

Review Paper

Educational Components off Children's and Adolescents' Resilience in Disasters



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ABSTRACT

Background: The increased risks and damages caused by disasters in recent years are significant and obvious. Meanwhile, the vulnerable group of children and adolescents are directly and indirectly affected by disasters. Therefore, training related to this field is necessary to improve their resilience. This study aims to identify the educational components of children and adolescents in disasters.

Materials and Methods: The present study is a multi-method study conducted in two review and qualitative sections, and then the results of these two sections are combined. The review section was conducted by searching the keywords "disaster," "crisis," "emergency," "resilient," "resiliency," "resilience," "child," and "adolescence" without a time limit in Scopus, Web of Science, and PubMed Emerald databases. The qualitative section was conducted with the content analysis method, and Graneheim and Lundman approach through in-depth and semi-structured interviews with 28 participants

Results: The study showed that educational components were placed in two general and specialized components groups. General components include individual and social skills, and specialized components include principles and basics of disasters, self-relief, and other-relief skills.

Conclusion: Education is a crucial factor in the resilience of children and adolescents in disasters. In this study, the educational components of the resilience of children and adolescents in disasters are categorized into two general and specialized groups to prepare the educational package by considering the appropriate educational areas in each group and the participation of experts.

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1. Introduction

Currently, the world is facing many natural and technological disasters that have countless negative effects on the people of the world, especially in Asian countries [1]. The increase in population and infrastructure, especially in urban areas, has considerably increased the risk of disasters and strengthened the degree of uncertainty, the challenge of emergency measures, and the debate regarding their appropriateness [2-4].

The World Conference of Hugo (2005-2015) proposed the resilience approach in disasters to reduce the risk of disasters. Resilience is defined as the ability of a system, society, or community at risk to resist, absorb, replace, and recover from a hazard promptly and efficiently. This process includes maintaining and restoring the basic functions and structures. The concept of disaster resilience is multifaceted and has various dimensions. Knowledge and education are emphasized in all dimensions to create a safety culture at all levels [5-7].

On the other hand, children are one of the vulnerable groups in disasters [8, 9]. In the 2001 Gujarat earthquake in India, the 2005 Kashmir earthquake in Pakistan, and the 2008 Wenchuan earthquake in China, children were among the groups that were greatly affected, and school buildings in these earthquakes were damaged [8, 10].

Determining and teaching resilience factors in disasters through skill training in schools plays a crucial role in students' resilience and reduces their vulnerability [11-13]. Chiu et al. mentioned the decisive role of education in schools in reducing the risk of disasters [14]. In the study by Briceño et al., the concept of educating children and adolescents in schools to implement the disaster risk management program is also mentioned [15]. On the other hand, due to the growth of societies and the increase in children's understanding, their power can also be used to improve the preparedness of societies. With proper and operational planning and educational investments in the children, they can be prepared to prevent and deal with risks so that they take good care of themselves and do not get hurt [16]. Also, by transferring their knowledge to their family members and society, they could provide an environment ready to improve safety and health and eliminate risk factors for their society and neighborhoods [17-19].

Although the necessity of resilience, especially in recent years, is evident, all educational organizations, especially children and teenagers, are confused about how to teach resilience with good examples. Since resilience has many definitions, a specific example cannot be found for the education field of resilience. Education is the best path to resilience and improving children's ability and capacity to deal with disasters and reduce their vulnerability [16]. But the crucial issue is to know what should be taught to children so that it does not create fear in them while helping them be more resilient and prepared to deal with disasters [20]. Certainly, this work requires identifying the educational components of children's and adolescents' resilience so that they can be taught their skills by good examples. Therefore, this qualitative study tries to identify the objective and exemplary educational components of the resilience of children and adolescents with a native approach in Iran.

2. Materials and Methods

This multi-method study was conducted in two sections: Review and qualitative content analysis. Then, the results of these two sections are combined. A review study was conducted through the review of library resources, magazines, and related articles, on the effective components of the resilience of children and adolescents in disasters by searching the following keywords of "disaster," "crisis," "emergency," "resilient," "resiliency," "resilience," "child," "adolescence" in [Scopus](#), [Web of Science](#), and [PubMed](#) Emerald databases. Relevant studies were selected without publication year restrictions until 2020.

In the qualitative section of the study, purposive sampling was used, and to meet maximum diversity, we tried to use different people for interviews, and the sampling continued until no new concept was added to the previous concepts. In this study, the participants included 28 people from health experts in disasters, teachers, school assistants, children's social workers, children and adolescent psychologists, school principals, and managers of organizations in charge of children and adolescents, and the youth population in the [Red Crescent](#) and institutional organization group. The participants were 70% male and 30% female, and their average age was 48 years. Regarding the education level, 2% had a postdoctoral, 13% had a PhD, 17% had an MS, and 68% had a BS.

The interview started with a general question with an open and explanatory answer, "what things are necessary for the resilience of children and adolescents in disasters?" the average duration of the interviews was 40 minutes.

Immediately after conducting the interview, after listening several times, the interviews were transcribed verbatim. The analysis was done according to Granheim and Lundman's approach simultaneously with data collection and continuous comparison. Then, semantic units and primary codes were extracted. Similar primary codes were grouped into subclasses, and then the main classes were extracted.

To increase the data's validity, the research findings were given to the participants and people skilled in qualitative research to ensure the correctness of the codes and interpretations. Finally, the comprehensive and complete components that included all the features presented in the previous stages were provided.

3. Results

This study was conducted to find the educational components of the resilience of children and adolescents in disasters. The study results showed that the educational components were in two groups: General and specific components.

General components

According to the participants' experiences, the general components of the resilience of children and adolescents in disasters include skills whose learning affects how a person interacts with the accident and skills whose learning helps a person's harmonious interaction with society in disasters. This group of components is classified into two subgroups: General personal and social skills.

General personal skills

According to the participants' experiences, a series of general personal skills can influence the way of thinking, emotions, and behavior in disaster situations and therefore play a decisive role in how a person responds. Simpler skills included writing, language communication, self-awareness, emotional literacy toward oneself, self-esteem, self-control, creativity, assertiveness and boldness, and maintaining privacy and more complex skills, including problem-solving, stress management, technical skills, and research.

Participant number 5 stated: "For example, in family or neighborhood planning, because we assume that children study in schools, anyway, as a knowledgeable person, a person who has access to modern science can give new ideas and help the neighborhood or family. When we say children of 13 to 17-18 years are a matched popu-

lation, you can form them easily and make them harmonious. When you feel the matter is serious, they work harmoniously."

Participant number 13 stated, "I think that children, contrary to what we imagine and think that adults understand events much better, I think that children have more creative aspects and can understand aspects of that subject that we are incapable of because we are used to it. They have fluid thinking to understand it better than us."

Social skills

Another skill extracted as an educational component of the resilience of children and adolescents in disasters was social skills, which, according to the participants' experiences, include skills that enable people to interact harmoniously with society during disasters. Skills such as empathy, being effective, being responsible, understanding the realities of life, communicating with others, and helping others that comfort people communicate in disasters, meet needs in appropriate ways, ask for help, assist, and protect themselves.

Participant 11 described the category of helping others as follows: "Honestly, I have a nephew who is 16 years old. This child, who was the only child and grandchild in the family until he was 15 years old, was a child whom others always tried to provide services to him. Of course, I can't say that he is a dependent child; he is supportive and strong because his character is a character that feels responsible and tries to help. I also taught him some things from the aid. He would come and say, for example, I would like to learn how to take a pulse, I would like to, control bleeding, revive, for example, teach me this, I taught him something, I am sure if something happens, considering the character that I know of him as a child who always has the spirit of helping, he always likes to support his mother, for example, I am sure that he can support her if something happens."

Participant 5 mentioned the responsibility skill: "Children are more responsible people than adults. Ask a child to write his homework so that he doesn't sleep until he finishes it. It's true, but an adult will mention a thousand reasons not to do it. Therefore, if you assign something to your children as a task and then ask them for feedback, they will do the work and follow up on the feedback if they understand what that work is. Like the homework that all the children do, the child rarely says why I did not write my homework."

Specific components

According to the participants' experiences, gaining general knowledge in the field of disasters and understanding nature and how they occur and how to respond to disasters, as well as having self-relief and other-relief skills, are the main foundations of the resilience of children and adolescents in disasters.

General knowledge in the field of disasters

According to the study findings, the starting point and facilitator of increasing the resilience of children and adolescents in disasters are the efforts to raise their general knowledge level of disasters. General knowledge includes knowing every hazard and the solutions to deal with each risk, the concept of understanding the risk and its dimensions, the concepts of safety, respect for the environment, understanding organizations and their role in the crisis, and some topics related to disasters, including religious education and some humanitarian topics. Participant 12 expressed the need for children and adolescents to know about risk perception as follows:

"... when the earthquake occurred, all the children went under the table because they were trained in advance, and after the shaking ended, they quickly left the classroom, and no one was hurt..."

Regarding essential safety concepts, participant number 14 said: "I said, children are an opportunity; children are now the center of the family; if you dictate behavior to the child, you have dictated to the family. If you tell the child to wear a seat belt, the child will force the mother to wear a seat belt. That's why I said work on the children because children greatly impact families now. In the past, parents had an influence, now children do. If you want to work any behavior on the child's brain, any behavior you create in the child, it will be institutionalized in the society."

Participant number 24 stated: "Also, children can effectively convey these tips and training to their parents and raise the safety culture in families; therefore, they can be taught the necessary training from preschool to have a safe society."

Self-relief and other-relief skills

The study's findings showed that self-relief and other-relief skills are among the main concepts in training the resilience of children and adolescents in disasters. According to the experiences of the participants, skills such

as cardio-pulmonary resuscitation, taking shelter, removing debris, finding family members in disasters and locations, preparing a 72-hour bag, preparing a field toilet, and extinguishing a fire, which helped to take timely and appropriate actions, and it preserves the survival of the individual or others or prevents permanent disability, or reduces the length of hospitalization for the individual and his family. "Children can learn relief courses, learn sheltering, and then teach these to their families. (Participant number 12).

Participant 17 described the category of helping others as follows: "In addition to meeting the basic needs, the child can be used for empathy and even reconstruction and involving them in reconstruction or rehabilitation, which can help other children while keeping them busy and forgetting about the pain and psychological issues, which itself causes him to feel useful and stimulate a sense of responsibility in them, and at the same time, he thinks that all children have the same situation as him, he will be less injured, and children's capacity can be used a lot."

Participant 22 mentioned the responsibility skill: "Children meet their emotional needs with each other and help each other, and usually children have a great capacity to take responsibility and help."

4. Discussion

The present research was conducted to explain the educational components of children's and adolescents' resilience in dealing with disasters. The findings of this research showed that educational components were in two categories: General and specific components.

General components include general personal skills and social skills. Regarding general personal skills, in the study of Sadeghi et al., consistent with the current research, creativity, and its development have greatly affected children's resilience [21]. Also, problem-solving skill has been introduced as one of the crucial interventions to increase resilience and improve the psychological well-being of children and adolescents [22].

With social skills, teaching communication with others and tolerance has reduced aggression in adolescents [23]. In addition, Gartland believes that a high level of empathy and tolerance affects the resilience of adolescents and gives them strength, despite the existence of differences, to have a better relationship with people and their community [24].

In other studies, the component of responsibility has been introduced as one of the components of children's resilience [11, 25]. In some schools, individual activities are considered more than group programs for children, so community programs and social skills training can help promote resilience when disasters occur.

General knowledge of disasters is the main pillar of the resilience of children and adolescents in disasters. This training has grown well in schools recently but must be strengthened and expanded. On the other hand, improving education is one of the effective operational strategies for creating resilient schools [26, 27]. It is worth mentioning that having general knowledge in the field of disasters increases the understanding of risk. Still, it cannot enable people to apply the importance of pre-disaster and actual measures to reduce the risk of disasters [28].

The second category of skills includes specific skills. In some other texts, education to improve general knowledge of disasters has been introduced as one of the main pillars of the resilience of children and adolescents in disasters [11, 16]. They emphasized face-to-face training regarding disasters [25].

In addition, it is necessary to improve self-relief and other-relief skills, hold active skill training courses, and operational and simulated exercises to increase students' resilience and prepare them when facing disasters [29-31].

Duffy has considered schools the main and crucial road for disaster resilience education and has regarded the success of this educational matter in the educational curriculum if the programs are integrated and linked in a way that he has prepared an educational plan for it [32]. In Duffy's continuous studies, it has been pointed out that vulnerability factors should be identified first, followed by empowerment and creating resilience, and finally, building capacity and promoting resilience [33].

In Iran, the prepared school project has been launched by the Tehran Crisis Prevention and Management Organization in Tehran schools, which may prepare both students and teachers and school administrators to understand the risk of natural disasters, such as earthquakes, so that it can prepare not only administrators and teachers but also children for the issue of earthquake risk [34]. As Oktari pointed out, the school is one of the appropriate places to teach children about disaster risk reduction [35]. Updating educational curricula and including educational programs for students are essential in improving students' resilience in schools [36, 37].

5. Conclusion

It seems that education is an influential factor in the resilience of children and adolescents in disasters. According to Hugo's framework, disaster education and community preparedness planning are inevitable to build resilient societies and nations in the future. Considering the greater impact of education on children, this may be a crucial factor or an effective measure for societies. It may be said that this issue can be considered a culture in disaster risk reduction policy. Children can convey disaster risk reduction messages to their families and communities. Although improving their knowledge alone is not enough, changing their behavior is also vital to reduce risk and prepare for other phases of the disaster cycle [38]. In addition, the school can be one of the best places to achieve the goal of improving knowledge [35] that develops and promotes education to increase children's resilience in disasters.

Ethical Considerations

Compliance with ethical guidelines

This research has been approved by the Ethics Committee of Shiraz University of Medical Sciences (Code: IR.SUMS.REC.1399.790).

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Authors' contributions

Conceptualization, supervision and data collection: Leila Mohammadinia; Methodology and data analysis: Leila Mohammadinia and shokoufeh ahmadi; Investigation, writing-original draft, review & editing: All authors; Funding acquisition and resources: All authors

Conflict of interest

The authors declared no conflict of interest.

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