Effectiveness of Structured Teaching Material on Awareness Regarding Prevention of Traditional Chulha Usage and its Impact on Respiratory Health Issues Among Family Members: A Longitudinal Study

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Abstract

INTRODUCTION:-

About1million deaths occur annually in India due to household air pollution, according to a report by the lancet respiratory medicine commission (2016), about 25% of the 4.3 million global premature household air pollution (HAP) deaths occur in India every year. According to world health organization (WHO) estimates. The main contributor to household pollution is the smoke released by cook. Over 800 million people in India are affected by indoor air pollution, mainly caused by smoke from burning solid, according to a report by the global alliance for clean cookstoves.

OBJECTIVES

To identify the usage of traditional chulha before and after given structured teaching material on awareness regarding prevention of traditional chulha usage and its impact on respiratory health issues among family members selected houses in community area.

HYPOTHESES

There will be significant difference between the mean of pre and post interventional awareness on prevention of traditional chulha usage among family members selected houses in community area.

MATERIAL AND METHODS

A pre experimental study was conducted at Bicholi hapsi village, Indore Madhya Pradesh India. The population for this study was traditional chulha usages of family members. The sample size was for the study is 60. Convenient sampling technique was used to select samples.

RESULT-

The data of mean post-interventional level of knowledge (13.65) is apparently higher than the mean pre-interventional level of knowledge (5.96). The mean-difference between pre-interventional & post-interventional is 7.69. With the S.D for pre-test and post-test were 2.49 and 3.63 and the calculated "t" value 13.98 is found to be significant at the level of 0.05. Hence research hypothesis H_1 is accepted.

CONCLUSION

It is concluded that the pre-experimental study was effective in measuring the knowledge level among family members of community area. Selected socio demographic variables showed the knowledge level. Hence, it is concluded undoubtedly that the pre-experimental study helped us to assess the knowledge level and to assess the effectiveness of structured teaching material regarding prevention of traditional chulha usage.

KEY WORDS- Pre experimental study, Effectiveness, Knowledge, Awareness, Traditional Chulha, Respiratory Health Issues

INTRODUCTION:-

Smokeless chulha which is the modern chulha or stove is a cooking stove mainly used in the village area that can be made with locally available material like cow dung, clay, soil, chimney pipe and net iron plate. Use of Chulha has a higher risk of health hazards. It increases indoor air pollution so it affects the health of the householders. About1million deaths occur annually in India due to household air pollution, according to a report by the lancet respiratory medicine commission (2016), about 25% of the 4.3 million global premature household air pollution (HAP) deaths occur in India every year. According to world health organization (WHO) estimates.

Many reports aims to describe local stove and fuel use, to identify household preferences related to stove features and function, and to elicit the community perceptions of cleaner-burning stove alternatives with a focus on liquid propane gas. Similar to many resource-limited settings, biomass fuel use was ubiquitous and multiple stoves were used, even when cleaner burning alternatives were available; less than 1% of households that owned a liquid propane stove used it as the primary cooking device.

NEED OF THE STUDY

Respiratory illness affects the health of a huge number of low-income people living in community area, who still cook indoors and outdoors with biomass fuels i.e., Wood, crop residue, charcoal or dung. Cooking on chulha puts at risk the lives of many, but the most affected are women, who spend a substantial amount of time cooking on it, and children who spend most of their time indoors around it.

Chronic respiratory disease is third leading cause of death worldwide causing 3.23 million deaths in 2020.The prevalence of chronic respiratory disease in rural and urban areas was 5.6% and 11.4% in India, 18% global population and increasing burden of chronic respiratory disease. Globally household air pollution was responsible for an estimated 3.2 million deaths per year in 2020, including over 237 000 deaths of children under the age of 5. 1.3 million deaths every year in India due to indoor air pollution. Air pollution is a global public health emergency. Currently 72,626,809 people in Madhya Pradesh are breathing toxic air that does not meet WHO's clean air guidelines.

PROBLEM STATEMENT

"A longitudinal community-based study to ascertain the effectiveness of structured teaching material on awareness regarding prevention of traditional chulha usage and its impact on respiratory health issues among family members of selected houses in community area at Indore M.P."

OBJECTIVES OF THE STUDY

1. To identify the frequency of usage of traditional chulha among family members of selected houses in community area.
2. To estimate the pre-test awareness regarding prevention of traditional chulha usage among family members of selected houses in community area.
3. To prepare the structured teaching material on awareness regarding prevention of traditional chulha usage among family members of selected houses in community area.
4. To analyze the post-test awareness regarding prevention of traditional chulha usage among family members of selected houses in community area.
5. To evaluate the effectiveness of planned teaching programme on awareness regarding prevention of traditional chulha usage among family members of selected houses in community area.
6. To find out the association between post test score on awareness regarding prevention of traditional chulha usage among family members with their selected socio-demographic variables.

HYPOTHESES

(At the level of significance 0.05)

H01: There will be no significant difference between the mean of pre interventional awareness level and mean of post interventional awareness on prevention of traditional chulha usage among family members.

H1: There will be significant difference between the mean of pre interventional awareness level and mean of post interventional awareness on prevention of traditional chulha usage among family members.

H02: There will be no significant association between post test score on awareness regarding prevention of traditional chulha usage among family members with their selected socio-demographic variables.

H2: There will be significant association between post test score on awareness regarding prevention of traditional chulha usage among family members with their selected socio-demographic variables.

ASSUMPTION

- The study will help the family members to become aware of how to avoid using traditional chulha.
- Family members will understand the adverse effect of traditional chulha usages and the influence of respiratory difficulties.

REVIEW OF LITERATURE

Megha Thakur et. al (2018), Systematic review and meta-analysis quasi-experimental studies related to impact of improved cookstoves on women and children health in low- and middle-income countries to identified from 13 electronic databases and the participants are women and children. The interventions were improved biomass cookstoves. the result of the study they identified 53 eligible studies including 24 that met prespecified design criteria. Improved cookstove had no demonstrable impact on pediatric, sever pneumonia, low birth weight babies or miscarriages.

1.2: Utkasha Pathak et.al (2018), A cross-sectional study analyzed the impact of biomass fuel exposure from traditional stoves on lung functions in adult women of a rural Indian village. Households were divided two groups based on the cooking fuel, the BMF group and the LPG group. Information a respiratory symptoms and socio-economic status was obtained using a standard questionnaire, indoor air concentration for PM10 and PM2.5 was measured during cooking hours and pulmonary function tests were conducted for the women inhabitants and result showed that a high prevalence of respiratory symptoms and an abnormal pulmonary function in women exposed to BMF.

MATERIAL AND METHODS:-

Study Design and approach

Longitudinal community based study was conducted, to ascertain the effectiveness of structured teaching material on awareness regarding prevention of traditional chulha usage and its impact on respiratory health issues among family members In this study quantitative approach was used.

Study Area and Population and criteria

This study will be conducting in selected community area in Indore, M.P.India. The population for this study was family members who residing at community area in Indore.

Inclusive Criteria

- People who living in selected community area.
- People who using traditional chulha in household.
- People who are willingly participate in study.
- People who will present at the time of study.
- People who can speak Hindi.

Exclusive Criteria

- People are not interested to participate.
- People those who are not available at the time of study.
- People who are not using traditional chulha.

Sample Size, Sampling techniques and variables

The sample size was for the study is 60. Probability simple random sampling technique was used to select samples.
Two types of variables were used in this study Independent variable Structural teaching material,
Dependent Variable is awareness of family members on prevention of traditional chulha uses.

RESULT- The data of mean post-interventional level of knowledge (13.65) is apparently higher than the mean pre-interventional level of knowledge (5.96). The mean-difference between pre-interventional & post-interventional is 7.69. With the S.D for pre-test and post-test were 2.49 and 3.63 and the calculated "t" value 13.98 is found to be significant at the level of 0.05. Hence research hypothesis H_1 is accepted. I.e. there is significant difference between the mean pre and post awareness regarding prevention of traditional chulha usage and its impact on respiratory health issues among family members and null hypothesis is rejected.

Table shows the distribution of samples according to socio-demographic variables:

S No.	SOCIO-DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1	**Age (in years)**		
	15-25 years	14	23.3%
	26-35 years	18	30%
	36-45 years	20	33.33%
	46 years and above	8	13.3%
2	**Gender**		
	Female	50	83.3%
	Male	10	16.7%
3	**Marital status**		
	Married	56	93.3%
	Divorced	2	3.3%
	Widowed	0	0%

	Unmarried	2	3.3%
4	**Employment status**		
	Unemployed	6	10.0%
	Employed	4	6.7%
	Home-maker	50	83.3%
	Student	0	0%
5	**Economic status**		
	BPL	46	76.7%
	APL	6	10.0%
	Red card	2	3.3%
	Others	6	10.0%
6	**Family type**		
	Joint family	42	70%
	Nuclear family	18	30%
	Extended family	0	0%
	Single parent family	0	0%
7	**Number of family members**		
	2-4	18	30%
	5-7	28	46.7%
	8-10	6	10%
	11-13	8	13.3%
8	**Type of fire resource in chulha usage**		
	Wood	48	80%
	Cow dung	12	20%
	Coal	0	0%
	Paper	0	0%
9	**Location of traditional chulha**		
	Indoor	40	66.7%
	Outdoor	20	33.3%
10	**Frequency of usage of traditional chulha in a day**		
	1 time	1	1.7%
	2 times	26	43.3%
	3 times	19	31.7%
	More than 3 times	14	23.3%

Table- Comparison between Mean, SD, Mean Difference and 't' Value of Pre and Post test score (N=60)

GROUP		MEAN	MEAN DIFFERENCE	MEAN PRECENTAGE	S. D	t- VALUE	P-VALUE
Sample group	Pre test	5.96	7.69	22.79%	2.49	13.98	0.05
	Post test	13.65		59.6%	3.63		

The table result shows that mean post-interventional level of knowledge (13.65) is apparently higher than the mean pre-interventional level of knowledge (5.96). The mean-difference between pre-interventional & post-interventional is 7.69. With the S.D for pre-test and post-test were 2.49 and 3.63 and the calculated "t" value 13.98 is found to be significant at the level of 0.05.

Table:- Association of Demographic Variables with Pre-test Awareness of Prevention of Traditional Chulha Usage Among Family Members

SOCIO-ECONOMIC VARIABLE		POOR (0-5)	AVERAGE (6-10)	GOOD (11-15)	EXCELLENT (16-20)	d.f	X2 VALUE
Age (in years)	15-25 years	0	2	10	2	9	12.19
	26-35 years	3	2	6	8		
	36-45 years	0	3	12	5		

	46 years and above	0	1	3	3		
Gender	Female	3	6	26	15	3	1.01
	Male	0	2	5	3		
Marital status	Married	3	8	30	15	9	5.59
	Divorced	0	0	0	2		
	Widowed	0	0	0	0		
	Unmarried	0	0	1	1		
Employment status	Unemployed	0	0	4	2	9	2.17
	Employed	0	1	2	1		
	Home-maker	3	7	25	15		
	Student	0	0	0	0		
Economic status	Bpl	2	7	21	20	9	2.17
	Apl	0	0	3	3		
	Red card	0	0	2	0		
	Others	0	1	5	0		
Family type	Joint family	2	4	25	10	9	4.78
	Nuclear family	1	4	6	8		
	Extended family	0	0	0	0		
	Single parent family	0	0	0	0		
Number of family members	2-4	1	3	5	9	9	9.49
	5-7	2	2	17	7		
	8-10	0	1	4	1		
	11-13	0	2	5	1		
Type of fire resource in chulha usage	Wood	2	7	26	13	9	1.59
	Cow dung	1	1	5	5		
	Coal	0	0	0	0		
	Paper	0	0	0	0		
Location of traditional chulha	Indoor	3	5	18	14	3	3.59
	Outdoor	0	3	13	4		
Frequency of usage of traditional chulha in a day	1 time	0	0	1	0	9	12.38
	2 times	0	6	13	6		
	3 times	3	2	9	6		
	More than 3 times	0	0	8	6		

CONCLUSION

The present study attempted to find out the effectiveness of sstructured teaching method regarding prevention from usage of traditional chulha and its impact on respiratory health issues among family members of selected community areas in Indore M. P. On the basis of the findings the following conclusion was drawn, it was found out that, majority of samples, it can be clearly seen that 3(3%) sample had poor ,9 (15%) average score, 30(50%) were in good score and 18 (30%) ffamily members is excellent score.

Hence, the intervention, "structured teaching material" was effective in acquiring knowledge regarding pprevention of traditional chulha usage among family members in selected community area in Indore M. P.

RECOMMENDATIONS

On the basis of findings of the study the following recommendations were made.

- A similar study can be replicated on a larger sample.
- An experimental study can be under taken with control group.

KEY WORDS- Pre experimental study, Effectiveness, Knowledge, Awareness, Traditional Chulha, Respiratory Health Issues

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