

Effects of Earthquake on Children's Health and Responsibilities of Nurses

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Abstract

The earthquake, which is one of the natural disasters whose time cannot be determined and causes negative consequences such as the death of many living things, financial losses, and psychological problems, has great effects especially on children. Earthquake has many negative effects on children physically, socially and psychologically. Children have negative consequences such as sleep and eating problems due to fear and anxiety, lack of hygiene, deterioration in family earthquakes, disruption of squinting, drinking, and post-traumatic stress disorder. Apart from these, musculoskeletal system problems, respiratory problems, digestive system disorders are among the health problems that occur due to earthquakes. Every year, hundreds of children are affected by earthquakes in our country. Children are the future of a country and they are vulnerable to the events and people around them. Because they are vulnerable, their rights should be protected by adults. In order to maintain the sibling and family relations of the children affected by the earthquake, to continue their treatment and education; Professionals such as nurses, physicians, teachers, psychologists and physical therapists have great responsibilities. Nurses have important duties in the process of determining the physical, mental and social needs of children affected by the earthquake and meeting these needs. The aim of this study is to evaluate and compile the data on the effects of the earthquake on children's health and the responsibilities of nurses in reducing these effects, and to inform the interested reader about the situation of children being affected by the earthquake and the roles of nurses in reducing these effects. The fact that our country is an earthquake country and children are greatly affected by this situation has revealed the necessity of compiling this article.

Keywords: Child health; child mental health; natural disaster; nursing

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1.Introduction

Natural disasters cause significant socioeconomic damage and large-scale deaths. Compared to adults, infants and children are more vulnerable during and after natural disasters (Tashiro et al., 2018). Türkiye was shaken by a major earthquake centered in Kahramanmaraş on February 6, 2023. The earthquake caused great damage and caused many children to suffer. Houses, schools, and structures that form the fabric of daily life were destroyed and incredible suffering was experienced in the country.

Earthquakes are one of the most unpredictable natural disasters and have a great impact on the psychological and physical condition of the survivors. Post-traumatic stress disorder (PTSD) is the most common type of psychiatric disorder among earthquake victims and can be defined as a delayed but persistent psychological stress disorder (McLaughlin et al., 2011). It is also a disabling disorder associated with high rates of depression, anxiety, and suicidal ideation (Cogle et al., 2009). Recent research has suggested that the prevalence rate of PTSD among child survivors after earthquakes is 12.4–28.4% (Chen et al., 2017) and that trauma may have a lasting impact on children's developing brains and bodies (De Bellis et al., 2017, 2014).

Traumatic events are often associated with an increased prevalence of insomnia symptoms in children and adolescents (Tang et al., 2018;2018). Children exposed to at least one trauma were more likely to experience insomnia symptoms compared to their unexposed peers (Wang et al., 2016). Studies investigating the prevalence of insomnia symptoms among children and adolescents after traumatic events are important. Because traumatic events can trigger trauma-related insomnia, which can continue with psychological sequelae for a long time (Sinha, 2016; Tanaka et al., 2016; Guo et al., 2017).

A study conducted with primary school children who experienced the 2012 Emilia Romagna earthquake showed that the most frequently expressed emotion of the children participating in the study was fear, followed by sadness and other negative emotions (Raccanello et al., 2017).

Disasters such as earthquakes damage the physical and social environment, causing increased family stress at home (Curtis et al., 2000; Who, 2005). There are many studies investigating the prevalence, incidence, and consequences of post-disaster child abuse (Subedi et al., 2020), but population-based epidemiological studies testing the relationship between natural disasters and child abuse are limited globally. From existing research, it has been suggested that in post-disaster situations, when stress at home increases and social support decreases, child abuse incidents are more likely to occur (Curtis et al., 2000 ; Keenan et al., 2004 ; Subedi et al., 2020). The relationship between family-level stress and levels of child abuse in the home has also been investigated in other traumatic environments, such as wars.

After a natural disaster, babies, pregnant and breastfeeding women need adequate food and priority support to survive (Tsuboyama-Kasaoka and Purba, 2014). However, support to mothers and children after a natural disaster is often inadequate (Amitani et al., 2017).

1.1. *Effects of Earthquake on Children*

1.1.1. *Physical and social effects*

The World Health Organization defines health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO, 2023). Deterioration in health occurs due to traumas that occur as a result of natural disasters experienced during childhood

(Hensley and Varela, 2008; Karabuulut and Bekler, 2019; Gurbuz and Koyuncu, 2023). It has been stated that the health problems that arise include musculoskeletal system, respiratory problems, digestive system disorders and sleep problems (Felix, 2016; Karabuulut and Bekler, 2019; Gurbuz and Koyuncu, 2023). Infrastructure disorders, changes in environmental conditions, difficulties in providing clean water and food resources, deficiencies in waste controls, difficulty in accessing health services and disruptions in vaccination programs, having to live in crowded places, lack of personal hygiene, lack of information about infectious diseases and ways of protection, The risk of infectious diseases after the earthquake increases due to the delay in the burial of those who lost their lives (Eksi, 2016; Pascapurnama et al., 2018; Karabuulut and Bekler, 2019; Gurbuz and Koyuncu, 2023).

In the region where the earthquake occurred, people no longer feel safe and are forced to migrate to other regions due to compulsory reasons, and children in the region may have adaptation problems and may have to take a break from their education, thus their school success decreases (Kastan, 2015; Karabuulut and Bekler, 2019; Sönmez, 2022; Gurbuz and Koyuncu, 2023).

1.1.2. Behavioral and Psychological effects

Children's reactions to earthquakes vary depending on their developmental period (Gurbuz and Koyuncu, 2023). A state of fear, confusion and insecurity can be observed in children exposed to an earthquake during the play age period. Speech disorders may also occur (Erden et al., 2011; Limoncu and Atmaca; 2018; Karabuulut and Bekler, 2019; Sönmez, 2022). The concept of peer togetherness and friends is very important for school-age children, and losing a friend or moving away from the environment they belong to can cause psychological problems that can lead to depression (Karabuulut and Bekler, 2019; Gurbuz and Koyuncu, 2023). Sleep disorders, tendency to crime, aggression and substance use can be observed during adolescence (Yuksel, 2016; Limoncu and Atmaca; 2018; Karabuulut and Bekler, 2019; Gurbuz and Koyuncu, 2023).

Post-traumatic stress disorder and depression are among the most common psychological effects in people who experienced the earthquake and were exposed to its effects. However, anxiety and advanced grief are among the most common symptoms (Felix et al., 2011; Karabuulut and Bekler, 2019; Gurbuz and Koyuncu, 2023).

1.1.3. Effects of Earthquake by Age Groups

Infancy (0-1 years old)

Infancy is a period of critical importance for the development of the baby, in which parents are the first educators to meet the baby's care needs. Due to the development of mother-infant bonding and sense of trust during infancy, parents should provide various stimuli and show interest to their children to support their children's growth and development during this period (Stelmach et al., 2019).

The earthquake that occurred during infancy, when such important emotional skills are formed, has an impact on babies; It has effects such as being in an unnecessary rush and excitement, losing the skills acquired during the developmental period (such as sleeping, eating and drinking), and having difficulty in acquiring new social skills (İsmen, 2016). Intense crying spells, the mother's feeling of fear and insecurity, and the impact on the child's regular care are among the situations that negatively affect the health of children in infancy (Akcanbas, 2009).

Preschool Childhood Period (Ages 2-5)

Excessive attachment to parents, refusal to sleep alone, inability to stay away from parents, hyperactivity, fear of animals, sounds, darkness, night nightmares, thumb sucking, wetting the bed,

loss of toilet training behavior, regression in behaviors such as eating and drinking. Situations such as sudden screaming and sobbing, and physical discomfort are among the reactions seen in preschool children after the earthquake (İsmeň 2001; Erkan, 2010). In their study by Bar-On et al. (2015) to classify the injuries of children treated in hospitals during the 2010 Haiti earthquake; They determined that children had a higher percentage of femur fractures than adults and were more likely to require surgery.

School Age Childhood (6-11 Years)

The school age period is a period in which children are in constant growth and development emotionally, physically and socially (Akca and Ayaz-Alkaya, 2021). In the child who was in this period of the earthquake; It has effects such as negatively affecting school success, distraction, not wanting to go to school, aggression or loss of self-confidence, physical disorders such as nausea, tantrums, visual disturbances, dizziness, hearing disorders, sleep problems, fear and nightmares, and mistrust towards adults (İsmeň, 2001; Limoncu and Atmaca, 2018). In the study conducted by Giri et al. (2018) to identify and classify the diseases that occurred in children immediately after the Haiti earthquake; Hospitalizations for pneumonia, acute gastroenteritis, and acute or poststreptococcal glomerulonephritis were found to be significantly higher in children in earthquake-affected neighborhoods.

Adolescence (Ages 12-17)

Adolescence is a period of cognitive differences due to understanding and thinking more about abstract concepts. Adolescents in this period; They begin to understand and solve complex problems, they attach great importance to the feelings of the people around them and try to understand the perspectives of these people, and they have a higher moral and ethical sensitivity (Heyne, 2022).

In this period of identity confusion, adolescents who experienced an earthquake; Physical problems such as nightmares and sleep disorders, fear of the dark, loss of appetite, risk of substance use, risk of suicide or self-harm, and pain may occur. Loneliness, alienation from society, inability to fulfill responsibilities, lack of self-confidence, and depression symptoms (Erkan, 2010; Limoncu and Atmaca, 2018) are also among the behaviors that can be seen in adolescents after the earthquake.

1.1.4. The role of the nurse in psychological disorders that develop after the earthquake

In order to maintain normal physical and mental health of the child, post-traumatic stress disorder seen in children who experienced the earthquake must be addressed by nurses. After the earthquake, nurses should follow the normal and abnormal behaviors of babies, children and adolescents (Carrion et al., 2002; Atac et al., 2021). Unusual changes such as inability to separate from parents and dependence, fear of the earthquake reoccurring, not wanting to return to school, nightmares, physical problems such as abdominal pain, lack of attention, and incontinence should be determined by the nurse (Atac et al., 2021).

Although there is no separate diagnosis for children and adolescents from adults, the nursing diagnoses of the North Atlantic Nursing Diagnosis Association (NANDA) state that "an individual who has experienced one or more undigested/unassimilated devastating traumatic events constantly experiences distressing reactions and is oriented toward adaptation." The situation in which inappropriate behaviors are observed is expressed as Post-Traumatic Stress Syndrome (PTSS). After the data is collected, nursing diagnoses can be made by the nurse by observing NANDA's post-traumatic stress symptoms for children and adolescents affected by the earthquake (Oflaz, 2015).

After a detailed anamnesis is taken after the earthquake, the child and his/her parents should be made to feel safe, an environment should be created where the child and the family can share their feelings, the child and adolescent should be allowed to express themselves and answer their questions, if the child does not or cannot express himself verbally, direct him to draw and play, avoid traumatic injuries or If traumatic situations such as death are witnessed, protection and monitoring should be provided by the nurse (Atac et al. 2021).

Purpose of the study

The purpose of this study is to evaluate and compile the data on the effects of the earthquake on children's health and the responsibilities of nurses in reducing these effects, and to inform the interested reader about the situation of children being affected by the earthquake and the roles of nurses in reducing these effects

2.Conclusion

Our country is located in a geologically risky earthquake zone region. Earthquakes negatively affect children, especially children, physically, psychologically and socially. Psychological disorders as a result of the trauma experienced after the earthquake; Anxiety, suicide and addiction, communication disorders such as speech and hearing disorders, and post-traumatic stress disorder are among the prominent problems. Nurses have a great role in preventing these diseases. Nurses also have roles in ensuring sanitation, monitoring immunization and growth development, monitoring and meeting the needs of children and adolescents with chronic diseases.

3.Recommendation and Future Directions

Early intervention, especially for children and adolescents, after an earthquake is important in preventing psychological disorders that may occur in the future and in adulthood. In addition, it is important to follow up children who experienced the earthquake in the long term, psychologically and physically. In this context, it will be beneficial for nurses to be prepared for earthquakes and to receive training in the fields of developmental psychology of children and adolescents, physical injuries, child and adolescent psychology, post-earthquake behavioural changes in children, and physical and psychological trauma symptoms in preventive, therapeutic and curative practices.

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