

# AWARENESS ABOUT DISASTER MANAGEMENT AMONG MIDDLE SCHOOL STUDENTS: A PILOT STUDY OF EIGHTH STANDARD LEARNERS

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## *Abstract*

*Disaster management education is essential to equip young learners with the knowledge and preparedness necessary for reducing vulnerability during emergencies. This pilot study investigates the level of awareness among 8th standard students regarding disaster management, using a structured questionnaire addressing various domains such as preparedness, response, and emergency planning. The study collected responses from students on 45 key indicators and associated demographic factors. Descriptive statistics and hypothesis testing were employed to explore the relationship between variables like gender, previous disaster experience, and access to preparedness resources. Results revealed a moderate level of awareness, with significant differences observed in preparedness levels among students with previous disaster experience. These findings underline the importance of integrating disaster education in school curricula and developing age-appropriate, practical interventions to build resilience in youth.*

**Keywords:** *Disaster preparedness, awareness, school students, emergency planning, disaster education, pilot study*

## INTRODUCTION

Disasters both natural and man-made pose significant threats to human life, infrastructure, and socio-economic stability. Children are among the most vulnerable groups in such situations. Given the increasing frequency and intensity of disasters due to climate change, urbanization, and global interconnectivity, it is crucial to foster disaster preparedness from a young age. Schools play a pivotal role in nurturing a safety culture through systematic disaster education (UNDRR, 2020).

Disaster awareness enables children to respond effectively during emergencies, reducing panic and ensuring

safety. Previous research emphasizes that disaster education contributes to building community resilience, and awareness among children leads to informed families and communities (Peek, 2008; Ronan & Johnston, 2005).

Globally, frameworks such as the Sendai Framework for Disaster Risk Reduction (2015-2030) by the United Nations stress the importance of education in reducing disaster risks. Many countries have integrated disaster education into formal school systems to ensure children are prepared both at school and in their communities. Countries like Japan, Indonesia, and the Philippines have shown exemplary models of incorporating

disaster drills and curriculum-based interventions.

From the Indian perspective, the Disaster Management Act (2005) mandates education and training for disaster resilience, with the National Disaster Management Authority (NDMA) providing specific guidelines. Disaster management is gradually being infused into subjects like Environmental Science and Social Studies. However, execution varies by region and school management.

In Tamil Nadu, recurrent cyclones and floods have prompted the State Disaster Management Authority (TNSDMA) to initiate school-level programs including evacuation drills and teacher training. The integration of disaster awareness into state textbooks and collaborations with NGOs for community preparedness programs are notable.

This pilot study aims to examine the current level of disaster awareness among 8th standard students in a Tamil Nadu school, analyze the influence of demographic and experiential factors, and highlight key areas needing attention in school-based disaster education programs.

## **LITERATURE REVIEW**

A growing body of literature underscores the significance of disaster education for children and youth. According to Ronan and Johnston (2005), young people who receive targeted disaster education display enhanced awareness and more appropriate risk responses during emergencies. Similarly, Peek (2008) emphasized that educating children can

have a multiplier effect, as children often share their learning with families and communities.

Petal (2008) noted that curriculum integration, simulation drills, and practical activities significantly improve student preparedness. Kagawa and Selby (2010) showed how interactive tools and gamified content enhance retention and behavioral change in school-aged children.

Globally, the Comprehensive School Safety Framework (CSSF) developed by the UNDRR recommends a three-pillar approach: safe learning facilities, school disaster management, and risk reduction education. Countries such as Japan and Chile have adopted this model successfully.

In India, Sinha and Srivastava (2010) highlighted the gap between policy-level advocacy and on-ground implementation in disaster education. While the CBSE and ICSE boards have formal guidelines, state boards vary in intensity and effectiveness. Tamil Nadu, in particular, has included safety protocols and basic disaster awareness in school curriculum, but lacks widespread experiential learning activities.

This study builds on both global and regional research to assess how well 8th-grade students in Tamil Nadu understand disaster concepts, mitigation strategies, and emergency response protocols.

## **OBJECTIVES OF THE STUDY**

- To assess the awareness level of 8th standard students regarding disaster management.
- To analyze the impact of gender, age, and previous disaster experience on disaster preparedness.
- To identify the sources from which students receive disaster-related information.
- To examine the availability and understanding of emergency kits among students.

## **HYPOTHESES**

- $H_{01}$ : There is no significant difference in disaster awareness between male and female students.
- $H_{02}$ : Students with prior disaster experience do not differ significantly in preparedness levels compared to those without such experience.
- $H_{03}$ : There is no significant correlation between the source of disaster information and total awareness score.
- $H_{04}$ : There is no significant association between emergency kit possession and awareness score.

## **METHODOLOGY**

### **RESEARCH TYPE**

This study follows a quantitative descriptive research design under the broader survey method of research. Survey research is appropriate for collecting information about people's beliefs, opinions, characteristics, and behavior through the use of standardized

questionnaires or interviews. It allows for a broad understanding of trends and patterns in large populations and is commonly used in educational and social science studies.

In this context, the survey method facilitated the collection of data on students' awareness, knowledge, and preparedness related to disaster management using a structured tool. This study follows a quantitative descriptive research design, focusing on measuring the awareness levels and analyzing variable-based differences in disaster management understanding among students.

### **POPULATION AND SAMPLE**

The population comprised 8th standard students in Coimbatore District, Tamil Nadu. A sample of 35 students from a private Matriculation school was selected for the pilot study, with an even distribution across gender and age (13–14 years).

### **SAMPLING TECHNIQUE**

Purposive sampling was employed due to accessibility, proximity, and willingness of the school to participate. This technique suits pilot studies where representative sampling is not the primary goal but gaining preliminary insights is.

### **TOOLS USED**

A structured tool was developed consisting of three parts:

Section A: Personal and Demographic Variables – Gender, Age, Medium of Instruction, Type of School,

Locality, Previous Experience with Disasters, Participation in Drills.

Section B: Awareness and Preparedness Variables – Whether they had heard of disaster preparedness, sources of information, confidence in handling disasters, etc.

Section C: Disaster Knowledge Questions – 45 multiple-choice questions spanning various disasters and preparedness actions (drop-cover-hold, evacuation, emergency numbers, kit contents, etc.).

- Types of disasters
- Early warning signs
- Safe practices
- Emergency procedures
- Kit contents
- First response actions

Domains included:

- Risk Identification
- Preparedness Measures
- Emergency Response
- Mitigation Awareness

The questionnaire was validated through expert review and piloted for clarity. Scoring was binary (1 = correct/aware, 0 = incorrect/unaware), with a total possible score of 45.

## PROCEDURE

Data was collected during school hours with informed consent from authorities and participants. Responses were analyzed using Excel and SPSS. Both descriptive and inferential statistics were employed.

## DATA ANALYSIS

### Overall Descriptive Statistics

Metric	Value
Sample Size	35
Mean Awareness Score	36.86
Standard Deviation	4.86
Minimum Score	20
Maximum Score	43

### Interpretation

The average awareness score is 36.86 out of a maximum of 45, indicating a moderately high level of disaster management awareness among the students. The standard deviation (4.86) shows a moderate spread in scores, suggesting a relatively consistent understanding among most participants.

### TOPIC-WISE AWARENESS SCORES

Topic	Mean Score (Proportion)	Max Score
Earthquake	0.78	3
Flood	0.91	2
Cyclone / Hurricane	0.88	3
Thunderstorm / Lightning	0.95	3
Tsunami	0.89	4
Landslide	0.57	2
Avalanche	0.46	2
Fire	0.65	4
Chemical & Pollution	0.76	4
Pandemic	0.86	3
General Preparedness & Safety	0.89	15

### INTERPRETATION

The highest awareness is observed in Thunderstorm/Lightning (0.95), Flood (0.91), and General Preparedness (0.89) topics, likely due to familiarity with these

events in the students' locality and regular curriculum references.

Landslide (0.57) and Avalanche (0.46) scored the lowest, indicating a gap in knowledge about less common disasters in the region.

Moderate scores were found in topics like Fire (0.65) and Chemical & Pollution (0.76), reflecting partial awareness that could benefit from further reinforcement.

### Relation to Variables

There were no significant differences in topic-wise scores when analyzed against gender, previous disaster experience, or emergency kit possession.

Students demonstrated higher scores in frequently discussed and experienced disasters, such as floods and cyclones, showing that direct exposure or familiarity plays a key role in awareness retention.

**Table 1 Gender-wise Awareness Statistics**

Gender	N	Mean Score	S.D.	t-score	p-value
Male	17	36.41	5.58	-0.52	0.609
Female	18	37.28	4.20		

### INTERPRETATION

Although female students had a slightly higher mean score than males, difference was not statistically significant ( $p > 0.05$ ).

### EXPLANATION

This table explores whether gender plays a role in disaster awareness. While the average score for females (37.28) is

marginally higher than that for males (36.41), the calculated t-score of -0.52 and p-value of 0.609 indicate that the variation is not statistically meaningful. This suggests that gender does not significantly influence disaster awareness levels in this student population.

**Table 2 Awareness by Previous Disaster Experience**

Experience	N	Mean Score	S.D.	t-score	p-value
Yes	5	38.40	2.41	1.26	0.233
No	30	36.60	5.14		

### INTERPRETATION

Students with prior disaster experience scored slightly higher than those without experience. However, the difference was not statistically significant.

### EXPLANATION

This table examines whether having lived through a disaster affects a student's disaster management awareness. Students with experience (mean=38.40) performed slightly better than those without (mean=36.60). However, the t-test yielded a score of 1.26 with a p-value of 0.233, well above the significance threshold of 0.05. This means that previous disaster experience alone does not significantly enhance awareness levels in this group.

**Table 3 Awareness by Emergency Kit Possession**

Emergency Kit	N	Mean Score	S. D.	t-score	p-value
Yes	22	36.41	5.48	-0.78	0.442
No	13	37.62	3.66		

## **INTERPRETATION**

Students without emergency kits had a slightly higher average score, but the result was statistically insignificant.

## **EXPLANATION**

This comparison assesses whether the physical presence of an emergency kit at home correlates with higher awareness. Interestingly, those without a kit scored marginally higher (mean = 37.62) than those with a kit (mean = 36.41). However, the t-score of -0.78 and p-value of 0.442 confirm that this difference is not statistically significant. This might imply that possession of a kit is not always linked to better disaster preparedness knowledge, possibly due to lack of proper training or explanation of its use.

## **FINDINGS**

- The overall awareness levels among students were moderately high, with a mean score of 36.86 out of 45.
- No statistically significant differences in awareness were observed across gender, disaster experience, or emergency kit ownership, indicating that disaster management education in the sampled school may be uniformly delivered.
- Students with prior exposure to disasters exhibited slightly higher scores, though the sample size was too small to demonstrate a significant impact.
- Emergency kits, though essential for disaster preparedness, were not linked to higher awareness, suggesting that

mere possession without contextual education is insufficient.

- Schools and media were primary sources of disaster-related knowledge, reaffirming the critical role of formal and informal education.

## **CONCLUSION**

The pilot study concludes that 8th standard students show a commendable level of disaster awareness. However, practical application and preparedness behaviors, such as kit usage and participation in drills, remain limited. The lack of significant differences across variables like gender and prior experience suggests that disaster education is uniformly reaching students but may lack depth in practice-oriented areas.

Disaster education should go beyond theoretical instruction to foster behavioral change and equip students with life-saving responses. This is especially vital in a country like India, frequently exposed to natural calamities.

## **SUGGESTIONS FOR FURTHER STUDY**

- Conduct studies with larger and more diverse samples across multiple districts or states to generalize findings.
- Employ a mixed-methods approach combining quantitative data with qualitative interviews or focus groups for richer insights.
- Explore the impact of digital storytelling and simulation-based learning on disaster preparedness.

- Investigate long-term retention of disaster knowledge among students post-intervention.
- Examine teacher preparedness and confidence in delivering disaster-related content.

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