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<https://doi.org/10.5281/zenodo.14992409>**Evaluation of the Effectiveness of Child Emergency Disaster Plan Training in Nursing Students****Yeliz Suna Dağ¹, Sümeyye Özarslan¹, Mehmet Emin Düken²**¹Inonu University, Faculty of Nursing, Paediatric Nursing Department, Malatya, Turkey²Harran University, Faculty of Health Sciences, Department of Nursing, Department of Paediatric Nursing, Şanlıurfa, Turkey**ABSTRACT**

Introduction: Children are one of the groups most affected by disasters. Health professionals have an important role to play in the protection and development of children's health in disasters. It is important and necessary to support nurses and nurse candidates, who are a numerically strong group among health professionals, with training in emergency management of children in disasters to reduce the risks that may occur.

Objective: This study was conducted to evaluate the effectiveness of paediatric emergency disaster plan training for nursing students.

Method: This study was conducted as a qualitative study with 40 students studying in the nursing department of a university who participated in the child emergency disaster plan training. An introductory information form and a semi-structured interview form were used to collect the study data.

Results: The mean age of the nursing students who participated in our study was 22.5±0.7 years and 66.6% of them were female. It was found that 92.5% of the students had not received any training on disaster and emergency management in children and 77.5% of them had no information on disaster and emergency plans for children in hospitals. As a result of the analysis of the data, 5 themes were identified: creating a special disaster management plan for children, organising children's emergency services, ensuring and protecting the safety of children, managing orphaned children and providing coordination.

Conclusion: In this study, it was found that the level of knowledge and awareness of nursing students about emergency disaster management for children was inadequate. However, it was found that the training received by the students helped them to become aware of critical issues such as disaster emergency planning for children, organisation of emergency services and management of orphaned children.

Keywords: Children, Disaster Education, Nursing Students.

INTRODUCTION

Health professionals have an important role to play in disaster management because of the services they provide and the responsibilities they assume (1). Nurses, who have the necessary knowledge and skills to intervene quickly and effectively in disasters because of their presence in all areas of health care, are the most important group in disaster management (2,3). The World Health Organization stresses the need for health professionals to be competent to respond to all disasters, regardless of their magnitude (4). The International Council of Nurses (ICN) states that it is important to support nurses, who are among the most important health professionals involved in disasters, with the necessary training curricula for managing disaster processes in order to reduce the problems that may arise (5). In Turkey, which is one of the countries with a high risk of disasters, there is a great need to raise awareness among nursing students about disaster management, emergency planning and health services in disasters (3,6,7). Studies have shown that nurses with little professional experience do not benefit enough from disaster and emergency training and their awareness level is low (7,8). Similarly, it has been reported that nursing students are inadequately prepared for disasters if the necessary educational and practical studies are not provided (3,9). Nursing students can provide care and meet the needs of disaster victims during disasters (10). Therefore, it is important to support nursing students with various disaster management training programmes before they graduate. Studies in the field of disaster education and management have found that the self-efficacy and management perceptions of nursing students who received disaster education increased significantly (6,10). In this context, it has been emphasised that

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nursing students should gain experience by taking responsibility in disasters, that applied training using case studies should be increased, and that disaster simulation training should be included in educational curricula (11,12).

In the light of these data, it has been reported that universities should provide more comprehensive disaster training and encourage students to participate in disaster plans to enable nursing students to take an active role in disaster situations (13). In disasters, children are physically, developmentally and socially different from adults. This situation may lead to the need for disaster response services specifically prepared for children in certain age groups (14). Nurses caring for children in disasters should have sufficient knowledge and skills about the needs of children. The National Association of Pediatric Nurse Practitioners (NAPNAP) reports that nurses play an important role in caring for children and their families before, during and after national and global disasters (15). Therefore, it is stated that nurses should be trained in the management of children affected by disasters (15,16). A review of the literature shows that nursing education curricula on disaster management have increased (17). At the same time, there are master's and doctoral programmes related to disaster nursing and it is separated from other fields as a specialty (17-19). An examination of training content reveals a focus on general disaster management, such as first aid and intervention practices, and meeting the basic needs of disaster victims (17,20,21). Despite the increase in training programmes, it is noted that they are not sufficient and need to be improved (17). However, no mention was made of the lack of support for nursing students and no mention was made of the need to improve training curricula in the management of children, one of the groups most affected by disasters.

Some organisations organise trainings for health professionals on the management of children in disasters (22). With these trainings, it is aimed to disseminate Child-Centred Disaster Management. However, increasing the number of health professionals equipped with knowledge and skills related to the systematic management of children in disasters can be achieved by training all nursing students in the early period. It is predicted that nursing students who graduate with adequate educational contents can make great contributions to the systematic management of children in disasters, even though the fields they work in are different. However, when the literature was examined, it was determined that educational activities and researches on the subject were insufficient. In this context, it was thought that participation of nursing students in disaster planning trainings prepared for children could be important. This study was conducted to evaluate the effectiveness of child emergency disaster plan training for nursing students.

METHODS

Study Design

This study was conducted between November-December 2024 in a qualitative descriptive design.

Sample of The Study

The population of the study consisted of 280 students who were studying in the Nursing Department of a university and who were in their final year and had taken the course of Child Health Nursing. In the university where the study was conducted, nursing students take the course Nursing Care and First Aid in Disasters as a compulsory course and the course called Chronic Diseases and Care in Disasters is given as an elective in some semesters. However, there is no detailed course content on the management of children, one of the most specific groups in disasters. Considering that nurses should be equipped with knowledge and skills in disaster management and coordination, the need to support students with different training before graduation comes to the fore. Therefore, in this study it was planned to include nursing students in the training phase in the training to be applied for the management of children in disasters. The contents of the training for the preparation of a child emergency disaster plan and the research plan were explained to the students and an announcement was made about the training. The sample of the study consisted of 40 students who agreed to participate in the study and attended the training regularly.

Data Collection

‘Introductory Information Form’ and ‘Semi-structured Interview Form’ prepared by the researchers were used to collect the research data.

Introductory Information Form

The form prepared by the researchers consisted of 6 questions that allowed us to assess the socio-demographic characteristics of nursing students (age and gender), receiving training on disaster management and emergency in children, being a member of a voluntary non-governmental organisation related to disaster or emergency, having knowledge about disaster and emergency plans for children in hospital, having knowledge about the process of classification and prioritisation of paediatric patients in an emergency.

Semi-structured Interview Form

This form consists of 5 questions to explore the experiences of the nursing students involved in the training process, and to determine their level of knowledge and perspectives on the management of children in disasters. Questions: How do you assess the general impact of disasters on children, What are the risks that children may face in disasters and how should children be protected at this stage, How should we organise children's emergency services in disasters, How should child-centred disaster management be, How do you think coordination for children in disasters should be as a result of the training you have received? In order to determine the suitability of the semi-structured interview form, interviews were conducted with 4 researchers who are experts in the field of children's nursing and nursing education, and the questions were revised. In addition, 3 students who had participated in the training were interviewed in advance and the comprehensibility of the questions was assessed.

Interviews

Prior to the start of the research data collection, nursing students who agreed to participate in the study were given detailed information about the purpose, scope, expectations and requirements of voluntary participation. Following the information, focus group interviews were conducted in the meeting room by scheduling a suitable time after training with the students who agreed to participate in the study. Each focus group consisted of 10 students and interviews were conducted with 4 focus groups. To ensure the integrity and consistency of the research, the interviews were only conducted by the same researcher. A voice recorder was used, with the consent of the participants, to fully record the details of the interviews. The focus group interviews lasted approximately 60 to 75 minutes for each group.

Analysis of the Data

In order to analyse the research data, all data recorded on the voice recorder were first transcribed. The data was transcribed from the voice recorder and listened to repeatedly by the researchers to increase accuracy and reliability. The recordings were then listened to repeatedly by the researchers to increase the accuracy and reliability of the data. The data were analysed according to the method described by Colaizzi, in which data collection and analysis took place in a cyclical manner (23). At the end of the Colaizzi process, each researcher received detailed explanations and definitions of the topic, and themes were formed by reinforcing them.

Validity and Reliability

An attempt was made to meet the criteria of validity, reliability, consistency, verifiability and transferability of the study (24). To ensure reliability, the interviews were conducted by the same researchers, audio recorded and transcribed verbatim. Each researcher listened to the audio recordings several times and transcribed them. Meetings were held at regular intervals and similarities and differences in the findings were assessed. In addition, the reliability of the research was increased by seeking expert opinion on the questions and conducting preliminary interviews. To ensure verifiability and consistency, in addition to the main questions in the interviews, additional questions were asked to enable participants to express themselves better, data analysis was carried out separately by three researchers, and meetings were held at regular intervals. This approach allowed the research findings to

be evaluated from different perspectives. The transferability of the data was ensured by including extracts from the participants' speeches in the findings.

Ethical Aspects of the Research

Ethical approval was obtained from the Social and Human Sciences Ethics Committee of a university (2024/273) before the study began. Institutional approval (E-20176953-900--520598) was then obtained. The purpose and content of the study were explained to the students. It was explained that they were free to participate in the research, that the data obtained would be used for scientific purposes, that their personal information would be kept confidential, and that voice recordings would be made during the interviews. Verbal and written consent was obtained from students who agreed to participate in the study. The study was conducted in accordance with the tenets of the Declaration of Helsinki.

RESULTS

The mean age of the nursing students participating in the study was 22.5 ± 0.7 years and 66.6% were female. It was found that 92.5% of the students had not received any training in disaster and emergency management in children, 77.5% had no information about disaster and emergency plans for children in hospitals, 92.5% had insufficient knowledge about the process of classification and prioritisation of child patients in an emergency and 85% were not members of any voluntary non-governmental organisation related to disaster or emergency.

Table 1. Sociodemographic characteristics of students

	N(%)
Mean Age	22.5±0.7
Gender	
Female	30(%66.6)
Male	10(%33.3)
Status of training on disaster management and emergency in children	
Yes	3(%7.5)
No	37(%92.5)
Whether you are a member of a voluntary non-governmental organisation related to disaster or emergency	
Yes	6(%15)
No	34(%85)
Having knowledge about Disaster and Emergency Plans for children in hospital	
None	31(%77.5)
Available	9(%22.5)
Adequacy of knowledge about the process of classification and prioritisation of paediatric patients in an emergency	
Yes	3(%7.5)
No	37(%92.5)

In our study, 5 main themes were identified after the interviews with the students (Table.2).

Table 2. Main Themes

Main Themes
1. Creation of a special disaster management plan for children
2. Organisation of child emergency services
3. Ensuring the safety and protection of children
4. Management of orphaned children
5. Coordination

1. Creation of a special disaster management plan for children

After the training, the students expressed the need to develop a child-specific disaster management plan as part of child-focused disaster management. The students reported that they had learnt that children are more affected by disasters than adults and that their level of exposure may vary according to their age groups, and therefore physical and psychosocial assessment of children in the acute phase of

disasters may be important in solving the problems that may arise. However, the students emphasised the need to plan continuous and regular training for health professionals and nursing students in order to carry out the process systematically and programmatically. At the same time, the students reported that it is essential for the hospital management to develop a disaster plan with the health professionals working in the emergency service, paediatric intensive care, neonatal intensive care and other areas where children are cared for and treated in disasters, and that this should be included in the hospital disaster plan.

Some students made the following statements;

'I think I understand better that children are affected differently from adults in disasters and therefore a disaster plan should be created specifically for children. At the same time, children can be affected by disasters at different levels depending on their age. This situation requires that the management of children in disasters should be systematically established.' (Student, 15).

'Considering the impact of disasters on children, physical and psychological parameters should be urgently assessed and appropriate care measures should be planned. In addition, children exposed to disasters should be followed up for a long time and the negative impact of the disaster on the child should be evaluated' (Student, 12).

'We have discussed child-centred disaster management in detail in this training. Nurses working in paediatric wards and paediatric/neonatal intensive care units, especially in paediatric emergencies, should be included in the disaster management plan for children in disasters, and training for health professionals should be held at regular intervals' (student, 9).

'In order to ensure the management of children in disasters, firstly, the management of children in disaster processes should be addressed in more detail in the hospital disaster plan, and the roles of all health professionals should be allocated. Training programmes and special exercises for managing children in disasters should be planned. Even a team dealing with the management of children in disasters should be established' (student, 29).

2. Organisation of paediatric emergency services

Students emphasised the importance of paediatric emergency services and general services being adequate and equipped to respond to the management of children in disasters. In particular, in emergency departments of hospitals located in peripheral regions and where adults and children are cared for together, the students reported that it is important to separate the management of adults and children during disasters and to carry out the procedures related to children in a specific area in order to avoid problems that may arise in terms of safety and protection. In addition, the students stated that the triage of all children brought to the emergency department should be carried out by trained and experienced health professionals and a multidisciplinary team. To ensure that emergency departments are equipped to deal with children in disasters, the students stated that continuous and regular drills would reduce problems of organisation and coordination in disasters.

Some student statements;

'...During a disaster, the emergency services should be able to intervene in many cases, allow the triage of all children to be carried out quickly and systematically, support the protection and safety of children and, most importantly, ensure that all necessary treatment and care needs are met...' (Student, 31).

'In the paediatric emergency service, it is necessary to have a team that is particularly experienced and trained and that can provide crisis management. This is because, based on the cases described in the trainings, a chaotic environment may develop during a disaster and different profiles of children may need to be managed. In order to manage the cases you mentioned, you need nurses who work systematically and can provide crisis management' (Student, 11).

'During the trainings we talked about many cases and shared our ideas. The cases you described really show that more than one child may need to be managed at the same time during a disaster and we understand that we may encounter different images. I was very impressed by what you described and

the child emergency situation in the 6 February earthquake, and training alone may not be enough to manage the process. We need to do exercises on the subject and on the child cases you described' (Student, 18).

3. Ensuring the safety and protection of children

Students who participated in our study highlighted that children may be more vulnerable to problems such as abduction, disappearance, neglect and abuse during disasters and the importance of ensuring the protection and safety of unaccompanied children in particular. They noted that children's vulnerability and fragile structures may result in their inability to protect themselves, thus increasing the risks to their safety. Students emphasised the need for a multidisciplinary team consisting of health professionals, family ministry officials and security officers to ensure the safety and protection of children, stating that safe areas should be created for children and a team should be established to take care of children who need to stay in these areas.

Statements from some students;

'In disasters, children can be abducted and lost. For this reason, it is one of the most important and necessary issues to protect and provide security measures for the children who are being treated and cared for, and especially for the children who have no one with them...' (Student, 28).

'They told us that many orphaned children were brought to the emergency room at the time of the disaster and that their families could not be reached for a long time. Some children were brought by their relatives and they could not stay with them all the time. Some children were lost and found after a while. These experiences show us that children can be orphaned and lost. This situation can expose children to risks such as neglect and abuse during disasters. Therefore, children should be protected and moved to safe environments' (Student, 33).

'Protecting children and moving them to safe areas is not something we can do alone. The process should be managed in cooperation with security guards and officials from the Ministry of Family Affairs, who will play an important role in contacting the children's families' (student, 14).

4. Managing orphaned children

The students stated that they realised that there should be a registration, follow-up and evaluation system for the protection of unaccompanied children, in line with the experience shared about the management of unaccompanied children in the emergency services during the 6 February earthquakes. They stated that they had a better understanding of the need to assess the physical and psychosocial needs of unaccompanied children, plan their treatment and care, monitor them in safe environments and strengthen protection measures. They reported that liaising with law enforcement and Family Ministry teams to ensure that children are returned to their families helps to reduce the risk of disappearance, abduction, neglect and abuse. In order to manage unaccompanied minors in a systematic and programmatic way, it may be important to establish a multidisciplinary team, to address them in detail in the hospital emergency plan (HEP) and to ensure the organisation and coordination of experienced and trained health professionals in the event of a disaster.

Statements from some students;

'...During this training process, I knew that many children were lost in the earthquake we experienced, but I did not know that there were so many problems in terms of managing the children. From what you have told us, it is very difficult for us to manage orphans on our own. That is why the necessary training should be organised before the disaster, for health workers and other professionals...' (Student, 4).

'Unaccompanied children may be more vulnerable, fragile and open to abuse than other children during a disaster. For this reason, their families should be reached as soon as possible and they should be placed in a safe environment by meeting all their needs until they are brought to their families...' (Student, 36).

'...In a disaster, not only one missing or orphaned child is brought. Several children may be brought together. Orphaned children may die, be treated and kept under observation, or be transferred to another

hospital. A special recording system should be set up to keep track of all children and coordination between team members should be ensured...' (Student, 29).

5. Coordination

Students emphasised the need for experienced and trained people to organise and coordinate health professionals at the time of disaster in order to manage the disaster in every sense. They expressed the need to form a special team, determine the distribution of tasks, conduct applied training and exercises, and organise all these processes in order to ensure child-centred disaster management mentioned in the training they received and to achieve its objectives. At the same time, they stated that ensuring a strong coordination for the management of children in disasters would be effective in minimising the damage to children and minimising the risks that may develop.

Statements from some students;

There is a great need for trained disaster health workers. Especially experienced, trained and skilled health professionals are needed to coordinate the disaster. Health professionals who will organise and coordinate the management of the disaster should also be identified in advance (Student, 17)'.

'I think one of the most important problems in disasters is to organise and coordinate the management. In fact, health professionals have problems in organising and coordinating, and if they cannot manage the process, the chaos grows even more and the solution becomes difficult' (Student, 5).

'A very corrosive environment is created during a disaster and this situation creates problems in managing the care and treatment process and other needs of children. For this reason, the organisational strategies to be applied in the event of a disaster should be determined before the disaster and included in the content of the disaster plan and included in the drills. Especially at the stage of ensuring the safety of children, training content should be developed and training should be provided to nursing students and nurses...' (Student, 34).

DISCUSSION

Ensuring the systematic management of children in disasters and developing a disaster plan requires the presence of experienced and equipped health professionals. Various guidelines have been developed for nurses and other health professionals to protect children in disasters (16,25-28). Various training programmes for health professionals are organised in many countries (22,29,30). It has been stated that the number of trained health professionals should be increased to include the management of children in the hospital disaster plan (22). However, the need to improve the training of nurses, who constitute a large part of the health workforce, in the management of children in disasters has not been sufficiently addressed. In our study, nursing students were found to have insufficient knowledge and training in this area. When the curricula of many nursing schools were examined, it was found that there was compulsory training in disaster nursing (18, 31, 32). However, it was noted that the training curricula included disaster response and public health interventions. Specific training content for children or other specific groups of people is not common. This situation may make it difficult for post-graduate nurses to manage the process in the event of a disaster. A study conducted after the earthquakes in Turkey found that nurses working in paediatric emergency services had difficulties in triage due to lack of disaster preparedness, knowledge and skills (33). Another study found that nurses experienced coordination problems due to the high number of children admitted to the emergency department and inadequate equipment (34). These results show that nurses should be trained in the management and organisation of children in disasters. In order to increase the number of experienced nurses, it is important to support nursing students with various training programmes. Our study was designed to highlight the importance of supporting nursing students with training programmes in the management of children in disasters. At the same time, this study is one of the first studies to present data on the effectiveness of child disaster management training for nursing students and is a preliminary result for further studies to be planned.

It shows that the training programme increased the students' knowledge and awareness of the holistic assessment of children in disasters and the planning of actions to be taken for the risks that may occur.

Studies have mentioned that training organised for disaster nursing is important in developing the knowledge and skills of nursing students (19,34,35). A study conducted by Alim et al. found that disaster preparedness training for nursing students increased their knowledge and skills (19). Hung et al. showed in their study that disaster nursing training organised for nursing students was effective in developing their knowledge and skills (36). However, published research reports have been effective in the development of nursing education curricula over the past 20 years (17,19). It is suggested that detailed consideration of the content of the undergraduate nursing curriculum can provide a long-term strategy for creating and expanding a competent workforce (36,37). Increasing training programmes and research on specific management of children in disasters can be effective in developing the literature in this area. In the development of educational curricula, it is important to make student participation in planned training mandatory in order to increase the number of nurses with sufficient knowledge and skills. This will contribute to the ability of graduate nurses to provide better crisis management in disasters and to carry out the process systematically (6,10). The literature shows that various methods such as case-based, game-based, applied and technology-based methods are used in disaster education organised for nursing students (11,12,20,21,35,38). These educational methods have been found to contribute significantly to the application of knowledge and management of behaviours in the stages of disaster management and organisation (35,38). In their study, Hosseini et al. showed that game- and case-based disaster education was effective for nursing students in developing different disaster management strategies (38). Aluisio et al. found that the use of case-based simulation improved students' skills more than the normal educational process (39). In line with the findings of this study, it is predicted that the implementation of research and training programmes for nursing students on the management of children in disasters will be useful in ensuring the management of children in disasters. The evaluation of the effectiveness of the training programmes implemented and the publication of the results can contribute greatly to the development of the curriculum.

Nurses and other health professionals are also involved in the development of the hospital disaster plan before the disaster and in the management of the disaster. Nurses' experience of disasters and disaster training processes increase their awareness and are effective in updating the disaster plan (35,38,40). In addition to being equipped with knowledge and skills related to disaster management, their awareness should also be increased in the provision and development of the organisation. Many studies have shown that health professionals experience various problems in providing organisation and coordination during disasters, even though they are trained in disaster care (34,36). Therefore, it is considered that the knowledge and skills of health professionals for disaster management should be improved and training for the processes of providing organisation and coordination should be increased (17,22). In this sense, the creation and implementation of a systematic plan for the management of children in disasters can be provided by health professionals with a high level of awareness. The results of this study show that the students' perspectives were improved by the training on the creation of an emergency disaster plan for children. With the applied training programme, it can be seen that the students emphasised the need to develop different strategies to take the necessary precautions by identifying the risks that may arise for children in disasters. These results also show that awareness has developed. This awareness can have an important impact on the process of developing the hospital disaster plan for systematic management of children in disasters.

CONCLUSIONS

This study showed that the training organised to improve nursing students' skills in managing and caring for children in disasters was effective. The trainings enabled students to gain awareness and skills on issues such as creating child-specific disaster plans, organising emergency services, and ensuring the safety of orphaned children. Accordingly, it is recommended that child-specific disaster nursing issues be fully integrated into the nursing curriculum and that practical training in this area be intensified.

DESCRIPTIONS

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