Review Paper: Schools' Resilience Components in Accidents and Disasters: A Systematic Review Protocol

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ABSTRACT

Background: Schools, as social infrastructure and an integral part of society, play an essential role in creating the resilience of the community to natural disasters. This study aims to systematically review and identify and categorize the components affecting schools' resilience against emergencies and disasters.

Materials and Methods: Without any time limit, we will search the PubMed, Scopus, Web of Science, and Google Scholar databases using the three keywords of "Disaster", "School", "resilience", and their synonyms according to the MeSH website terms defined in the PubMed database. The inclusion criteria will be the articles related to school resilience, schools and emergencies and disasters, and school safety and resistance to threats. There will be no restrictions on the type of documentation, and all articles, books, and conference papers will be evaluated in this study. Search syntax strategies will be defined based on the guidance of each database. The final version of EndNote X8 is used to manage databases, delete duplicate and irrelevant articles, and extract relevant articles. The evaluation and selection of articles are based on the research question and the PRISMA checklist.

Dissemination: The results of this systematic review determine appropriate criteria for school resilience, which are valuable for decision-makers and politicians, researchers in the field of education, Ministry of Health and Medical Education, Welfare Organization, Red Crescent, and people interested in research in the field of students and schools, especially in the event of emergencies and disasters. Also, according to the criteria extracted from this systematic review, the difference between resilient and non-resilient schools can be shown from an international perspective.

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1. Introduction

Currently, the world is facing many natural and man-made disasters, which have many adverse effects on people in the affected countries, especially in Asia [1]. Natural disasters affect children, youth, and education systems [2]. Studies of natural disasters and the possible consequences of climate change show that 175 million children are at risk of natural disasters each year. About 38000 students and 1300 teachers and educators died during the 2010 earthquake in Haiti. In the 2008 earthquake in China, nearly 80% of educational institutions and offices of the Ministry of Education were destroyed with 4000 schools, about 10000 students were injured in their classrooms, and more than 7000 classes collapsed [3].

Some critical committees and programs of disaster management organizations, such as the HUGO International Program (2005-15) and the Sendai Framework Document (2015-30) under their working program deal with issues such as disaster risk management, investment to reduce risk of disasters for resilience, increasing disaster preparedness for effective response, rehabilitation, and community return to normalcy [4-6] to reduce the risk of disasters.

Schools as a social infrastructure are an integral part of society, and community resilience can be created in schools. Therefore, schools' resilience is a strategy to disaster consequences [7-9]. The term resilience is defined as the ability of a system, community, or community at risk to resist, absorb, replace, and reduce the hazard effect in a timely and efficient manner, to maintain and restructure its essential functions and structures [10, 11]. This definition can be used in the concept of disaster resilience in schools, which is the capacity of organizations and systems to start school education after a disaster [12, 13].

Schools are the link between students and residents of the surrounding community and are an excellent example of participatory education. Schools are involved in activities such as disaster education and disaster risk dissemination as initiators and facilitators. In other words, they are responsible for transmitting content of preparatory activities to parents and adults and ultimately to the community [14-16]. After disasters, schools play an essential role in bringing society back to normal. Regarding the distribution of schools throughout society, they are ideal places to provide shelter for the homeless and water, sanitation, first aid, medical care, and other emergencies [14, 15, 17]. The performance of a school creates a sense of normalcy for the community and helps people return to normal activities after a disaster [17].

In a study, Gwee et al. suggested that a comprehensive approach was needed to integrate disaster risk reduction activities into education at the national, local, and community levels. To do this, in addition to setting up a disaster training curriculum and informal activities, a statutory (rules and financial support) of structural and non-structural risk reduction, community participation, and other components must be considered. This research shows that school disaster resilience requires consideration of broader aspects and comprehensive resilience components [18].

Since the research team has not observed the systematic review on school resilience in disasters in both Iran and other parts of the world, this study aims to investigate the studies conducted in the field of schools' resilience in accidents or disasters. We intend to identify and extract the criteria of schools' resilience with an international approach and provide appropriate information for the authorities to reduce the risk of disasters.

2. Materials and Methods

Type of studies

All documents and articles, including original, short communication, letter to the editor, editorial, randomized controlled study, systematic review, as well as books and articles presented at international conferences and congresses, with the main research question and inclusion criteria, will be evaluated in this systematic review. Of course, all documents that are only in English and have been published until August 10, 2018, will be reviewed by the research team. Search syntax strategies will be defined based on the guidance of each database.

The inclusion and exclusion criteria

The inclusion and exclusion criteria will be based on the main research question "what are the components of schools resilience in accidents and disasters" and the standard guideline of PRISMA [19, 20]. To answer the systematic question of the dimensions and components of schools' resilience in emergencies and disasters, three keywords of "resilience", "disasters", and "schools" will be selected in the study. All articles related to school resilience in English are examined without time constraints and study design. Also, studies will be excluded that focus solely on the students' individual resilience based on resilience tools, psychological aspects after disasters, post-traumatic stress disorder in students, risk

management education, early post-disaster alerts, post-disaster health care in schools, post-disaster diseases, epidemiology of post-disaster morbidities and mortalities and society resilience.

Search methods to select the articles

First, the Scopus, Web of Science, PubMed, and Google Scholar websites will be reviewed. Then keywords are selected based on the MeSH website, expert opinions, and previous studies. The search strategy and terminology in examining the titles and abstracts are examined as follows: (Disaster* OR emergen*) AND (school OR kindergarten) AND (resilienc* OR risk). Finally, the list of references for selected articles will be reviewed in order not to be ignored in the final report.

Data collection

Selection of articles

All articles are transferred to the EndNote software. Then, all the recovered studies will be evaluated as follows:

1. Elimination of the duplicate and unrelated studies by examining the title;

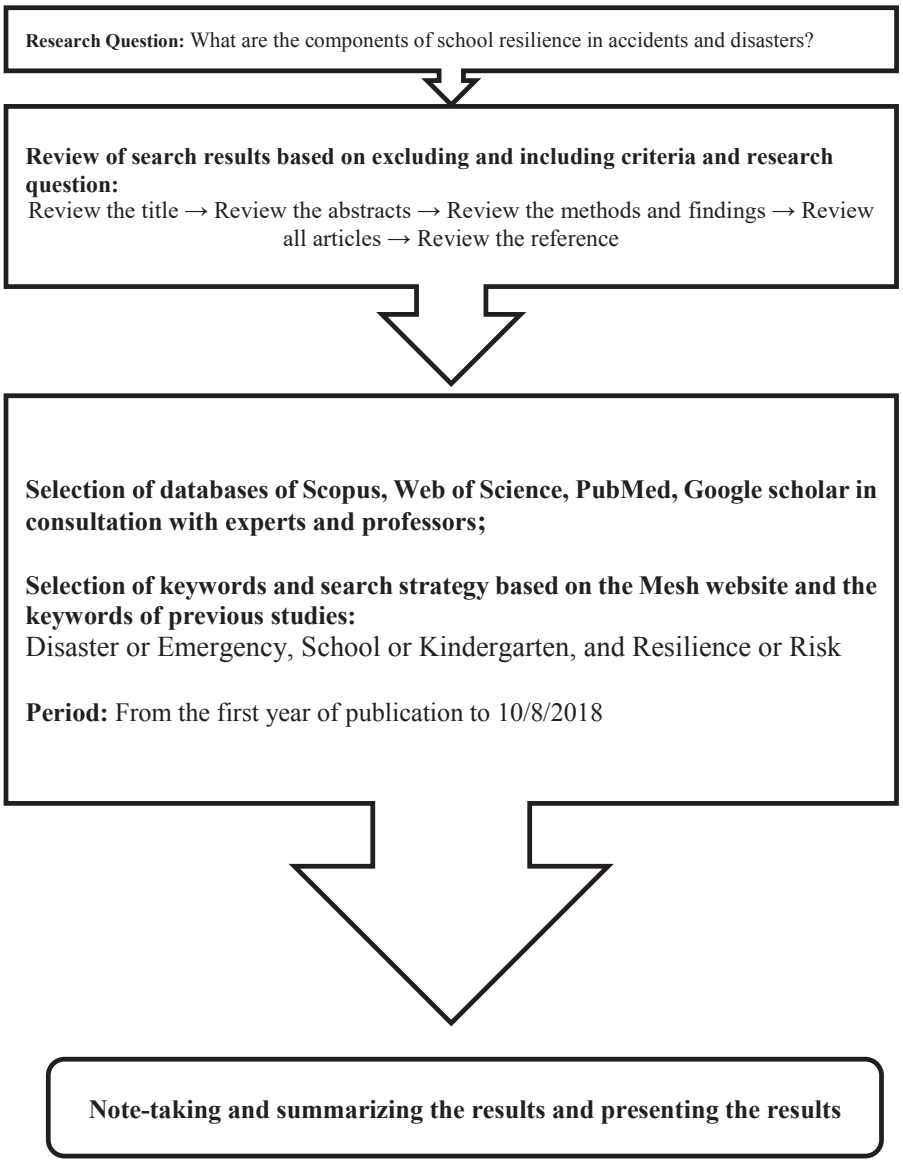

Figure 1. The process of reviewing articles and their selection

2. Elimination of the unrelated studies by reviewing the abstract;

3. Elimination of the unrelated studies by reviewing the whole text of the studies (if any) and using the inclusion and exclusion criteria by two independent researchers (one student and one supervisor).

The full text of the remaining articles will also be reviewed based on the PRISMA checklist. Two researchers independently examine the quality of articles, and in case of disagreement between the two researchers, the third researcher examines the article.

Data mining management

The search terms for each database are defined according to the research question and several survey discussions with the researchers. A specific strategy (syntax) for each main database, and keyword selection is used based on the number of non-duplicate indicators (NNR). Finally, the best syntax will be selected according to the index and entered into the EndNote software. The titles and abstracts are reviewed independently by two researchers to review the differences systematically. They review and encode complete articles and remove any articles that do not meet the inclusion criteria. Disputes will be resolved through discussion with other members of the group. The process of reviewing texts and selecting articles is presented in Figure 1.

Risk of bias

The selected articles will be evaluated by the PRISMA checklist. In addition, the quality assessment will be done by two authors, and then the articles will be chosen accordingly.

3. Discussion

Finally, the selected articles are analyzed by the content analysis method to extract schools' resilience criteria in accidents and disasters. The research results are a basis for decision-making in the field of health and the protectors of children and students to apply them in schools to prepare for threats. By increasing the resilience of educational places, students experience less damage during an disasters. Content analysis is expected to be done based on three areas and subareas of structural, non-structural, and functional.

4. Conclusion

A new perspective on the resilience of schools in disasters will be provided in a systematic review, and its terminology is defined in the field of disasters with multiple dimensions, as well as objective indicators in schools. These findings will be useful for managers and policymakers. It will clarify for them the conditions of disasters, the definition of school resilience in disasters, and the components and indicators that can be assessed to make schools resilient to risks.

Strong and weak points of the study

Since no study has so far addressed schools' resilience except for safety, this study will have a strong point as it examines schools from other dimensions of resilience, both functional and procedural. In the study of schools in the event of disasters, the structure or education alone has been studied to prepare schools for disasters. Still, this study has a more comprehensive view of school resilience and disaster preparedness.

Of the weaknesses of this research, we can point to the lack of access to the full text of the articles that have entered in the systematic review. However, the researcher can access these articles using the library resources of medical universities and direct communication with the corresponding author. In addition, despite the extensive search for English articles, some studies may be missed as they have the quality of a systematic review but in other languages without an English version. The research team has accepted and considered non English articles as a limitation. Another limitation of this study is the multidimensionality of the resilience, which we will use different experts in the team to solve this problem.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were considered in this article.

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Authors' contributions

All authors contributed in preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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