understood that TD children and their classmates learned from each other and grew as a result. Take, for example, the following observation by a nurse:

> He [the TD child] spent time with classmates and performed the same activities with them, except those that were dangerous or impossible for him. When classmates are in higher grades, they understand what he can do and tell me that.

Through checking the TD children's physical conditions, nurses came to understand the influence of the school and home environments on their physical conditions. When nurses felt the influence of the home environment and predicted the TD children's futures, nurses realized that children's homes were their care bases: "I came to think that parents' intentions for their children's care comes before anything else."

Supporting self-care. After nurses understood the parents' and TD children's perspectives on caring and that the TD children's homes were children's care bases, nurses began to find ways of teaching TD children and their parents to care for themselves. They did this by providing advice and observing their own health maintenance behavior in cooperation with teachers. One nurse described:

> At first, I tended to help her [the TD child] a lot. She has a physical disability. But I didn't consider [her]. I thought I needed to change her clothes and do catheterization as fast as possible. I realized that we should support her in eating by herself when I saw a teacher help her to eat by herself. I realized it was important.

Becoming a secure base. Having established relationships of mutual trust with the TD

children, nurses began listening to the children's feelings and concerns and tried to become a secure base for them. One nurse mentioned:

> It's mental care. She [the TD child] talked to me about daily happenings during urine catheterization. She said, "A classmate said to me 'You can't walk' and I felt frustrated and cried and hit her." She tends to feel at ease. So I listened to her.

Bridging. After nurses understood the school community, they tried to serve as a bridge between teachers, school nurses, and the TD children. Nurses provided information about the TD children's physical condition to teachers and school nurses and took care of these children with their cooperation. By doing so, nurses attempted to bring these children to the forefront of teachers' and school nurses' minds, instill a sense of security among teachers in handling TD children, and encourage teachers to ensure the children's safety: "I explained to teachers about the TD children's physical condition. When they [the teachers] didn't notice, I explained it to them in greater detail." Nurses shared parents' concerns and bridged the gap between teachers and parents so that both parties could understand the other's perspectives, thereby improving the relationship:

> His mother sent me an email when she hesitated to tell his [the TD child's] teacher directly. So, I informed his teacher and we discussed his mother's concerns together. I did not speak with the mother myself, but I asked the teacher to talk to her.

Stage 3: Supporting children's leaning with each other. In this stage, nurses came to realize the importance of TD children's learning and interaction with other children and the meaning of supporting TD children in their learning and interaction with other children. As such, they actively began to support TD children's participation in educational activities and building relationships with other children and realized the meaning of supporting TD children more. This

stage contains three categories: realizing the meaning of supporting TD children, supporting participation in educational activities, and supporting the building of relationships with other children.

***Realizing the meaning of supporting TD children*.** By watching the growth of TD children and their schoolmates, nurses came to realize how important it was for TD children to learn and interact with other children in mainstream schools. One nurse described:

> I saw that she [the TD child] was changing. By leaving her among her classmates, she is trying to do [things] by herself and ask a classmate around her to get help when she has difficulty, and [as a result] she gets more confidence in herself. I saw how she was changing and I realized that it was important.

After realizing the importance of TD children's learning and interaction with other children, the nurses came to realize the meaning of their supporting TD children to learn and interact with other children:

> I felt that it was good for him [the TD child] to make the effort to go to school. I noticed I had medical thoughts, the thoughts that nurses working in hospitals have, the thought that it is best for him to be treated and get better. Outside of the hospital, he had fun, even if his physical condition didn't get better. His disease was incurable. I realized that nursing was not only for treatment.

Nurses' realization of the meaning of their support of TD children clarified two roles for them: (1) supporting participation in educational activities, and (2) supporting the building of relationships with other children.

Supporting participation in educational activities. Together with teachers, nurses began actively supporting TD children's participation in educational activities as soon as they

understood their roles in this practice. When nurses felt that the teachers were having difficulty in interacting with children safely, they helped the teachers in providing educational activities. Nurses were also careful not to disturb the children's education while they were providing nursing care: "The place where I suction her sputum is not a hospital room but a classroom. I considered this to ensure that my actions did not disturb lessons." Nurses discussed educational activities with the teachers, parents, and the TD child and managed the content of educational activities to expand the child's participation without threatening his or her health and safety; one nurse said:

> His [the child dependent on the ventilator] mother wanted him to join swimming lessons, but that is difficult to do without guidance. To consider how he could do this, his teacher and I gathered the school principal and teachers to consider [this] together.

Nurses often found it difficult to decide whether TD children could join a given educational activity with their classmates. Some nurses resolved this difficulty by putting themselves in the place of the TD child. One nurse commented, "When I am at a loss, I follow his [the TD child's] standard. If I were him. What does he want to do? What kind of educational activities are better for his physical condition?" They engaged in this practice more frequently as they came to better understand the TD child.

Nurses reported that their mutually trusting relationships with teachers were the core of their ability to support the TD children's participation in educational activities (e.g., physical education, athletic meets, swimming lessons, school trips). In other words, nurses felt secure in their abilities to help because of these relationships.

Supporting the building of relationships with other children. Nurses and teachers collaborated in supporting TD children in building relationships with other children. Nurses

mingled with children to provide chances to facilitate communication between the TD children and other children. Often, nurses put themselves in the place of the TD children and spoke for them, especially when they could not communicate verbally. Nurses also used their own professional knowledge to assist other children in understanding the TD children and their disabilities. One nurse commented:

> I am a nurse. I thought it was necessary to have time to explain to the classmates about her [the TD child's] physical condition using expert knowledge. So I asked the homeroom teacher to give me school hours to explain to her classmates.

On the other hand, nurses were careful not to give the TD children special treatment and kept a distance while ensuring their safety, because nurses thought special treatment would disturb the TD children's communication with other children. One nurse mentioned:

> When she [the TD child] plays happily with classmates, I think I should go away. Conversely, when classmates are confused by what she is doing, they do not play with her; I watch the situation and assess when I should intervene. It's a conflict.

Nurses also paid attention to the children's socialization. Nurses taught the TD children to follow rules and greet others in order to build a relationship with other children smoothly.

Discussion

The present study revealed the role development of nurses caring for TD children who attend mainstream schools. It consisted of three stages: Stage 1, "maintaining children's physical health;" Stage 2, "maintaining children's physical and mental health;" and Stage 3, "supporting children's learning with each other." Role development of these nurses meant realization of the meaning of supporting TD children's learning and interaction with other children.

Our findings indicate that nurses' viewpoints gradually shifted from a focus on the TD

children's physical conditions (Stage 1) to considering children's futures, homes, and school lives (Stage 2). In Stage 2, nurses developed a deeper understanding of the school community and the TD children. Finally, in Stage 3, nurses realized the meaning of supporting the TD children's learning and interaction with other children. Previous research has indicated that knowing the patient affects nurses' abilities to engage in expert practice (Zolnierek, 2014). Stages 2 and 3 are thought to reflect nurses' development toward a stage of proficiency wherein nurses can practice with a holistic understanding of the patient (Benner et al., 2009). In Stage 3, nurses considered the situation from the TD children's perspectives and built mutually trusting relationships with teachers, which helped them support these children's participation in educational activities without confusion. In Stage 3, nurses were aware not only of what to do but also of how to do it and were able to develop orchestrated teamwork, which fits with definitions of expert practice (Benner et al., 2009). Benner et al. (2009) described the nature of skill acquisition in critical care nursing practice. Although the workplace is different, our findings were similar. We suggest that nurses' role development has similar stages regardless of the workplace.

Supporting TD children's participation in educational activities and the building of relationships with other children, by considering situations from TD children's perspectives and building mutually trusting relationships with teachers, could constitute expert practices for nurses caring for TD children in mainstream schools. Adults' and peers' understanding of the needs and abilities of individual children with disabilities is known to be a factor influencing the extent to which children participated in activities (Kramer, Olsen, Mermelstein, Balcells, & Liljenquist, 2012). In our study, nurses supported teachers and children in understanding the TD children using their expert knowledge and skills. In addition, nurses managed educational activities via

discussions with teachers, parents, and TD children in order to facilitate safe participation of TD children in school activities. Our study demonstrated that by developing nurses' roles, nurses were able to promote TD children's participation in their school activities using their expert knowledge and skills.

Our finding that nurses learned how to interact with children, understood the school community and the children, and realized the meaning of supporting TD children, which in turn, developed their roles, is similar to previous studies, which demonstrate that knowledge and skill acquisition are an important factor in nurses' role development (Ellis & Chater, 2012; Rasmussen et al., 2014). A novel finding of our study is that nurses learned not only to take care of TD children and to read their signals but also to interact with the children in an educational capacity, even though these skills do not fall under the purview of nursing practice. This suggests that the necessary knowledge and skills for nurses' role development are not restricted to the nursing sphere.

Nurses learned how to interact with children through building relationships of mutual trust with teachers and parents, and mainly watching their practices and getting advice from them. This finding is similar to a report suggesting that work community participation and engagement in interpersonal relationships are important in order to learn from work (Skår, 2010). Initially, the participants believed themselves to be solely present as nursing professionals in the schools. However, they did not cling to this status, and communicated positively in order to build relationships of mutual trust and work harmoniously in the school community. Nurses' professional competencies and interpersonal caring attributes—including honesty, trustworthiness, confidentiality, commitment to providing the best care, authenticity, sensitivity, humility, and the ability to see the larger picture—are important in developing trust in nurse–

patient relationships (Dinç & Gastmans, 2013). In addition, this study suggests that it is important for nurses who work in mainstream schools to have the flexibility gained from a lack of concern over their statuses in order to build relationships of mutual trust with teachers and children, learn more in their workplaces, and develop their roles.

Limitations

There were some limitations to this study. First, participants were nurses who provided nursing care in Japanese mainstream schools. The finding presented here cannot be generalized to different countries. Second, this study relied mainly on data from interviews. We did not observe all participants' actual practices. In spite of these limitations, this study is significant because it reveals the role development of nurses caring for TD children in mainstream schools for the first time and suggests that their developed roles can improve TD children's participation in educational activities.

How Might This Information Affect Nursing Practice?

The places where pediatric nurses play an active role are expanding. When these nurses begin working in mainstream schools, we believe that the findings of this study will be helpful in developing their roles. Our findings suggest that nurses should not only exhibit their expertise but also go beyond their nursing status in order to build relationships of mutual trust with teachers and children and learn on the job in mainstream schools.

This study showed that when nurses caring for TD children in mainstream schools develop their roles, there is a possibility of expanding the participation of TD children in their school activities and realizing inclusive education in mainstream schools. This information will support policymakers as they strive to create innovative policies for providing nursing care in mainstream schools.

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Table 1
*Characteristics of the Participants (*n = *21)*

Characteristics	*n*	*Mean*	*Range*
Gender			
Male	0		
Female	21		
Age (years)		45.5	
30s	3		
40s	13		
50s	3		
60s	2		
Professional Education			
Bachelor's degree	1		
Associate's degree	4		
Diploma	12		
No response	4		
Years of Experience			
Clinical experience (except at schools)		12.4	3–48
≥3 to <5 years	3		
≥5 to <10 years	7		
≥10 to <20 years	9		
≥20 years	2		
*Pediatric nursing (except at schools) (*N = *8)*		7.9	1–20
<3 years	2		
≥3 to <5 years	2		
≥5 to <10 years	1		
≥10 years	3		
Mainstream schools		5.4	2.6–9
≥2 to <5 years	11		
≥5 to <10 years	10		
Municipality population size of workplace			
<50,000	4		
50,000–500,000	13		
>500,000	4		
School size of workplace			
<100 children	1		
≥100 to <300 children	6		
≥300 to <500 children	5		
≥500 to <700 children	6		
≥700 children	3		

Table 2
Categories and Concepts

Category	Concept
Maintaining physical health	Providing nursing care
	Ensuring the TD child's safety
	Monitoring the TD child's physical condition
	Providing care for rehabilitation
Feeling confused	Being confused about the extent of care
	Being confused about the content of care
	Hesitation in being concerned with education
Building relationships of mutual trust	Harmonizing with the school community
	Going beyond the status of nurses
	Loving the TD child as their own
	Listening to and sharing parents' concerns
	Feeling a sense of security
Learning how to interact with children	Learning how to best provide care
	Learning the TD child's signals
	Learning how to interact with children in an educational capacity
Understanding the school community	Realizing education is foremost
	Being conscious of the school's timetable
	Realizing teachers are the primary agents of support
	Understanding the teachers' situation
Understanding the children	Understanding the TD child's health
	Understanding the TD child's and parents' desires for school life
	Noticing children's growth
	Realizing home is the care base
Supporting self-care	Advising the TD child and parents on self-care
	Observing the TD child's behavior on self-care
Becoming a secure base	Becoming a secure base
Bridging	Bridging the gap between teachers and the TD child
	Bridging the gap between parents and teachers
Realizing the meaning of supporting TD children	Realizing the importance of the TD child's learning and interaction with other children
	Realizing the meaning of supporting the TD child's learning and interaction with other children
Supporting participation in educational activities	Not disturbing educational activities
	Helping with educational activities
	Managing educational activities
	Considering situations from the TD child's perspective
Supporting the building of relationships with other children	Paying attention to the TD child's socialization with other children
	Not treating the TD child differently
	Supporting children's understanding

Note. TD, technology-dependent

Figure 1. **Interview Guide**

Content of nursing care

1. How do you take care of technology-dependent children in a mainstream school?
2. What do you consider when you provide nursing care in a school?
3. Who do you contact while you are working in a school? What is the purpose of this contact?
4. Has the content of care changed? If yes, how has it changed?

Role of nurses

5. What do you think your role is for the technology-dependent child in a mainstream school?
6. Has your role perception changed? If yes, how did your perception change? What changed your perception?

Change of view

7. Through this job, has your nursing view changed? If yes, how has it changed?

This is the accepted version of the following article: Journal for Specialists in Pediatric Nursing, which has been published final form at doi: 10.1111/jspn.12105.