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Education as a Tool to Guard against Disaster and Emergencies

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Abstract

Both man-made and natural disasters have shown an upward spiral for the last two decades. Technological advancements have paved the way for the fabrication of new modules of appropriate education and frameworks to effectively deal with disasters. Consequently, the prevention of disasters helps in lessening the effects of different risks associated with different disasters. This study aims to review the importance of education and the effects of its different modules in strategizing to reduce disaster risks. Preparedness for disasters plays a pivotal role in saving the lives and properties of vulnerable people. Keeping this into consideration, some of the articles indexed in databases of Google scholar, Scopus, Science Direct, PubMed, and ProQuest were assessed. Additionally, more than 120 research articles were assessed to provide a comprehensive overview of the theme provided. Disaster education focuses on providing relevant knowledge in order to reduce the vulnerability of risks, hazards, and disasters. Disaster education is an operational and effective tool to manage risks both during and aftermath of a disaster. Disaster education is important for vulnerable people in order to learn about disasters and their management.

Keywords: Disasters, education, vulnerable people

Introduction:

Disasters and their effects are rising across the world and acquiring the appropriate knowledge are regarded as the most efficient and effective way to prevent disasters. Moreover, with the appropriate knowledge and advancement in technology, the effects of disasters get reduced. (Adiyoso and Kenagae, 2012). Education can play a pivotal role in reducing the negative effects of climatic events both directly and indirectly (Muttarak and Lutz, 2014). The communities and the strengthening of the communities are important in implementing mitigation measures and consequentially, it reduces the damage of disasters (Shiwaku and Shaw, 2008).

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Providing appropriate knowledge about disasters through disaster programs is an easy task and such programs can encourage people to update their information regarding disasters. The programs keep people aware and increase their knowledge about risk perception. As a result, the various teaching and learning approaches comprehensively help in achieving the goals of disaster risk reduction and culturally preparing people for disasters (Adiyoso and Kenagae, 2012).

Disaster education aims to provide appropriate knowledge to vulnerable people. The proper skills, motivation, and ability to take action are important frameworks to reduce the vulnerability of a disaster (Torani et al, 2019). The previous research has examined the significance of modules associated with awareness and preparedness. The relevant theoretical and practical perspectives have highlighted the importance of disaster education programs in schools and other institutions. It not only addresses the critical awareness of children but also changes their perception of preparedness (Adiyoso and Kenagae, 2012). Most disasters cannot be prevented but their consequences can be mitigated (O'Brien et al, 2006).

Learning skills and their practicality in education are taught in comprehensively mapping disaster-prone areas. The thematic field study provided an appropriate application for carrying out the mapping appropriately. Thus, to reduce the effects of earthquake disasters, it is important to assess preparedness and mitigation strategies. According to, 'Investigating the role of Geography education in enhancing earthquake preparedness: Evidence from Aceh, Indonesia,' by Furqan Ishak Aksa et al, in 2020, geography education and earthquake risk perception have a very proactive effect in enhancing the preparedness strategies of earthquake among college students (Aksa et al, 2020).

Natural disasters cause a great loss of both human resources and properties. "From 1996 and 2015, 1.35 million people have been killed by 7,000 natural disasters worldwide, of which 56 percent are victims of earthquakes and tsunamis (UNISDR and CRED 2016)." Furthermore, the study emphasizes the target of the sustainable development goals to minimize the number of victims of disasters vis-à-vis disaster education programs.

Materials and Methods:

Research articles from prestigious journals and websites during 2006-2020 were assessed. Different research sources were consulted to get relevant information regarding disasters and education. PubMed, Web of Science, Google Scholar, Scopus, and Science Direct were the databases that were consulted during the course of the study. The main keywords included *resilience, education, disasters, preparedness, and vulnerability*. Keeping the theme and the objectives of the study under consideration, the researcher consulted 120 relevant research articles. However, only 40 reference articles were considered so that duplication can be eliminated. Moreover, 30 references that didn't meet the inclusion index were excluded after further review of the literature. 10 articles were included in the study.

Vulnerability and education:

Knowledge and skills learned by children are sustained over time and can be passed on to future generations (Mudavanhu et al, 2016). Educate residents about the potential risks associated with floods and how to prepare for and respond to them (Bosschaart et al, 2016). Education and training can help individuals and communities prepare for and respond to disasters and can help ensure that evacuees receive the resources and support they need

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during an emergency (Brodie et al, 2016). Various indicators are put to use to assess community vulnerability, including demographic, socioeconomic, physical, and environmental factors. Communities that are more vulnerable to disasters are those that have limited access to resources, services, and support systems, and those that have a limited ability to cope with the impacts of disasters and emergencies (Morrow, 1999). Disaster education programs should be integrated into the broader education curriculum and they should be informed by the latest developments in disaster risk reduction and climate change adaptation and mitigation (Kagawa and Selby, 2012).

Though Poverty has been a big source of vulnerability to disasters. However, poverty alleviation is a well-considered tool to increase adaptive capacity. Education directly by its own right and indirectly can cause poverty eradication. Reduction in vulnerability and enhancement in adaptive capacity can be achieved by means of education. A country's vulnerability is intensified if it lacks education and awareness, has poor infrastructure, and unplanned settlements (Tuladhar et al, 2015). Apart from all associated factors, education has been an important tool to reduce vulnerability. Increasing socio-economic resources, the information can be accessed, and consequently, social capital can be improved. Facilitating education can project vulnerability reduction and adaptive capacity strategies in a positive light (Muttarak and Lutz, 2014).

Preparedness :

The prerequisites for preparedness are education and awareness because it provides not only formal means of strategies but also informal means vis-à-vis government and non-government organizations. The link between preparedness and education promotes demographic, social, and economic characteristics which proactively influence preparedness actions. Furthermore, the interaction between people in a community is of utmost importance because it fabricates the path toward the exchange of information in a well-crafted way. As a result, it helps in disaster preparedness so that the information flows to the grass root level (Muttarak & Pothirisi, 2013). Education and training are effective tools for increasing disaster preparedness by increasing knowledge and awareness about the dangers of earthquakes and the appropriate response measures (Izadkhah and Hossieni, 2007).

Disaster Resilience:

Education provides communities with the tools they need to reduce their exposure to hazards and increase their resilience in the face of disasters and emergencies (Morrow, 1999). Redundant system, resourceful capabilities and efficient communication systems have the capability to organize resilience strategies coherently (Kapucu and Khosa, 2015). Educational institutions need to modify their strategies toward a sustainable and resilient approach to disasters because education reduces the extent and magnitude of disruptions associated with a disaster (Barkhe and Smith, 2009). Disaster management infused with all the resilience approaches has gained importance in recent times. Disasters are catastrophic events in extreme cases and can cause multiple disruptions from social, economic, and environmental viewpoints. A resilient community can bounce back after an extreme weather event or a man-made disaster because resilient communities incorporate preparedness and mitigation strategies in a community. Educating children about disaster risk reduction is crucial for building community resilience and reducing the impact of disasters (Mudavanhu et al, 2016).

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Resilience provides a picture of holistic risk management which includes the modules of climate change mitigation, hazard mitigation, and sustainable human development. Resilience considers needs and vulnerabilities and appropriate adaptive capacities to deal with any crisis (O'Brien et al, 2006).

Conclusion:

This paper reviewed the role of education in reducing the vulnerability posed by natural disasters. The literature reviewed highlights the importance of education in disaster risk reduction and preparedness. A few studies have demonstrated that disaster education programs can increase disaster preparedness among schoolchildren and vulnerable populations, including older adults and children. These programs aim to provide the knowledge, skills, and attitudes necessary to reduce the risks posed by natural hazards and emergencies. Studies have evaluated the effectiveness of disaster education programs through assessments of knowledge, attitudes, and behaviours related to disaster preparedness. Some studies have used case studies of natural disasters, such as the 2012 Indian Ocean earthquake in Thailand, to examine the role of education in disaster preparedness. These studies have shown that education can play a crucial role in increasing awareness, reducing vulnerability, and improving disaster resilience.

Additionally, the literature review includes studies on the development and implementation of disaster risk reduction education programs, including interdisciplinary approaches and community partnerships. These approaches recognize the importance of collaboration between educators, communities, and disaster management organizations in promoting disaster resilience.

Overall, the reviewed literature supports the conclusion that education is a powerful tool for reducing the risks posed by disasters and emergencies and increasing resilience. However, further research is needed to fully understand the role of education in disaster risk reduction and to develop effective education programs. The results revealed that exceptional consciousness be given to disaster education as far as vulnerable people are concerned. Exceptional training should be provided to disaster vulnerable groups after vividly identified. Because training can help to prevent and mitigate the effect of disasters. People after getting appropriate training can themselves as well as others also. Financial loss due to disasters is an important issue which is least emphasized can also be reduced if there is training. Thus it is important to plan and design comprehensive educational programs for vulnerable people.

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