ABSTRACT OF THE THESIS

1. INTRODUCTION

Open a newspaper and no matter what part of the world you happen to be in, you are bound to read reports of all sorts of natural and man-made disasters.

This proposed thesis is mainly related to the “Disaster management (DM)”. Its main focus is to highlight the Human Resource Development in disaster management. Capacity building of the community is one of the important aspect of human resource management. People need competencies like knowledge, attitude and practices to perform tasks. Success of the disaster management mostly depends upon efficient capacity building of the society through educational intervention to them. The thesis title is to assess the effectiveness of training manual on disaster management in terms of knowledge and self expressed practices of secondary school teachers in Pune city during 2009-11.

2. REASON FOR THE CHOICE OF THE TOPIC

Disasters are on rise, at global as well as in India. The loss of life and property due to disasters has increased substantially during last two decades. People are now at risk from disasters. Flood, Earthquake, Terrorist attack, fire and road accidents has created concern across the country for preparedness. There is urgent need to adopt multidimensional, multi disciplinary and multi sectoral approach to reduce the losses.
School children and their teachers are some of the most receptive group to disaster preparedness education and training. These children, in turn share this valuable education with family and community. Recognizing the value of school children as “multipliers” of disaster information. School teachers are valuable social group to educate children about disasters. This strategy is proving its long term effectiveness.

Justification of the study was based on the facts that safety of the school children is basic right of children. Teachers must be aware of disaster management in schools and gain knowledge and implement safety practices in school environment. Identifying learning needs of adult learner in very important aspect in disaster education. According to Cox 2001, adult will learn when they feel a need to learn at their own pace. Disaster management booklet, training manual, handouts are easy ways of learning at own pace and it is preferable means of learning on the topic. Hence researcher has taken initiative to develop a training manual and assess its effectiveness.

Some of the recent disasters that have affected the education sector in India are the Gujarat earthquake (2001) where 971 students and 31 teachers were killed, 1,884 schools collapsed; Tamil Nadu Fire (2004) incident where 93 children died in a fire due to explosion of a cooking gas cylinder; Kashmir earthquake (2005) where 17,000 students died at school, and 10,000 school buildings destroyed (Petal 2007). Unfortunately, it is impossible to prevent most
disasters. Nevertheless, we can alleviate its worst effects by being prepared. Education for disaster management is a trans-disciplinary exercise aimed at developing knowledge, skill and values at all level. Government of India in its eleventh five year plan document, have emphasized the need to enhance knowledge, skill and values to reduce the impact of disasters on the education sector. To build in a culture of safety and resilience at all levels in the education sector, there is a need to carry out a large number of initiatives. (Balaka Dey Chillibreze -2009)

3. STATEMENT OF PROBLEM

“A study to develop and assess the effectiveness of training manual on Disaster Management in terms of knowledge and self expressed practices among teachers of selected schools in Pune city during 2009-11”

4. OBJECTIVES

1. To assess the knowledge of the secondary school teachers of Pune city regarding disaster management before administration of training manual.

2. To assess self expressed practices of secondary school teachers of Pune city regarding disaster management before administration of training manual.
3. To find out effectiveness of training manual on disaster management among the secondary school teachers of Pune city in terms of knowledge and practices.

4. To correlate the knowledge of secondary school teachers of Pune city regarding disaster management with self expressed practices

5. To associate the findings with selected demographic variables.

5. HYPOTHESES

Following hypotheses were formulated by the Researcher for the study:

a. There is no significant difference in the level of knowledge among the school teachers of Pune City before and after administration of disaster management training manual.

b. There is no significant difference in the self expressed practices among the school teachers of Pune City before and after administration of disaster management training manual.

c. There is no correlation between knowledge and self expressed practices of Secondary School Teachers of Pune city regarding disaster management.

d. There is no association of knowledge of secondary school teachers of Pune city regarding disaster management with demographic variables
e. There is no association of self expressed practices of secondary school teachers of Pune city regarding disaster management with demographic variables

6. REVIEW OF LITERATURE

According to UNICEF 30,000 children die each day in the poorest villages on earth due to poverty, malnutrition and communicable diseases

The Asia pacific region is home to 53% of the world’s population and 20% of the land area experiences a disproportionate share loss of life and impact to socio-economic processes. According to a United Nations’ report, nearly 70% of all lives were lost due to natural disasters occurred within Asia Pacific Region.

India’s road has become highways of death. We have dubious distinction of having the largest number of road accident fatalities for the number of vehicles in the world. Almost 100,000 Indians die on our roads every year in over 300,000 accidents. Studies by World Health Organization and Government of India show that our road safety record is declining alarmingly at 5% a year. A 2002 Planning Commission study estimated India’s loss from such accidents at a colossal Rs 55,000 crore a year, which works out to 3 percent of GDP at 2000 prices. Another statistics: there are 12.7 road fatalities per 10,000 vehicles in India in USA road fatality rate is 1.79, fatality rate in UK and Germany are 1.0 and 1.1 respectively.
Pala I. and Vankar GK 1997 Assessment of knowledge and attitude of primary teachers about disasters suggests that only one fifth teachers out of 113 were confident about dealing with an accidents. It was revealed that there was a knowledge deficit, especially regarding the prevalence of accidents. Misconceptions regarding first aid were also common. Communication about accidents among the teachers, parents and doctor was virtually non existent. even primary care givers showed poor knowledge score on home safety and first aid (Thein M M and others, 2005 ) though the score of knowledge of road safety was satisfactory. This study was conducted in Singapore as childhood injuries are the leading cause of death for children between 5 to 14 years of age.

Ghosh A and Bharat R (Burns 2004) reports that ‘Community Awareness Programme for the target group of ladies and teenage girls and ‘School Education Programmes for the target group of school children of standard 8 in the steel producing city, Jamshedpur. He revealed that not only the formal Disaster Management training helps to improve the knowledge of the people, but the efforts like giving information booklet on child and infant safety and first aid treatment are also effective.

Above review of literature has shown that although there is information and recognition of the issues related Disaster Management, there are very few
studies done on need assessment on primary or secondary school teachers in India regarding basic first aid course or refresher course. In India around 30% of population is below 15 years of age, and they are spending their maximum time in schools.

7. RESEARCH DESIGN AND METHODOLOGY

Research approach adopted was quasi-experimental. Single group pre test post design in which researcher observed the group prior to the intervention of training manual (Pre test). The same group was observed after seven days (Post test). The study was conducted in secondary schools in Pune city. There are 306 secondary schools in Pune city under Pune Municipal Jurisdiction. Researcher divided the Pune city in five regions viz. East, West, South, North and Central. A random method was used to select the 30 schools for the research. This was done to ensure that participating schools were sufficiently representative of each region, programme level (State Board, CBSE, and ICSE) and language of instruction.

Researcher has given due justice to all five regions. 18 teachers from each school were selected in the study by simple random method. While selecting the schools researcher ensured that equal percentage was maintained between English and Marathi medium schools (page 154) The state board schools, CBSE schools and ICSE schools were also given equal representation. Total 540 teachers across the city from 30 schools (on an average 18 teachers from each school by simple random method) were included in the study. In order to collect the necessary data
to assess the effectiveness of the training manual on disaster management, a semi structured questionnaire was developed. Questionnaire design consists of three sections, first section consists of demographic data such as age, sex, education, experience, medium of teaching, type of teacher’s training programme and teaching experience. Second section comprised of items to assess knowledge of teachers regarding disaster management. Section three consists of self expressed practices checklist regarding disaster management. Knowledge questionnaire developed were multiple choice question in which one correct answer and other three distracters. Correct answer carries one score and wrong answer carries zero score. There were 30 items of knowledge assessment. Practice checklist was having responses like yes, no and do not know right practice carries one score while wrong practice carries zero score. There were 15 items of self expressed practices.

Training manual was developed by researcher in English as well as in Marathi language. The language in the manual was kept as simple as possible. A training manual includes chapters like basic concept of disasters, causes, types, effects of disasters, do’s and don’t during disasters, school disaster management plan and life saving skills (First Aid)

Validity and Reliability: The tool for collecting data was prepared and given to 20 experts in the field like defense personnel, educationist, authorities from social sciences and expert from the disaster management field. All identified
experts were Ph D qualified persons. After validity of the tool, modification was made and final draft of the tool is prepared. In this study, the reliability was determined by test retest method. The reliability coefficient was found to be 0.8430 (84%). Pilot study was undertaken on 10% of the sample in various schools to test the practicability of the tool.

Administrative permission was procured formally from the principal of the schools prior to the data collection. 30 schools were covered for data collection which includes 540 teachers. Teachers were explained about the purpose of the study. Their willingness was sought before the study. Researcher himself administered the semi structured questionnaire for the pre test. Training manual was given to study group. After seven days post test was conducted by researcher.

8. RESEARCH FINDINGS

Description of subjects

Age and Gender: The mean age of the school teachers is found to be 38.2 years. The average ages of male-teachers and female teachers were 37.06 years and 38.65 years respectively. The sample distribution shows that out of 540 teachers majority 284 (52.6%) were between the age group of 35-44 years, 148(27.4%) were in age group of 25-34 years, 88(16.3%) samples were in above 45 years and 20 (3.7%) were in age group 18 – 24 years. It interprets that very few teachers are in young age group and majority of the teachers are
in middle age group. Of the 540 responses 394 (73%) respondents were female teachers and 146 (27%) were male teachers.

**Education**: The educational attainment of this city is higher, as it was found majority of the teachers had completed post graduate degree 256 (47.4%) followed by graduate degree 248 (45.9%) and undergraduates were 36 (6.7%).

**Teaching Experience**: Teachers in Pune City are found to be well experienced in their job. 166 (31%) teachers having 11 – 15 years of experience, 140 (26%) teachers had up to 5 years experience, 111(21%) with 6 to 10 years, 79 (14%) with 16 to 20 years and 44 (8%) possessing 21 or more years in the field.

**Medium of instructions**: Teachers from Marathi medium schools were in majority 306 (57%) followed by English medium school teachers 234 (43%).

**Programme wise distribution**: Teachers from Maharashtra state board were in majority 466(86.3%) followed by CBSE 54 (10%) and ICSE 20 (3.7%).

**Teacher’s Training wise**: B. Ed trained teachers were 431 (80%) whereas D. Ed teachers were 81(15%) and others were 28 (5%).

**Training of First aid or Disaster Management**: Of the 540 responses 399 (74%) of them had not been exposed to any type of first aid or disaster
management programme, while nearly 141 (26%) had participated in some of the first aid training programme which was organized by school authority.

**Assessment of overall knowledge of Disaster Management:** The Researcher, through Questionnaire, had asked 30 questions covering various aspects of Disaster Management. In the Pre-Test, it was revealed that, overall score of all teachers is observed to be 15.9 i.e. 53%. The maximum score observed was 25 (81.3%) which is achieved by 0.5% of respondents only. Researcher also observed score less than 10 (33%) by 4.5% of respondents. 65.6% respondents could achieve their score above 50% while distinction (70% +) is achieved by 7.1% of respondents.

**Association of Knowledge : Age wise** distribution of knowledge score shows that young teachers are more knowledgeable, as age advanced score shows in downward trends. As mean knowledge score of teachers in age group 18 -24, 25 -34, 35-44 and 45 & above shows 17, 16.37, 15.97 and 15.18 respectively. Researcher tried to investigate whether this score has any association with gender of the respondent. It is observed that females are comparatively more knowledgeable than males. The mean scores of females was 16.42 and mean score of male was 14.82. It is also noticed that, those respondents whose scores are below 10 (out of 30) have 13 females and 12 males. Researcher also made an attempt to correlate the scores with the educational qualification of the respondents. It is found that average scores (out of 30) of
UG, Graduates and Post-Graduates are 17.39, 14.99 and 16.82 respectively. The increment in scores from Graduate to Post graduate level could be the indication of association between qualification and DM knowledge. The confirmation of this association of knowledge is separately done under Testing of Hypothesis. The high score of under graduate teachers, despite their low (6.7%) sampling contribution, may have come possibly by mere chance only.

Similarly, Researcher, tried to find out association of teaching experience and that of DM knowledge. As no trend in these figures is observed, it can be concluded that, increase in teaching experience may not necessarily be useful to increase knowledge of DM. Researcher also made an attempt to find out any kind of association attached with the score and that of previous training of Disaster Management or First Aid. It was observed that, previous training in DM and / or FA definitely adds to the knowledge but not to a large extent. This is so, because average score of Teachers who were trained in Disaster Management is found to be 16.94 against 15.69 who had not received any kind of training on Disaster Management or First Aid.

‘Marathi’ is the regional language of the state of Maharashtra. Therefore majority of schools are teaching in Marathi. Researcher made an attempt, to see whether ‘Medium of teaching’ affects the overall knowledge of teacher regarding DM. Survey revealed that on an average, knowledge of teachers
from Marathi medium schools is comparatively lower than those from English medium schools, with their respective scores as 16.54 and 15.56.

Region wise knowledge distribution shows that teachers in central and eastern region is on higher side i.e. 17.31 and 17.28 whereas north, south and western region score was 14.63, 13.11 and 12.93 respectively.

**Assessment of Break-up of knowledge**

**Break-up of Questionnaire**

The Questionnaire designed for assessment of knowledge was broken into 30 questions. These 30 questions were grouped into 3 major categories as under

- Question No. 1 to 11 – Knowledge regarding Disasters and its management.
- Question No. 12 to 18 – Do’s and Don’ts related to Disaster Management
- Question No. 19 to 30 – First Aid Skill and safety.

**Break-up of knowledge assessment**

The overall score of all teachers is observed, for all 30 questions, to be 15.9 i.e. 53%. However average scores of the above mentioned sub-group of questions are found to be 6.4 (58.18%), 4.5 (64.28%) and 5.1 (42.5%) respectively.

It is clear from the above scores that teachers are well-aware about what ‘should be done and should not be done’ during ‘Disaster’. Also their
knowledge and its management is comparatively better but they are lacking in First-Aid and Safety.

These were the trends observed on overall basis. The Researcher probed to find out any kind of relation, if it exists, among these trends and gender, education and experience of the teacher.

**Break-up of knowledge and Demographical parameters.**

Researcher analyzed the data to see any kind of relation between sex of the teacher and parameters of the knowledge. The following findings were observed. It is seen that ‘knowledge of Disaster and its Management’ is not altered drastically with the gender of the teacher, since their average scores are found to be around 58.2% only. However Females are more knowledgeable than men about ‘Do’s and Don’ts’ about the Disaster since score of females has recorded as 66.57% against male’s score as 57.86%. Also Females are more alert than men when First Aid and Safety is concerned. (Score of 45.08% against 35.33%). Similarly data was also analyzed for scores and various age-groups of respondents. The following observations were revealed: It is seem that, knowledge of school teachers regarding ‘Disaster and its Management’ does not fluctuate much more due to age factor. There appears to be a small declining trend over the age for Do’s and Don’ts. Similar trend is also observed for First-Aid Skill and Safety. Thus it is confirmed that knowledge of School-Teachers regarding Disaster and its Management does not vary to a large extent as far as Age and Sex of a Teacher is concerned.
Question wise knowledge description

1. Correct definition of disaster management was given by 27% respondents, while correct meaning given by 78% respondents.

2. It was observed that about 85% respondents could identify types of disasters.

3. Researcher asked question regarding phases of disasters only 42% respondents could give correct answer.

4. Drop, cover and hold method is very simple way to save life during earthquake, unfortunately only 18% respondents could answer correctly.

5. Among the total respondents majority of them (96%) knows to move higher level during floods to save life, while only 62% identified cause of death during floods is drowning.

6. Road traffic accident is biggest killer in Pune city is, fortunately 72% teachers are aware of safe way of driving the vehicle but in practice scenario is different.

7. Fire accident is common and fatal disaster in school, 73% respondents knows common cause of fire in schools.

8. 74% teachers knows best place to keep first aid box in schools.

9. Only 48% respondents could able to give correct definition of first aid.

10. CPR is sure way of saving life when in cardiac arrest, 72% teachers could not know even full form of CPR.

11. Pouring water is only immediate treatment for burns, only 49% responded correctly.
12. Activation of EMS is only way to tackle road accident and other emergencies
41% responded correct toll free number of EMS.

13. Evacuation drill and school disaster management plan is safety initiative of
the school, only 40% teachers were aware of school disaster management
plan (SDMP).

14. Researcher asked fire emergency telephone number, 70% responded
correctly.

**Evaluation of Practices Adopted** - the researcher asked 15 questions related
to self expressed practices and the responses collected are as follows. The
mean score of practices observed was 7.05 i.e. 47%. It clearly indicates that
safety practices of teachers were needs to be improved.

Categories of Practices Adopted – researcher tried to identify the age related
practices and found that mean score of safety practices of 18 – 24 age group
was 5.25, mean score of 25-34 years age was 7.36 and mean score of 45 years
and above age group was 7.19. It shows that very young teachers are very
poor in safety practices and as age progresses safety practices improves.
There was no significant association of sex, teaching medium, education,
pattern of teaching and safety practices with practices adapted.
Question wise self expressed practices

1. Cell phone is nowadays become important electronic gadget carries by everyone, in case of emergency (ICE) number may be stored in phones e.g. ICE1, ICE2 etc. Unfortunately only 33% respondents expressed correctly.

2. Display of emergency telephone numbers were not done in 80% of schools.

3. Only 41% of teachers undergone first aid training organized by school authorities.

4. Using mobile phone even by hands free mode is dangerous during driving a vehicle, 39% respondents not operating phones while driving.

5. Only 22% respondents expressed about recovery position.

6. Only 33% expressed need of school disaster management plan

7. Treatment of bleeding, burns and fractures correctly expressed by only 53% of respondents

9. STATISTICAL ANALYSIS

Post Test Findings

The mean score obtained by school teacher in the pre test was 15.9 (53%), S. D. was 3.673 and in the post test score was increased to 24.07 (80%), S.D. was 5.568. Researcher also observed that in all the areas (Knowledge of disasters and its management, do’s and don’ts during various disasters, first aid and safety) there was significant increase in knowledge and self expressed practices which indicates that the training manual is effective to improve knowledge and practices of school teacher.
10. TESTING OF HYPOTHESIS

Based on the various objectives, the researcher decided to test various hypotheses as mentioned below:

Hypothesis 1
Hypothesis of the study was: “there is no significant difference in the level of knowledge among secondary school teachers of Pune city before and after administration of training manual on disaster management.” To test this hypothesis researcher used paired 't' test. The calculated 't' value was 19.69 and is greater than table value (1.96) and was found highly significant at both 0.01 and 0.05 level of significance. Hence null hypothesis is rejected. Thus proving that manual on DM is useful in increasing the level of knowledge.

Hypothesis 2
Second Hypothesis of the study was “there is no significant difference in the self expressed practices among secondary school teachers of Pune city before and after administration of training manual on disaster management.” To test this hypothesis researcher also used paired 't' test. It was found that the ‘t’ value so obtained viz. 14.88 is greater than table value i.e.1.96 and was also found highly significant at both at 0.01 and 0.05 levels of significance. Hence null hypothesis is rejected. This clearly indicates that training manual is effective in improving self expressed practices of the teachers.
Hypothesis 3

Researcher also identified correlation of knowledge with practices of the teachers by calculating correlation coefficient \( r \) between these two parameters. It was found to tend to \( r=0 \) (0.0254). It indicates that knowledge is not correlated with practices of teachers.

Hypothesis 4

Researcher also tried to test the hypothesis. “There is no association of knowledge of school teachers regarding disaster management with demographic variables” and also subsequent hypothesis “There is no association of self expressed practices of school teachers regarding disaster management with demographic variables”. For this purpose researcher applied chi square test and found that age, experience and previous disaster management and first aid training is associated with improvement in knowledge and practices at \( p<0.05 \) whereas other variables are non associated.

11. CONCLUSIONS & RECOMMENDATIONS

Conclusions

School safety is very important concern. Every school and community must take it seriously and strive continually to achieve highest safety in schools. Every school is unique by virtue of its teachers, students, location and culture. Teachers role is very important in mitigating the hazards and disasters in schools. The teacher who is aware of disasters and its management can
improve the practices successfully. Hence researcher has chosen teacher as a target population to investigate an issue as well as provide them educational material.

The primary aim of this study is to determine the effectiveness of training manual on disaster management among secondary school teachers in Pune city. Semi structured questionnaire was administered.

Majority of the school teachers were in middle age group with an average age of 38.2 and are heavily dominated by females. Overall mean knowledge score was 15.9 (53%) and self expressed practice score was 7.05 (48%) indicated that teachers knowledge and self expressed practices are not at satisfactory level. Young teachers (below 25) and female teachers found more knowledgeable than their counterparts. Knowledge was positively correlated with teaching experience and level of education of the teachers. Of the 540 respondents 26% had participated in first aid training programme but their knowledge level was not significantly more than those who have not undergone the training. Questionnaire was divided under three headings, concept of disasters, does and don't related to disaster management and first aid and safety. Out of these three components first aid and safety knowledge among teachers was found very poor (42%)
The effectiveness of the manual was tested statistically at 0.01 and 0.05 level of significance which indicated that training manual was effective in improving knowledge and practices of the teachers.

**Recommendations:**

**Knowledge and Practices**

1. The survey revealed a general lack of information among school teachers regarding disaster management. This highlights the need for disaster safety education. It is evident that disaster has significant impact on school children. Improvement in knowledge and practices of teachers equip the teachers with knowledge of how to react if an emergency situation arises. Teacher should take initiative to improve their knowledge and practices by using booklet, posters, brochures, charts etc. The school authority should provide such material to the teachers.

2. School authority should display all the important telephone numbers at prominent places of the school as researcher found that teachers were ignorant about emergency medical services available in the city as well as important telephone numbers like ambulance, fire, disaster helpline, child helpline etc.

3. Researcher observed that majority of the schools have been given low priority to disaster education. No disaster plan was available in surveyed
School authorities, therefore should take initiative and sensitize the school community (students, teaching and non teaching staff, management staff and parents) regarding disaster preparedness and management. It is therefore strongly recommended that each school must prepare their own school disaster management plan (SDMP). The SDMP should consists the following components namely viz. SDM committee, safety assessment, evacuation map, formation and training of DM team and establishment of task force.

4. Periodical mock drill and evacuation drill should be exercised in all the schools at least urban schools of the state in collaboration with concerned authorities such as Police, Fire brigade etc.

5. Capacity building is one of the WHO strategy for improving disaster preparedness. Indian Red Cross is universally recognized institution for capacity building of the communities. School authorities should collaborate with such agencies to raise awareness among the school teachers and students and every teacher must undergo such training.

**School safety**

6. In Pune city, schools are located in very crowded areas, the approach road was found very narrow and school children commute by auto rickshaw or motorbike. Since large number of vehicles are found parked on the way to
school creating unsafe environment to children. Traffic authorities should ensure that if any mishap occurs there should be way to enter ambulance or fire engine. Researcher strongly recommends that at least schools located in city should have one way traffic control around the schools up to the main road so that vehicles will come in one direction traffic mishap will be avoided. In addition to this speed breaker at the entrance of the school should be constructed to control on the speed.

7. Every school should ensure that children coming to school must use school bus facility. School bus should have unique colour code system (currently color code adopted is yellow) and every school must adhere to this norm.

**Training Manual**

8. World Health Organization stresses the importance of validating current and future disaster preparedness training needs by developing instrument to assess, validate and evaluate training needs. The school training programme on disaster management needs to be evaluated because teacher undergone training also found unaware of disaster management.

9. Subject of disaster management should be included in the curriculum of the standard 5\textsuperscript{th} to 10\textsuperscript{th} standard.
10. Study revealed that there was improvement in knowledge and practices of disaster management after administration of manual. Accordingly greater emphasis need to be placed on implementing the manual for the teachers.

11. Various other means of educational interventions should be used to train the teachers on disaster management e.g. Video learning, online learning, games, workshops etc.

12. The training module can be used by teachers while teaching the subject of Disaster management.

Limitations:
Considering availability of time, financial component and availability of respondents following limitations were faced by the researcher.
1. Only secondary schools were considered for the study.
2. Knowledge and practices regarding disaster management is included in the study other components like attitude, culture and behavior were excluded.
3. Instead of imparting actual training disaster management training manual was developed.
4. Due to vast distribution of geographical area of Pune city sample size (540) and number of schools (30) were limited.
5. Because of the language constraint of the researcher schools other than English and Marathi medium were excluded.
Area for further research:

1. In this study it was found that there is low level of knowledge among school teachers regarding disaster management with regional disproportinality. Therefore school based disaster education activities remains a phenomenon. The more researches are needed in this area

2. This study covered component of knowledge and practices of disaster management. Other components such as behavior, attitude and culture is open for research.

3. Some studies can be conducted to assess the school safety and security, school building, grounds, in which fire extinguishers, unsafe parking area etc should be assessed, safety index should be determined for each school. The school below safety standard may be identified and precautionary measures may be taken.

4. Similar study can be conducted among school students, college students, and general public. Taking into account entire state of Maharashtra.

5. Similar study can be undertaken as comparative study between Rural and Urban teachers.

6. Similar study can be conducted by using advanced technology like simulation, online learning, virtual classrooms etc
7. There is urgent need for international data sets to provide sex-disaggregated data on disaster related mortality, morbidity and long term consequences.

8. Research is needed both at local and at national level on structural processes and factors that increase disaster vulnerability in women and men across different social groups.

9. Effects of funding, programming, training and the consequences of these for demographic variables in disaster situations is another important area that needs to be addressed by research studies.