Research Article

Knowledge among adolescents regarding disaster preparedness, with a view to develop information booklet

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ABSTRACT

Background: Growing frequency and higher intensity of the various types of a natural disaster such as landslides, earthquakes, flood, cloudburst, forest fire, and lightning have been recognized to cause major losses of human life, property, resources, and environment in India. Disaster situation cannot be prevented, but the losses due to disaster can be minimized with adequate preparedness. Adolescents can share learning to their friends, families, and communities so that it is essential to meet their educational need to optimize the quality of life. **Objective:** The objective of this study was to assess the level of knowledge regarding disaster preparedness and develop information booklet. **Materials and Methods:** A cross-sectional survey method with quantitative approach was undertaken for the study. A total of 200 school-going adolescents were conveniently recruited from selected schools. **Results:** The statistical finding shows that the overall mean awareness score of the study participants was 11.29 ± 3.26. Percentage distribution of knowledge level shows that majority (73.5%) of adolescents had moderately adequate knowledge and 23.5% of them had inadequate knowledge, whereas only 3% of adolescents had adequate knowledge on disaster preparedness. **Conclusion:** Findings of the study conclude that the knowledge of adolescents regarding disaster preparedness was moderately adequate. Therefore, the study brought a need for further teaching of the adolescents regarding disaster preparedness.

KEY WORDS: Knowledge; Disaster Preparedness; Adolescents; Information Booklet

INTRODUCTION

"Disaster is an adverse situation that far exceeds the capabilities".

Disasters are not restricted to a particular area of the world: It can occur at anytime and anywhere. Emergencies do not only affect the health and well-being of individuals; often, a huge number of people are displaced, injured or killed, or subjected to a great risk of epidemics.[1,2]

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Remarkable increases have been noted in recent years in the frequency and impact of the hazardous natural disasters in the world. Although one of the reasons is excessive use of nature and environment by the people, the other causes are inherent nature of the earth.[3] Children's, older adults, women, and underprivileged people are considered as most susceptible community members because they do not have adequate capacity as well as resources to overcome from the effects of disaster.[4]

Capacity building among vulnerable communities is directly proportional to the degree of risk reduction. For creating understanding regarding the prevention of various natural as well as manmade disasters, preparedness plays a very significant role by which the rate of damages and losses may be lessened and even entirely be prevented.

As per 2016 data, available from CRED shows that the 8733 people killed by various disasters globally and Asia

was estimated most often hit (46.7%) region. The estimated economic loss from natural disasters was US$ 153.9 billion. The report also revealed that floods killed the 4731 people; earthquakes killed 1315 people, and death due to landslides was 361.[5]

Keeping in view of above findings and the investigator's own clinical observation, in which investigator noticed that generally people are unaware of disaster preparedness that leads to significant hazards to the population, and also no such study has been conducted among adolescents on disaster preparedness so far in this area. Capacity building among the community people, especially among the youth, can provide the confidence to deal with disaster situation because youth is considered as the most receptive group, and they can share this valuable information's to their families, friends, as well as community and can contribute toward effective disaster preparedness plan to prevent potential effects of disaster.

Purpose

The purpose of the study is to improve the knowledge of adolescents about disaster preparedness by providing information booklet, which would help them to contribute toward effective disaster preparedness plan and prevent effects of the future disaster.

Rationale

Educating the general public regarding disaster preparedness is an important part of systematic efforts to increase resilience to disaster so that the occurrence of future disaster can be managed effectively.

Objectives

The objectives of this study were as follows:

1. To assess the level of knowledge regarding disaster preparedness among adolescents
2. To find out the association between knowledge score with selected demographic variables among adolescents
3. To develop information booklet regarding disaster preparedness.

MATERIALS AND METHODS

A cross-sectional survey method with quantitative research approach was used as one point data collection was done. A total of 200 school-going adolescents of the 9th and 11th standards were selected by convenient sampling technique from schools of Doiwala and Raipur Blocks, Dehradun district, Uttarakhand. Before the commencement of the study, formal ethical and administrative permission was obtained from concerned authorities. Moreover, prior written informed consent was taken from parents, and during data collection, assent of the adolescents was obtained. Data were collected using structured knowledge questionnaire. Analysis was done using SPSS version 20 and for quality check manual, calculation was done. Information booklet was developed by the researcher, validated from the experts, and distributed to adolescents based on their learning need identified.

RESULTS

Data presented in Table 1 show that almost more than half of the adolescents (55%) were aged between 13 and 15 years, more than half (53.5%) of adolescents were female, about

Table 1: Frequency and percentage distribution of demographic profile of adolescents (*n*=200)

Variables	Frequency (%)
Age (years)	
13–15	110 (55)
16–18	90 (45)
Gender	
Male	93 (46.5)
Female	107 (53.5)
Educational status	
9th Standard	92 (46)
11th Standard	108 (54)
Type of house	
Pucca	162 (81)
Semi-pucca	18 (9)
Kutcha	20 (10)
Permanent residential place	
Plains	49 (24.5)
Hilly	151 (75.5)
Number of people living in house	
3–7	167 (84)
8–12	33 (16)
Previous exposure to natural disaster	
Yes	64 (32)
No	136 (68)
Types of disaster	(*n*=64)
Earthquake	51 (79)
Cloud burst	04 (6)
Landslide	01 (2)
Flood	05 (8)
Forest fire	03 (5)
Previous knowledge about management of natural disaster	
Yes	169 (84.5)
No	31 (15.5)
Source of knowledge	(*n*=169)
Internet	11 (7)
School	122 (72)
Television	31 (18)
Radio	05 (3)

54% of adolescents were studying in the 11th standard, most of (81%) adolescents were having pucca house, majority (75.5%) of adolescents were living in hilly area, most of (84%) were having three to seven members in their family, one-third (32%) of adolescents were previously exposed to natural disaster, and majority (79%) of them faced earthquake previously. Most of (84.5%) adolescents had previous knowledge about management of natural disaster and majority (72%) of them got the information from school.

The statistical finding shows that the overall mean awareness score of the study participants was 11.29 ± 3.26. Hence, it was inferred that mean percentage of knowledge score was less than half (41.81%).

Figure 1 presented mean knowledge score regarding disaster preparedness according to domains which revealed that knowledge score was highest in general information about disaster (4.42 ± 1.26) and lowest in disaster risk perception (0.49 ± 0.64). Hence, it was interpreted that all four domain knowledge scores were not satisfactory.

Percentage distribution of knowledge level illustrates that majority (73.5%) of adolescents had moderately adequate knowledge and 23.5% of them had inadequate knowledge, whereas only 3% of adolescents had adequate knowledge on disaster preparedness.

There was a significant association between mean knowledge score with selected demographic variables, i.e., educational status was significantly associated with mean knowledge score with calculates χ^2 value 5.77 which was statistically significant at $P < 0.05$. Further, it could be interpreted that the higher the educational status of adolescents was better the knowledge of disaster preparedness.

DISCUSSION

Disaster is a crisis event that results in great damage to property as well as loss of human life and resources.

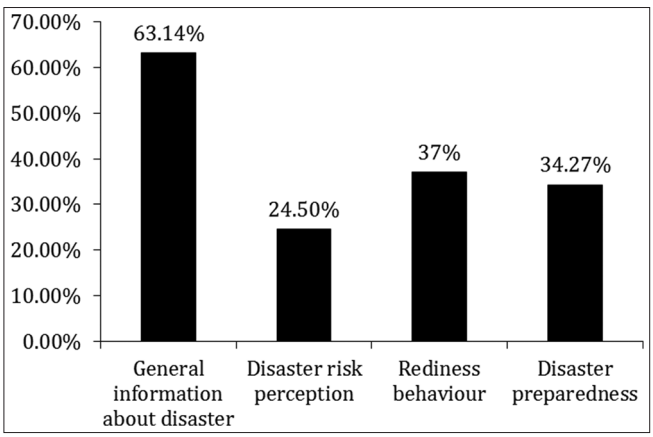

Figure 1: Mean knowledge score regarding disaster preparedness according to domains (n=200)

Incidence of disasters is increasing at alarming rate in the developing countries. Disaster situation cannot be prevented, but the losses due to disaster can be minimized with adequate preparedness. Adolescents can share learning to their friends, families, and communities so that it is essential to meet the educational need to optimize the quality of life. The purpose of the study was to assess the knowledge of adolescents regarding disaster preparedness and improve the knowledge of adolescents regarding disaster preparedness by providing information booklet which would empower them to be prepared for the future incidences. The content validity of the adopted tool was established by validators' agreements. The validated tool was given to language expert for translation and the language validity was determined by the retranslation. Pretesting of tool was done on five adolescents of government higher secondary school Doiwala, Dehradun. Reliability of the knowledge questionnaire was determined by the test-retest and Pearson's formula on 20 adolescents of government intercollege Bullawala, Dehradun, and the reliability score attained was $r = 0.91$. Pilot study was done on 20 adolescents of government inter college Badowala, Dehradun. The pilot study did not show any problem and the research tools were found to be feasible, practicable, and acceptable. Data collection was done in the month of December 2017 using a structured questionnaire. Information booklet on disaster preparedness was distributed to 200 study participants. Analysis of the obtained data was done according to the objectives of the study. Both descriptive statistics and inferential statistics were used for analysis and interpretations.

Description of Demographic Profile of Adolescents

In the present study, it was seen that more than half (53.5%) of adolescents were female. Result of the study was consistent with the case study on "the role of education on disaster preparedness" conducted by Muttarak and Pothisiri, at Thailand. Result of the study shows that more than half (54.9%) of the study participants were female.[4] On analysis of data, it was seen that one-third (32%) of adolescents were previously exposed to natural disaster. Findings of the study were consistent with the cross-sectional study on "demographic determinants of disaster preparedness behaviors" conducted by Najafi *et al*., at Iran. Results of the study show that 41.6% of participants had previous disaster experience.[5]

Level of Knowledge Regarding Disaster Preparedness among Adolescents

Findings of the present study illustrate that the overall mean knowledge score of the study participants was 11.29 ± 3.26. The result was consistent with a cross-sectional study on assessing household natural disaster preparedness conducted by Mahdaviazad and Abdolahifar, at Iran. Findings of the

study revealed that the overall mean scores were 7.3 ± 2.0 for knowledge regarding disaster preparedness.[6] In the present study, findings show that majority (73.5%) of adolescents had moderately adequate knowledge and 23.5% of them had inadequate knowledge, whereas only 3% of adolescents had adequate knowledge on disaster preparedness. The findings of the study were consistent with a cross-sectional study on "knowledge regarding disaster preparedness," conducted by Saxena *et al*.,[7] at Indore. The findings of the study revealed that around 60% of samples had average knowledge; one-third (34%) had good knowledge, whereas 6% had poor knowledge.[8]

Association between Knowledge Score with Selected Demographic Variables among Adolescents

The present study revealed that there was a significant association between mean knowledge score with selected demographic variables, i.e., educational status was significantly associated with mean knowledge score with calculates χ^2 value 5.77 which was significant at $P < 0.05$. The result was consistent with a quasi-experimental study on "effectiveness of planned teaching program regarding disaster and disaster preparedness in terms of knowledge" conducted by Singh *et al*.,[9] at Ambala. Results of the study showed that educational status was significantly associated with knowledge of school-going children regarding disaster and disaster preparedness with χ^2 value 51.87 which was significant at $P \leq 0.05$.[10]

Strength

Enhancement of knowledge, skill, and values about disaster and its preparedness at individual, family, and community level is the most urgent need to reduce the losses.

Limitations

1. Study design was confined to survey method only.
2. Samples had previous knowledge regarding management of natural disaster.

CONCLUSION

Based on the findings of the study, it can be concluded that the knowledge of adolescents regarding disaster preparedness was moderately adequate. Therefore, the necessity is to enforce preparedness and the ability of people in a community to deal with and manage the consequences of the disastrous events which will safe community people life. The present study brought a need for further teaching of the adolescents regarding disaster preparedness.

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