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Effectiveness of Structured Teaching Programme on Disaster management among women living in selected urban areas, Puducherry

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Abstract: *India has been vulnerable to natural disasters due to its geo-climatic conditions. The Union Territory of Pondicherry has a coastline of 45 km: prone to disaster and planning for the management in this area is important. Awareness is a basic tool for disaster preparedness. Hence the investigator felt the need to conduct a structured teaching programme among women on disaster management to improve their knowledge, attitude and skills.A community intervention study was done at Muthialpet with 40 women samples each in experimental and control group 30-50 years old, educated upto 10th. The immediate steps to be taken (before, during, after) first aid measures (wound dressing and lifting) for flood, earthquake and building collapse was the intervention which took 45 mins by mock drill and demonstration. Pre and post test was done for knowledge, attitude and knowledge on skill, for skill only post test was done. Post test was done after 6 months also. Ethical clearance was obtained and informed consent got.The mean and SD of the knowledge, attitude and skill scores was calculated for samples. To find effectiveness of teaching programme on knowledge, attitude and knowledge on skill among experimental and control group anova was computed and found significant. (F=637, p>0.001), it was significant for posttest II also (F=592.53, p>0.001). The correlation between posttest knowledge and skill score was done in experimental group, there was a positive correlation found (r=0.82). The study also found no association between pretest knowledge scores and the sample characteristics in both the groups.*

Keywords: *Disaster, flood, earthquake, building collapse, knowledge, attitude and skill*

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I. Introduction

India has been susceptible to natural disasters on account of its distinctive geo-climatic conditions. Floods, droughts, cyclones, earthquakes and landslides are continuous phenomena. Up to 60% of the total land area is vulnerable to earthquakes of varied intensities; over 40 million hectares is vulnerable to floods; cyclones can occur in almost 8% of the total area and drought in 68%. In the decade 1990-2000, an average of about 4,344 people lost their lives and about 30 million people are affected by disasters every year. The loss in terms of private, community and public asserts has been astronomical. The Government of India has adopted mitigation and prevention as essential components of their development strategies[1,2]

At the global level, there has been considerable concern over natural disaster. The UN General Assembly in 1989 declared 1990-2000 as the International Decade of Natural Disaster Reduction with the goal to decrease the loss of lives and property and bring down the socioeconomic losses through action taken worldwide. [1, 2]

The Union Territory of Puducherry has a coastline of 45 km stretching along the Bay of Bengal and to some extent along the Arabian Sea. Puducherry region alone has 24 km of coastline, Karaikal has 20 km stretch and Yanam has 1km stretch of coastline. The U.T. also has 675 sq. km of inshore waters. The Puducherry U.T. is prone to many natural hazards like floods, cyclones and earthquakes. In the past, cyclones and associated storm surges have inundated vast area of land along the coastal stretches of Puducherry U.T. The coastal areas are prone to disaster and planning for the management in this area is important.[3]

Disaster management occupies an important place in our country's policy framework as it is the poor and the under-privileged who are worst affected due to calamities/disasters.[1,2] The Tenth Five Year Plan has a chapter on Disaster Management.[2] However, there has been no significant decrease in the loss of lives and/or property among the people living in the coastal areas despite substantial scientific and material progress.

Disaster management Act 2005 states the meaning of disaster management as continuous and integrated process of planning, organising, coordinating and implementing measures which are necessary or expedient for the following[4]-

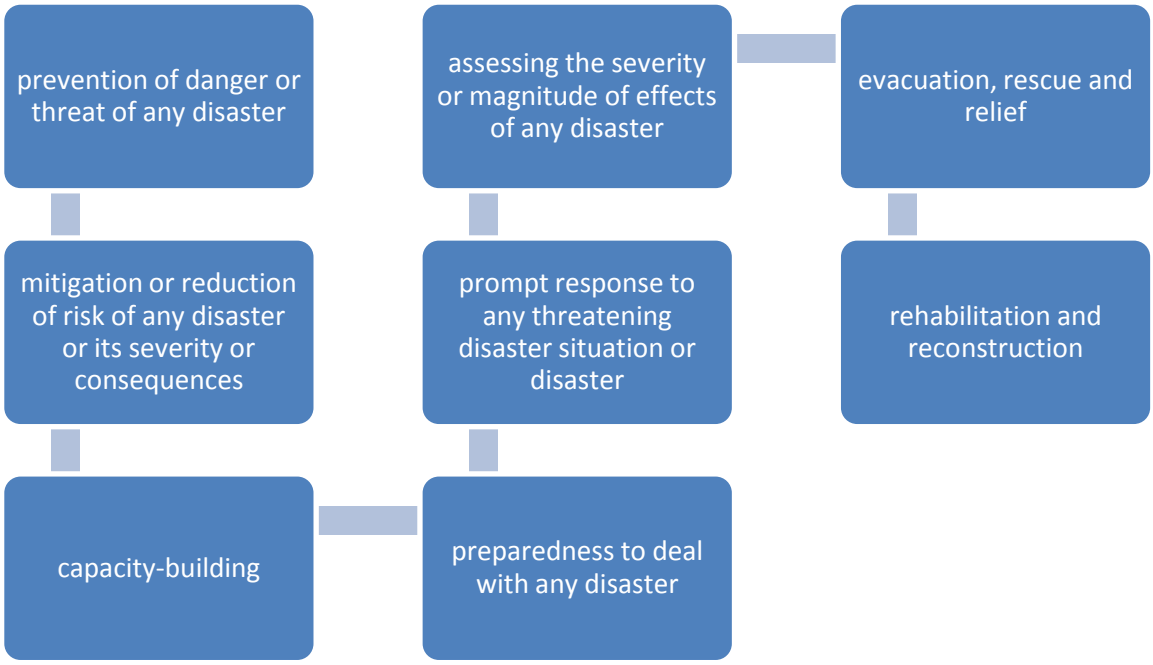

Fig1 Components of Disaster Act 2005

Disaster management is key programme in any nation to prepare and face any emergency situation of natural and manmade events. Disaster preparedness and planning is an inter-sectoral exercise and it is the responsibility of the health care professionals to stimulate and co-ordinate the exercise as well. Health professionals can take more pro active approach; their responsibility is not only post disaster response, but also starts from planning for an improved response and for prevention or mitigation of the disaster impact to allow for a healthier and happier life for all.[1]

Awareness-raising is a basic tool for disaster preparedness and environmental protection. Community involvement and awareness generation, especially for the high risk group of the population and women has been considered as utmost importance for sustainable disaster risk reduction. This is a critical part of the policy because people in the community are the first responders to disasters and, therefore, unless they are empowered and made capable of managing disasters, any amount of external support cannot lead to optimal results.[1]

Hence the investigator felt the need to conduct a structured teaching programme among women on disaster management to improve their knowledge, attitude and skills.

II. Material And Methods

Research approach: Evaluative approach

Research design: Community Intervention Study

Setting: Muthialpet urban area in Puducherry

Population: Study population will be women aged 30-50 yrs

Sample: Women aged 30-50yrs from Muthialpet urban community.

Sampling technique: The College of Nursing, PIMS provides community health care services to four community areas. From these 4 areas, 2 areas will be allocated to experimental and 2 to control group randomly by simple random sampling.

Sample size: 80 (40 in experimental, 40 in control group), 20 in each of the 4 areas

Criteria for selection of sample:-

Inclusion criteria:

1. Women aged between 30-50 years
2. Women who have studied atleast 10th std.
3. Women of urban community who are available at home

Exclusion criteria:
1. Women with severe illness
2. Women with disability

Procedure methodology
After written informed consent was obtained, a well-designed questionnaire was used to collect the data of the recruited subjects. A structured interview on knowledge, attitude and skills on disaster management and structured teaching programme was prepared. Pre and post test was done for knowledge, attitude and knowledge on skill, for skill only post test was done. Post test was done after 6 months also. Ethical clearance was obtained and informed consent got. The tool comprised the following sections:
Section-A
It consisted of demographic questions on variables such as age, educational status, marital status, health professionals in family and membership of any self help group/ non-governmental organization.

Section-B
Structured interview of 30 questions on knowledge
Section-C
Likert scale with 10 questions on Attitude

Section-D
Knowledge on practice with 10 questions
Section-E
Checklist to know the skills for wound dressing and lifting procedures
Intervention

A mock drill and demonstration was conducted on disaster management regarding flood, earthquake, building collapse. The immediate steps to be taken, triaging, and steps to be taken prior to disaster was a part of the intervention programme. First aid measures (wound dressing and lifting) were demonstrated and the skill was assessed during first posttest. The intervention took 45 mins. The participants were divided into 2 groups experimental and control, After teaching to experimental group 1 week and 6 months post test was done. In control group no teaching but post test was done 2 times.

Statistical analysis

Anova was used to ascertain the effectiveness of teaching programme. Karl Pearson's Coorelation coefficient was used to find the relationship between knowledge and skill and chisquare for association. The level $P < 0.05$ was considered as the cutoff value of significance.

III. Result

Table no 1 shows in both the groups most number of participants where in the age group 30 to 35 years, 45% in experimental and 60 % in control group respectively. Most of them were 10-12th class educated 77% and 87% respectively. It was found that most of the women were married and housewives, ie in experimental group 85% married and 73% housewives, in control group 90% married and 70% housewives. 20% in experimental group and 15 % in control group were members of NGOs and only 3% and 8% were members of mahila mandals. 8% in both the groups had not seen any disaster so far.92% in experimental group and 80% in control group had not undergone any training on disaster management and 58%, 45% respectively had got information from media regarding disaster management.

Table no 1: Distribution of women based on their characteristics

S.No	Demographic Variables	Experimental		Control	
		f	%	f	%
1	Age				
	30-35	18	45	24	60
	36-40	8	20	6	15
	41-45	6	15	6	15
	46-50	8	20	4	10
2	Education				
	10-12	31	77	35	87
	Dip/UG	7	18	5	13
	PG	2	5	0	0
3	Marital status				
	Un married	2	5	3	8
	Married	34	85	36	90
	Divorce	2	5	1	2

	Separated	2	5	0	0
4	Occupation				
	Govt job	1	2	3	8
	Pvt job	4	10	4	10
	Self employment	6	15	5	12
	House wife	29	73	28	70
5	Member of Ngo				
	No	31	77	30	75
	Self help gp	8	20	6	15
	Youth clubs	0	0	1	2
	Others/mathar sangam	1	3	3	8
6	No. of disasters seen				
	No	3	8	3	8
	1	10	25	8	20
	2	12	30	12	30
	More than 2	15	37	17	42
7	Training on disaster				
	No	37	92	32	80
	Yes	3	8	8	20
8	Previous Information on disaster management from				
	Nil	7	18	5	12
	Media	23	58	18	45
	Newspaper/magazine	8	20	11	28
	Medical professional	1	2	0	0
	Family/friends/relatives	0	0	4	10
	others	1	2	2	5

Table no 2: The mean and Standard deviation of the knowledge, attitude and knowledge on practice scores was calculated for the pretest, immediate post test(post test I) and post test after 6 months (post test II) for experimental and control groups.

Table no 2: Mean & Standard deviation of the knowledge, attitude and knowledge on practice scores

S.No	Variables	Pretest		Post test I		Post test II	
	Experimental	Mean	SD	Mean	SD	Mean	SD
1	Knowledge	16.08	3.91	19.73	5.64	18.9	4.74
2	Attitude	39.33	4.25	39.73	4.43	39.73	4.43
3	Practice	3.33	2.03	4.23	2.12	5.13	1.83
	Control						
1	Knowledge	17.03	4.67	18.86	4.50	18.34	3.82
2	Attitude	39.25	2.59	38.6	3.97	38.12	4.09
3	Practice	3	1.90	3.89	1.83	3.95	1.58

Table no 3 & 4: To find effectiveness of teaching programme on knowledge, attitude and knowledge on practice among experimental and control group anova was computed and found significant. ($F=637$, $p>0.001$), it was significant for posttest II also ($F=592.53$, $p>0.001$) also.

Table no 3: Effectiveness of structured teaching programme on knowledge. attitude and knowledge on practice regarding disaster management among women Pretest & PosttestI

S.No	Variables	Pretest		Post test I		F	p
	Experimental	Mean	SD	Mean	SD	637	>0.001
1	Knowledge	16.08	3.91	19.73	5.64		
2	Attitude	39.33	4.25	39.73	4.43		
3	Knowledge on Practice	3.33	2.03	4.23	2.12		
	Control						
1	Knowledge	17.03	4.67	18.86	4.50		
2	Attitude	39.25	2.59	38.6	3.97		
3	Knowledge on Practice	3	1.90	3.89	1.83		

Table no 4: Effectiveness of structured teaching programme on knowledge. attitude and knowledge on practice regarding disaster management among women Posttest I & II

S.No	Variables	Post test I		Post test II		F	p
	Experimental	Mean	SD	Mean	SD	592.53	>0.001
1	Knowledge	19.73	5.64	18.9	4.74		
2	Attitude	39.73	4.43	39.73	4.43		
3	Knowledge on Practice	4.23	2.12	5.13	1.83		
	Control						
1	Knowledge	18.86	4.50	18.34	3.82		

2	Attitude	38.6	3.97	38.12	4.09		
3	Knowledge on Practice	3.89	1.83	3.95	1.58		

The correlation between posttest knowledge and skill score was done in experimental group, there was a positive correlation found (r=0.82). The study also found no association between pretest knowledge scores and the sample characteristics in both the groups.

IV. Discussion

The present study found that in both the experimental and control groups most number of participants where in the age group 30 to 35 years, 45% and 60 % ,respectively remaining where in the age group of 36-40 and 40-45 years. These findings are almost similar with the study conducted at Pune[5] by Mangala A. Joshi & Amol Ahirrao which found that 26(43.3%) of the samples were in the age group 21-30 years, 18(30%) of them 31-49 years and 16 (26.7%) of them were from age group 41-50 years.

At Pune[5] they had studied 50% males and females but in an Iranian [6]study the participants were 37.7% females and 62.3% were males but in the present study only women were included as emphasized by the Government of India's[4] report on disaster management to provide awareness to decrease disaster risk.

In our study most of them were 10-12th class educated 77% and 87% respectively remaining where diploma/undergraduates and postgraduates in experimental group but we had no postgraduate in the control group but the Pune[5] study had participants of all levels of education: 28 (46.7%) of them were graduates, 14(23.3%) of them were higher secondary,13 (21.7%) of them were post graduates and above and 5(8.3%) of them were secondary educated. The Iranian[6] study also reveals that 71.5% of participants had high school or higher education. These variations may be due to inclusion of males in both the studies.

The current study found 73% in experimental and 70% in control group were housewives, the Iranian study had 34.5 % participants in the unemployment category. 82% in both the groups had seen one or more disasters in their lives so far in our study but in the Iranian[6] study it was 41.6%. This may be due to geographical differences of Puducherry and Tehran.

Regarding previous information on disaster we had found that 58%, 45% respectively had got information from media. It was also found that no one in experimental group got information from friends/family and no one in control group got information from medical professional. In the Pune [5]study also information from media ie TV-63.3%, Radio -16.7% was comparatively high than other sources,

The study found that 92% in experimental group and 80% in control group had not undergone any training on disaster management. A study conducted by Sonopant G Joshi, Kalpana Sawane, Mangesh Jabade[7] in 2015 on Effectiveness of Training Manual on Disaster Management in Terms of Knowledge and Self Expressed Practice among Secondary School Teacher in Selected School of Pune City also has a similar finding that 74% had not been exposed to any type of first aid of disaster management programme.

The result of the present study shows significant difference in the pre and post test, knowledge, attitude, practice scores and also there is no association between pre test knowledge score and selected characteristics of samples which are supported by the study done by Sonia, Seema Rani, Urmila Devi Bhardwaj at New Delhi[8]. They also found that the mean post-test knowledge scores (29.87%) of community inhabitants regarding disaster preparedness was higher than their mean pre-test knowledge scores (20.85) with a mean difference of 9.02 and computed 'z'-value 7.973. There was no significant association between post-test knowledge scores and age, sex, education, occupation and previous experience of disaster of the subjects.. Regarding association in the present study found no association between pretest knowledge scores and the sample characteristics in both the groups.

The study found a correlation between posttest knowledge and skill score in experimental group (r=0.82). An USA[9] based study marks that basic first-aid skills can be useful in treating minor injuries and that First-aid training, particularly recent training, was associated with greater perceived first-aid skills.

V. Conclusion

The study concludes that women have positive attitude towards learning about disaster preparedness. Creating awareness on dos and donts during disaster is important and teaching programmes including skill training is very effective in the community.

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