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Research Article

A Descriptive Study to Assess the Level of Knowledge and Attitude Regarding Prevention of Worm Infestation among Mothers of Under Five Children in Selected Area of Jammu

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Abstract

Background: Worm infestation is the major problem in our country. Under five children can be easily affected by worm infestation. Mother has the responsibility in taking care of the children, so the knowledge of the mothers is necessary to reduce the risk of getting infection among under five children. The majority worm infestation caused for the children under five is eating of raw meats, unhealthy habits, touching of the soil and so on.

Method: A descriptive study was conducted and research approach adopted for this study was non experimental approach. Simple random sampling technique was used to select a sample for this study. The sample consisted of was mothers of under five children who were residing in the selected area of Jammu. The study was conducted in Kirpind area of Jammu. Self-structured knowledge questionnaire and Likert scale was used to collect data.

Result: Findings of the study revealed, 44% of mothers had moderate knowledge, 38% of mothers had inadequate knowledge and only 18% of mothers had adequate knowledge regarding prevention of worm infestation. The mean score of knowledge was 13.53 and standard deviation was 6.619. 45% of mothers had positive attitude and 55% of mothers had negative attitude regarding prevention of worm infestation. The mean score of attitude score was 39.27 and standard deviation was 21.08.

Conclusion: The present study concluded that majority of mothers had moderate knowledge and negative attitude regarding prevention of worm infestation. The findings suggest that the awareness about prevention of worm infestation can be beneficial for the mothers.

Keywords: *Knowledge; Attitude; Mothers; Worm Infestation; Prevention; Under Five Children*

Introduction

Human worm infestation is when intestinal worms, another name for parasitic worms, reside and develop inside the body [1]. One Youngsters frequently complain of stomach aches. Intestinal infections, primarily brought on by intestinal parasites like worms, are the main causes of stomach aches in children. Worms typically reside in the intestines and consume the food that children eat. Although

intestinal worms can cause worm infections, the most frequent ones are hookworms, tapeworms, roundworms, and pinworms, often known as thread worms [2].

Children frequently get worm infestations and associated diseases, which are also easily treated. Irritability, weight loss, stomach aches, bedwetting, and blood in the stool are some of the typical signs of worm infestations. In addition to this, each worm infection has unique symptoms, which are detailed below. Jaundice, nausea, vomiting, appetite loss, overeating, and even malnutrition are all symptoms of a tapeworm infection. Roundworm infection symptoms include fever, dry cough, diarrhoea, and worms in the stool. Itching around the anus, difficulty sleeping because of itching, and painful urination are symptoms of a pinworm infection. Wheezing, coughing, exhaustion, and anaemia are symptoms of a hookworm infection [2].

Due to inadequate sanitary and hygienic settings, worm infestation is a significant issue among children in poor nations. An estimated 740 million cases of hookworm infestation occur in tropical and subtropical rural areas, making it one of the most prevalent chronic illnesses. The research that is now available indicates that more than 200 million people globally are suffering with worms. About 800 million people have hookworm, and 1200 million have Ascaris. A parasitic infection can be quite harmful, particularly if there is a high worm load. Children's malnutrition poses risk to public health, particularly given rise in parasitic infection rates. Malnutrition is caused by a number of causes, such as a low socioeconomic standing, subpar living conditions, and contaminated drinking water, restricted access to healthcare, and unfavourable weather and environmental circumstances. Due to the scarcity of resources and the disregard for government initiatives, this load is particularly heavy in rural areas [3].

Over the past three decades, the World Health Assembly has advocated for millions of children to receive routine deworming. Climate change concerns in various nations that impact the delivery of deworming medications are among the many causes driving this. Focusing on the educational system could be essential to reaching the global objective. Pregnant women, pre-schoolers, and out-of-school children run the danger of going untreated. The potential for a vaccination (several are now in the early phases of development) and the emergence of drug resistance to deworming agents are still being studied by scientists. Due to its intestinal invasion, this is the cause of poor mental health outcomes, particularly in youngsters. However, in order to overcome the burden of worm infestation, preventative measures are crucial [3].

Given the strong correlation between worm infestation and both generalised malnutrition and micronutrient deficiency, it is crucial to evaluate mothers' attitudes and knowledge regarding their children's susceptibility to anaemia and malnutrition. In order to minimise anaemia and malnutrition in these children, the data from this investigation will therefore assist participants in creating and directing measures as well as educating mothers of low socioeconomic group populations about worm infestation [4].

About half of population in south India, 50% of schoolchildren in tribal areas of central India are infected with *Ascaris lumbricoides*, *Trichiura*, and hookworm, respectively, according to estimates from the World Health Organisation. Infection with roundworm (*Ascaris lumbricoides*), whipworm (*Trichuris trichiura*), and hookworm with morbidity affect roughly 250 million, 46 million, and 151 million people, respectively. In the western region of Nepal, 13.3% of preschool-aged children have a mixed illness and 86.7% have a single geo helminth infection. Worm infestation is a public health issue that requires urgent attention across South Asia, including India. Since worm infestations are rarely the primary causes of death, they are often dismissed as somewhat inconsequential, making intestinal parasitism a priority health issue [5].

In developing nations, worm infestation is likely more serious than some vitamin and mineral deficits. The issue is probably more prevalent in India due to a number of related reasons, including poverty, inadequate awareness, poor cleanliness, and misconceptions about literacy. Research conducted across India has shown that among school-age girls, intestinal parasite prevalence can range from 30

to 50% and anaemia can range from 40 to 73%. Being infected is more often than not in underdeveloped nations, and the virus thrives and persists in areas that lack access to proper sanitation, clean water, improved housing, health care, education, and higher incomes.

In order to establish an 85-design Helminthes control program, a descriptive study was carried out to evaluate mothers' awareness of intestinal Helminthes in children aged 2 to 12. They used interviews to gather information from 768 mothers and the findings indicated that every responder thought worms are dangerous and understood the need for treatment. Based on the findings, they created a health education program that aimed to improve sanitary behaviour and encouraged the use of informal channels of communication to reach women who are illiterate. A small number of mothers had adequate information about how to prevent infection. Most of women (75%) with average knowledge of worm infestations (basic understanding of worm infestation, causes, signs and symptoms, diagnosis, and management) also showed comparable findings in another study. The current study's findings will assist health administrators in creating some creative approaches to worm infestation health education [5].

Need for the Study

According to estimates, there are around 1.5 billion people worldwide who are infected with STHs, including over 568 million school-age children and 270 million preschool-aged children. Treatment and preventative measures are required for all of these affected individuals. While those with strong infections tend to have substantial morbidity, those with minor infections are typically asymptomatic. Thus, intestinal blockage, anaemia, and a range of particular and non-specific negative effects, including cognitive impairment in youngsters and stunted physical growth, are the crippling results of those who are extensively infected. According to recent estimates, there are four STHs that infect over 480, 508, and 700 million individuals globally. *Ascaris lumbricoides, Trichuris trichiura*, and hookworms (*Necator americanus* and *Ancylostoma duodenale*). The largest prevalence is found in tropical nations, where an estimated 135,000 deaths occur each year. Clusters of infections are more frequently found in crowded families. The three main factors that contribute to the spread of STHs are faecal contamination of the soil, favourable soil conditions for egg and larval survival, direct oral infection or skin contact with contaminated soil, and ingestion of contaminated food and/or water. The two groups most at risk for STH infections are pregnant women and school-age children (5-15 years). STH infections are said to be more common in endemic nations with few medical services, no portable water, and unhygienic circumstances [6].

India is a bigger nation with many different types of diversity. Of the 1.25 billion people living in India today, 25% are children. The inability to attain "Health for all by 2000 A.D." has been largely attributed to the general public's ignorance about malnutrition and cleanliness. Malnutrition, the leading cause of under-five mortality, is the primary reason of the rise in morbidity, despite the fact that under-five mortality has decreased to 93. Worm infestation is typical between the ages of 1 and 5, when the child starts to live a more self-sufficient life.

In many regions of the world, the extent of parasite infestation in children is a serious health concern. Ineffective human excreta disposal is thought to be the cause of 85% of the total occurrence. An international health concern is intestinal parasite infection (IPI). An estimated 3.5 billion people worldwide are thought to be afflicted by these parasites, and 450 million suffer from morbidity-many of them are children in poor nations. Over 1.5 billion people, or 24% of the global population, suffer from soil-transmitted helminthic illnesses. More than 267 million preschool-aged children and more than 568 million school-aged children who reside in regions where these parasites are highly prevalent and require treatment. 53% of all children at risk, or over 676 million school-aged children, received anti-helminthic medication treatment in endemic countries in 2018 [7].

Worm infestations are thought to pose a threat to 225 million preschool-aged (3 - 6 years) and school-aged (6 - 12 years) children in India. In South East Asia, India is responsible for 65% of soil-transmitted helminthic (parasitic worm) cases, and globally, 27% of cases.

India's nationwide deworming program, which has been in place for a few years, deworms about 250 million children twice a year in February and August. With an incidence of 48.33%, Ascariasis outperformed all other helminths in the Dakshina Kannada region. Worm infestation is the most prevalent issue in children because of its strong correlation with hygienic conditions and health behaviours. Mothers are in a unique position to influence the development and growth of their children. The behaviours that foster childhood will continue until old age. Therefore, mothers must learn, practice, and in still sanitary practices in their children. Therefore, education of mothers of children under five is essential for the welfare of future generations [7].

265 (75.28%) of the 352 children surveyed in the Gurez Valley of Jammu and Kashmir tested positive for intestinal helminths. *Ascaris lumbricoides* accounted for 71.87% of the total, with *Trichuris trichiura* (26.42%), *Enterobius vermicularis* (13.92%), and *Taenia saginata* (5.39%) following closely behind. Of the children affected, 38.63% had a single species infection, whereas 36.64% had numerous species of helminth parasites. The age group of 11-15 years old had the highest infection prevalence (84.91%), followed by 6-10 years old (81.70%) and 0-5 years old (50.54%). Prevalence rates among male, female, and rural/urban youngsters did not differ significantly ($P>0.05$). Significant risk factors for intestinal helminth infection prediction included maternal education, personal cleanliness, water source, and defecation place ($P<0.05$).

Methodology

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In this we study the various steps that are generally adopted by a researcher in studying their research problem along with the logic behind them. A research methodology is a blue print for conducting a study. Its purpose is to maximize control over factors that can interfere with the validity of the research findings.

The methodology used for this study is covered in this chapter, along with the research approach, research design, study setting, population, sample, sampling technique, sampling criteria, study variables, tool description, tool validity and reliability, pilot study, data collection process, and data analysis plan.

Research approach

The fundamental component of the research is the choice of research methodology. The research approach aids the investigator in deciding how to address the research issue and in drawing conclusions through the use of a variety of techniques. Research can be approached in two main ways: quantitatively and qualitatively. Given the nature of the issue and the study's goals, the researcher decided to utilise a quantitative evaluative strategy, which entails producing data in a quantitative format that can be rigorously and rigidly submitted to quantitative analysis.

Research design

The research design for the study was descriptive design.

Setting: Kirpind area of Jammu.

Study population

- **Target population:** Mothers of Kirpind area Jammu.
- **Accessible population:** Mothers of under five children of Kirpind area Jammu.

Sample: The sample comprises of mothers of under five children.

Sample size: 100 mothers who meet the inclusion criteria.

Sampling technique: Sampling technique is simple random technique.

Sample criteria

Inclusion criteria:

- Mothers who have under five children.
- Mothers who were willing to participate.
- Mothers present during the study period.
- Mothers who can understand Hindi or English.

Exclusion criteria:

- Mothers who were not willing to participate.
- Mothers who were not present at the time of data collection.
- Mothers who cannot understand Hindi or English.

Research tool

Section A: It comprises of socio-demographic variables for obtaining personal information from the Students i.e., Age, Education, Occupation, Type of family, Socio-economic Status, number of children and Source of information.

Section B: It consists of 30 multiple choice questions related to assess the level of knowledge of mothers of under five children regarding prevention of worm infestation. Self-structured questionnaire was constructed on the basis of review of literature, clinical experience, expert opinion and suggestions of research panel. The maximum possible score was 30 and minimum possible score was 0.

Scoring procedure

Interpretation of knowledge score	Score	Percentage
Inadequate knowledge	≥1-10	≥3-33%
Moderate Knowledge	≥11-20	≥34-67%
Adequate knowledge	≥21-30	≥68-100%

Table A

Section C: There were 15 positive and 15 negative statements. The responses were quantified by giving score for positive items as 5, 4, 3, 2, 1 i.e. strongly agree, agree, neutral, disagree and strongly disagree respectively. The negative statements were scored reversely in order of 1, 2, 3, 4, 5.

Response	Positive scoring	Negative scoring
Strongly agree	5	1
Agree	4	2
Neutral	3	3
Disagree	2	4
Strongly disagree	1	5

Table B

Scoring procedure

Criterion measure of attitude score	
Category	**Score**
Positive	>50
Negative	≤50

Table C

Results

Data analysis and interpretation

This chapter deals with systematic presentation of the analyzed data followed by its interpretation. The collected information was organized tabulated, analyzed and interpreted by using descriptive and inferential statistics. The findings were organized and presented below to base on the objectives of the study.

Characteristics		F	%
Age in years	≤25	11	11%
	25-27	28	28%
	28-30	35	35%
	≥31	26	26%
Education	Primary education	13	13%
	High school education	20	20%
	Higher Sec. education	29	29%
	Graduation or above	38	38%
Occupation	Government employed	8	8%
	Private employed	22	22%
	Self employed	25	25%
	Home maker	45	45%
Type of family	Nuclear	68	68%
	Joint	32	32%
	Extended	0	0%
Socio-economic status	≤10000 (lower class)	30	30%
	10001-30000 (middle class)	48	48%
	≥30000 (upper class)	22	22%
Number of children	One	12	12%
	Two	66	66%
	Three	22	22%
Source of information	Mass media	13	13%
	Health professionals	14	14%
	Family/friends	65	65%
	Any other, specify	8	8%

Table 1: *Frequency and percentage distribution of socio-demographic variables (N = 100).*

Objective 1: To assess the level of knowledge regarding prevention of worm infestation among mothers of under five children (N = 100).

Knowledge level	Category	Classification of mothers on knowledge level	
		F	%
Inadequate	1-10	38	38%
Moderate	11-20	44	44%
Adequate	21-30	18	18%
Total		100	100%
		Maximum score = 30	Minimum score = 0

Table 2: *Table 2 depicts the frequency and percentage of level of knowledge score regarding prevention of worm infestation among mothers of under five children in selected area of Jammu. 38% of mothers were having inadequate knowledge, 44% of mothers were having moderate knowledge and 18% of mothers were having adequate knowledge.*

Objective 2: To assess the attitude regarding prevention of worm infestation among mothers of under five children (N = 100).

Criterion measure of attitude score		
Category score	**Frequency**	**Percentage (%)**
Positive (>50)	45	45%
Negative (≤50)	55	55%
	Minimum score = 10	Maximum score = 50

Table 3: *Table 3 depicts the frequency and percentage distribution of attitude score regarding prevention of worm infestation among mothers of under five children. 45% had positive attitude and 55% had negative attitude.*

Objective 3: Association of level of knowledge scores of mothers of under five children with their selected socio-demographic variables.

Socio-demographic variables		Level of Knowledge			X^2, df, p-value
		Inadequate	Adequate	Adequate	
Age in years	≤25	7	2	2	24 6 0.00004*
	25-27	4	20	4	
	28-30	10	15	10	
	≥30	17	7	2	

Education	Primary education	4	5	4	15.68 6 0.015*
	High school education	8	6	6	
	Higher secondary education	12	14	3	
	Graduation or above	14	19	5	
Occupation	Government employed	4	2	2	9.5 6 0.149^{NS}
	Private employed	12	6	4	
	Self employed	10	15	5	
	Home maker	12	21	7	
Type of family	Nuclear family	25	28	8	2.41 2 0.299^{NS}
	Joint family	13	16	7	
	Extended family	0	0	0	
Socio-economic status	≤10000	12	13	5	0.768 4 0.941^{NS}
	10001-30000	18	20	10	
	≥30000	8	11	3	
Number of children	One	8	3	1	19.81 4 0.0016*
	Two	15	35	16	
	More than two	15	6	1	
Source of information	Mass media	3	5	5	6.68 6 0.35^{NS}
	Health professionals	8	5	1	
	Family/friends	24	30	11	
	Others	3	4	1	

Table 4: *Table 4 depicts the computed chi-square of socio-demographic variables and the level of knowledge of mothers of under five children. The data revealed that there was a significant association of level of knowledge with socio-demographic variables i.e., age, education and number of children. The data also revealed that there was no significant association of level of knowledge with socio-demographic variables i.e. type of family, occupation, socioeconomic and source of information.*

Objective 4: Association of attitude of mothers of under five children with their selected socio demographic variables.

Socio-demographic variables		Attitude		X^2, df, p-value
		Positive	Negative	
Age in years	≤25	6	5	2.26 3 0.51^{NS}
	25-27	10	18	
	28-30	15	20	
	≥30	14	12	
Education	Primary education	20	5	27.61 3 0.0002*
	High school	15	10	
	Higher secondary	5	15	
	Graduation or above	5	25	
Occupation	Govt. employed	12	8	4.36 3 0.22^{NS}
	Private employed	12	13	
	Self employed	11	9	
	Homemaker	10	20	
Type of family	Nuclear	40	28	16.41 1 0.0001*
	Joint	5	27	
	Extended	0	0	
Socio-economic status	≤10000	12	18	3.54 2 0.17^{NS}
	10001-30000	20	28	
	≥30000	14	8	
	Two	24	42	
No. of children	One	8	4	5.01 2 0.82^{NS}
	Two	24	42	
	More than two	13	9	
Source of information	Mass media	3	10	17.67 3 0.001*
	Health professionals	3	11	
	Family/friends	30	35	
	Others	9	0	

Table 5: *Table 5 depicts the computed chi-square of socio-demographic variables and the attitude of mothers of under five children, the data revealed that there was a significant association of attitude with socio-demographic variables i.e. education, type of family and source of information. The data also revealed that there was no significant association of attitude with socio-demographic variables i.e. age, occupation, socio-economic status and number of children.*

Discussion

Major findings

Among 100 mothers 44 (44%) had moderate knowledge, 38 (38%) had inadequate knowledge and 18 (18%) had adequate knowledge regarding prevention of worm infestation. The mean knowledge score was 13.66, median score was 14 with standard deviation of 6.619.

There was a significant association of age, education and number of children with the knowledge level. 7% had inadequate, 2% moderate and 2% had adequate knowledge who were in the age group of ≤25, 4% had inadequate, 20% had moderate and 4% had adequate knowledge who belonged to age group of 25-27 years, 15% had moderate, 10% adequate and 10% inadequate knowledge who belonged to age group of 28-30 and 17% had inadequate, 7% had moderate and 2% had moderate knowledge who were in age group of 30 years. As per education, 5% had moderate, 4% had moderate and 4% had inadequate knowledge who had primary education, 8% had inadequate, 6% had adequate who had studied till high school, 14% had moderate, 12% had inadequate and 3% had adequate who had studied till higher secondary school, 19% had moderate, 14% inadequate, 5% had inadequate who had graduated. According to number of children, 8% had inadequate, 3% had moderate and 1% had moderate knowledge who had one 1% child. 35% had moderate, 16% had adequate and 15% had inadequate knowledge who 2% children. 15% had inadequate, 6% had moderate and 1% had adequate knowledge who had more than two children. There was no significant association with occupation, type of family, socio-economic status and source of information.

There was a significant association of education, type of family and source of information. As per education 20% had positive attitude and 5% had negative attitude who had primary education. 15% had positive attitude and 10% had negative attitude who had high school education. 15% had negative attitude and 5% had positive attitude who had higher secondary education. 25% had negative attitude and 5% had positive attitude who were graduates. As per type of family 40% had positive attitude and 28% had negative attitude who belong to nuclear family. 27% had negative attitude and 5% had positive attitude who belong to joint family. As per source of information 10% had negative attitude and 3% had positive attitude whose source of information was mass media. 11% had negative attitude and 3% had positive attitude whose source of information was from health professionals. 35% had negative attitude and 30% had positive attitude whose source of information was from family/ friends. Only 9% had source of information was from others. There was no significant association with age, occupation, socio-economic status, number of children and source of information.

Nursing implications

The findings of the study can be used in the areas of nursing practice, nursing administration, nursing education and nursing research.

- **Nursing practice:**
- One of the most crucial roles of health professionals is health education. In their capacity as community resource people, nurses ought to educate women about worm infestations and how to avoid them.
- It aids in enhancing school-age children's understanding and mind set regarding worm infestation avoidance.
- **Nursing education:**
- The current study has a strong emphasis on improving attitudes and awareness about worm infestations.
- This can be accomplished by assigning students, nurses, and other health professionals the duty of educating the public, and by repeating the instruction until the community has learnt it.
- **Nursing administration:**
- As an administrator, nurses are crucial in training personnel and formulating policies, such as those pertaining to paediatric health education.
- Nursing administrators in paediatrics have a unique responsibility to observe all mothers and determine whether they are adequately informed about worm infestations. As a nurse administrator, you can set up particular training programs and in-service teaching about worm infestations.

- **Nursing research:**

- The main goal of research is to increase nursing knowledge.
- Professionals and students alike use the results of this study as a foundation for future research.
- By repeating the study, the findings can be made more broadly applicable. The nursing profession is expanding through nursing research.

Conclusion and Recommendation

The present study concluded that majority of mothers had moderate knowledge and negative attitude regarding prevention of worm infestation. The findings suggest that the awareness about prevention of worm infestation can be beneficial for the mothers.

In the light of the above findings and personal experience of the investigator the following recommendations are offered:

- The study can be replicated on a larger sample, there by findings can be generalized for a larger population.
- A similar study can be undertaken by adopting an experimental design
- A similar study can be done to assess the knowledge of school teachers.
- A similar study can be undertaken in different settings.
- A comparative study can be done between rural and urban mothers [8-19].

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Author Contributions

Afshana Bashir Reshi and Kavita Sharma came up with the idea, planned the manuscript's structure, and helped with its preparation. The manuscript was written, analysed, and researched by Afshana Bashir Reshi. Sarla Raina are also helped some research part.

Competing Interests

The authors have stated that none of the article's aspects conflict with their own interests.

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