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Development of Disaster Management Awareness Project and Disaster Education for the Students of Higher Secondary School in India

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Abstract

Prevention is more comfortable than treatment, a new saying that emergency prevention is beneficial and relevant. It is clear from the reality that disaster preparedness prevention and investment will save thousands of lives, critical economic properties, livelihoods and reduce the total cost of disaster relief. At this stage, the role of education and schools in mitigating the likelihood of disasters becomes highly significant. Therefore, showing the extent of knowledge of the person regarding disasters is both the first step of the studies to be carried out on this topic and significant addition to social disaster management studies. This paper aims to illustrate the development of disaster management awareness projects and disaster education for higher secondary school students in India.

Keywords: Disaster Management Education, Disaster Management Awareness Project, Awareness Level, Higher Secondary School Students, Status of Formal Education on Disaster Management in India.

Introduction

If one claims that even a single day is not passing without the news of disasters, in the form of flooding as in Maharashtra or earthquakes as in Nepal or the like, it won't be exaggerating. These calamities may be attributed to natural factors such as extreme rain or earthquake, where man's carelessness may be responsible, as sure others may. Given the magnitude and destruction incurred by these events, emergency management has become increasingly concerned around the globe with the expectation that more will be done about these disasters to mitigate, if not avoid, the damage.

There are currently no environmental catastrophes. Hazards such as earthquakes, cyclones, rain, and tsunamis are produced by design. When human lives or economic investments are placed in areas prone to specific natural hazards, these hazards transform into disasters. A disaster is an unfortunate event that has a detrimental effect on humans' everyday lives and

working environments and flora/fauna from natural or human-made causes (or a mixture of both). The Centre for Catastrophe Epidemiology Research (CRED) in Brussels, Belgium, uses an updated description, “A disaster is a situation or event that requires the local capacity to request external assistance at the national or international level.” According to CRED, an event is defined as a disaster if more than ten persons have been killed/impacted or displaced by more than 100 people.

Disasters trigger a disturbance in the usual rhythms of existence, whether for the nation, state, or family, whatever the cause and background. Disasters often set back a century of families and countries in terms of their economic growth. The scenario of increased awareness and rising threats thus poses the issue of what organizations and individuals can do to avoid or decrease

The 1990-99 decade was proclaimed by the United Nations as the International Decade for Natural Disaster Mitigation with the primary goal of concentrating on disaster response preparation to deter, minimize, mitigate, brace, and adapt to the loss of life and property related to natural disasters.

SAARC has established a system for the treatment, safety, and involvement of children in disasters to illustrate the critical problems in legislation, plans, services, and initiatives in all related fields, including disaster prevention and emergency management in South Asia. The authorities should have appropriate guidelines to increase children’s participation in disaster management (CBSE,2008).

A classroom most frequently becomes a temporary refuge for the casualties after a catastrophe strikes. The teachers and students have to assume a rescuer position or provide first aid as an immediate reaction. For those who faced catastrophic losses during the disaster, they would be the most successful trauma counselors. There is also a need for skill-based instruction in the school in many areas of disaster resp.

Disaster management is a field for serious study, including Grosskopf (2010) on the need for post-disaster recovery and restoration protection preparation, Fahrudin (2011) on the value of preparing social work students for disaster work, and Ganadevan and Selvan (2012) on the alienation of students impacted by natural disasters.

Disaster Prevention requires several activities that establish disaster/emergency coordination and include a mechanism to support citizens’ prevent, mitigate or rebound from a disaster’s effects. These activities can be linked to preparedness, preparation, emergency response, rescue, and recovery, which may be carried out before, after, or after a disaster (UN ISDR, 2002).

For every country’s well-being, persons with the right form of awareness of disasters and disaster management are essential. In many situations, the lack of proper understanding

among citizens exacerbates the disaster's effect, rendering it impossible for the authorities to tackle the emergency. A report on disaster management secondary school students' awareness may shed light on Government and Non Governmental organizations' plans and policies regarding disaster management.

Why Disaster Management Education?

There are different forms of the school system in India, according to India's UNCRD (2008) program, the Central Board of Secondary Education, State Education Boards, the Council for Indian School Certificate Exams (CISCE), National Open Schools, and Foreign Schools. According to the new government census, there are 1,124,033 schools in India, around one-third of the population. It is about time that 34 percent of the country's potential generation have been trained to battle future disasters, with almost 85 percent of the land region vulnerable to catastrophe. GOI advised the numerous school boards, the Ministry of Human Resource Development to integrate Emergency Management into the school curriculum.

In addition to classes, there is tremendous potential in our colleges and universities for emergency education. With developments in information and technology, online and distance learning education also has immense potential.

Each nation is at risk of exposure, whether natural or human-made, to any form of catastrophe. It must educate its people about the numerous disasters for each country to plan for some disaster. Area people will need to be mindful of how they can actively engage in emergency preparedness, reducing the possible consequences of a disaster, and the post-disaster recovery phase. The conduct of education and public health programs at the local community level is one of the most important mechanisms for a nation to plan for a catastrophe. Public literacy of emergency prevention is a way of informing and inspiring the community by exchanging expertise and details as broadly as possible about the different kinds of disasters and their future risks such that citizens respond accordingly when a disaster occurs.

Why Disaster Management Awareness Project Required for the Students of Higher Secondary School

India is vulnerable to a vast range of natural and human-made hazards of differing degrees. 58.6% of the landmass is susceptible to earthquakes of moderate to very high intensity. More than 40 million hectares (12% of the land) are susceptible to flooding and river erosion: nearly 5,700 km of the 7,516 km long coastline are susceptible to cyclones and tsunamis; 68% of the cultivated area is susceptible to drought, and landslides, and avalanches are at risk. Chemical, medical, radiological, and radioactive (CBRN) hazards/crises are also susceptible.

Disaster education is recognized as an essential element of sustainable development by the "United Nations Educational, Scientific and Cultural Organization (UNESCO)" as it hastens societal progress towards disaster resilience. Our government has spent a lot of resources on relief and rehabilitation measures when a disaster strikes. We can save all these resources and thousands of lives by educating a generation. It's safer, then, to suggest that prevention is more comfortable than treatment. In line with recent demands for disaster management education, the curriculum should be revised. In this respect, a life-oriented approach can allow students to apply directly to their lives.

Disaster Management Awareness Project for School and Higher Secondary Schools in Other Countries

Education linked to disasters is given in several sections of the world. Primary-level disaster response education is supported by nations such as Canada, Japan, China, Bangladesh, Kenya, Indonesia, Thailand, Africa, and Latin America. They make information kits and strategies for school students and the public. There are some examples:

- In South Africa, there is no national curriculum directly dealing with disasters; however, as different governments undertake relevant educational programs, these curricula deal with life and safety education and prevention of abuse. Songs are used to show younger kids the essentials of defense.
- Senior middle schools have a recommended manual on natural hazards and their prevention in China.
- In Japan, emergency education is a concern for the nation. In a multitude of respects, adolescents grow up witnessing people practicing civil duty. Tiny red buckets of water are kept outside the front door in suburban areas and modern homes as a legacy of the typical fire brigade culture, which has persisted since the 1700s in many communities. In Japanese classrooms, emergency preparedness and preparation are learned utilizing lectures.
- Sixteen distinct curricular structures in Germany entrust sub-national states with responsibility for schooling. The textbooks concentrate on regions of the world in danger, the natural cause for the risk, and the threat's environmental effects. Teachers aim to make students alert to the difference between a natural accident and a catastrophe and explain the need for an early warning mechanism for disaster management. The schools carry out voluntary lessons. A community of students is involved in fieldwork in their area surrounding earthquakes and floods.
- In Algeria, learning about natural disasters is at the pace of one lesson per year by tales. The training becomes more formal in the pre-university years, geology, plate tectonics, and earthquakes are introduced to pupils again.
- Disaster Preparedness Day in schools is held in Jamaica. As the latter month signifies the beginning of the hurricane season, these activities occur in January and June. Disaster preparedness is incorporated at primary, secondary, and tertiary levels of the curriculum

for multiple topics. School children compete in a creative disaster-themed cuisine competition held at the annual Independence Festival last year. Using only the ingredients that will be usable during a tragedy, children cook meals. In Jamaica, in June each year, an annual danger awareness month is held. Schools are urged to make their students more conscious of the types of threats facing Jamaica on this day and engage them in danger recognition events such as developing original pieces in art, drama, song, and poetry to communicate themselves regarding their vulnerability to disasters.

As is apparent, numerous countries have diverse methods of informing people about disasters. Every mode's key objective is to reduce the effects of disasters. It is important to remember here that schooling in disasters is not only an intellectual activity. It has several advantages and can differentiate between life and death, economic growth and suffering, sustainable development, and environmental destruction.

Objectives

1. To explore the level of knowledge among secondary school students from Godhra, Gujrat regarding disaster management
2. To decide if there is a substantial average difference in knowledge of disaster management within related subgroups based on gender, locality and disaster experience.

Hypothesis

1. There is no substantial variation in disaster management knowledge among the related sub-groups based on ethnicity, locality, and disaster experience.

Method

Participants

For the conduct of the research, the survey approach was used as the goal of the study is to explore knowledge among secondary school students regarding disaster management. Some secondary school students from Godhra - Gujrat state are the community under study, and the study was performed on a sample of 500 students.

Instruments

1. Disaster Management Understanding Exam, which comprises 50 multiple choice elements on four areas of disaster management, General Disaster Awareness, Specific Disaster Management Framework Skills, Disaster Management Protection Steps and Disaster Management Stages. For the right answer, a score of 1 is granted and 0 for the wrong one. The gained reliability coefficient of the research retest is 0.65 and the material validity of the test was calculated.

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2. Personal Data Sheet: This method was used to gather personal details such as sex, class, locale and other sensitive information necessary for the analysis.

Results and Discussion

"Mean, median, mode, standard deviation, skewness, and kurtosis" were assessed to understand the level of understanding of disaster management among secondary school students. In Table 1, the specifics of the figures are provided.

Table 1.Descriptive Statistics of Awareness on Disaster Management among Secondary School Students

Sample	Mean	Median	Mode	S D	Skewness	Kurtosis
Size 500	14.3	14	13	4.478	-0.09	-0.05

Here, the three indicators of core pattern, mean, median and mode of disaster management variable understanding are almost identical. The degree of skewedness is -.09. This indicates that the distribution is slightly biased adversely. The kurtosis indicator is -.05, which is a very low value that means that the curve is mildly leptocurtic. But because these values are very small, it is necessary to consider the distribution as symmetric and mesokurtic.

A frequency curve histogram is given as figure 1 to get a clear understanding of the variable distribution.

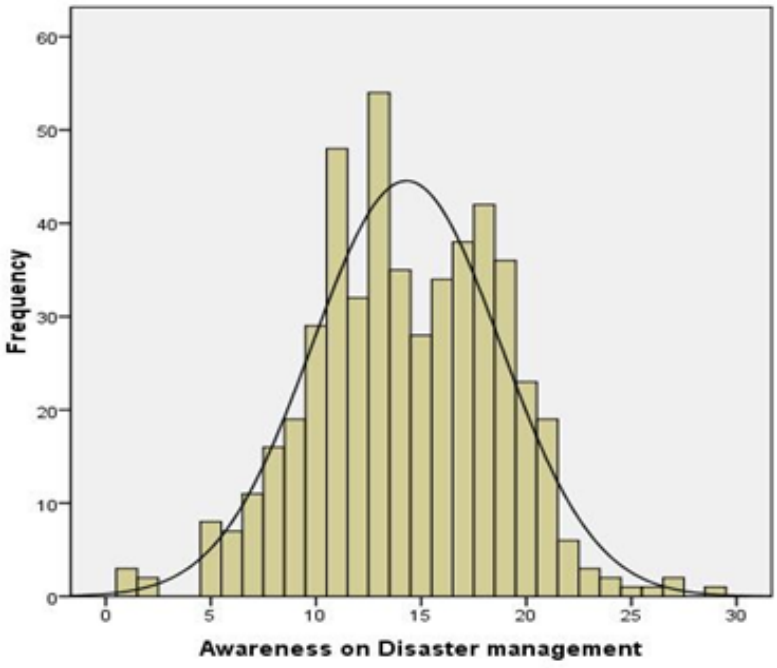

Figure 1.Frequency curve of the variable Awareness on disaster management

The statistics obtained and the frequency curve drawn indicate that the portion of disaster management awareness is almost normally distributed among Godhra - Gujrat state secondary school students, but the values vary from 0 to 30, with a maximum score of 50.

When the mean value obtained is compared to the average test score, 22.5 using the single sample t test, the main ratio obtained is 40.94, suggesting that the mean score obtained differs considerably from the average test score (p ⁇ 0.01), and the low mean score implies a lower degree of awareness of disaster management among Godhra-Gujrat secondary school students.

Comparison of Mean Emergency Management Exposure Ratings by Gender and Practice

Mean disaster response exposure ratings for subgroups, boys and girls; and students who have witnessed disasters and those who have not been contrasted and the findings are shown in Table 2

Table 2.Mean, Sd and 't' value of Awareness on Disaster Management by Gender and Experience

Variable	Category	N	Mean	Standard Deviation	Critical Ratio
Awareness on Disaster Management	Boys	281	13.41	4.24	5.22**
	Girls	219	15.47	4.5	
	Experienced disaster	157	12.61	4.65	5.93**
	Not experienced	343	15	4.2	

**p≤ .01

In both instances, the t-values obtained indicate that there is a substantial gap (t=5.22, p≤ .01) in the average crisis management knowledge scores between boys and girls; and between students who have witnessed the disaster and those who have not (t=5.93, p≤ .01). That is to suggest, the gender gap in disaster management knowledge is important. For girls, a higher average score suggests that girls are more conscious of emergency prevention than boys at secondary school. This may be related to the role performed by men and women in home relations. Relative to men, women are more involved with family issues and may gather more knowledge about family security. The mean comparison of disaster management knowledge among secondary school students who have experienced disasters and those who have not experienced disasters shows that for the second category, the mean score is higher than predicted. That is, relative to those who witnessed a catastrophe, a higher mean score for students who have not experienced any disaster indicates that witnessing any sort of disaster in their life would not necessarily render them conscious of disaster preparation, preparedness, and strategies. This could be attributed to people's general attitude that it is the government's responsibility to preserve people's life and property, and people have no serious part in this. But, as in the event of a tragedy, this mentality would not effectively manage emergency conditions.

Status of Formal Education on Disaster Management in India

(i) Central Board of Secondary Education

The Central Board of Secondary Education (CBSE) has included a short course on disaster management in the school curriculum in its first attempt by an educational institution in the world, according to India's UNCRD (2008) program. In the region, about 7300 schools adopt the CBSE curriculum, and approximately 900,000 children are enrolled. The board has its schools in the Gulf and several nearby nations, such as Nepal, Bangladesh, and Far East Africa, apart from India. A short overview of the material of the course is:

- Class VIII reflects on preparedness steps to be implemented regarding multiple disasters by students and staff.
- Class IX concentrates on methods of prevention.
- Class X reflects on the role of government and other organizations in crisis relief, the role of science and technology in disaster management, and the implementation of children's charitable activities.
- Class XI (Sociology) reflects on gender and child rights in disaster management and the role of the culture in disaster management.
- Class XI (Geography) relies on the notion of multiple dangers.

(ii) State Education Boards

Different state governments are incorporating disaster management in school education, as proposed by the Government of India's Ministry of Home Affairs. As compiled by the Ministry of Home Affairs, the status of disaster education in various states under the State Education Boards is provided below:

a) **Maharashtra State:** The Ministry of Education has started integrating disaster management into the curriculum of colleges.
b) **Gujarat State:** Textbooks have been drawn up for Classes VII, VIII, and IX on disaster management.
c) **Tamil Nadu State:** The curriculum for the course has been drawn up and will soon be integrated.
d) **Orissa State:** The Orissa State Disaster Mitigation Authority (OSDMA) for students has introduced "Bipati Biparjayao Surakhya" or "Disaster Risk Safety." A chapter on disasters was included in the Orissa Board of Secondary Education
e) **Bihar State:** Disaster Relief by Sarva Shiksha Abhiyan has been taken forward. From class V onwards in Social Science, the Government of Bihar has introduced Disaster Management into the course curriculum, and the textbook is being produced.
f) **West Bengal State:** The Municipal Corporation of Kolkata is initiating a disaster management course in the municipal council's schools.

g) **Jharkhand State:** As part of the topic of the social sciences, the state government of Jharkhand included a textbook on disaster management in the class IX syllabus.

Non-Formal Education

According to the India UNCRD (2008) program, under various schemes such as "NCC (National Cadet Corps), NSS (National Service Scheme), Scouts and Guides, National Yuva Kendras (NYKs), Civil Defence, Sainik Board," etc., disaster management training has been included in the security training of student cadets in India under the following schemes:

a) **Tamil Nadu State:** The National Service Scheme Project Officers were known as Cuddalore District Master Trainers and were sensitized to disaster management. In exchange, the Master Trainers arranged a sensitization training program for all the NSS Program district officers and coordinated the NSS volunteers' sensitization program in their respective schools in the Cuddalore District. During February 2006, NSS, NCC, Scout & Guides Project Officers from vulnerable districts of Tamil Nadu were educated in disaster management at the Anna Institute of Management in Chennai.
b) **Gujarat State:** The Gujarat State Disaster Management Authority (GSDMA) has completed a two-year Gujarat School Safety Initiative-I (GSSI-I) project to foster disaster safety culture in selected 150 schools in the Ahmedabad, Vadodara, and Jamnagar districts in association with SEEDS. In Jasani hospital, Ahmedabad, 500 NCC Girl cadets training cadets for first aid, search and rescue, and Ham radio was arranged.
c) **Maharashtra State:** To build knowledge among students, an essay competition was organized in Maharashtra's Dhule district. The competition included about 180 pupils.
d) **Uttranchal State:** NSS volunteers are being educated in first aid, search and rescue and planning evacuation measures at secondary and senior secondary school levels.
e) **Assam State:** In Nagaon district, in collaboration with the Commander of the 8th Assam Battalion, 1800 NCC cadets were sensitized to DRM activities.
f) **Kerala State:** Approximately 170 volunteers were sensitized in two different disaster response initiatives in Kozhikode, including first aid and searched and rescue principles, the country's vulnerability profile, the national industry, and the need for preparedness, 120 from the National Service Scheme and 50 from Nehru Yuvak Kendra Sangham (NYKS)
g) **Tripura State:** Training has been started for 250 NSS officers and volunteers in Agartala Town.
h) **State of Himachal Pradesh:** Under the SESIS (School Earthquake Protection Initiative Shimla) scheme, students from 20 schools were made aware of the possibility of earthquakes and were trained in first aid, fire safety, search and rescue, etc., as part of a SEEDS project sponsored by the European Commission & Christian Aid.

Conclusion

Prevention is more comfortable than treatment, a new saying that emergency prevention is beneficial and relevant. It is clear from the reality that disaster preparedness prevention and investment will save thousands of lives, critical economic properties, livelihoods and reduce the total cost of disaster relief. At this stage, education and schools' role in mitigating the likelihood of disasters becomes highly significant. Researchers and decision-makers worldwide have also recognized the value of education in fostering and facilitating Disaster Risk Mitigation (DRR). In doing so, there is a renewed emphasis in primary and secondary schools on disaster risk education. Mainstreaming DRR into school curricula seeks to increase knowledge and provide students, educators, and families with a greater understanding of emergency management. Now with several colleges providing Disaster Management courses and the openings of job opportunities in different organizations, it is high time that more and more students are inspired to enter these courses and render their profession in the highly competitive sectors and socially extremely satisfying. There is already a lot of space for progress in higher education and research-related practices from the perspective of education, potentially contributing to catastrophe risk mitigation.

The analysis therefore observed that in secondary school students from Godhra do not have an adequate degree of knowledge of disaster management (Mean=14.30). In the overall awareness ratings on emergency recovery, boys and girls vary substantially ($p \leq .01$). In the mean disaster management awareness scores, coastal region students vary significantly from urban and rural students ($p \leq .01$); rural and urban students may not differ significantly in the mean disaster management awareness scores, however there is a substantial mean gap in disaster management awareness between high school students who have experienced disasters and those who have experienced disasters ($p \leq .01$). These results show that there is an immediate necessity to make students knowledgeable of emergency management because school students are the strong driver for disaster risk avoidance, preparedness and mitigation. They should be viewed as the social components that can distribute the data to the broader community.

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