Research Paper

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Effectiveness of Educational Package on Knowledge Regarding Pneumonia And It's Prevention Among The Mothers of Under-Five Children In Dakshina Kannada District of Karnataka State

Medical Science

KEYWORDS :
Pneumonia,Mortality,Fast breathing, Under-five children.

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ABSTRACT

Childhood Pneumonia has been identified as a major "forgotten Killer of children by UNICEF in 2006". It is a primary cause of child mortality worldwide. In the view of the nature of the problem, an experimental study was conducted with an aim to assess the effectiveness of educational package on knowledge regarding pneumonia and it's prevention among the mothers of the under-five children. Random sampling technique by lottery method was used to select thefour subcentres each of Amblamogaru and Kudupu PHC's. Systematic sampling was utilized to select 60 samples fromeach of these subcentres. Total 480(240 experimental and 240 control)samples were included in the study.

Data was collected using the structured knowledge questionnaire. The pre-test was conducted on the day one and afteradministration of the educational package using the same questionnaire datawas collected on the eighth day and three months after intervention.

The findings of the study were:

Significant difference between the mean pre-test knowledge scoreand mean post-test I and post-test II knowledge scores of motherswas found in the experimental group ($F_{2,717}$ =529.734, p<0.001),but inthe control group ($F_{2,717}$ = 0.264, p = .0.768) there was no significantdifference. Post hoc analysis also revealed a significant increase in the knowledge from the pre-test to post test I and post test II at .001 level.

In the experimental group significant association was found between the pre-test knowledgescores and demographic variable for occupation ($\chi 2$ = 21.19, p<.001)

and fuel used for cooking ($\chi 2$= 7.15, p<.05). In the post-test I significantassociation was found between knowledge scores and demographic-variable occupation ($\chi 2$= 21.84, p<.001).

Thus the study showed that the educational package on pneumoniaand its prevention among the mothers of under five children was indeedeffective, the largest increase was observed on the 8th day and there wasconsistent increase after three months of administration of the educationalpackage.

Introduction:

Pneumonia is a leading killer of children under the age of five worldwide-responsible for nearly one in five global child deaths annually.In 2011 alone, 1.3 million young children died from this preventable and treatable illness.Most of these deaths occur in sub-Saharan African and South Asia.Pneumonia is a 'disease of poverty': It is closely associated with factors such as poor home environments, under nutrition and lack of access to health services. Deaths are largely preventable through optical breastfeeding practices and adequate nutrition, vaccinations, handwashing with soap and water, safe drinking water and basic sanitation(UNICEF,2012).

In India, every 4 minutes, one child dies of pneumonia causing diseases before even reaching his 5th birthday (Sinha, Kounteya, Time of India, 2009). The global coalition against pneumonia – a collaborative effort of more than 100 international governments, non-governments, and community based organizations research and academic institutions and child health organizations have created the day to drive awareness to the disease and its global effect by holding world pneumonia day every year(World Pneumonia Day,2012). The first world pneumonia day was held in the year November 2009 and thereafter every year November 12th is observed as 'World Pneumonia Day'.

Preventing a child from developing pneumonia in the first place is essential for reducing death. One of the key actions to reduce pneumonia death among children is to ensure that all the care givers know the danger sign of pneumonia in children. Only one of every five care-givers knew the 2 tell-tale symptoms of pneumonia. 21% of the mothers knew that difficult breathing is a symptom of pneumonia and 17% knew about fast breathing as a symptom. Care givers essential role in home based treatment education program need to ensure that care – givers broadly understand the importance of disease and its treatment regimen. More than 1 million lives could be saved if both prevention and treatment intervention for pneumonia were implemented universally (UNICEF, 2006).

Objectives of the study:

1. To assess the knowledge regarding pneumonia and its prevention among the mothers of under five children.
2. To determine the effectiveness of educational package on pneumonia and its prevention among the mothers of under five children.
3. To find the association of knowledge scores among theexperimental group mothers of under five children on pneumonia andits prevention with their selected demographic variables like age ,education ,occupation,income, type of family , number of childrenbelow five years and fuel used for cooking.

Materials and Methods:

True experimental time series designed was adopted for the study:

Group	Pre-test	Intervention	Post-Test I	Post-Test II
G_1	O_{11}	X	O_{12}	O_{13}
G_2	O_{21}		O_{22}	O_{23}

The study was conducted in 4 randomly selected subcentres of Kudupu and Amblamogaru Rural PHC under Mangalore Taluk of D.K. District.

Sampling technique adopted was random sampling technique by lottery method. Mangalore rural Taluk was divided into 3 zones North, East and South. 2 zones were randomly selected (North and South). One each PHC's were randomly selected from these zones. The two selected PHC's were Amblamogaru from South and Kudupu from North. Four subcentres were randomly selected from Kudupu PHC and Amblamogaru PHC and 2 each were randomly assigned to the control and experimental group from each of the PHC's.

All the mothers of the under-five children meeting the inclu-

sive criteria were listed and serially numbered from the selected subcentres. 60 samples were drawn by using systematic random sampling technique which accounted to 480 samples, 240 each from the experimental and control group.

Formal written permission was obtained from the district health officer of Dakshina Kannada district. The purpose of the study was explained and the consent was taken from the mothers.

A structured knowledge questionnaire was used to assess the knowledge of the mothers on pneumonia and its prevention. Pre-Test was conducted on the first day. On the second day an educational Package which included a planned teaching program with the help of the teaching aids was given to them. After the teaching an information booklet and a video CD was given to the mothers of the experimental group for better understanding. On the eighth day after intervention a post test I was conducted for the mothers using the same structured questionnaire. After 3 months, of intervention Post Test II was conducted for the mothers using the same structured questionnaire. In the control group, there was no intervention, post-test I and post-test II was conducted on the eighth and after 3 months.

Results:

Data presented in the figure I shows that majority of the mothers both in the experimental, 156 (65%), and the control groups, 147 (61.3%), had poor knowledge during pre-test. Whereas in the post-test I, the majority of the mothers in the experimental group, 141 (58.7%), had good knowledge, and in the post-test II, the majority of the mothers, 171 (71.2%), had average knowledge. In the control group, both in post-test I, 152 (63.4%), and post-test II, 147 (61.3%), had poor knowledge.

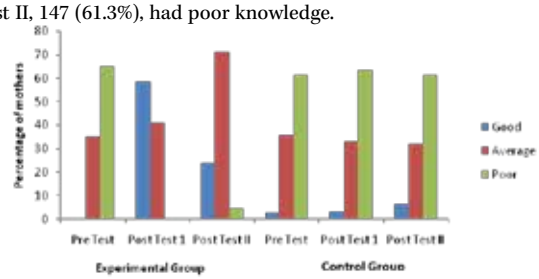

Fig 1: Diagram showing the distribution of the mothers according to the level of knowledge in the experimental and the control group.

Table 1.Range, Mean, Median, Standard and Mean Percentage of Knowledge Scores during Pre-test , Post-test I And Post- test II Experimental and the Control Group.

Period of Observation	Experimental Group					Control Group				
	Range	Mean	Median	SD	Mean %	Range	Mean	Median	SD	Mean %
Pre-Test	3-20	11.99	12	3.88	44.40	4-23	12.57	12	3.81	46.55
Post-Test I	15-26	21.19	21	2.64	78.48	3-23	12.60	12	4.05	46.66
Post-Test II	10-26	18.28	18	2.82	67.70	4-23	12.35	12	4.46	45.74

The data presented in table 1 shows that the Mean and-Mean Percentage knowledge scores of the experimental group wassignificantly higher on the 8th day (Post-test I) of the implementationeducational package (21.19, 78.48 %) than before the implementation of theeducational package (11.99, 44.40%). The mean knowledge score and meanpercentage three months later after implementation educational package(Post-test II) was relatively higher (18.28,67.70%). There was no difference inthe mean knowledge of scores of the control group mothers between thethree times of measurements. The range of the pre-test knowledge scores of the mothers in the control group was higher (4-23) compared to theexperimental group (3-20). Also, the pre-test mean and mean percentageknowledge score was slightly higher in the control group (12.57, 46.55%)when compared to the experimental group (11.99, 44.40%). The standarddeviation (3.8) was similar in both the groups during pre-test. In the-experimental group, the range of scores during the Post-test I was 15-26 andin the Post-test II was 10-26 whereas in the control group, range of scoresduring the Post-test I was 3-23 and Post -test II was 4-23. The Median was12 during the three test period in the control group whereas in theexperimental group, the median varied during pre-test (12) post-test I (21)and post-test II (18).

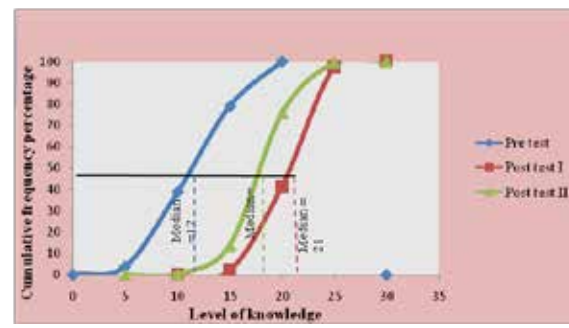

Fig 2: Ogive representing Pre-test and Post-test knowledge scores of experimental group mothers.

Figure 2 shows that the post-test I and post-test II ogive lies entirely to the right of the pre-test ogive. It shows that the scores have been increased from pre-test to post-test.

Area-wise mean percentage of knowledge scores of the experimental and control group mothers reveals that in the pre-test the highest mean percentage knowledge scores of the mothers was in the area of 'preventive measures' both in experimental (56.88%) and control groups (56.04%). In the post test I and post test II mean percentage knowledge score was highest in the experimental group for the area of 'meaning' (89.17%) and 'incidence of pneumonia' (80%). The least mean percentage score in the experimental group in Post Test I (69.42%) and Post Test II (54%) were for the area 'mode of spread and signs and symptoms'. In the control group, highest mean percentage during the post-test I was for the area of 'causes and risk factors' (56.67%).In the Post-test II highest mean percentage was for preventive measures.

Group		Type III Sum of Squares	Df	Mean Square	F Value	P Value
Experimental	Between	10613.776	2	5306.888	529.734,	.000
n=240	Within	7182.93	717	10.018		
Control	Between	8.944	2	4.472	0.264	0.768
N=240	Within	12143.638	717	16.937		

***P<0.001

Table 2. ANOVA results Showing Significance of difference in the Mean Knowledge during Three Test Periods

The data presented in the table 2 according to ANOVA showed asignificant differences in knowledge scores of experimental group mothersbetween the three different test periods, ($F_{2,717}$ = 529.734, $p < .001$).But inthe control group there was no significant difference($F_{2,717}$ = 0.264, p =.0.768)

Table 3. Post-hoc Analysis Showing the Significance of difference of Mean Knowledge Scores Across the Pre-test and Post-test.

Observation	Experimental(n=240)		Control(n=240)	
	Mean	P	Mean	P
Time(I)	Time(J)		Difference	Difference
Value				
	(I-J) Value		(I-J)	
Pre-Test	Post-Test I	-9.21	.000***	-0.03 1.00
Pre-Test	Post-Test II	6.29	.000***	-0.22 1.00
Post-Test-I	Post-Test III	2.91	.000***	0.14 1.00

***P<0.001

Data in the table 3 on Post hoc Analysis revealed that a significantincrease in the knowledge scores from the pre-test to post-test I (p<0.001),pre-test to post-test II (p<0.001) and post-test I to post-test II (p<0.001) in theexperimental group was observed. But in the control group, there was nosignificant increase in the knowledge scores between the pre-test to post-testI, Pre-test to post-test II and Post-test I to Post-test II.

Association of pre-test, post-test knowledge scores of the mothers inthe experimental group according to the demographic variable.

There is a significant association between the pre-test knowledgescores with demographic variable for occupation ($\chi 2$ =21.19, p<.001) and fuelused for cooking ($\chi 2$=7.15, p<.05). In the post-test I significant associationwas found between knowledge scores and demographic variable occupation($\chi 2$=21.84, p<.001).

DISCUSSION:

The present study finding are consistent with the finding of Bijapur (2010)to evaluate the effectiveness of planned teaching programme on pneumonia among mothers showed that there is significant difference in the pre- test and post-test level of knowledge at p<0.001.

Jamar and sarapuddin(2006)conducted a pre-post interventional design study to assess and compared the knowledge of bajau mothers regarding pneumonia .The interactive video lecture presentation was proven effective in increasing the knowledge of the respondents .The study recommended OSCE should be conducted a month after the post intervention to determine if there is retention of knowledge and skills among the respondents.Finding of the present study shows that In the experimental group the mean knowledge scores increased afterthe intervention on eight day (M=21.19) after three months (M=18.28)than before intervention (M=11.99).Findings are in accordance with the studyconducted to assess the effectiveness of WHE for women in ruralmaintenance and to know the knowledge retention results revealedthat the mean scores dropped by about 5% after six months laterafter the intervention (Sloss & Munier,1991).

CONCLUSION:

Preventing a child from developing pneumonia in the first place is essential for reducing death . Home health care has been growing as an important component of health care delivery system. Educational package prepared for the mothers could be used on regular bases for educating the mothers for retaining their knowledge and applying the knowledge in recognizing the signs and symptoms ,homecare and prevention of pneumonia. The results of the study have implication for nursing education, nursing practices, nursing research and nursing administration.

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