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Original Research Article

Knowledge regarding prevention of worm infestation among mothers of under five children: a rural community-based study

Nabajani Dutta[1]*, Kaushik Deka[2]

[1]Department of Nursing, Royal School of Nursing, The Assam Royal Global University, Betkuchi, Guwahati, Assam, India
[2]Tata Medical Centre, Kolkata, West Bengal, India

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***Correspondence:**
Dr. Nabajani Dutta,
E-mail: duttanabajani@gmail.com

ABSTRACT

Background: Worm infestation poses a significant public health challenge in developing countries, particularly among children, due to poor living conditions and inadequate hygiene practices. In developing nations, helminthic infestations are a major contributor to the global disease burden, leading to malnutrition, developmental issues, and iron deficiency anemia in young children. Poor socio-economic conditions and lack of proper sanitation contribute to the high prevalence of worm infestations among children in developing countries, impacting their health and development. Worm infestations are a significant health concern in developing countries, affecting children's nutrition, development, and overall well-being, with a substantial proportion of children at risk. In regions like Assam, the high prevalence of parasitic intestinal worm infestations among children aged 1-4 years underscores the need for targeted interventions to address this public health issue. Aim was to assess the level of knowledge regarding prevention of worm infestation among mothers of under five children and to find the association between knowledge with selected demographic variables.
Methods: Purposive sampling was adopted in a descriptive study design for 60 mothers of children under five in Lakhara, Guwahati. A structured knowledge questionnaire served as the study's instrument. Both descriptive and inferential statistics were used in the analysis.
Results: Majority of the mothers had inadequate level of knowledge (50%), moderate practices (35%) and adequate (15%) regarding worm infestations. There was statistically significant association found between level of knowledge and demographic variables such as educational qualification, family income, type of house and dietary pattern at $p<0.05$ level.
Conclusions: Research hypotheses stated were accepted. It was concluded that there is a need to improve the knowledge with regard to prevention of worm infestation. Hence, health education pamphlet was prepared.

Keywords: Knowledge, Prevention, Worm infestation, Mothers, Under five children

INTRODUCTION

Worm infestation is a serious public health issue for children in underdeveloped nations due to their low socioeconomic status and poor living environments.[1] Children are the most valuable asset for any society. They are the builders of the future of any nation. "Children's health is tomorrow's wealth". Children are priceless resources. Their wellbeing is the basic concern of every nation. A healthy child brings joy to the family, enduring happiness to the parents, excitement to the community, and hope to the country.[2]

The under five children are vulnerable or special risk group in any population deserving special health care

because of their immaturity and various stages of growth and development. The under five children are more prone to acquire some infections which is not seen in adults. As a result, there is an increased morbidity and mortality rate in under-five children. These diseases include diarrhoea, vector borne diseases, worm infestation, and respiratory infections etc.[3]

Human beings strive hard to acquire a healthy life style, but in times because of negligence, human beings are at highest risk of diseases because of which, they suffer a lot. Most of the parents find long white/pinkish worms or tiny thread like worms, in their child's stool. This is called worm infestation or infection by worms. It is common in rural areas where practice of defecation in open fields is prevalent.[4]

Parasitic infections lead to an untold misery and economic loss throughout the world. They can infect all organs of the body. Worm infestation with roundworm, hookworm, and pinworm are the sources of severe morbidity in children as well as adults. Although mortality from such infestation is low, some intestinal parasitic infections interfere with the nutrition, growth and development of the children as well as with work and productivity of children.[5]

Worm infestation is common from 1-5 years of age when the child begins to lead a more independent life. The magnitude of parasitic infestation among children constitutes a major health problem in many parts of the world. It is estimated that 85% of the total incidence is due to ineffective disposal of human excreta.[6]

Even though the problems associated with the worms are drastic, these do not grab headlines like other diseases. The sickness they cause can be equally devastating. Children who are affected with worm infestation may show the sign and symptoms of weight lost, itching at anal area, abdominal pain, diarrhoea, anaemia, sleeplessness, irritability and fever. Worm infections can also cause stomach pain, cough, fever, vomiting, loss of appetite, a swollen belly, blood in stools or urine, fatigue and restlessness. Worms can limit nutrient absorption and cause intestinal bleeding, leading to anaemia and malnutrition thereby making children either too sick or too tired to concentrate. In case of serious chronic infections children may also be physically stunted. This can lead to long term retardation of mental development. In rare cases worms can lead to conditions that are live threatening.[7]

Every year February 10 and August 10 is observed as the National Deworming Day (NDD). The objective of NDD is to deworm all preschool and school-age children (enrolled and non-enrolled) between the ages of 1-19 years through the platform of schools and Anganwadi Centers in order to improve their overall health, nutritional status, access to education and quality of life. The day is an initiative of the Ministry of Health and Family Welfare, GoI. Theme of NDD 2024 is "Eliminate STH: Invest in a healthier future for children."[8]

Worm infestation affects children's physical development and health, resulting in under-nutrition and anaemia. In order to improve children's and adolescents' health and nutritional status, the World Health Organization has also recommended routine deworming. In order to lower the morbidity and mortality rates among children, the researcher felt compelled to carry out the current study in order to evaluate mothers' knowledge of worm infestation and to teach them about it.

Statement of problem

A study to assess the knowledge regarding prevention of worm infestation among mothers of under five children in selected community of Guwahati, Assam.

Objectives

Objectives were to assess the knowledge on prevention of worm infestation among mothers of under five children and to determine the association of the knowledge on prevention of worm infestation among mothers of under five children with selected demographics variables.

Hypothesis

H1: There is a significant association between knowledge on prevention of worm infestation and selected demographic variables.

METHODS

A quantitative research approach was used for the study. Non experimental descriptive research design was adopted for the study and was carried out among 60 mothers of under children of Sagalpara Anganwadi in Sagalpara village, Lakhera, Kamrup, Assam. The samples were selected using purposive sampling technique.

Ethical consideration

Ethical approval for this study was obtained from The Assam Royal Global University, Guwahati, Assam, institutional ethical committee (IEC) for human resources (No. RGU/ IECHR/ B.Sc (N)/2024/12), date of issue: 12/07/2024). Informed consent: an explanation to the study subjects shortly about the purpose of the study and its outcome. The written informed consent was approved by the members of the IEC of RGU.

Inclusion criteria

Mothers who have an understanding of the English or Assamese languages, have at least one child under five, and are ready to participate were included.

Exclusion criteria

Mothers who were unavailable during data collection due to any illness were not included in the study were excluded.

Data collection

Data was collected using a self-structured interview schedule. The study was carried out for 1 months, from 26 August 2024 to 24 September 2024.

Table 1: Data collection tool and technique.

Sections	Tool	Technique
I	Demographic variables (Age of mother, educational qualification of mother, number of under five children, type of family, monthly family income, housing type, source of drinking water and dietary pattern)	Self-report and interview method.
II	Structure questionnaires to assess the knowledge of mothers regarding worm infestation	Self-report and interview method.

The reliability is found to be 0.96 by using split half method and indicating an acceptable level of the tool. The pilot study was conducted at Rani CHC, Guwahati, Assam. Permission for conducting study was obtained from the senior medical officer, Rani Community Health Centre, Rani, Kamrup, Assam. Final study was conducted in Sagalpara Anganwadi, Sagalpara village after taking permission from the medical and health officer cum in charge of Lakhara State Dispensary, Lakhara, Kamrup Metro, Assam.

Statistical methods used

Data were entered and analyzed using the statistical software SPSS 20.0 version. Descriptive data were presented in frequencies and percentages and Chi square test is done to assess relationship.

RESULTS

Out of 60 mothers, 20 (33%) belonged to 26-30 years of age group, 16 (27%) belonged to Higher Secondary education qualification category, 27 (45%) mothers have 1 child, 23 (38.3%) has a family income of Rs 10,000-20,000, 30 (50%) lives in a pucca housing type, 30 (50%) belonged to nuclear family, 1 (32%) source of drinking water is tap water, 45 (75%) of them are non-vegetarian.

Table 2 data shows that level of knowledge on prevention of worm infestation among mothers of under five children was calculated and knowledge score has been categories based on mean 10.2, Standard deviation 3.58, range 3-9 and divided as score >13 is adequate (A) knowledge, 7-13 score is moderate (M) knowledge and <7 score is inadequate (IA) knowledge. It has been observed that majority 30 (50%) of mothers had Inadequate knowledge 21 (35%) had moderate knowledge and only 9 (15%) had adequate knowledge regarding prevention of worm infestation. Table 3 shows that majority 30 (50%) of mothers had Inadequate knowledge, 21 (35%) had moderate knowledge and only 9 (15%) had adequate knowledge regarding prevention of worm infestation.

Section III: Association between the level of knowledge of mothers with selected demographic variables

Demographic variable educational qualification (X^2=18.5, p=0.047), income (X^2=15.2, p=0.019), type of house (X^2= 4.9, p=0.005) and dietary pattern (X^2=7.21, p=0.027) had significant association with level of knowledge of mothers regarding prevention of worm infestation at <0.05 level and other demographic variables did not show statistically significant association with level of knowledge of mothers regarding prevention of worm infestation.

Table 2: Frequency and percentage distribution of the sample according to demographic variables, (n=60).

Demographic variables	N	Percentage
Age (in years)		
<20	10	17
20- 25	19	32
26-30	20	33
>31	11	18
Education qualification		
Primary school	4	6
Middle school	15	25
High school	15	25
Higher secondary	16	27
Graduate	6	10
Above graduate	4	7

Continued.

Demographic variables	N	Percentage
Number of children		
1	27	45
2	26	47
3 and above	7	12
Family income (in Rs)		
<Rs 10,000/month	15	25
Rs 10,000-20,000	23	38
Rs 20,001-30,000/ month	14	24
>Rs 30,000/ month	8	13
Housing type		
Kaccha	14	23
Pucca	30	50
Semi pucca	16	27
Type of family		
Joint family	20	33
Nuclear family	30	50
Sole parent family	10	17
Source of drinking water		
Tap water	19	32
Handpumps	18	30
Open well	15	25
Surface water sources	8	13
Dietary pattern		
Vegetarian	15	25
Non-Vegetarian	45	75

Table 3: Frequency and percentage regarding level of knowledge on prevention of worm infestation among mothers of under five children, n=60.

Knowledge criteria (Score)	N	Percentage
Inadequate knowledge (< 7)	30	50
Moderate knowledge (7-13)	21	35
Adequate knowledge (>13)	9	15

Table 4: Association of level of knowledge of mothers with selected.

Demographic variables	N			Chi square X^2	Df	P value	Tabulated value	Remarks
	IA	M	A					
Age (in years) of mother								
Below 20	5	3	2	0.598	6	0.996	12.592	NS
20-25	9	7	3					
26-30	10	7	3					
Above 30	6	4	1					
Educational qualification of mother								
Primary school	3	1	0	18.5	10	0.047	18.3	S*
Middle school	10	5	0					
High school	8	5	2					
Higher secondary	5	9	2					
Graduate	3	0	3					
Above graduate	1	1	2					
Number of under five children								
1	14	11	2	3.79	4	0.48	9.49	NS
2	12	9	5					
3 and above	4	1	2					
Family income (in Rs.)								
<Rs 10, 000	11	4	0	15.2	6	0.019	12.592	S*
Rs 10,000-20,000	8	13	2					
Rs 20,001-30,000	7	3	4					
>Rs30,000	4	1	3					

Continued.

Demographic variables	N			Chi square X^2	Df	P value	Tabulated value	Remarks
	IA	M	A					
Type of house								
Kaccha	9	4	1	14.9	4	0.005	9.49	S*
Pucca	8	16	6					
Semi Pucca	13	1	2					
Type of family								
Joint	10	9	1	3.50	4	0.477	9.49	NS
Nuclear	16	8	6					
Sole Parent	4	4	2					
Source of drinking water								
Tap water	11	4	0	3.73	6	0.713	12.592	NS
Handpumps	8	13	2					
Open well	7	3	4					
Surface water sources	4	1	3					
Dietary pattern								
Vegetarian	12	2	1	7.21	2	0.027	5.991	S*
Non-Vegetarian	18	19	8					

At 0.05 level of significant, (I=Inadequate, M=Moderate, A=Adequate, NS=No significant, S=significant).

DISCUSSION

The present study results shows that majority 30 (50%) of mothers had inadequate knowledge, 21 (35%) had moderate knowledge and only 9 (15%) had adequate knowledge regarding prevention of worm infestation. The finding was similar with a descriptive study conducted by Hemamalini on to assess the knowledge on worm infestation among mothers with under five children in Maraimalai Nagar, Kancheepuram District using non probability Purposive sampling technique. A total of 50 mothers with under five children were selected for the study. Data was collected using structured questionnaire which consists of 20 questions. The study showed that 18 (36%) mothers have inadequate knowledge; 20 (40%) mothers have moderately adequate knowledge and 12 (24%) mothers have adequate knowledge.[9]

The present study also reveals that the demographic variable i.e. educational qualification (X^2=18.5, p=0.047), family income (X^2=15.2, p=0.019), type of house (X^2=14.9, p=0.005) and dietary pattern (X^2=7.21, p=0.027) had statistically significant association with level of knowledge of mothers regarding prevention of worm infestation at $p<0.05$ level. The findings are supported by a evaluative study conducted by Thomas to assess the effectiveness of structured teaching programme on knowledge regarding prevention of worm infestation, among 30 mothers with under five children at Uttarahalli, Bangalore. From the chi-square value of knowledge scores, it was found that the significant association was found with their educational status (Chi-square=3.862). And there is no significant association between their age, income, occupation, and number of children.[10]

No declared conflicts of interest.

Limitations

The study was limited to one selected rural community. Therefore, the possibility for wider generalization is limited. Study limited to mothers of school age children.

CONCLUSION

The results of the current study showed that nine mothers (15%) had adequate knowledge, twenty-one women (35%) had slightly adequate knowledge, and thirty mothers (50%) had inadequate knowledge. Therefore, a mass awareness program on worm infestation prevention can improve mothers' understanding, which will benefit the health of children under five. To increase the community's awareness of worm infestation among mothers of children under five, posters and pamphlets might be created and distributed.

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