Original Research Article

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Effectiveness of planned teaching programme regarding worm infestation on knowledge among mothers of under-five children in rural area of Lucknow district

Sandeep Yadav^{1*}, Rohitash Kumar¹, S. K. Singh²

¹Department of Community Health Nursing, KGMU College of Nursing ²Department of Community Medicine, King George's Medical University College of Nursing, Lucknow, Uttar Pradesh, India

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*Correspondence: Sandeep Yadav,

E-mail: sandeepyadavm91@gmail.com

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ABSTRACT

Background: According to the World Health Organization 241 million children between the ages of 1 and 14 years are at high risk of parasitic intestinal worms in India. As per the first-post news updated November 24, 2019, At least 241 million children below the age of 14 years are at high risk of getting stomach worms in India. The study was conducted with the objective to assess the level of knowledge and effectiveness of planned teaching programme on knowledge regarding worm infestation among the mothers of under-five children.

Methods: The experimental pre-test-post-test control group design used and probability random sampling technique was adapted to select 92 mothers for both groups. Tool was used semi-structured knowledge questionnaire and planned teaching programme was implemented only on experimental group.

Results: The results revealed that in experimental group post-test mean and SD score i.e. (16 ± 3.56) was significantly higher the pre-test score i.e. (8.26 ± 3.79) and compared the 't' value, calculated 't' value was (3.76) at the level of significance (0.05) and tabulated with 45 degree of freedom i.e. (2.01). So, it showed that the planned teaching programme regarding worm infestation among the mothers of under-five children in rural area was found effective.

Conclusions: The present study assessed the knowledge among mothers of under-five children regarding worm infestation and found that mothers had poor knowledge related to worm infestation. After the planned teaching programme on worm infestation there was significant improvement on knowledge of the mothers of under-five children regarding worm infestation in experimental group.

Keywords: Effectiveness, Knowledge, Planned teaching programme, Worm infestation

INTRODUCTION

As per the 2011 census, India has 121.1cr. Population in this 16.45cr Children in the age group 0 to 6 years and 37. 24cr 0 to 14 years of age. According to this census 74% of children 0 to 6 years lived in rural area. As per the first-post news updated November 24, 2019, At least 241 million children below the age of 14 years are at high risk of getting stomach worms in India. Many researchers say this is because our soil quality and temperature are conducive to worm growth - poor sanitation also adds to the risk. As per the article of Times of India, 8 February

2018, (76%) kids and teens in UP have a worm in the stomach. Three out of four children and teenagers in the 1-19 years age group in UP have worm in their stomach, according to data from the Health Department shared ahead of National Deworming Day. According to this worm infestation contributes to iron deficiency it can lead to poor brain development.³

Worm infestation can be prevented by practices such as safe disposal of excreta, washing hands after defection, wearing slippers and food hygiene, washing vegetables and fruits properly before using. These can be implemented through effective education of mothers because the mother is only the person who provides the proper education to their children. World health organization (WHO, 2013), estimated that about 1400 million people worldwide are infected with at least one type of intestinal worm.⁴

Objectives were to assess the level of knowledge regarding worm infestation among mothers of under-five children, to evaluate the effectiveness of planned teaching programme on knowledge regarding worm infestation among mothers of under-five children and to find out the association between the pre-test knowledge score with their selected demographic variables.

METHODS

This experimental (Pre-test-Post-test control group design) study was carried out in rural area of Lucknow district, Uttar Pradesh. Mothers of under-five children residing at village- Natkur and Ramchaura of Lucknow district, Uttar Pradesh were selected for the study.

The sample size was 92 for both groups. Probability random sampling technique was used for sampling.

Calculated using the formula, $n= 2(\sigma 1 + \sigma 2)^2 (Z1-\alpha/2+Z1-\beta)/(m1-m2)^2$

 $n=2(3.70+3.40)^2(1.96+1.28)^2/(10.06-15.06)^2$

 $n=2(7.1)^2 (3.24)^2/(-5)^2$

 $n = 2 \times 50.41 \times 10.49/25$

 $n = 2 \times 528.80/25$

 $n = 2 \times 21.15 = 42.3$

Minimum 42 sample for each group (42 for Experimental and 42 for Control group) based on previous study. 4 n=42 for drop out 10% extra sample will be collected (42@10%) Final sample size=46.

Inclusion criteria

Mothers who were having one or more children in the age group 6 months to five years, mothers who were present at the time of data collection were included in the study.

Exclusion criteria

Mothers who were not willing to participate in the study, mothers who were having a degree or diploma in medical and paramedical courses, mothers who were sick at the time of data collection.

Data collection tool

Section A: Socio-demographic

The demographic profile included- age of mothers, religion, no. of under-five children, education, occupation, types of Family, type of house, family

income, drainage system, water supply, defecation facility, having any pet animal, source of information and health services availed from.

Section B: Semi-structured knowledge questionnaire

A semi-structured questionnaire related to awareness of worm infestation among the mothers of under-five children. It consists of 28 items.

Table 1: Semi - structured knowledge questionnaire criteria.

Score	Score (%)	Level of knowledge
1-9	3.57-32.14	Poor
10-18	35.71-64.28	Average
19-28	67.85-100	Good

Development of planned teaching programme and AV aids

The PTP was prepared covering various headings i.e. introduction, definition of worm infestation, common causes of worm infestation, mode of transmission of worm infestation, common signs and symptoms of worm infestation, types of worms, treatment or management of worm infestation, prevention of worm infestation.

Data collection

Data was collected through semi-structured knowledge questionnaire to the mothers of under-five children, for duration of three moths from November 2019 to January 2020.

Statistical analysis

Data entered in Microsoft excel and analysis was done. The association between pre-test knowledge score of mothers of under-five children and their selected sociodemographic variables was done by chi-square test and effectiveness of planned teaching programme was done by using paired 't' test. The level of significance was set at p value<0.05.

Ethical clearance and informed consent

The study was carried out after obtaining approval from the institutional Ethical Committee of King George's Medical University, Lucknow and also the permission was taken from Chief Medical Officer of Lucknow. The participants were briefed about the purpose of the study and informed consent was obtained prior to the data collection.

RESULTS

The level of knowledge among the subjects of experimental group that, the majority of mothers had poor knowledge in the pre-test i.e. 76.08%, where as in post-

test majority of subjects had average level of knowledge i.e. 80.43%. Where as in control group, the majority of mothers had poor knowledge in the pre-test i.e. 50%,

where as in post-test majority of subjects had average level of knowledge i.e. 54.35% (Table 2).

Table 2: Level of knowledge among the mothers of under five children regarding worm infestation in experimental and control group (n=92).

Level of knowledge	Expe	Experimental group				Control group			
	Pre te	Pre test		Post test		Pre test		Post test	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	
Good (19-28)	1	2.17	09	19.57	1	2.17	00	00	
Average (10-18)	10	21.7	37	80.43	22	47.83	25	54.35	
Poor (<9)	35	76.08	00	00	23	50	21	45.65	

Maximum score=28

Table 3: Effectiveness of planned teaching programme on knowledge regarding worm infestation.

Cwayn	Experimental gr	roup	Control group		
Group	Pre test	Post test	Pre test	Post test	
Mean	8.26	16	9.96	9.96	
SD	3.79	3.56	3.61	3.02	
df 45	2.01		2.01		
t-value	3.762		1		

Level of significance p≤0.05

Table 4: Association between the pre-test knowledge score of mothers in experimental group and their selected demographic variables.

Variables	Sample	Knowle	dge level of sul	ojects	P value	χ2 value
variables		Good	Average	Poor		
Age in years						•
18-23	12	0	3	9	9.48	0.93
24-29	30	1	5	24	df=4	NS
30-35	4	0	1	3		
Religion						
Hindu	43	1	9	33	5.99	0.89
Muslim	3	0	0	3	df=2	NS
No. of under-five children						
1	32	1	5	26	5.99	1.39
2	14	0	4	10	df=2	NS
Education						
Illiterate	21	0	4	17		
Primary	8	1	0	7	12.59	10.28
Secondary	13	0	5	8	df=6	NS
Graduation and above	4	0	0	4		
Occupation						
Housewife	46	1	9	36	NA	
Type of family						
Nuclear family	42	1	8	33	5.99	0.16
Joint family	4	0	1	3	df=2	NS
Type of house					•	
Kuccha	2	0	0	2	5.99	0.58
Pucca	44	1	9	34	df=2	NS
Montly income						
Below 5000Rs.	28	1	6	21	9.48	2.46
5001-10000Rs.	16	0	2	14	df=4	NS
100001-20000Rs	2	0	1	1		

Continued.

Variables	Sample	Knowle	edge level of su	bjects	P value	χ2 value
Variables		Good	Average	Poor		
Drainage system						
Open	42	1	7	34	5.99	2.61
Closed	4	0	2	2	df=2	NS
Water supply	•				•	
Hand pump	26	1	4	21	5.99	1.35
Tube well	20	0	5	15	df=2	NS
Defecation facility						
Open field	7	0	1	6	5.99	0.35
Private/household toilet	39	1	8	30	df=2	NS
Pet animal						
Yes	10	1	3	6	5.99	4.85
No	36	0	6	30	df=2	NS
Have you heard about worn	n information					
Yes	35	6	29	0	5.99	2.79
No	11	0	4	7	df=2	NS
Health services availed						
Primary health centre	24	1	3	20	9.48	0.45
Community health centre	7	0	1	6	df=4	NS
Hospital	15	0	5	10		

Level of significant (p=<0.05); NS=Non Significant

Table 5: Association between the pret-test knowledge score of mothers in control group and their selected demographic variables.

Wanishlar	Sample	Knowledg	ge level of subj	ects	P value	χ2 value
Variables		Good	Average	Poor		
Age in years						
18-23 years	4	0	4	0	9.48	10.93
24-29 years	35	1	12	22	df=4	S
30-35 years	7	0	6	1		
Religion		•		•		
Hindu	45	1	21	23	5.99	0.65
Muslim	1	0	1	0	df=2	NS
No. of under-five children						
1	25	0	16	9	5.99	6.33
2	21	1	6	14	df=2	S
Education				•		•
Illiterate	17	0	10	7		
Primary	17	0	6	11	12.59	5.8
Secondary	10	1	5	4	df=6	NS
Graduation and above	2	0	1	1		
Occupation						
Housewife	46	1	22	23	NA	•
Type of family						
Nuclear family	36	1	17	18	5.99	0.16
Joint family	10	0	5	5	df=2	NS
Type of house		•		•		
Kuccha	4	0	2	2	5.99	0.29
Pucca	42	1	20	21	df=2	NS
Montly income						
Below 5000Rs.	21	0	13	8	5.99	3.53
5001-10000Rs.	25	1	09	15	df=2	NS
Drainage system						
Open	41	1	18	22	5.99	2.34

Variables	Sample	Knowled	ge level of sub	jects	P value	χ2 value
Variables		Good	Average	Poor		
Closed	5	0	5	0	df=2	NS
Water supply						
Tap water	6	0	5	1	9.48	8.69
Hand pump	28	0	10	18	df=4	NS
Tube well	12	1	7	4		
Defecation facility						
Open field	9	0	6	3	5.99	1.69
Private/household toilet	37	1	16	20	df=2	NS
Pet animal						
Yes	12	0	6	6	5.99	0.36
No	34	1	16	17	df=2	NS
Have you heard about worm	information					
Yes	40	1	20	19	5.99	0.83
No	6	0	2	4	df=2	NS
Health services availed						
Primary health centre	25	0	12	13	9.48	5.02
Community health centre	9	1	3	5	df=4	NS
Hospital	12	0	7	5		

Level of significant at (p≤0.05); S=Significant; NS= Non- Significant

Effectiveness of planned teaching programme on knowledge regarding worm infestation.

In experimental group the calculated 't'-value was (3.76) at the level of significance (<0.05) and the tabulated 't'-value with 45 degree of freedom was (2.01). Since the calculated 't'-value was greater than the tabulated 't'-value. That means there is a significant change in the knowledge score of post-test value of mothers. Where as in control group the calculated 't' value was (1) and the tabulated 't'-value was (2.01). Since the calculated 't'-value lower than the tabulated 't'-value means there is no significant change in the knowledge score of post-test value of mothers in control group (Table 3).

Association between, pre-test knowledge score of mothers of under-five children and their selected socio-demographic variables

The association of pre-test knowledge score with their selected demographic variables by using Chi-square, the result revealed that in experimental group there was no significant association between, pre-test knowledge score and selected socio-demographic variables (Table 4).

Where as in control group age of subjects and no. of under five children had significant association it means having positive relationship between the knowledge score and age of subjects and no. of under five children. Others demographic variables in control group had no significant association with pre-test knowledge score (Table 5).

DISCUSSION

The present study was conducted among mothers of under-five children of rural population of Lucknow

district. A total of 92 mothers of under-five children including both experimental and control group were selected after fulfilling the inclusion criteria. Most of subjects were having poor knowledge regarding worm infestation in experimental group i.e. (76.08%) where as in post-test majority of subjects had average level of knowledge i.e. 80.43% and in control group, the majority of mothers had poor knowledge in the pre-test i.e. 50%, where as in post test majority of subjects had average level of knowledge i.e. 54.35%.

A similar study was conducted where the result revealed that low knowledge score in pre test was (53.30%) and high level knowledge score was (6.70%) after intervention post test high level knowledge score was (66.70%).⁵ In experimental group the mean and standard deviation of pre-test was (8.26±3.79) and in post test it was (16 ± 3.56) where as in control group i.e. (9.96 ± 3.61) in pre test and in post test i.e. (9.96±3.02). Since the calculated 't' value was 3.76 for experimental group that is greater than the tabulated value (2.04) of df=45 at the level of significant (p < 0.05). That means there was a significant change in the post test knowledge level of subjects. So, this is evident that the planned teaching programme among the mothers of under-five children in rural area was effective. Where as in control group the calculated t-value i.e. (1) was less than the tabulated tvalue i.e. (2.04) that means, there was no significant changes in the post knowledge level. A similar study was conducted where the result revealed that the overall mean knowledge score (62.26) obtained by the subjects in post test was higher than mean knowledge score (42.7) in the pre test and with the improvement score as (19.56). There was a significant difference between pre-test and post-test knowledge score at $(p \le 0.05)$. The result of the study revealed that the planned teaching programme was

significantly effective in improving the knowledge of mothers of under-five children regarding prevention of worm infestation.6 The present study showed that in experimental group there was no significant association between, pre-test knowledge score and selected sociodemographic variables where as in control group age of subjects and no. of under five children had significant association it means having positive relationship between the knowledge score and age of subjects and no. of under five children. Others demographic variables in control group had no significant association with pre-test knowledge score. A similar study was conducted where result revealed that variables were age, education, religion, type of house, type of family, latrine facility, and water source. The chi-square calculated value was less than the chi-square tabulated value. Hence there was no significant association between pre test knowledge score and selected demographic variables.⁷

CONCLUSION

The present study assessed the knowledge among mothers of under-five children regarding worm infestation and found that the mothers had poor knowledge related to worm infestation. After the planned teaching programme on worm infestation there was significant improvement on knowledge of the mothers of under-five children regarding worm infestation. The study concluded that the planned teaching programme was effective in improving knowledge of mothers of under-five children regarding worm infestation.

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Institutional Ethics Committee

REFERENCES

- Putting farmers first. Available at http://mospi.gov.in. Ministry of Statistics and Program Implementation Government of India. Accessed on 10 May 2019.
- First post. Available at https:// www. firstpost. com/ health/why-it-is-crucial-to-get-children-dewormedespecially-in-india. Accessed on 24 November 2019.
- 3. Times of India. Available at www.TOINews/UP.com. The Times of India News/UP, 8 Feb 2018, Lucknown (UP). Accessed on 15 January 2019.
- 4. Worm infestation problem in Country, World health organization, Available at www.who/worm. Accessed on 20 January 2019.
- 5. Manda MS, Avinash SH. Evaluate the effectiveness of planned teaching programe on knowledge regarding prevention of worm infestation, International Journal Advance in Nursing Management, 2014;2(2):82-5.
- 5. Suja B, Raman AV. Effectiveness of video assisted teaching programme on worm infestation among mothers of under five children. Indian J Nursing Studies. 2016;07(02):44-9.
- 7. Nazir, B. A study to assess the effectiveness of planned teaching programme on knowledge regarding prevention of worm Infestation among mothers of under-five children in Selected hospital of Srinagar Kashmir. IJAR 2019;9(2):2-35.

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