A SURVEY BASED STUDY TO EVALUATE THE KNOWLEDGE, ATTITUDE, AND DEWORMING PRACTICES AMONG THE PARENTS OF YOUNG CHILDREN IN KOMARAPALAYAM

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ABSTRACT

Introduction: Worm infestation affect the child growth and development and are generally not noticed but can sometimes lead to significant problems if the children are not treated in the earlier stage.

Objectives: To assess the knowledge, attitude and practice of deworming among parents of young children.

Methodology: A survey based cross-sectional study was conducted in komarapalayam. The sample size was 356 parents. A self-designed questionnaire was prepared and the sample was collected accordingly.

Results and discussion: The parents with a degree completion rate of 38 (10.67%) had good knowledge, in accordance with the relationship between knowledge and educational status. Parents who acquired the information from friends and relatives were 35 (9.83%) more likely to have good knowledge, considering the association between knowledge and source of information. The parents between the ages of 20 to 30, 39(10.95%) of the parents had good practices,

Conclusion: In our study, we aimed on evaluating the knowledge, attitude and deworming practices among parents of young children. We found that on the basis of educational status,individuals who had completed their degree 38(10.67%) were showing higher level of knowledge, On measuring the level of deworming practices, we found that parents of age category 20-30 were doing “GOOD” practices.

Keywords: Deworming, Worm infestation, Knowledge, Practice

Submission details

- Date of submission:14/11/2024
- Total number of pages: 13
- Word counts:
  - Total : 3123
  - For abstract:207
- Number of Tables: 4
- Number of Figures: 3

Contribution details

- Dr. K. C Arul prakasam: Conceptualization, Methodology, Validation, Supervision, Project administration, Writing-Review & Editing
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All authors have read and approved the final manuscript.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest

There are no conflicts of interest

Acknowledgments

The authors would like to express their sincere gratitude to the faculty and staff of the Department of Pharmacy Practice at JKKMMRF's Annai JKK Sampoorani Ammal College of Pharmacy for their support and guidance throughout this research project. Special thanks are extended to the mentors and supervisors who provided valuable insights and encouragement, making this study possible. The authors also appreciate the cooperation of the patients who participated in this study.

Ethics Statement

The institutional ethical committee gave its clearance for this investigation prior to its start (approval reference number: EC/PHARM.D/2022-01). All of the methods used complied with the 2013 revision of the Helsinki declaration of 1964 and the ethical guidelines set forth by the competent committee on human testing. Every patient gave their informed consent in order for them to be included in the current study.

INTRODUCTION

Children are the future of a nation. It is absolutely essential to protect child's health if we are to build a sound foundation for the health of the nation. They have to be protected and look after. By promoting their health, we will be strengthening the development of the family, Country, Nation and World.(1) Worm infestation is a common childhood problem, which affects growth and development of children and has a close relationship with the socio demographic and ecological factors like poverty, illiteracy, poor, personal and environmental hygiene. (2) Worm infestation describes the condition of acquisition of parasitic infection as a consequence of being a primary or intermediate host in the life cycle of a worm. Early detection of the aforementioned

intestinal worms in kids would aid in faster and more effective treatment of the child. Nearly one-fourth of the world's population is known to be affected by worms particularly affecting the children from the low- and middle-income countries. Based on pooled data of 127 surveys in India, worm infestation prevalence is found to be over 20% and hence the World Health Organization (WHO) classified India as moderate risk area. Ministry of Health and Family Welfare study across the country shows varied picture with prevalence ranging from 12.5 to 85%. Studies show Ascaris is most common infestation (52%), followed by hookworm (42%) and whipworm (5%).

Worms or helminths are multi-cellular eukaryotic invertebrates of the phyla Nemathelminths (roundworms) or Platyhelminthes (flatworms). And some other commonly prevalent intestinal nematodes of public health importance – roundworm (Ascaris lumbricoides), whipworm (Trichuris trichiura), two species of hookworm(Ancylostoma duodenale and Necator americanus) and pinworm (Enterobius vermicularis).(3)

Symptoms will vary between individuals and will depend on the type of worm present. However, common signs and symptoms include:

After swallow the tiny (microscopic) ascariasis eggs, they hatch in the small intestine and the larvae migrate through the bloodstream or lymphatic system into the lungs. At this stage, you may experience signs and symptoms similar to asthma or pneumonia, including: Persistent cough, Shortness of breath, Wheezing. After spending 10 to 14 days in the lungs, the larvae travel to the throat, where you cough them up and then swallow them. The larvae mature into adult worms in the small intestine, and the adult worms typically live in the intestines until they die. In mild or moderate ascariasis, the intestinal infestation can cause Vague abdominal pain, Nausea and vomiting, Diarrhea or bloody stools.

If you have a large number of worms in the intestine, you might have: Severe abdominal pain, Fatigue, Vomiting, Weight loss or malnutrition, Worms in your stool.

Some types of worm, including some tapeworms, can affect the central nervous system (CNS), with potentially severe consequences.(4)

Complications of worm infestations are: Digestive system blockage: some intestinal tapeworms may grow large enough to block passages in your digestive system, including your intestines, appendix, bile ducts and pancreatic duct.Vitamin deficiency anemia: The fish tapeworm especially likes to absorb vitamin B12, which can cause anemia. Allergies: You can have allergic reactions to the larvae, including itching, hives and breathing difficulties. Coughing and chest pain can occur when cysts attach to your lungs. Organ function disruption is a risk when larvae invade your liver, heart, eyes or lungs. Neurological symptoms can occur when larvae invade

your central nervous system, including headaches, seizures, confusion, meningitis and brain swelling.(5)

Gastroenterologists may recommend several different tests to help them diagnose intestinal worms. These tests may include: Fecal tests to check for signs of infection, Blood tests to detect some types of parasite, Colonoscopy, which uses a thin camera to check the bowel for parasites, Imaging tests to check other organs for signs of damage from the parasite, Tape tests – A tape test involves placing a piece of tape over the anus as the person sleeps to check for signs of eggs. Checking Fingernails – As your hands are the primary mode of transferring worms inside the body through ingestion, worms often leave their eggs under the fingernails. Your gastroenterologist will examine the area under your fingernails to determine the presence of worms.(6)

Deworming in a child cannot be ignored or avoided. It is one of the first steps to be taken as early as notice the signs of intestinal worms in younger ones. The treatment of deworming the child can differ from other children's medical practice of deworming based on the type of inflammation your kid is dealing with. Hesitancy in deworming for child can cause other health complications in near future. Thus it would be best to take consultation from your child's specialists for required treatments.(7)

It is important to deworm the Children in the society, certain disease affects them, and result in increased morbidity and mortality by rates. These diseases include diarrhoea, malaria as well as other vector borne diseases, acute respiratory infection and unintentional injures. The children death can be prevented if we know what to do strategies have been developed to face their threats to children's health. The need to be implemented on a global and national scale. (8)

Deworming should be done two times a year, or every six months, Parents should deworm their children whenever needed starting from the beginning at the age of two years. Deworming is the process of eliminating intestinal parasites, such as worms, using medication. Kids who are struggling with recurrent worm disease require repeated deworming and should be in touch with their specialists. Parents should encourage themselves in deworming practice for their children. Keep your eyes open whether your child is washing hands or not after coming back from the playground or touching animals/pets. Don't let them consume contaminated water or foods to evade infection. It is a completely safe medical practice, involving medication intake to get rid of worm diseases. (7)

Personal and environmental hygiene are the key drivers of parasitosis in humans. Poverty, overcrowding, warm climate, open defecation, vulnerable water supply and poor food hygiene are main factors underpinning parasitic burden in children. Most of the worms are geographically distributed in the warm and moist climates of tropics and subtropics. However, Enterobius vermicularis (Pinworm) infection is the only exception which has ubiquitous presence

worldwide independent of socioeconomic status of population and is not included under the classification of Neglected tropical diseases. (9)

The treatment is safe, even when given to uninfected children. The most commonly used drugs for the treatment of common intestinal worms are albendazole (400 mg) or mebendazole (500 mg). They are administered as a single tablet to all children, regardless of size or age. Regular deworming will help children avoid the worst effects of infection even if there is no improvement in sanitation. (10)

MATERIALS AND METHODS

This study aims to assess the knowledge, attitude and practice of deworming among parents of young children and to provide awareness to them and the primary objective is to determine how many children are affected by worms and how many of them given medicine correctly and to educate the parents about worm infestation and deworming. It is an survey based cross-sectional study conducted among parents of young children in Komarapalayam-Namakkal,Tamilnadu during the period from January to September 2023. The Sample size was calculated using RAO software by keeping 5% margin of error, 95% confidence interval and 50% response distribution the sample was found to be 356. This study includes parents of children younger than 15 years of age, both male and female are included in this study. The parents who are expecting their first child and medical workers are excluded in this study.

STUDY PROCEDURE

A self-designed questionnaire was prepared and the questions are categorized into three sections, Knowledge section which contains 9 questions, Attitude section contains 8 questions and Practice section contains 13 questions and the responses are randomly collected.

Socio-Demographic details, lifestyle aspects, medication, and symptoms related to worm infestation, are also collected. Parent's knowledge, Attitude and Practices are assessed through the data collection form and evaluated based on self-scoring. For YES/NO questions negative response is awarded 0 marks and 1 marks is awarded for a positive response. Awareness about deworming will be provided to the parents through pamphlet.

PARTICIPANTS AND DATA COLLECTION

During the study, a survey has been conducted among parents of young children by giving data collection form. Questionnaires data has been gathered at the final stage of the survey. Questionnaire has been distributed and the information has been taken by direct interview.

STATISTICAL PROCEDURE

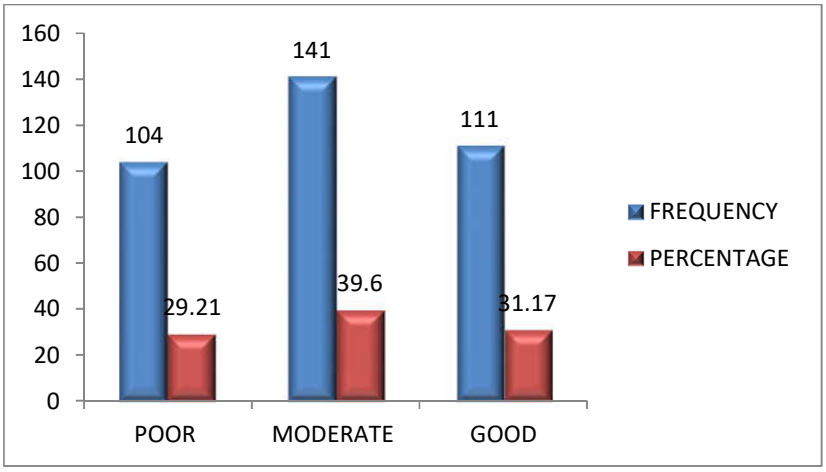
The data collected were tabulated, analyzed, and interpreted using standard statistical tools. The statistical procedure was undertaken with the help of the statistical package JASP. The P-values less than or equal to 0.05 was fixed as the level of significance. The statistical method used here is Chi-square test.

RESULTS

Table 1: Demographics:

DEMOGRAPHICS	FREQUENCY	P VALUE
AGE OF THE CHILD		
1-5 yrs	110 (30.89%)	
6-10 yrs	178 (50%)	<0.0001*
11-14 yrs	68 (19.10%)	
GENDER		
Male	165 (46.34%)	0.1682
Female	191 (53.65%)	
DIETARY PATTERN		
Vegetarian	85 (76.1%)	<0.0001*
Both	271(23.8%)	

Figure 1: The level of knowledge of the parents



The level of knowledge of the parents is evaluated by categorizing them into three categories: Poor (0-3), moderate (4-6) and good(7-9), based on scoring method. Out of 356 parents, 104(29.21%) did not have sufficient knowledge, 141(39.60%) were moderate and 111(31.17%) had good knowledge.

Table 2: Association between knowledge and selected demographic profiles

DEMOGRAPHIC VARIABLES		POOR		MODERATE		GOOD		P VALUE
Education	Primary	7	1.96%	12	3.37%	24	6.74%	< 0.001 Significant
	High school	10	2.80%	19	5.33%	24	6.74%	
	Higher secondary	28	7.86%	52	14.60%	18	5.05%	
	Degree	59	16.57%	54	15.16%	38	10.67%	
	Illiterate	0	0%	4	1.12%	7	1.96%	
Source of Information about worm infestation and deworming	Social media	40	11.23%	44	12.35%	23	6.46%	< 0.001 Significant
	Friends and relatives	53	14.88%	41	11.51%	35	9.83%	
	Health personnel	5	1.40%	47	13.20%	34	9.55%	
	Don't know	6	1.68%	9	2.52%	19	5.33%	

According to the socio demographic details of our study, parents who completed primary school are 43(12.07%), high school 53(14.88%), higher secondary school 98(27.52%), degree 151(42.41%) and illiterate are 11(3.08%). And, based on source of information about worm infestation and deworming are from social media 79(22.1%), friends and relatives 94(26.4%), health personnel 47(13.2%) and those who don't know are 31(8.7%).

Figure 2: The Level of attitude of parents

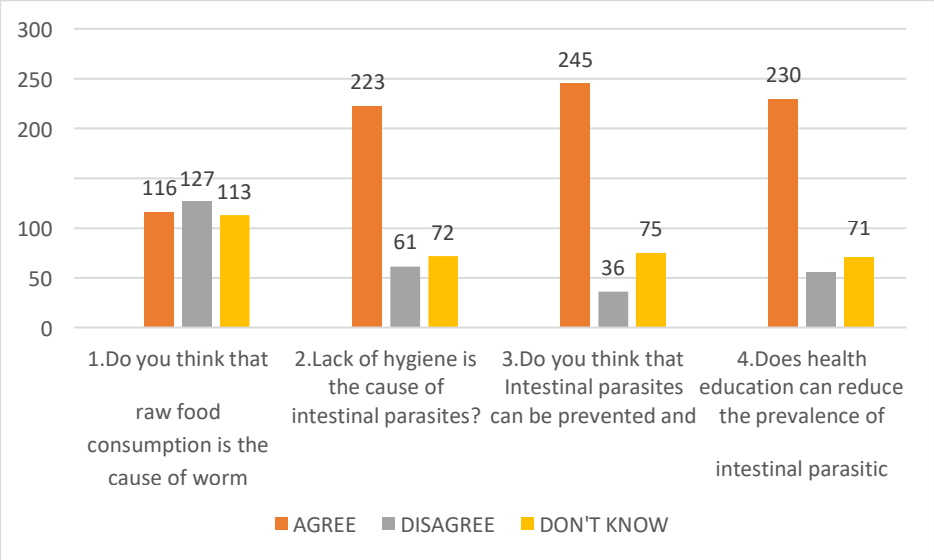
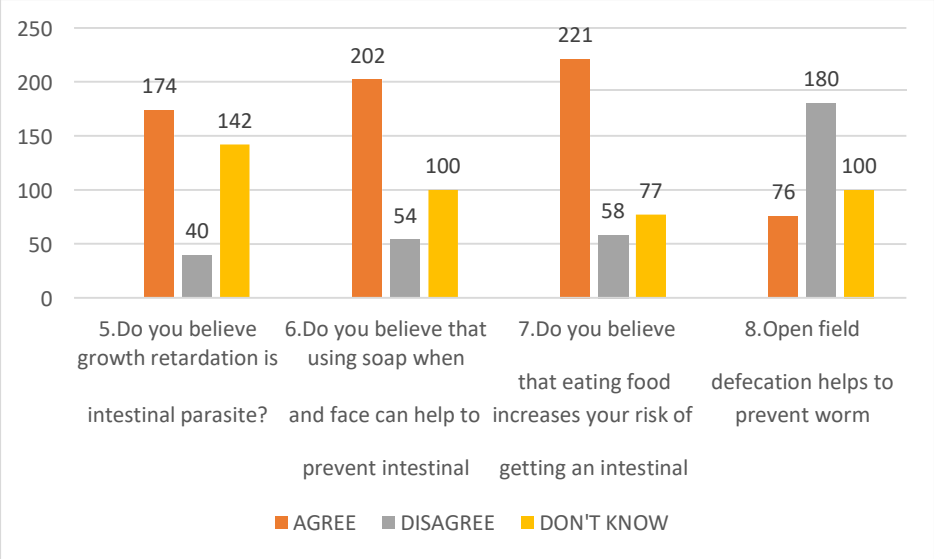


Figure 3: The Level of attitude of parents



The overall percentage of participants who have a good attitude regarding deworming practices is 64%.

Table 3: The Level of practice of parents.

QUESTIONS	RESPONSES	N or %
1. Do you wash your child's hands before and after meals?	Yes	297 (83.42%)
	No	59 (16.57%)
2. Do you frequently trim your child's nails?	Yes	289 (81.17%)
	No	67 (18.82%)
3. Did you administer medication to your child to avoid intestinal parasites?	Yes	143 (40.16%)
	No	213 (59.83%)
4. Do you use filtered and boiled water to prevent intestinal parasite infection?	Yes	276 (77.52%)
	No	80 (22.47%)
5.Do you wash your child's hands with soap after defecation?	Yes	271(76.12%)
	No	85 (23.87%)
6.Has your child ever had an infection from an intestinal parasite?	Yes	180 (50.56%)
	No	176 (49.43%)
7.Do you use soap to clean utensils?	Yes	303 (85.11%)
	No	53 (14.88%)
8.Do you wash the fruits and vegetables regularly before cooking?	Yes	290 (81.46%)
	No	66 (18.53%)
9.Do you give raw foods to your child?	Yes	185 (51.96%)
	No	171 (48.03%)
10.Do you allow your child to walk in barefoot?	Yes	215 (60.39%)
	No	141(39.60%)
11. Cleaning private parts thoroughly with soap and water helps to prevent worm infestation?	Yes	65 (18.25%)
	No	291(81.74%)
12. Do you encourage open defecation?	Yes	113 (31.74%)
	No	243 (68.25%)

Table 4: Association between age of the parents and level of practices

Age of the parents	Poor	Moderate	Good	Chi-square	P value
20-30	9(2.52%)	85(23.8%)	39(10.95%)	28.567	<0.001 significant
30-40	34(9.5%)	42(11.7%)	35(9.83%)		
40-50	22(6.17%)	64(17.97%)	26(7.3%)		

DISCUSSION

In our study, we evaluated the knowledge of parents about deworming and the results shows that parents with good knowledge are 111(31.17%), moderate 141(39.60%) and with poor knowledge are 104(29.21%). Similarly, a study conducted by **S. Prathaban et al. (2010)** shows that most number of mothers have moderately adequate knowledge but in our study, we have included both male and female. Followed by that we have associated the level of knowledge of parents with their socio demographic details which includes their education and source of information. Based on that the results shows that the parents those who have completed their degree have good knowledge which is 38(10.67%) and based on source of information, parents those who have acquired knowledge from friends and relatives have good knowledge which is 35(9.83%). Similarly, **S. Prathaban et al. (2010)** carried out a study in which mothers who obtained information from medical professionals shown high level of knowledge. Parents who took part in our study obtained information from friends and relatives have good knowledge. When evaluating the level of practices according to the age of parents, we found that parents between the ages of 20-30 had good practice which is 39(10.95%).

CONCLUSION

In our study, we aimed on evaluating the knowledge, attitude and deworming practices among parents of young children. In order to evaluate parent's knowledge, we categorized them into groups based on their level of education and informational sources. We found that on the basis of educational status, individuals who had completed their degree were showing higher level of knowledge, whereas from the source of information, individuals who have acquired information from friends and relatives were showing more in proportion, when compared to other categories. Following the knowledge, we have assessed the attitude of the parents by using the questionnaire. We have associated the level of deworming practices with the age of the child to identify the category of parents who are doing good practices. On measuring the level of deworming practices, we found that parents of age category 20-30 were doing "GOOD" practices. Here, through our study we observed that most parents are believing that deworming practices should be initiated only when the children show the signs of having worm infection.

LIMITATIONS

It was challenging to evaluate people's knowledge considering their lack of Interest and was difficult for parents lacking formal education to respond to our questionnaire. We are unable to follow up on the parent's level of knowledge and practices due to time limitations.

RECOMMENDATIONS

Basically, fathers have less level of knowledge when compared to mothers. So, both fathers and mothers should be educated by various health programs and campaigns. Studies should be conducted on married men to evaluate their level of practice and awareness regarding worm infestation and deworming emphasizing their role as the family's decision-makers. Schools should educate more about self-hygiene and cleanliness to create awareness among children. Even though the schools are taking certain measures to educate children about hygiene the role of parents is unavoidable to look after their child's personal hygiene. Deworming is still an un-noticed practice in daily life so as a pharmacist we should do our level best to create awareness among the public. To improve public awareness, more health promotion programs should be established through local community health centers, radio, and media.

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