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## Awareness on Disaster Management: An exploration among Secondary School Students in Kerala based on their Gender, Locale and Experience with Disaster

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### Abstract

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Disaster is an unexpected accident resulting from natural or man-made factors that has a negative impact on the daily lives and living conditions of human and flora/fauna. There has been an increased concern all around the world about disaster management to minimize, if not prevent, the damage. Present study on 500 secondary school students of schools of five revenue districts of Kerala revealed that they are having low level of awareness with significant gender difference, locale difference in awareness on disaster management and significant difference in awareness on disaster management exist between those who have experienced disasters and those who have not.

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It will not be exaggerating if one says that even a single day is not passing without the news of disasters, in the form of flood as in Maharashtra or earth quake as in Nepal or the like. These calamities may be due to natural causes such as heavy rain or earth quake where as some others will be due to the carelessness of man. Considering the severity and damage due to these disasters, there has been an increased concern all around the world about disaster management with a hope that something can be done about these disasters so as to minimize, if not prevent, the damage.

In fact there are no natural disasters. Nature produces hazards such as earthquake, cyclones, rains and tsunamis. These hazards turn into disasters when human lives or economic investments are located in places vulnerable to such natural hazards. Disaster is an unexpected accident resulting from natural or man-made factors (or combination of both) that has a negative impact on the daily lives and living conditions of human and flora/fauna. The centre for Research on the Epidemiology of Disaster (CRED) in Brussels, Belgium, uses a modified definition, "A disaster is a situation or event which over whelms local capacity, necessitating a request to a national or international level of external assistance". According to CRED an event is classified as a disaster if, it killed more than 10 people/ impacted or displaced more than 100 people/ it is declared a national emergency/ the country has sought international assistance. The main features of disaster can be listed as unpredictability, unfamiliarity, speed, urgency, uncertainty, and threat.

Whatever is the cause and the context, disasters cause disruption in the normal patterns of life, be it for the country, state or the family. Disasters at times, set families and countries back by a generation in terms of their economic development. So, the scenario of increased exposure and increasing hazards arises a question on what the institutions and individuals should do to avoid or decrease the impact on human race and the answer is the branch of management called disaster risk management. Vulnerability of disaster can be reduced or avoided through proper disaster management system.

The decade 1990-99 was declared as International Decade for Natural Disaster Reduction by UN with the main objective of focusing on disaster management planning for

prevention, reduction, mitigation, preparedness and response to reduce the loss of life and property due to natural disaster.

SAARC developed a frame work for care, protection and participation of children in disasters with the objective of highlighting the mainstream issues in the policies, strategies, programmes and projects in all relevant sectors including disaster reduction and emergency management in South Asia. To increase the participation of children in disaster management, the authorities should give proper guidance and awareness programmes to the school children. In a country like India which is extremely disaster prone, teachers and students can play significant role in creating awareness in communities, and reaching vital information to them (CBSE,2008).

When a disaster strikes, a school very often becomes a temporary shelter for the victims and the teachers and students have to take the role of rescuer or give first aids as an initial response. They will be the most effective trauma counselors for those who faced devastating losses during the disaster. Hence there is a need to skill based training in the school in certain aspects of disaster response together with the theoretical knowledge. Schools can arrange co-curricular activities which include mock drills, first aid training, and training on fire and safety and on other emergency skills as appropriate. Students can serve as role models in the community and reach out to the under-privileged and non-school going mass to spread disaster risk reduction messages.

Disaster management is an area where serious researches are to be conducted, some attempts include that by Grosskopf (2010) on the need for post disaster recovery and reconstruction safety training, Fahrudin, (2011) on the importance of preparing social work students for working with disaster, and Ganadevan and Selvan (2012) on loneliness of students affected by natural disasters. Udayasree and Rekha (2015) have presented a paper on the importance of Disaster education in teacher education, the major reason highlighted in the paper is that teachers have a double role in disaster management, one being the member of school core team and the second as the key person for the village disaster preparedness and response plan.

Disaster Management includes a range of activities to maintain control over disasters/emergency situations and to provide a framework for helping people to avoid, reduce the effects of, or recover from impact of a disaster. These activities may be related to preparedness, mitigation, emergency response, relief and recovery and may be conducted before, during or after a disaster (UN ISDR, 2002).

Individuals with right type of awareness about disasters as well as disaster management are essential for the welfare of any nation. In many cases, lack of proper awareness among people makes the impact of the disaster worse, making it difficult to the authorities to manage the emergency. A study on the awareness of secondary school students in Disaster management will throw light to the future plans and policies by Government and Non Governmental organizations regarding disaster management.

### **Objectives**

1. To find out the extent of awareness on disaster management among secondary school students
2. To find out whether there exist significant mean difference in awareness on disaster management among relevant sub groups based on Gender, Locale and Experience with disaster.

### **Hypothesis**

1. There is no significant difference in awareness on disaster management among relevant sub groups based on Gender, Locale and Experience with disaster.

## Method

### Participants

Survey method was used for the conduct of the study as the purpose of the study is to explore the awareness on Disaster management among secondary school students. Population under study is the secondary school students of Kerala and the study was conducted on a group of 500 students studying in the state schools of Kozhikode, Malappuram, Wayanad, Thissur and Palakkad districts of Kerala state.

### Instruments

1. Disaster Management Awareness Test (2012) which contains 45 multiple choice items on four dimensions of disaster management, General Awareness on Disaster, Basic Knowledge about Disaster Management System, Safety Measures Related with Disaster Management and Phases of Disaster Management. A score 1 is given for the correct answer and 0 for wrong one. The test retest reliability coefficient obtained is 0.65 and the content validity of the test was established.
2. Personal Data Sheet: Personal information like Sex, Class, Locale and other relevant information needed for the study was collected using this instrument.

## Results and Discussion

To know the extent of awareness on disaster management among secondary school students, mean, median, mode, standard deviation, skewness and kurtosis were calculated. The details of the statistics are presented in table 1.

Table 1

*Descriptive Statistics of Awareness on Disaster Management among Secondary School Students*

Sample Size	Mean	Median	Mode	S D	Skewness	Kurtosis
500	14.30	14	13	4.48	-.08	-.03

Here the three measures of central tendency, mean, median and mode of the variable awareness on disaster management are almost equal. The extent of skewness is -.08. This shows that the distribution is slightly negatively skewed. The measure of kurtosis is -.03 which is very low value indicating the curve is slightly leptokurtic. But as these values are very small the distribution can be considered as symmetric and mesokurtic.

To get a clear picture of the distribution of the variable a histogram with frequency curve is given as figure 1.

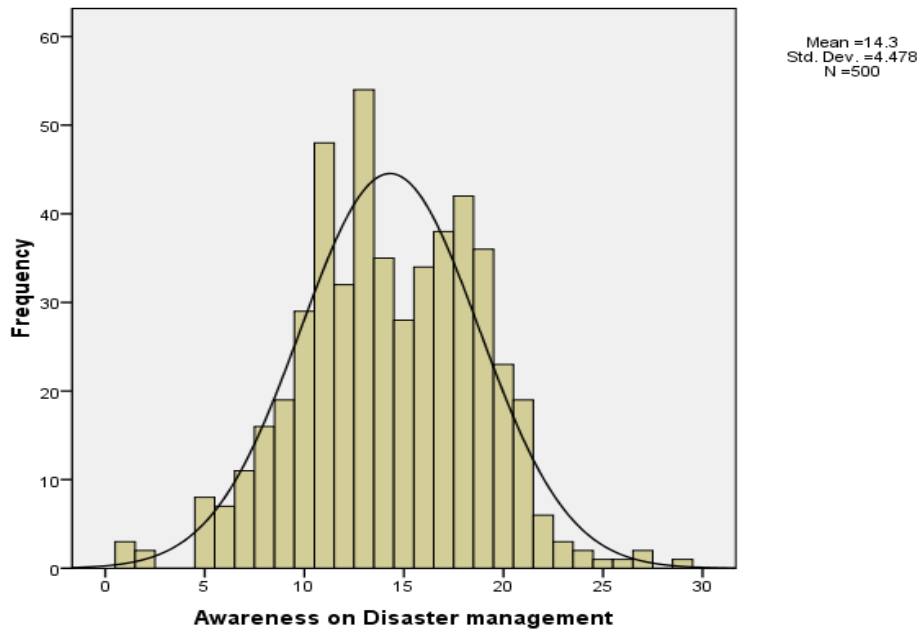


Figure 1: Frequency curve of the variable Awareness on disaster management

The statistics obtained and the frequency curve drawn show that the variable, awareness on disaster management is almost normally distributed among secondary school students in Kerala, but the values range from 0 to 30, the maximum score obtainable being 45.

When the mean value obtained is compared with the average score on the test, 22.5 using single sample t test, the critical ratio obtained is 40.94, showing that the mean score obtained significantly differ from the test average ( $p \leq 0.01$ ), and the low value of the mean score indicates a lower level of Awareness on disaster management among secondary school students of Kerala. This finding is similar to that of Kangabam, Panda and Das (2012) who found low level of disaster management awareness among community people.

### Comparison of Mean Scores of Awareness on Disaster Management by Gender and Experience

Mean scores of Awareness on disaster management of the subgroups viz., boys and girls; and students who have experienced disaster and those who have not were compared and the results are given as 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	

\*\* $p \leq .01$

The t-values obtained in both cases show that there exist significant difference ( $t=5.22$ ,  $p \leq .01$ ) in the mean scores of Awareness on disaster management between boys and girls; and between students who have experienced the disaster and those who have not ( $t=5.93$ ,  $p \leq .01$ ). That is, the gender difference in the awareness on disaster management is significant. A higher mean score for girls indicates that girls have greater awareness on disaster management than

the boys at secondary level. This may be due to the role played by male and female in home affairs- females are more concerned with family matters compared to males and may collect more information regarding the protection of the family. The mean comparison of awareness in disaster management of secondary school students who have experienced disaster and those who have not experienced showed that the mean score is higher for the second group which is against what will be expected. That is, a higher mean score for students not experienced any disaster compared to those who experienced disaster reveals that experiencing any type of disaster in their lives will not generally make them aware of the disaster management, preparedness and the strategies. This may be due to the common attitude of people that it is the duty of Government to protect the lives and property of individuals and individuals have no serious role in this. But this attitude will not help to handle the emergency situations as in the case of a disaster.

### Comparison of Mean Scores of Awareness on Disaster Management by Locale

Based on the locale of institution, the total group was divided into three viz., rural, urban and coastal area students. Grouping of the total sample to urban, rural and coastal was done based on the location of the school and this resulted three groups with 106 students from urban area, 294 from the rural area and 100 from coastal area. To know whether there is significant difference among these three groups in awareness on disaster management, one-way ANOVA was used. Details of one-way ANOVA are given as table3.

Table 3

*Summary of one-way ANOVA of Awareness on Disaster Management by Locale*

Source of Variation	Sum of Squares	df	Mean squares	F-value
Between groups	547.8	2	273.9	14.4**
Within group	9457.6	497	19.029	
Total	10005.40	499	292.929	

\*\* $p \leq .01$

The results of ANOVA show that the difference in awareness on disaster management among rural, urban and coastal area students is significant at 0.01 level as the calculated F-value (14.4) is greater than the value required for significance at 0.01 level for (2, 499) degrees of freedom (4.61).

That is, awareness on disaster management of rural, urban and coastal area students differ significantly. To know which groups differ in their awareness on disaster management, Scheffe's test was done as post hoc analysis.

Table 4

*Details of Multiple Comparison of Awareness on Disaster Management based on Locale*

Groups	Mean Difference
Rural-Coastal	2.70**
Rural-Urban	0.46
Urban-Coastal	2.24**

\*\*  $p \leq .01$

Scheffe's test revealed that rural and coastal area students and urban and coastal area students differ significantly in their awareness on disaster management (difference being significant at 0.01 level). It also reveals that rural and urban area students are almost equal in their awareness on disaster management. The mean score obtained for the urban students is 14.48, for rural it is 14.94 and for the coastal area students, it is 12.24, showing that coastal area students have lower level of awareness on disaster management compared to the urban and

rural area students. Kangabam, Panda and Das, (2012) in their study found that the awareness on disaster management varies among community members based on their origin, age and education level.

### Conclusion

Thus the study found that secondary school students in Kerala are not having satisfactory level of awareness in disaster management (Mean=14.30). Boys and girls differ significantly in the mean scores of awareness on disaster management ( $p \leq .01$ ). Coastal area students differ significantly from urban and rural students in the mean scores of awareness on disaster management ( $p \leq .01$ ); Rural and urban students do not differ significantly in the mean scores of awareness on disaster management but significant mean difference exists in the awareness on disaster management between secondary school students who have experienced disaster and those who have not. ( $p \leq .01$ ). These findings imply that it is an urgent need to make the students aware of the disaster management because school students are the powerful force to prevent, make it prepared and reduce the risk of disasters. They can be considered as the social elements which can propagate the information to the wide society. A serious thought about the inclusion of Disaster management as a compulsory part of academic programmes at various levels of schooling as well as higher education must be made by the authorities. Monitoring of the disaster management programmes in schools must be strictly followed as it is one among the most prominent ways to sustain humanity. While executing such programmes more focus should be given to boys and students of coastal area. The assumption of people who have faced disasters will be capable of managing it is found to be wrong in the study and hence irrespective of experience, efficient, purposeful training and awareness programmes are to be organized by the schools.

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