Article

A Study to Evaluate the Effectiveness of Computer Assisted Teaching Programme on Knowledge Regarding Earthquake Preparedness among General Population Residing Dera Bassi, District Mohali, Punjab

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Abstract: Background: There is always the chance of an earthquake, but there is no way of predicting or giving any warning to when one may occur. The USGS estimates that several million earthquakes occur throughout the world each year, although most go undetected because they hit remote areas or have very small magnitudes. It is estimated that around 500,000 earthquakes occur each year, detectable with current instrumentation.
Aim: The present study aimed to evaluate the effectiveness of the Computer Assisted Teaching Programme on knowledge regarding earthquake preparedness among the general population.
Design: A True experimental research design was used in this study and a rural area was selected for study. Sample: Random sampling technique was used for data collection and structured questionnaire was used for data collection.
Results: In the experimental group 60% pre-test knowledge score was average whereas in post-test, highest percentage (77.50%) of subjects had excellent knowledge.
Conclusion: Teaching Programme was effective in improving knowledge level of General Population.Recommendation: The findings of the study suggest many implications for nursing research, nursing practice, nursing administration and nursing education.

Keywords: Computer Assisted Teaching Programme -Earthquake preparedness-General population.

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1. Introduction

Hature is providing sources through which all basic needs of the human being get fulfilled but man never gets satisfied and wants more and more, which results in the disbalancing of nature, resulting in Disaster. Earthquakes are one of the most common, unpredictable occurrences on earth. An earthquake is a geological event inside the earth that generates strong vibrations. When the vibrations reach the surface, the earth shakes, often causing damage [1].

Earthquakes are the result of plate tectonics, or shifting plates in the crust of Earth and quakes occur when the frictional stress of gliding plate boundaries builds and causes failure at a fault line. Earth is made up of multiple layers i.e. crust, mantle and core. The ocean basins and the continents compose the crust, the outermost layer. Earth's crust is between three and 46 miles (five and 75 km) deep. The mantle under the crust is about 1,800 miles deep (2,890 km). It is composed mostly of silicate rocks rich in magnesium and iron. At the center of the earth is the core, which has two parts. The solid, inner core of iron has a radius of about 760 miles (about 1,220 km) [2].

1.1. Significance of the Study:

The Indian subcontinent has a history of earthquakes. The reason for the high frequency & intensity of earthquakes is the Indian plate driving into Asia at a state of approximately 47mm/ year [3]. One of the most effective mechanisms for a country to prepare for a disaster is by conducting education and public awareness programmes at the local community level. Disaster preparedness consists of a wide range of measures, both long and short-term, designed to save lives and limit the amount of damage [4].

1.2. Aim:

The study aimed to evaluate the effectiveness of the Computer Assisted Teaching Programme on knowledge regarding earthquake preparedness among the general population.

1.3. Hypothesis:

• H1 - There will be statistically significant effect of the Computer Assisted Teaching Programme on knowledge regarding earthquake preparedness among General Population.

2. Material and methods

A True experimental research design was used in this study and two rural areas were selected for data collection Issapur Rauni & Dera Jagadhari respectively. Total 80 general people were selected by simple random sampling technique and data was collected by structured knowledge questionnaire.

3. Results

Table -1 Percentage Distribution of Sample Characteristics

N=80

Demographic Variables	Experimental group (n=40) n %		Control group (n= 40) n %		Chi-square	df	p-value
Age in years							
18-28	13	32.5	12	30	5.0374 [NS]	3	0.1690
29-39	10	25	13	32.5			
40-50	14	35	7	17.5			
51-61	3	7.5	8	20			
Gender							
Male	16	40	17	42.5	0.0516 [NS]	1	0.8203
Female	24	60	23	57.5			
Educational Qualification							
Illiterate	0	0	0	0			
Primary standard	16	40	14	35	8.1131 [NS]	4	0.0874
Middle standard	7	17.5	14	35			
Secondary standard	4	10	5	12.5			
Senior Secondary Standard	8	20	1	2.5			
Graduation & above	5	12.5	6	15			
Occupation							
Govt. job	5	12.5	2	5	3.8629 [NS]	5	0.5693
Private	3	7.5	1	2.5			
Farmer	8	20	7	17.5			
Business	5	12.5	8	20			
Homemaker	15	37.5	15	37.5			
Student	4	10	7	17.5			
Religion							
Hindu	15	37.5	16	40	0.3656 [NS]	2	0.8329
Sikh	23	57.5	23	57.5			
Muslim[a]	1	2.5	1	2.5			
Christian[a]	1	2.5	0	0			

Table 1:   shows that total 40 subjects were there in experimental group highest percentage (32.5%) of subjects were within age of 18-28 years, 60% subjects were female, 20% having senior secondary standard education, 37.5% of subjects were homemaker and highest percentage (57.5%) of subjects were sikh whereas in control group highest percentage (32.5%) of subjects were within age of 18-28 years, 35% of subjects had primary and middle standard education, 37.5% of subjects were homemaker and more than half (57.5%) of subjects were Sikh. For matching of experimental and control group chi- square test was applied for each demographic variable.
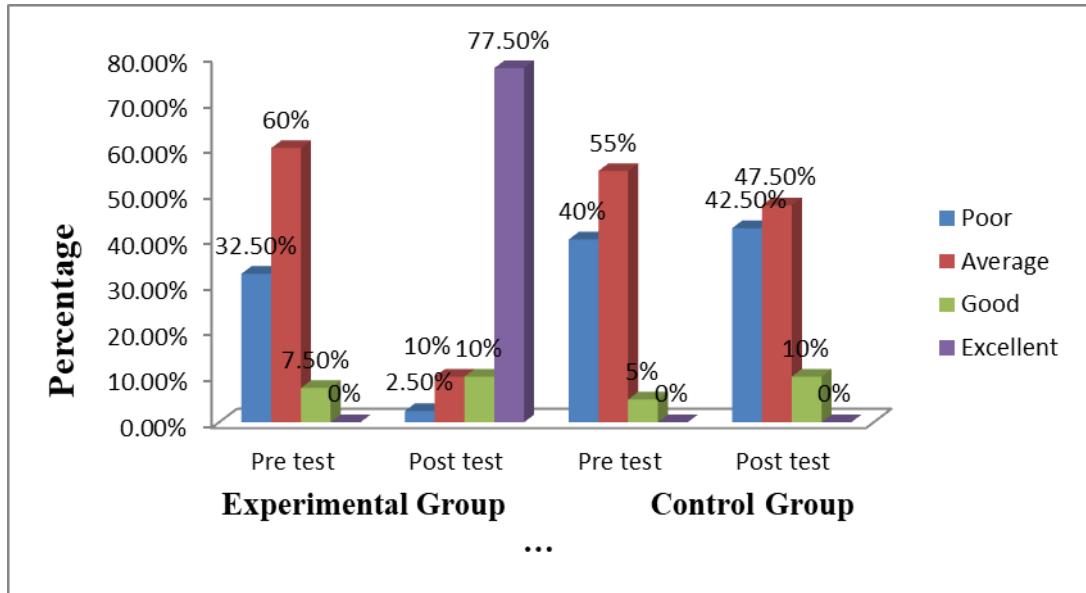

Figure 1. Comparison of Level of Knowledge in experimental and control Group

Figure: 1- revealed that in pre-test knowledge score of experimental group, 60% subjects had average knowledge, 32.50% subjects had poor knowledge score, 7.50% had good knowledge and none of subjects had excellent knowledge regarding earthquake preparedness whereas in post-test, highest percentage (77.50%) of subjects had excellent knowledge and similar percentage 10% of subjects had good and average knowledge and only 2.50% had poor knowledge regarding earthquake preparedness. While in control group, pre-test knowledge score 55% of subjects had average knowledge, 40% of subjects had poor knowledge, 5% had good knowledge and none of subjects had excellent knowledge in both pre-test and post-test whereas in post-test nearly half 47.50% of subjects had average and 42.50% of subjects had poor knowledge and only 10% of subjects had good knowledge regarding earthquake preparedness. In the experimental group, the pre-test mean knowledge score was 11.27±4.49 while in the control group it was 10.95±4.48. The post-test mean knowledge score of subjects in experimental group 29.70±7.40 was higher than control group 11.07±5.15. In the control group pre-test knowledge score 10.95±4.48 was found approximately similar to the post test mean knowledge score 11.07±5.15.

Table -2 Comparison of Pre-test and Post-test Knowledge Scores of Earthquake Preparedness among General Population.

Pre/Post Test	Experimental group (n=40)		Control group (n=40)		t-test	df	p-value
	Mean	**± SD**	**Mean**	**± SD**			
Pre-test	11.27	± 4.49	10.95	± 4.48	0.327^{NS}	78	0.744
Post-test	29.70	± 7.40	11.07	± 5.15	13.05*	78	0.000

t-test	df	p-value		t-test	df	p-value
14.7*	39	0.000		0.232^{NS}	39	0.818

Table 2: It can be inferred that pretest mean knowledge in the control group and experimental group was approximately similar. However, after a computer assisted teaching programme regarding earthquake preparedness to the experimental group. In the experimental group the value of the mean post-test knowledge score was significantly higher than the mean pre-test knowledge score, whereas in the control group it was approximately similar. Hence, it can be concluded that the computer assisted teaching programme regarding earthquake preparedness was effective for improving knowledge.

4. Discussion

The first objective of the study was to assess the baseline knowledge regarding earthquake preparedness among the general population. The study results revealed that in experimental group, during pre-test more than half of subjects (60%) had average knowledge, 32.50% had poor, 7.50% had good and none of subjects had excellent knowledge regarding earthquake preparedness whereas in control group, during pre-test 55% of subjects had average knowledge, 40% of subjects had poor knowledge, 5% had good knowledge and none of subjects had excellent knowledge regarding earthquake preparedness.

The third objective was to assess the effectiveness of computer assisted teaching programmes on knowledge regarding earthquake preparedness among the general population. The study results showed that in experimental group, the mean post-test knowledge score (29.70 ± 7.40) was significantly higher than the mean pre-test knowledge score (11.27 ± 4.49) with t value 14.7 at p level ≤ 0.05, whereas in control group the mean post-test score (10.82 ± 5.30) and mean pre-test knowledge score (10.95 ± 4.48) was approximately similar with t value 0.232at p level ≤ 0.744.

The fourth objective was to find the association between post-test knowledge scores. The study findings showed that post-test knowledge score of general population had statistically non-significant association with selected demographic variables in experimental group whereas in control group, post-test knowledge score had statistically significant with selected demographic variables.

4.1. Summary:

This study was conducted with the purpose to assess the effectiveness of computer assisted teaching programmes on knowledge regarding earthquake preparedness. Conceptual framework of the study was based on Modified Imogene M. King's Theory of Goal Attainment. The tool used in the study consisted of two sections i.e. Demographic profile to collect subjects personal information and structured knowledge questionnaires to assess the knowledge of the general population. Simple random sampling technique i.e. lottery method was used to select 80 subjects, 40 for experimental group from village Issapur Rauni and 40 for control group from village Dera Jagadhari of Dera Bassi , Distt. Mohali, Punjab. 't'-test and ANOVA was used to find the association between post knowledge scores regarding earthquake preparedness.

5. Conclusion

In the experimental group, the pre-test knowledge score depicts that most of the subjects (60%) had average knowledge whereas in the control group during pre-test more than half of the subjects (55%) had average knowledge. In control group, pre-test and post-test mean knowledge score (i.e. 10.95 ± 4.48 and 11.07 ± 5.15) was approximately similar whereas in experimental group post-test mean knowledge score (29.70 ± 7.40) was higher as compared to pre-test knowledge score (11.27 ± 4.49) which indicate that computer assisted teaching programme was effective.

Recommendations:

- Research in the nursing profession is very vital and can lead to important discoveries. Nurse can utilize the findings of the study for the enhancement of knowledge and awareness of community people on earthquake preparedness. Through publication of the research findings, awareness about earthquake preparedness can be promoted by nurse researchers. Research will not only help the nurse in improving their knowledge but also refine their practices for saving the life of other people.
- The similar study can be replicated with a large sample size.
- Similar studies can be done on different populations such as health personnel, students, school teachers and elderly people.
- Public Health Nurse can conduct training, drills and exercises related to care of individuals, families and communities during disaster focusing on populations with access and functional needs in an identified region
- Nurse educators should plan and conduct workshops, symposium, guest lectures, conferences, seminars and discussion programmes should be organized for enhancing the knowledge and skills of students for earthquake preparedness.

Conflicts of Interest: Write conflict of interests or write "The authors declare that they do not have any conflict of interests."

References

[1]   Gopalakrishnan S. Disaster [Intermet]. [place unknown]: Disaster –[cited2015 March 15]. Available from: http://www.icm.tn.gov.in/dengue/disaster.htm

[2]   Sharp T. Space.com [Internet]. [place unknown]: Space.com – [cited 2015 March 15]. Available from: http://www.space.com/17777-what-is-earth-made-of.html. september 26

[3]   Wikipedia Atom feed.[Internet]. [place unknown]: Wikipedia Atom feed. 2015 [cited 2015 April 27]. Available from:en.m.wikipedia.org/wiki

[4]   Wikipedia the free encyclopedia.[Internet]. [place unknown]: Wikipedia the free encyclopedia. 2016 [cited 2016 Jan 12]. Available from: https://en. wikipedia.org/wiki/Preparedness