

# A study to assess effectiveness of structured teaching on knowledge regarding disaster (Fire) preparedness among adolescent at selected Junior colleges in Pune city.

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**ABSTRACT:** Disaster as ‘any occurrence that causes damage, economic destruction, loss of human life and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area. Disaster is the occurrence of a sudden or major misfortune, which disrupts the basic fabric, and normal functioning of a society. Keeping in view that Fire management, disaster preparedness is creating a condition or state to reduce hazards and risk. This includes the use of mitigation, prevention and pre-attack efforts with community involvement is an important to conduct study to assess effectiveness of structured teaching on knowledge regarding disaster (Fire) preparedness among adolescent at selected Junior colleges in Pune city. **The present study title:** A study to assess effectiveness of structured teaching on knowledge regarding disaster (Fire) preparedness among adolescent at selected Junior colleges in Pune city. The objective of the study to assess the knowledge, to assess the knowledge regarding disaster (Fire) preparedness among adolescent after structured teaching and to compare the knowledge scores before and after structured teaching to see the effectiveness, to associate the findings with selected demographic variable. **Material and Methods:** In present study, researcher adopted pre experimental one group-Pre- test post-test design. Study carried out on 100 samples .The non-probability convenient sampling technique was used to data was collected using the demographic profile and structured questionnaire on knowledge regarding disaster (Fire) preparedness among adolescent at selected Junior colleges Data was analyzed statistically. Ethical clearance was taken from Institutional ethics committee. Data analysis was done mainly using descriptive statistics. **Result:** The mean post test score of 33.5, student improved their knowledge about disaster preparedness. There is almost 14% increase in the knowledge of the students in relation to disaster preparedness after structured teaching. Finding related to compare pretest and post knowledge Scores in the pretest and posttest ‘paired t’ test was applied. Mean of pretest was 19.86 and posttest was 33.5 and mean difference was 13.64. p value is 0 which is less than 0.05 therefore it is highly significant. This shows that there is difference between pretest and post test scores. This indicated that after structured teaching there is increase in the knowledge scores. **Conclusion:** A finding of research and supporting literature shows that structured teaching is always effective to enhance the knowledge level of the people. **Recommendation:** • The study can be conducted on basis of the assessing knowledge, attitude and practice. Also carried out for effectiveness of STP using different teaching method .A comparative study can be done between urban and rural adolescent students.

**Keywords:** (Assess, Effectiveness, Structured teaching, Knowledge, Disaster, Fire, Preparedness, Adolescent)

## INTRODUCTION

Disaster as ‘any occurrence that causes damage, economic destruction, loss of human life and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area. Disaster is the occurrence of a sudden or major misfortune, which disrupts the basic fabric, and normal functioning of a society. Keeping in view that Fire management, disaster preparedness is creating a condition or state to reduce hazards and risk. The High Powered Committee of the Government of India, in its October 2001 Report defines Disaster as “an occurrence of a severity and magnitude that normally results in deaths, injuries and property damage and that cannot be managed through the routine procedures and resources of government. It

usually develops suddenly and unexpectedly and requires immediate, coordinated and effective response by multiple government and private sector organizations to meet human needs and speedy recovery".<sup>1</sup>

## NEED FOR THE STUDY

Fire is one of the most common disasters. Fire causes more deaths than any other type of disaster. But fire doesn't have to be deadly if you have early warning from a smoke detector and everyone in your family knows how to escape calmly. Please be serious about the responsibility for planning for and practicing what to do in case of a fire.

Fire management preparedness is creating a condition or state to reduce hazards and risk. This includes the use of mitigation, prevention and pre-attack efforts with stakeholder involvement. There are many reasons including increased public awareness, community action and program support, possible additional funding available to local fire departments, the potential for local resources to positively influence mitigation and prevention projects, and a common operating plan that can be used not just for wildfires, but has useful information for other emergencies such as floods, hurricanes, tornadoes, severe ice storms, and others. When a community experiences large-scale trauma, it's affected at many different sociocultural levels. Community members question their assumptions about safety, perceived vulnerability, powerfulness, and political effectiveness. Often, people feel powerless to influence how their communities will respond to threat and need to depend on others to assure their safety.<sup>2</sup>

## OBJECTIVES OF THIS STUDY

- To assess the knowledge regarding disaster (Fire) preparedness among adolescent before structured teaching.
- To assess the knowledge regarding disaster (Fire) preparedness among adolescent after structured teaching.
- To compare the knowledge scores before and after structured teaching to see the effectiveness.
- To associate the findings of Disaster preparedness among adolescent with selected demographic variable.

## REVIEW OF LITERATURE

Review of the relevant studies was carried out from the textbooks, journals of preventive social medicine.

Deaths from fires and burns are the fifth most common cause of unintentional injury deaths and the third leading cause of fatal residential injuries in the United States. In 2006, someone died in a fire about every 3 hours and others were injured every 32 minutes. Fires caused by smoking-related material, such as cigarettes, killed 800 people and injured 1,660 others in 2005. Ninety-three percent of fatalities related to these fires and 78 percent of the injuries occurred in the home. Although the number of fatalities and injuries caused by residential fires had declined, it continues to pose a problem for the public's health. The good news is that residential fires are preventable. Researchers at the University of North Carolina Injury Prevention Research Center (UNC IPRC) are helping us understand how.<sup>2</sup>

Through Nov. 30, nearly 260,000 people died in natural disasters in 2010, compared to 15,000 in 2009, according to Swiss Re. The World Health Organization, which hasn't updated its figures past Sept. 30, is just shy of 250,000. By comparison, deaths from terrorism from 1968 to 2009 were less than 115,000, according to reports by the U.S. State Department and the Lawrence Livermore National Laboratory. The last year in which natural disasters were this deadly was 1983 because of an Ethiopian drought and famine, according to WHO. Swiss Re calls it the deadliest since 1976. The charity Oxfam says 21,000 of this year's disaster deaths are weather related.<sup>3</sup>

Street play is one of the most popular mediums for mass awareness generation. For the first time in the State, a street play on disaster awareness theme was conceived and prepared in consultation with NSS of Gogate Jogalekar College, Ratnagiri. The volunteers of National Service Scheme [NSS] are very active in Maharashtra. They carry out IEC activities on various social themes. The process of street play on disaster awareness kicked off with the consultation meeting with Professors of Gogate Jogalekar College. During the consultation meeting, professors were requested to prepare a draft script of the street play. The draft script was discussed and modified by the officials of district administration, state administration and UNDP. The play is in local language i.e. Marathi.<sup>4</sup>

Edbert et al. (2006) conducted a study in Johns Hopkins University School of Medicines (USA) on “healthcare worker competencies for disaster training”. The need for effective evidence-based disaster training of healthcare staff at all levels, including the development of standards and guidelines for training in the multi-disciplinary health response to major events, has been designated by the disaster response community as a high priority. The study describes the application of systematic evidence-based consensus building methods to derive educational competencies and objectives in criteria-based preparedness and response relevant to all hospital healthcare workers. The results developed seven healthcare worker competencies for disaster training: (1) Recognize a potential critical event, and implement initial actions; (2) Apply the principles of critical event management; (3) Demonstrate critical event safety principles; (4) Understand the institutional emergency operations plan; (5) Demonstrate effective critical communications; (6) Understand the incident command system and your role in it; (7) Demonstrate the knowledge and skills needed to fulfill your role during a critical event. This systematic evidence-based consensus building approach may serve as a foundation for future hospital healthcare worker training and education in disaster preparedness and response.<sup>5</sup>

The 2009 Victoria Bushfires Royal Commission (VBRC) was established in response to the bushfires of Black Saturday, 7 February 2009. In the period leading up to the fires, the Victorian government and fire agencies warned that the prolonged drought and heatwave conditions were likely to result in severe bushfires. These expectations were well matched by the unparalleled scale and ferocity of the bushfires; they caused the death of 173 people, entire communities were destroyed, with extensive loss of infrastructure, and large tracts of forests were devastated. The VBRC was charged with the task of ensuring that the lessons from the Black Saturday fires were clearly identified. An extensive investigation of —the causes of, the preparation for, the response to and the impact of the fires that burned throughout Victoria in late January and February 2009! (p.vii, VBRC Final Report) was undertaken. The priority was to hear from community members who were directly affected by the fire. Submissions were also heard from all levels of government, and those involved in the preparation and response to the Black Saturday fires. The inquiry generated three extensive reports. Interim Report 1 was released in August 2009, and the 51 recommendations focus on the immediate actions that needed to be taken to prepare for the imminent 2009–10 bushfire season. Interim Report 2 was released in November 2009, and the seven recommendations focus on additional priorities for building in bushfire prone areas, such as the construction of bushfire bunkers and bushfire resilient building. The Final Report was released in July 2010, and is a comprehensive account of all aspects of the inquiry and the findings and the recommendations regarding all aspects of preparation, response and recovery. The Final Report consists of a summary and four volumes.<sup>6</sup>

## **MATERIAL AND METHOD:**

In present study, researcher adopted pre experimental one group-Pre- test post-test design. Study carried out on 100 samples. . The non-probability convenient sampling technique was used to data was collected using the demographic profile and structured questionnaire .Data was analyzed statistically. Ethical clearance was taken from Institutional ethics committee. Data analysis was done mainly using descriptive statistics.

**DESCRIPTION OF TOOL:****The tool includes two sections:**

Section A : Demographic profile: - Which included code number, age, education, previous exposer to disaster.

Section B: Structured questionnaire: - This included 40 questions on knowledge regarding disaster (Fire) preparedness among adolescent at selected Junior colleges in Pune city.

**Plan for Data Analysis**

Data analysis was done by using descriptive and inferential statistics based on objectives of study.

**RESULT AND DISCUSSION**

**Analysis and interpretation of the data are based on data collected from 100 samples.**

**Section -I**

DEMOGRAPHIC CHARACTERISTICS OF SAMPLES FREQUENCY AND PERCENTAGE DISTRIBUTION OF STUDENTS BY THEIR DEMOGRAPHIC CHARACTERISTICS

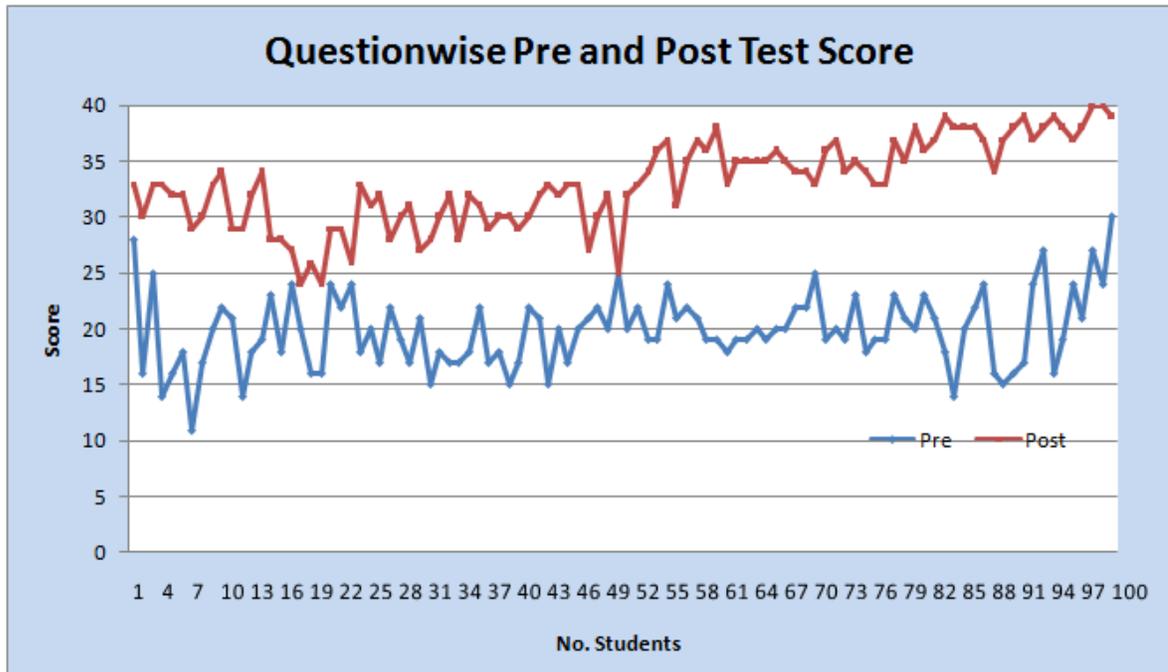
N=100

DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
Age		
16years	19	19%
17years	41	41%
18years	40	40%
Gender		
Male	46	46%
Female	54	54%
Stream		
Art	50	50%
Commerce	50	50%

Age wise distribution of samples reveals that majority of samples belongs to 17 years (41%) &18 years (40%) of age and Gender wise distribution of samples reveals that the male (46%) and female (54%) samples were almost equal. Distribution of samples on basis of stream reveals that the (50%) of students were belongs to each arts and commerce stream.

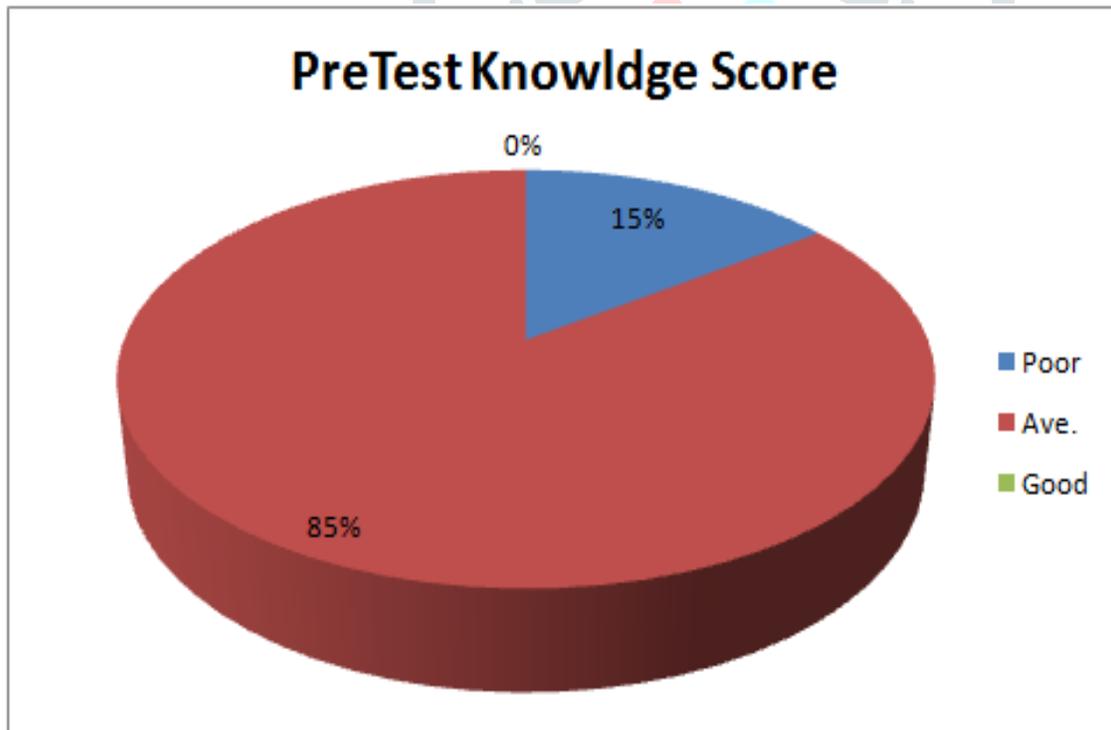
Section I (A)

N=100



Students scored 28% in the pretest, whereas in the post test knowledge it was increase by 5%. Similarly in the pretest 4to 9 students scored only 50% but in the post test overall scored are above 70%, marked improvement seen in the knowledge.50 students shows remarkable improvement in the post test knowledge score i.e. (80-100%) compare to pretest knowledge score

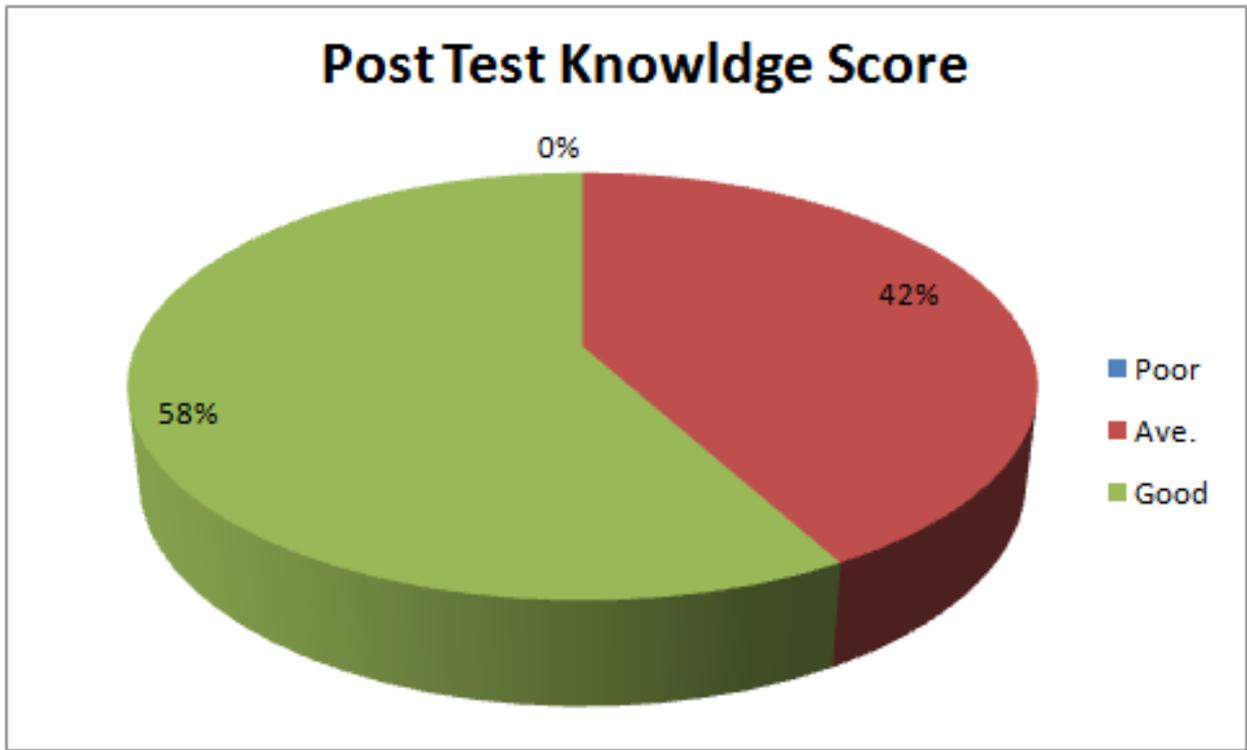
**Section II (B)**



**The pie graph pre-test knowledge scores of the group**

The above figure shows that, 85% samples have average knowledge, 15% samples have poor knowledge and no one having good knowledge regarding disaster preparedness.

Section III (B)

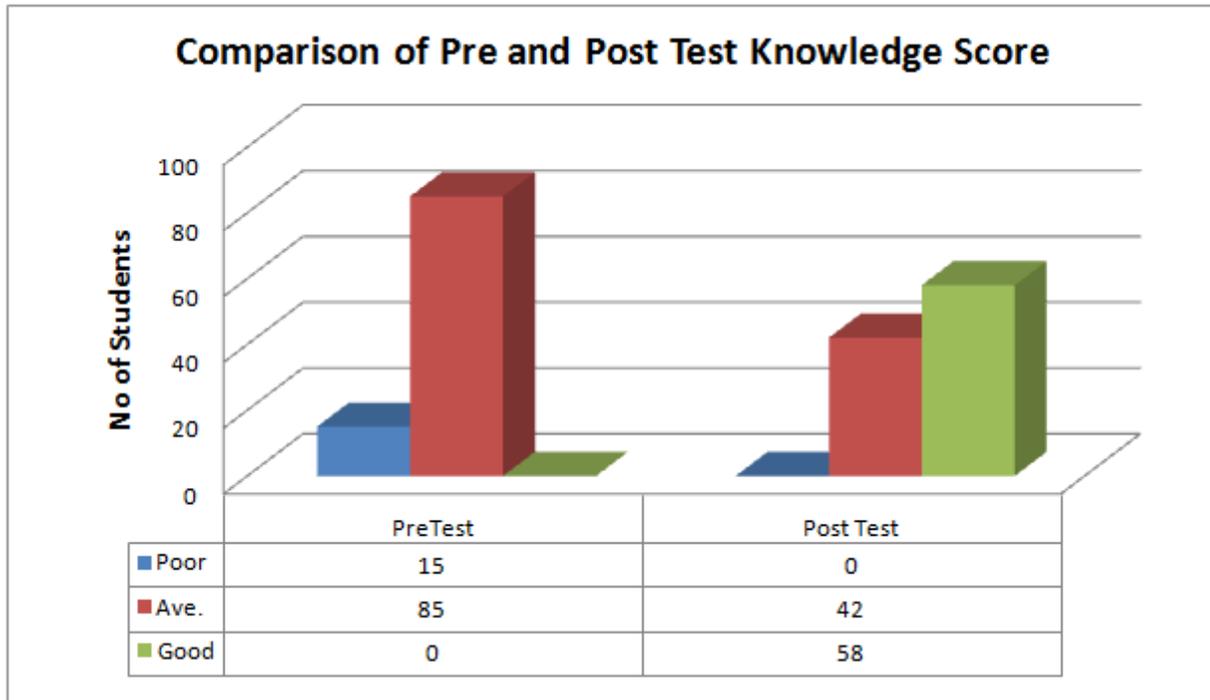


The pie graph represents post test knowledge score

The above figure shows that 58% samples have good knowledge, 42% samples having adequate knowledge and no one have poor knowledge regarding disaster preparedness.

Section IV

N=100



comparison between the pre test and post knowledge score

Above bar diagram shows that majority of (85) the respondents having average knowledge in pretest, however in the post test majority of (58) respondent had good knowledge and 42 were having average knowledge which shows significant increase in the knowledge after structured teaching.

Table No: - 02

Mean standard deviation of pre test and post test knowledge scores of students.

N=100

PRE TEST		POST TEST		Z CAL	Z TABLE	P VALUE
Mean	S.D.	Mean	S.D.			
19.86	3.298545	33.05	3.824591	8.258619	2.326348	0

(At the P<0.05 level significance)

Table 2 shows that

- 1) Mean With regards to the knowledge of disaster preparedness, the mean value-19.86 (40%) of pretest was significantly increased to 33.05 (71.2%) in post test.
- 2) 'Z' calculated value (8.258619) was significantly greater than 'z' table value (2.326348) at 5%level of significance. This shows that there was a significant difference between pre and post test knowledge scores
- 3) Calculated P value was <0.05 level significance

Hence, it was clear from the above findings that there was a significant increase in the knowledge score in the post test which evident by

the statistical calculation of mean, S.D and Z test.

## Section V

Table No:- 03

### Association of pre-test knowledge scores with selected demographic variables

N=100

Demographic variables	d.f	Chi. cal	Chi. Table	p value	Association
Age	1	1.897034	3.841459	0.168411	No association
Gender	1	5.307695	3.841459	0.021231	Association
Stream	1	1.960784	3.841459	0.16143	No association

#### Association with Age:-

- ▶ P value is greater than 0.05, hence we accept  $H_0$ . i.e. Age and knowledge are not associated, as all of them are nearly of the same age.

#### Association with Gender:-

- ▶ P value is less than 0.05 hence we reject  $H_0$ . i.e. there is association between gender and knowledge, i.e. female have better knowledge than male.

#### Association with Stream:-

- ▶ P value is greater than 0.05, hence we accept  $H_0$ . i.e. Stream and knowledge are not associated

### DISCUSSION:

Analysis of section I revealed that majority of age wise distribution of samples belongs to 17 years (41%) & 18 years (40%) of age. Majority of gender wise samples reveals that the male (46%) and female (54%) samples were almost equal. Stream wise distribution of samples reveals that the (50%) of students were belongs to each arts and commerce stream. Pre testing knowledge of the samples regarding disaster preparedness shows that Samples were not have adequate knowledge in all four areas e.g. General awareness about fire, Fire safety, Fire extinguish and evacuation and Actual fire management.

### IMPLICATIONS

### NURSING PRACTICE

The practice requires sympathetic Learnt and Wilking hands. Nurses are in unique position to interact with people thus allowing the nurses to participate effectively in practice. In the current scenario there is lack of qualified nurses in community set up. Many of them they have lack of proper concept of community health nursing. The authority to improve knowledge of health care professionals working in the both settings hospital, and community should implement some strategies. Whenever there is availability of the continuing education programs organized in the vicinity they should be invited for the programme.

## NURSING EDUCATION

Nursing is service to mankind. Service needs an adequate knowledge and comprehensive skill which helps to bring all activities and impart knowledge about disaster preparedness for community. Nurse's responsibility and one of the roles is nurse as an Educator. So as a nurse has to recognize need of the community and impart knowledge about disaster preparedness among adolescents.

## NURSING ADMINISTRATION

In the event of changing community trends and health focus, nursing administration has a responsibility to provide nursing with continuing education. This enables them in updating their knowledge and acquiring new skills. Nursing administration can depute them to various workshops, conferences and special courses on disaster preparedness.

Administration can impart knowledge about newer trends in societal needs in training subordinates. Administrators also can motivate the nursing staff to develop and use information material to impart knowledge about disaster preparedness.

## NURSING RESEARCH

There are many studies conducted on the different aspects of the disaster in India and Abroad. These study results have opened up new avenues for conduct further studies in order to have the specialized skill and knowledge in this specific area. Students should encourage to present papers on the disaster management, and also conduct workshops and street play to create awareness within community.

## LIMITATION

- Study was limited to the subject of adolescent students of selected Junior colleges of Pune city.
- Study was limited to the small number of samples which limit the generalization that can be made.
- Study has less time duration.

## RECOMMENDATIONS

- The study can be replicated on a large sample, thereby findings can be generalized for a larger population
- The study can be conducted on basis of the assessing knowledge, attitude and practice.
- The same study can be conducted to assess the effectiveness of STP using different teaching method etc.
- A comparative study can be done using different educational material like information booklet, leaflets.

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