A Pre Experimental Study to Evaluate the Effectiveness of Planned Teaching Programme Regarding Disaster Management among BEd Students Studying in Selected BEd Colleges at Jaipur

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Abstract: *Background of the study: (Arya AS, Padmanabhan G, Karanth A) "Prevention is better than cure" is an old saying which is very apt in the context of disaster management. India is large country and has had more than its share of major natural hazards like drought, floods, earthquakes, and cyclones throughout its history of civilization. Naturally the country developed its own practices and strategies for coping with various natural calamities. Since independence, India has developed a nationwide relief administration. There has been a paradigm shift in the approach to disaster management in the country. The new approach proceeds from the conviction that development cannot be sustainable unless disaster mitigation is built into the development process. The new policy also emanates from the belief that investment in mitigation is much more cost effective than expenditure on relief and rehabilitation.1 Objectives: to asses effectiveness of structured teaching programme on disaster management among B. Ed. students. Material and method: a pre - experimental approach with one - group pre - test post - test design was used to evaluate the effectiveness of the structured teaching programme on disaster management for B. Ed. students.60 samples were selected using purposive sampling technique from selected B. Ed. college at Jaipur. Conceptual framework of study based on Dorothy Johnson's open system theory. Pre test and Structured teaching programme was delivered on day 1 and on 7th day post test was conducted. Results: The study findings revealed that that there was significant difference between pre test and posttest knowledge scores of B. Ed. students regarding disaster management, hence structured teaching programme was effective. Significant association was found between the demographic variables like age, place of living and Workshop and pre - test knowledge scores of B. Ed. students. Conclusion: Based on the findings of the study the following conclusions were drawn: 1) Assessment of level of knowledge of B. Ed. students regarding disaster management reveals that (76.66%) of samples had average knowledge, 21.66% of\ samples had knowledge deficit (poor knowledge), 1.66% had good knowledge and 0% have very good knowledge. 2) Area - wise analysis of knowledge score was more (45.5%) in the area of flood and least (43.10%) in the area of disaster management. The mean percentage of the knowledge score in the pre - test was 45.20% with mean and SD of 13.56±11.99 where as the post - test was 77.66% with mean±SD of 23.3±13.42. 3) The mean post - test knowledge scores of the B. Ed. students on disaster management in all the areas were significantly higher than their mean pre - test knowledge scores. The study revealed that STP was very effective in improving the knowledge of the B. Ed. students regarding disaster management. 4) Significant association was found between pre - test knowledge scores and some selected demographic variables like age, place of living and workshop.*

Keywords: Disaster management, Structured teaching programme, B. Ed. students, B. Ed. Colleges

1. Introduction

(Swasth Hind July 1990; 160 - 2) Each year many places on the earth are struck by floods, storms, landslides, forest fires, earthquake, epidemics, which affect the human life. Besides, there are other modern disasters caused by man as result of rapid industrialization and urbanization. The above context made WHO to give the slogan **"should disaster strike be prepared"** in 1991. The theme reflects the need for creating awareness of the great damage to human health that can be caused by natural and manmade disasters

(Disaster risk management (2002 - 07). United Nations Development Programme.1 - 2.) The Asia Pacific region experiences nearly 60 percent of world's natural disasters. India on account of its climatic and geographical settings – made from 28 states and seven union territories – has 22 states which are disaster - prone. Twenty - eight percent of the country's total cultivatable area is drought - prone, 60 percent land mass is earthquake - prone, and seventy - six lakh hectares of land is flooded every year. Over 1, 300 lives are lost to floods every year. Asia has accounted for 83% of population affected by the disasters globally. The number of

people affected in the rest of the world was 1, 11, 159 in Asia it was 5, 54, 459. Within Asia, 24% of deaths due to disasters have occurred in India. Floods and high winds account for 60% of all disasters in India.3 Disaster Management Act 2003 defines disaster management as arrangement about managing the potential adverse effects of an event, including, for example, arrangement for mitigating, preventing, preparing for responding to and recovering from a disaster

(Sahni A Indian Society of Health Administration; 1994) The World Health Organization Collaborating Centre for Research on the Epidemiology of Disasters (CRED), Brussels (1991) states that the frequency of disasters in the region has nearly quadrupled during the last 30 years with their impact on populations ranking on top over the regions. It is mainly because of continuous increase in population, and active population migration. The Indian subcontinent is highly prone to natural disasters. As per the latest seismic map brought out by the Bureau of Indian Standards (BIS), over 65% of the country is prone to earthquakes. Some of the most intense earthquakes of world have occurred in India, but fortunately, none of these have occurred in any of

the major cities. Majority of the constructions in these cities are not earthquake - resistant. Thus, any earthquake striking in one of these cities would turn into a major disaster.

(Bremer R. Pre - hospital Disaster Medicine 2003 Oct - Dec; 18 (4): 372 - 84) A study was conducted to identify the level of disaster preparedness and management in reducing human suffering in the 2001 earthquake in Gujarat, India. Nearly 20, 000 persons were killed, 1, 70, 000 were injured and 6, 00, 000 were rendered homeless. During the two - week mission in the disaster area, the disaster relief provided to the affected population of Gujarat was evaluated through the representatives of major relief organizations involved by interviewing them on their relief policies. The evaluation revealed that relief provided to the disaster victims had reduced quality by the following: proper public health indicators had not yet been developed; inefficient coordination was lacking, delayed relief actions because of bureaucracy; and policies on the delivery of disaster relief had not been developed. The study concluded that a successful disaster response will depend on accurate and relevant medical intelligence and planning in advance of during and after disaster.

Objectives of the study:
1) To find out the level of knowledge regarding disaster management among B. Ed. students.
2) To evaluate the effectiveness of structured teaching programme on disaster management in terms of gain in knowledge using the same structured questionnaire.
3) To find out the association between pre - test knowledge score with selected demographic variables of B. Ed. students.

Hypothesis
H_1: The mean post - test knowledge scores of selected B. Ed. students regarding disaster management will be significantly higher than their mean pre - test scores.
H_2: There will be a significant association between level of knowledge of B. Ed. students and selected demographic variables.

2. Methodology

Research Design: The research design selected for this study was Pre experimental one group pretest posttest control group design.

Research Setting: The research setting was selected B. Ed. college in Jaipur.

Population: The accessible population consists of B. Ed. students who met inclusion and exclusion criteria.

Samples and sampling technique: The sample for the study consisted of 60 B. Ed. students. Non - probability purposive sampling technique was used for selecting the sample for the study.

3. Results

1) Percentage distribution of demographic variables of B. Ed. Students.

S. No.	Variables	Frequency	Percentage
1	Age In Years:		
	a) 20 - 23	25	42%
	b) 24 - 27	23	38%
	c) 28 - 31	09	15%
	d) 32 - 35	03	05%
2	Place of Living:		
	a) Urban	23	38%
	b) Rural	37	62%
3	Religion:		
	a) Hindu	43	72%
	b) Muslim	13	22%
	c) Christian	1	01%
	d) Others	3	05%
4	Educational Qualification:		
	a) B. A.	29	49%
	b) B. Sc.	26	43%
	c) Others	5	08%
5	Attended any Workshop on Disaster Management:		
	a) No	53	88%
	b) Yes	7	12%
6	Marital Status		
	a) Married	30	50%
	b) Unmarried	27	45%
	c) Other	3	05%

Part II: Analysis of the knowledge of B. Ed. students regarding disaster Management

Section A: Assessment of level of knowledge

Table 2: Distribution of level of knowledge of B. Ed. Students, N=60

Percentage of Scores	Level of Knowledge	No. of B. Ed. Students	Percentage
0 - 40	Poor	13	21.66%
40 - 60	Average	46	76.66%
60 - 74	Good	1	1.66%
75 and above	Very good	0	0%

The findings of the present study reveal that highest percentage (76.66%) of B. Ed. students had average knowledge regarding disaster management. One B. Ed. students (1.66%) had good knowledge and 21.66% of them had poor knowledge regarding disaster management.

The above findings reveal that most of the sample had average knowledge regarding disaster management.

Section B: Area - wise analysis of pre - test knowledge scores

Table 3: Area - wise mean, standard deviation and mean percentage of knowledge, N=60

S. No.	Area	Maximum Scores	Mean Score	Standard Deviation	Mean Percentage
1.	Knowledge regarding disaster and it's management	10	4.31	7.51	43.10%
2.	Knowledge related to earthquake	10	4.46	7.50	44.60%
3.	Knowledge related to floods	10	4.55	8.39	45.50%
4.	Total	30	13.32	11.99	45.20%

The total mean percentage of knowledge scores of the pre - test was 44.40 with total mean±SD of 13.32±23.40. Area - wise mean percentage of knowledge score was more (45.50%) in area of flood with mean±SD of 4.55±8.39. In the area of disaster and its management the mean percentage was 43.10% with an area - wise mean±SD of 4.31±7.51. In the area of earthquake the mean percentage was 44.60% with an area - wise mean±SD of 4.46±7.50. This reveals that the knowledge of B. Ed. students regarding disaster management was average in all the areas.

Part III: Evaluation of effectiveness of structured teaching programme (STP) on disaster management

Section A: Comparison of Pre - test and Post – test
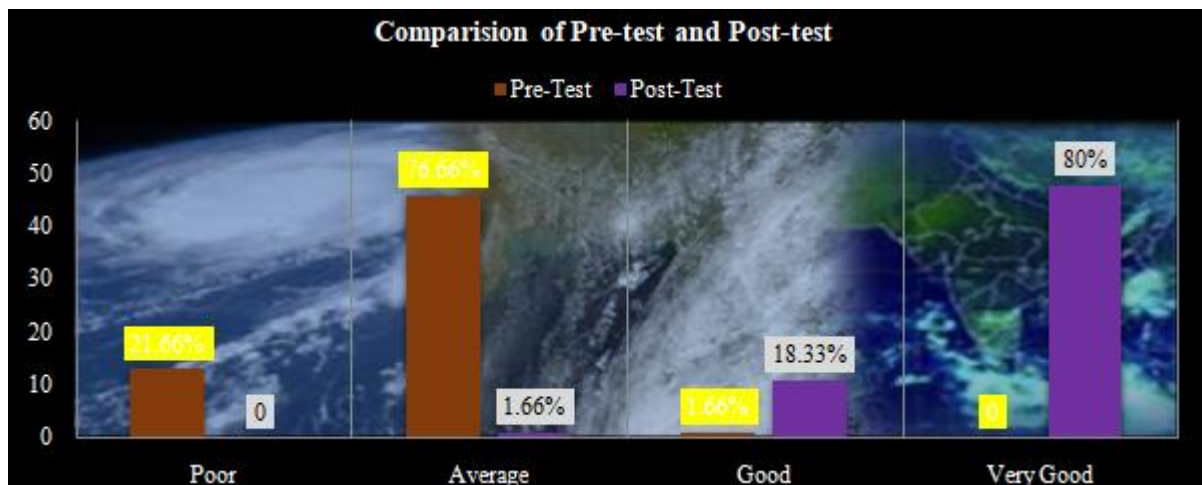
Figure 9: Comparison of pre - test and post - test knowledge of samples

The comparison between the pre - test and post - test knowledge scores shows that:
- In Pre - test number of students in poor knowledge category were 21.66%, while in Post - test it reduces to nil.
- In Pre - test number of students having average knowledge were 76.66% while in Post - test it decreased to 1.66%
- In Pre - test students having good knowledge were 1.66% but in Post - test this number increased to 18.33%
- In Pre - test students having very good knowledge was nil while it Post - test it increases by 80%.

Therefore, it shows a significant gain in knowledge after the administration of Structured teaching Programme.

Section B: Area - Wise Effectiveness of Structured Teaching Programme.

Table 4: Area wise effectiveness of structured teaching programme

Areas	Score	Pre - Test (x)			Post Test (y)			Effectiveness (y - x)		
		Mean	S. D.	Mean %	Mean	S. D.	Mean%	Mean	S. D.	Mean %
Disaster and It's Management	10	4.31	7.51	43.1	7.68	6.13	76.83	3.37	1.38	33.73
Earthquake	10	4.46	7.50	44.6	7.93	6.11	79.33	3.47	1.39	34.73
Floods	10	4.55	8.39	45.5	7.65	5.74	76.5	3.20	2.65	31
Total	30	13.32	11.99	45.2	23.3	13.42	77.66	9.74	1.43	32.46

Area - wise distribution of knowledge scores of B. Ed. reveals that an increase of 32.46% was found in the total mean knowledge scores with mean and SD of 9.74±1.43. Comparison of area - wise mean and SD of the knowledge scores shows that in the area of disaster and its management, the pre - test score was only 43.10% (4.31±7.51) whereas the post - test mean knowledge score was 76.83% (7.68±6.13) showing an increase of 33.73% (3.37±1.38) in the mean knowledge scores of B. Ed. students. The effectiveness of structured teaching programme was 34.73% in area of "earthquake"; and 31% in the area of "flood".

Overall findings revealed that the mean percentage of post - test knowledge score was more compared to the mean percentage of the pre - test knowledge scores. The effectiveness of structured teaching programme was observed in all the areas suggesting that it was effective in increasing the knowledge of the B. Ed. students regarding disaster management.

Part IV: Testing hypothesis
Hypothesis was tested using paired 't' test. The value of 't' was calculated to analyze the difference in knowledge of B.

Ed. students before and after the administration of planned teaching programme. A null hypothesis was framed to evaluate the effectiveness of the structured teaching programme on disaster management.

H_0: There will be no significant difference between the mean pre - test and post - test knowledge scores of B. Ed. students.

H_1: There will be significant difference between the mean pre - test and post - test knowledge scores of B. Ed. students.

Table 5: Significance of difference between pre - test and post - test knowledge scores

S. No.	Area	Mean effectiveness	't' value
1	Disaster and its management	3.37	16.72
2	Earthquake	3.47	17.69
3	Floods	3.20	14.63
4	Total	9.74	25.06

*One - tailed table 't' value at 0.05%: t_{59} = 1.6711; * Significant; $P < 0.05$*

The calculated' value was greater than the table value in all sections. Therefore, the null hypothesis was rejected and research hypothesis was accepted. The gain in knowledge scores of B. Ed. students was highly significant in all sections. Therefore, it is concluded that there is significant gain in knowledge after the structured teaching programme on disaster management.

Part V: Association between the pre - test knowledge score of B. Ed. Students regarding disaster management and selected demographic variables

To find the association between pre - test knowledge score of B. Ed. Students and selected demographic variables, the following null hypothesis was formulated:

H_0: There will be no significant association between the pre - test knowledge score of B. Ed. students and selected demographic variables.

H_1: There will be significant association between the pre - test knowledge score of B. Ed. students and selected demographic variables.

Table 6: Association between age and pre - test knowledge score of B. Ed. students on disaster management, N=60

S. No.	Age	Pre - test score		Total	Df	Calculated value	Tabulated Value
		≤ Median	> Median				
1.	20 - 23	18	7	25	3	3.781	7.81
2.	24 - 27	15	8	23			
3.	28 - 31	8	1	9			
4.	32 - 35	1	2	3			
	TOTAL	42	18	60			

Level of significance=0.05%

Since calculated value is smaller than tabulated value, therefore there is no significant association between age and pre - test knowledge score of B. Ed. students on disaster management. So, in this case H_0 is accepted.

Table 7: Association between Place of living and pre - test knowledge score of B. Ed. students on disaster management, N=60

S. No.	Place of Living	Pre - test score		Total	Df	Calculated value	Tabulated Value
		≤ Median	> Median				
1.	Rural	26	11	37	1	19.08	3.841
2.	Urban	16	7	23			
	TOTAL	42	18	60			

Level of significance=0.05%

Since calculated value is greater than tabulated value, therefore there is a significant association between Place of living and pre - test knowledge score of B. Ed students on disaster management. So, in this case H_1 is accepted.

Table 8: Association between Religion and pre - test knowledge score of B. Ed. students on disaster management. N=60

S. No.	Religion	Pre - test score		Total	Df	Calculated value	Tabulated Value
		≤ Median	> Median				
1.	Hindu	28	15	43	3	7.11	7.81
2.	Muslim	11	2	13			
3.	Christian	1	0	1			
4.	Others	2	1	3			
	TOTAL	42	18	60			

Level of significance=0.05%

Since calculated value is smaller than tabulated value, therefore there is a no any significant association between Religion and pre - test knowledge score of B. Ed. students on disaster management. So, in this case H_0 is accepted.

Table 9: Association between educational qualifications and pre - test knowledge score of B. Ed. students on disaster management, N=60

S. No.	Educational Qualification	Pre - test score		Total	Df	Calculated value	Tabulated Value
		≤ Median	> Median				
1.	B. A.	21	8	29			
2.	B. Sc.	19	7	26			
3.	Other	2	3	5	2	2.33	5.99
	TOTAL	42	18	60			

Level of significance=0.05%

Since calculated value is smaller than tabulated value, therefore there is no any significant association between Educational qualification and pre - test knowledge score of B. Ed. students on disaster management. So, in this case H_0 is accepted.

Table 10: Association between any workshops on disaster management attended and pre - test knowledge score of B. Ed. students on disaster management, N=60

S. No.	Workshop	Pre - test score		Total	Df	Calculated value	Tabulated Value
		≤ Median	> Median				
1.	Yes	2	5	7			
2.	No	40	13	53	1	6.454	3.841
	TOTAL	42	18	60			

Level of significance=0.05%

Since calculated value is greater than tabulated value, therefore there is a significant association between any workshops on disaster management attended and pre - test knowledge score of B. Ed. students on disaster management. So, in this case H_1 is accepted.

Table 11: Association between marital status and pre - test knowledge score of B. Ed. students on disaster management N=60

S. No.	Marital Status	Pre - test score		Total	Df	Calculated value	Tabulated Value
		≤ Median	> Median				
1.	Married	20	10	30			
2.	Unmarried	20	7	27	2	0.3757	5.991
3.	Other	2	1	3			
	TOTAL	42	18	60			

Level of significance=0.05%

Since calculated value is smaller than tabulated value, therefore there is no any significant association between marital status and pre - test knowledge score of B. Ed. students on disaster management. So, in this case H_0 is accepted.

4. Summary

This chapter has dealt with the analysis of the findings of the data collected from 60 B. Ed. students. The data gathered were summarized in master sheet and both descriptive and inferential statistics were used for analysis. The sample characteristics were described using percentage. The mean score of B. Ed. students in pre - test was 13.56 ± 11.99, whereas the post - test mean knowledge score was 23.3 ± 13.42. Paired 't' test was used to analyze the effectiveness of STP on B. Ed. Students regarding disaster management. The findings revealed that there was a significant increase in post - test knowledge scores compared to the pre - test knowledge (t =25.06, P < 0.05). The findings of the association between the pre - test knowledge score and selected demographic variables showed there is an association on some selected demographic variables like age, place of living and workshop.

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