ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 9, Issue, 8(B), pp. 28320-28323, August, 2018

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

EFFECTIVENESS OF COMPUTER SIMULATION ON KNOWLEDGE REGARDING DISASTER MANAGEMENT AMONG NURSING STUDENTS

Pratima V., Sharla S and Indumathy

CHN, JMJ College of Nursing, Hyderabad

DOI: http://dx.doi.org/10.24327/ijrsr.2018.0908.2438

ARTICLE INFO

Article History:

Received 19th May, 2018
Received in revised form 5th June, 2018
Accepted 10th July, 2018
Published online 28th August, 2018

Key Words:

Computer Simulation, Disaster Management, Nursing Students

ABSTRACT

"We need to act and not just react". A disasters situation arises when people are unable to cope with a sudden and dangerous event. To face this situation every individual need to be prepared. It's the health care personnel's responsibility to educate the community regarding Disaster management. Specially the medical team must be updated and skilful in following the steps of Disaster Management to save the Disaster Victims. For this innovative teaching strategies are effective in improving knowledge as well as practice. Evaluatory research approach was adopted to assess the Knowledge on Disaster Management among Nursing Students. The sample included 40 Nursing Students and were selected by using simple random sampling technique. Data was collected by 35Structured Knowledge Questionnaire. Results revealed that the difference in mean and standard deviation of Nursing students between pre test (M=17.825 & SD= 3.434) and post test (M= 27.425 & SD= 2.678) was statistically significant (p>0.05). The study findings revealed that Computer Simulation is an effective and advanced technique of teaching to follow the steps of Disaster Management. Hence, there is a definite need to prepare the Nursing Students at their premiere stage by using Innovative teaching strategies to attend the victims in Disasters.

INTRODUCTION

Nature is providing sources through which all basic need of the human being get fulfilled but man never get satisfied and want more and more, which results in misbalancing of nature, results in Disaster. (Dhaur GM, 2007) India is the seventh largest country in the world by Geographical area with an extent of 32, 62,263 sq.km and is the second largest populated country in the World. India stands unique in its rich cultural heritage, diversified geographical and climatic conditions, with the snow covered mountains (Himalayas) in the Northern side and rain forests in the South, the Indo-Gangetic Plains, the Deccan Plateau, the major life-giving Rivers which make the areas fertile, deserts on the western side, drought prone areas and long stretches of coastal areas.(Vikrant Sharma, 2017)

We don't expect disaster, but they happen with living come Natural calamities; with industry and technologic advances occur accidents with socio-economic and political stagnation or change come dissatisfaction. Disasters can affect one family at a time as in a house fire, or they can kill thousands and have economic losses in the millions as with floods, earthquake, tornadoes, hurricanes and bioterrorism. (Park, 2014)

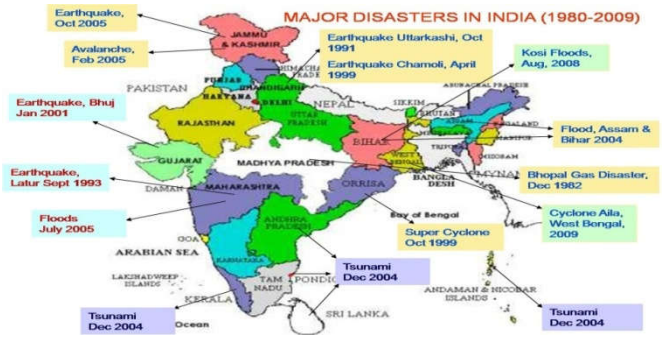

Figure 1 Major Disasters in India(1980-2009)

EM-DAT (Emergency Disasters Database), 2013

According to EM-DAT data indicates that 334 country level disasters occurred, with 109 countries affected. The impact of which resulted in 22,616 people killed, 96 million people affected, and economic damages of 118 billion US$.

Human impact of Disasters in India 2013 was 7,368. India is in the top 10 most affected countries in terms of Human Impact of Disasters in 2013. Economic impact of Disasters on India in 2013 in Absolute Value in USD Billions 2.4. India is one of the

*Corresponding author: **Pratima V**
CHN, JMJ College of Nursing, Hyderabad

top most economically affected countries from Disasters in 2013. The number of People 16.7 Million affected by Disasters in India, 2013.

As highlighted by Ala described that effective response to challenging situations and conditions is vital for ensuring personal safety and protection lives, property, equipment, infrastructure and environment. Everyone must able to take immediate action. These activities can identify potential challenges and training needs related to the coordination system, the equipment and the response personnel. Exercises and simulations can also be used to practice and perfect skills that have been learned. Drills and computer simulations are developed to prepare individuals or groups to do a specific task under certain conditions (e.g., fire drills to evacuate buildings, emergency response drills in hospital emergency rooms, etc.). These drills enhance the ability to respond faster, better and in an organized manner during the response and recovery phase. (Ala,2017)

In order to respond effectively to emergencies, a multi sectoral approach is needed. All sectors including urban, rural, industrial, corporate, health and education sectors should develop and implement disaster management programmes, plan detailed disaster response procedures, provide adequate training and access to emergency equipment. According to Building a National Agenda for Simulation- Based medical Education, "A health care provider's ability to react prudently in an unexpected situation is one of the most critical factor in creating a positive outcome in medical emergency, regardless of whether it occurs in the battle field, free way, or hospital emergency room". Health care providers must be trained with higher level of skills. There are different methods of teaching

Statement of the Problem

"A Study to Evaluate the Effectiveness of Computer Simulation on knowledge regarding Disaster Management among Nursing students in a Selected College, Hyderabad, Andhra Pradesh".

Objectives of the Study

- To assess the pre test and post test level of Knowledge on Disaster Management among Nursing Students.
- To develop and validate Computer Simulation on Disaster Management among Nursing Students.
- To find out the Effectiveness of Computer Simulation on knowledge regarding Disaster Management among Nursing Students.
- To associate the post levels of Knowledge regarding Disaster Management among Nursing Students with the demographic variables such as Age, Type of family, Place of living, Family Income, Previous knowledge and source of information.

Hypotheses

- $\mathbf{H_1}$ The mean post-test Knowledge scores of Nursing Students regarding Disaster Management is significantly higher than the mean pre-test Knowledge scores at 0.05 level of significance
- $\mathbf{H_2}$ There is a significant association between levels of Knowledge among Nursing Students regarding Disaster Management with the demographic variables such as Age, Type of family, Place of living , Family Income, Previous knowledge and source of information at 0.05 level of significance.

Conceptual Framework

The conceptual framework adapted for this study is based on "Modified Stufflebeams CIPP model of evaluation" (2009).

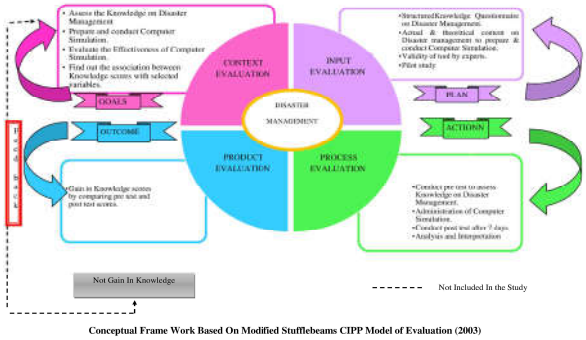

Figure 2 Conceptual Frame Work Based On Modified Stufflebeams CIPP Model of Evaluation (2009)

In order to accomplish the goal of the present study, the reviews has been organized under the following headings

- Incidence and effect of Disasters
- Prevention and Management of Disasters
- Effectiveness of Computer Simulation

METHODOLOGY

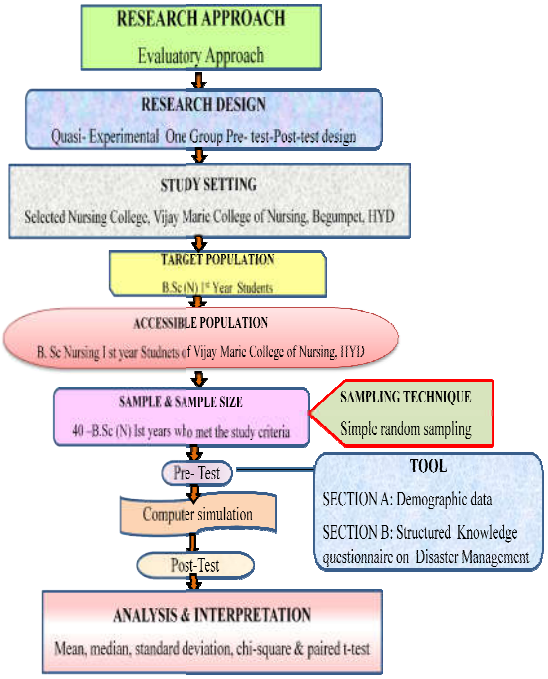

Fig.3: Schematic representation of the Research Design

RESULTS

Table 1 Description of Demographic Variables

n=40

S. No.	Demographic Variables	Frequency	Percentage(%)
1	Age (17-20 yrs)	25	62.5
2	Place of living(Urban)	21	52.5
3	Type of family(Joint & Nuclear)	20	50
4	Income of family per month (Rs. 5,000-10,000)	19	47.5
5	Previous exposure(No)	24	60
6	Source of information(Mass media)	8	50

Background of the Nursing students data revealed that the maximum number (62.5%) of Nursing students was in the Age group of 17-20 years. Majority of Nursing Students (52.5%) were residing at Urban area. Half of the Nursing Students (50 %) were Joint and remaining were Nuclear family. Majority of Nursing Students of Family income (47.5%) were between Rs.5,000-10,000. Majority of Nursing Students (60%) had no information about Disaster Management before this study. Maximum (50%) of Nursing Students had information through Mass media.(Table no. 1)

Table 2 Frequency and Percentage distribution of Pre test and Post test Knowledge scores

n=40

Knowledge scores	Pre test		Post test	
	Frequency	Percentage	Frequency	Percentage
Inadequate Knowledge(<33.33%)	02	05	00	00
Moderate Knowledge(33.33%-66.66%)	36	90	08	20
Adequate Knowledge (> 66.66%)	02	05	32	80

n=40

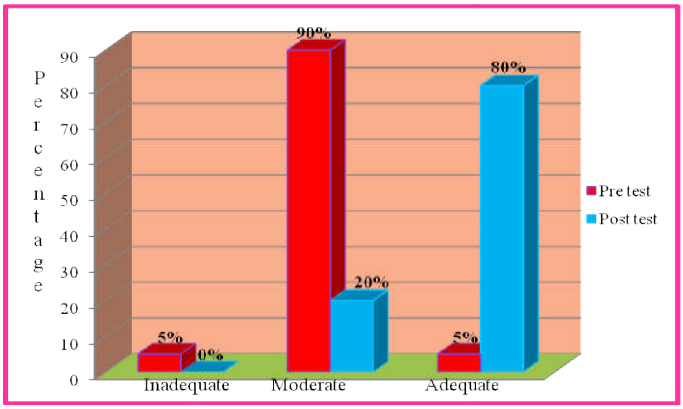

Figure 4 Frequency and Percentage distribution of the Pre test and Post test Knowledge scores of Nursing students

The data presented in the table No. 4 and Figure No. 4 depicts the Knowledge of Nursing Students regarding Disaster Management. The data indicates that Pre-test majority 5 percent of Nursing Students had Inadequate Knowledge and 90 percent had Moderate Knowledge and 5 percent had Adequate Knowledge. Where as in Post-test majority 80 percent of Nursing Students had Adequate Knowledge and 20 percent of Nursing Students had Moderate Knowledge.

Table 3 The Calculated Mean, Standard Deviation(SD), Standard Error(SE) , Paired 't' Values of Knowledge scores

n=40

Knowledge Scores	Mean	SD	SE	Paired 't' Value		df	Inferences
				Cal Value	Tab value		
Pre test	17.825	3.434	0.5429	18.87	1.96	39	S*
Post test	27.425	2.678	0.4235				

Table value = 1.960, df = 39, P <0.05 highly significant

The data presented in the table 3 depicts the mean Pre-test score of Knowledge of the Nursing Students regarding Disaster Management is 17.825 with a standard deviation of 3.434 has increased to the 27.425 with a Standard deviation 2.678 is a measure of spread of scores within a set of data. The large SD indicates greater variability in the data where as smaller SD indicates less variability in the data.The findings in the present study revealed that the Knowledge scores of pre test and Post-test have significance difference.

Table 4 Association between Knowledge and selected Demographic Variables

n=40

S.no	Demographic variables	Knowledge			Cal. value	Tab. value	df	Inference
		Inadequate	Moderate	Adequate				
1.	**Age in years**							
1.1	17-20	00	08	17				
1.2	21-24	00	00	15	4.17	3.84	1	S*
1.3	25 & above	00	00	00				
2.	**Place of living**							
2.1	Urban	00	01	20				
2.2	Rural	00	07	12	4.57	3.84	1	S*
3.	**Type of family**							
3.1	Joint	00	01	19				
3.2	Nuclear	00	07	13	3.91	3.84	1	S*
4.	**Income of Family per month (in Rs.)**							
4.1	Below 5,000	00	3	05				
4.2	5,000-10,000	00	4	15	0.03	5.99	2	NS
4.3	10,000 & above	00	1	12				
5.	**Previous Knowledge**							
5.1	Yes	00	02	14				
5.2	No	00	06	18	0.32	3.84	1	NS
	Source of Information							
6.	Mass media							
6.1	Health personnel	00	00	08				
6.2	Classroom lectures	00	00	01				
6.3	Workshop/conferences	00	02	04	3.81	7.81	3	NS
6.4		00	00	01				

(p=0.05) NS- *Non Significance, df- degrees of freedom,* S*-significance

It could be inferred from table 4 that there was statistically significant association between the level of Knowledge and the Demographic variables of Nursing Student Age, Place of Living and Type of Family. Hence, the hypothesis H_2 was accepted for variables such as Age, Place of Living and Type of Family. However, the association between Knowledge and variables such as Family income per month (in Rs.) , Previous

Knowledge and Source of Information was not significant, hence, the H_2 was rejected for these variables.

DISCUSSION

The study results show that Out of 40 Nursing students majority (90%) had moderate Knowledge, while (5%) of Nursing Students are having inadequate Knowledge and only a small percent (5%) of Nursing Students had adequate Knowledge regarding Disaster Management. This reveals that majority of Nursing Students had moderate Knowledge and need to be educated and informed about the Disaster Management.

Highest percent (80%) of Nursing Students reported adequate Knowledge, while only a (20%) of Nursing Students had moderate knowledge and none of them are having inadequate knowledge regarding Disaster Management in Post test. This reveals that majority of Nursing Students had improved their knowledge scores after Computer Simulation on Disaster Management. Whereas among experimental group of the school students, majority were found to have average level of attention before administration of virtual reality therapy (60%),whereas after virtual reality therapy most of them had above average level attention span (93.3%).

The findings of Paired t-test between pre-test and post-test Knowledge scores of Nursing Students regarding Disaster Management 18.87 were found to be highly significant difference, which was statistically significant at 0.05 level. The knowledge has improved after administration of Computer Simulation. Hence, the Hypothesis H_1 was accepted indicating the mean post-test knowledge scores of Nursing Students regarding Disaster Management is significantly higher than the mean pre-test Knowledge scores. Chi – square test was used to find out the association between selected variables and the Knowledge. It is found that there was statistically significant association between the post test knowledge scores and the Demographic variables of Nursing Students Age, Place of Living, Type of family, Income of family per month, previous information and Source of information. Hence, the Hypothesis H_2 was accepted for variables such as Age, Place of living and Types of family However, the association between post test knowledge scores and variables such as Income of the family, Previous knowledge and Source of information was not significant, hence, the $H_2$was rejected for these variables.

Limitations

The study is limited to

- ❖ No broad generalization could made due to the small size of sample and limited area of setting.
- ❖ The study did not use any control group.
- ❖ No attempt was made to control the extraneous variables.
- ❖ Only a single domain that is knowledge is measured in the present study.
- ❖ The tool used for the data collection was not standardized. It was designed by the investigator himself for the purpose of the present study based on the objectives of the study.
- ❖ The content of the Computer Simulation was prepared on selected areas that too limited to cover within one hour session.

Recommendations

On the basis of the study, certain suggestions are given for future studies.

- A similar study can be done on large population, with the intention that generalization might be possible to a larger population.
- A comparative study can be carried out between effectiveness of Computer simulation and Drill.
- A similar study can be undertaken with a control group design.
- A study can be conducted in various study settings by using the same teaching programme.
- A study can be conducted by using exploratory design to know the effective teaching
- A study can be conducted to develop a training manual for nursing students regarding disaster management.
- A study may be conducted to evaluate the community participation during disasters.

CONCLUSION

No community is immune to the emergencies caused by disasters. Both in man-made disasters and natural disasters the role of the nurse shifts from direct care to that of providing directions to teaching the personnel available in the community to tackle disaster.Based on the findings of the study, there is increase in all the areas of the Knowledge after showing Computer Simulation on Disaster Management. Thus it is inferred that Computer Simulation is the best teaching strategy as it enhance the Knowledge of Nursing Students regarding Disaster Management.

References

1. Dhaur GM, Robbani I. Foundation of Community Medicine. Noida: Elsevier Publication; 2007.
2. Vikrant Sharma. India Disaster Context Analysis[document on the internet]. Scribd online; 2013 Jan 25[cited 2013 April 23]. Available from:http://scribd.com/doc/137512310/india-Disaster-context-analysis.
3. Park K. disaster Management: WHO strategy and approaches to humanitarian action. 22 nd ed. Jabalpur: Banarsidas Bhanot; 2013. p. 736.
4. Wise G. Preparing disaster: Disaster manage response.[document on the internet]. Delhi:2007. Available from: http://www.delhi.gov.in/dolt DM/vbo.pdf.
5. Hong Feng. Effects of a selected Computer Simulation on high school students: Academic performance in technology education. Ph. D[dissertation]. Athens: Georgia University; 2010.
6. Hans A, Sharma K, Mishra P, editors. training manual for inclusion of disability in disaster response.[online]. Bhuji: Shanta Memorial Rehabilitation Centre. 2008; [10-20]. Available from: http://www.allindiary.org.
7. Rosemary MM. Knowledge, Attitude and practie of health care workers: Disaster preparedness. Health Sciences, Honours [thesis]. Johannesburg: Witwatersrand university; 2008.