Original Research Article

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What do mothers of urban slum know about worm infestation? Does literacy play a role?

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ABSTRACT

Background: In India, intestinal parasitic infestation is the most important problem of public health concern. Parasitic worm infestation among children is one of causes of undernourishment. The high prevalence may be due to poor sanitation, lack of awareness regarding transmission and treatment of disease and poor hygiene.

Methods: This was a cross-sectional study, conducted during the month of December 2016. All women having atleast one child below six years of age residing in the field practice area attached to urban health training centre of our medical college were interviewed. Data collected were entered in Microsoft Office Excel 2007.

Results: A total of 361 mothers were interviewed of whom, 81% were aware of the disease. Those mothers who had ever heard of the disease were further interviewed. Of these, 54% of them were literate and 46% were illiterate. Comparing the literacy status, 26% literate mothers and 36% of the illiterate gave correct answers. Twelve percent of the literate mothers had correct attitude toward prevention of worm infestation. Almost three-fourths (71%) of the women had incorrect attitude for prevention of the disease. Eighty eight percent mothers consulted doctors.

Conclusions: Majority of the mothers was aware about occurrence of intestinal worm infestations but they had incorrect knowledge about its causes, symptoms, preventive measures and treatment. The literacy status of mothers does not make any difference in knowledge and practice regarding worm infestation.

Keywords: Intestinal worm infestation, Literacy, Illiteracy

INTRODUCTION

According to the World Health Organization (WHO) estimates, 870 million children live in the area of high prevalence of worm infestations. Africa, South Asia and South America are the most affected regions of the world. In a developing country like India, intestinal parasitic infestation still remains as the most important problem of public health concern. Intestinal parasitic infestation is the most leading cause of morbidity and mortality especially among the children. India alone contributes nearly 25% to the total global cases with 220.6 million children in need of preventive chemotherapy. I

In Gujarat, 39.3% of children below five years are undernourished as per the National Family Health Survey–IV data.² Parasitic worm infestation among children is one of the established causes of undernourishment. The prevalence of intestinal parasitic infections was detected in 20.68% of the participants of age group below four years, in a study conducted in Vadodara during 2008 and multiple parasitic infestations were detected in 34.57% of stool samples.³ The WHO report states that amoebiasis caused by the protozoan parasite *Entamoeba histolytica* is most common parasitic cause of morbidity and mortality, with an estimate of about 50 million infections worldwide.⁴

Intestinal parasites are widely prevalent in developing countries, due to poor sanitation, lack of awareness regarding transmission and treatment of disease and poor hygiene. 3,5,6

Children are infected more commonly and more heavily than adults. This is because children are more likely to come in direct contact with locally contaminated soil that contains infective larvae. Children with physiologically low iron reserves may suffer greater complications from intestinal worm infestation. In children, prevalence of worm infestation prevalence is found to be 30% in urban and 68% in rural areas. Intestinal worm infestations rarely cause mortality with diarrhea, abdominal pain and low hemoglobin levels as the immediate outcome, however, the long term effects of these infections are far more sinister as those with infections show reduced cognitive abilities, intellectual capacity and lower work productivity.⁷ The warm and moist climate of tropical and subtropical countries provides the ideal environment for the survival of parasitic eggs or larvae of intestinal helminths.

Primary prevention is most effective way to break the chain of transmission and thus reduce the worm load among children in community. Some of these preventive measures are sanitary disposal of human excreta, provision of safe drinking water and habits of hygienically handling the food. To bring a change in the life of individual, group of people and society, education is a powerful tool. Health education can bring change in behavior, which is required for implementation of primary prevention.

It would be prudent to understand the community's existing knowledge, attitude and practice around the topic before embarking on any health education activities in community. This will help in making the health education content suitably tailor made for the local needs. A thorough literature search did not reveal any studies on the knowledge, attitudes, and practices of the urban community from Gujarat on worm infestations. Hence, we undertook this study to document the existing knowledge and practices of the members of urban field practice area attached to the urban health training center of department of community medicine.

The study aimed to assess knowledge regarding causes, preventive measures and treatment for intestinal worm infestation and to identify the practice they had adopted for treatment and prevention of worm infestation in their children. We also tried to find out the association of literacy status of mothers with knowledge and practice for the disease.

METHODS

This is a cross-sectional study conducted during the month of December 2016. All women having at-least one child below six years of age residing in the field practice

area attached to Kalyan Nagar urban health training centre (UHTC) of the department of preventive and social medicine, Medical College Baroda. Data collection was done using pre-tested structured questionnaire which included the questions related to knowledge regarding causes of worm infestation, symptoms of the disease and preventive practices for same. Questionnaire included the practice they followed during worm infestation to their children.

Inclusion criteria

Women having children aged below six years of age, residing in the slum area of UHTC and those giving consent for participation in study were interviewed.

Exclusion criteria

Those women not willing to participate or non-residents of the study area were excluded from the study.

All collected data were entered in Microsoft Office Excel 2007. Descriptive (proportions) and analytical statistics (for associations) were done using Epi-Info 7.0.8.0. p value of 0.05 was considered statistically significant.

RESULTS

A total of 361 mothers were interviewed. Out of 361, two mothers were below 20 years of age, 66% mothers were in age group 20 years to 30 years, 30% between 30 years to 40 years and nine were above 40 years. Twenty one percent mothers were Hindu whereas 78% belonged to Muslim community. Eighty one percent (295/361) of them were aware of the disease. Those mothers who ever heard of the disease were further interviewed. Of these, 54% of them were literate and 46% were illiterate (Table 1). Many of them had incorrect knowledge regarding reasons of occurrence of the disease (Figure 1). There were multiple answers to the question whether they know the reason for worm infestation. The responses like eating contaminated food, eating mud and clay, drinking contaminated water, not washing hand before eating and after defecation were clubbed together as correct answer. Thirty one percent of them gave correct answers, whereas 69% gave incorrect answers (Table 2). The responses like the cause of worm infestation is eating sweets, drinking milk, eating pulses, eating chocolate, eating uncooked rice were clubbed together as incorrect answers. Comparing the literacy status, 26% (42/159) literate mother gave correct answer whereas 36% (50/136) of the illiterate gave correct answers. Twelve percent of the literate mothers had correct attitude toward prevention of worm infestation. Almost three-fourths (71%, 51/295) had incorrect attitude for prevention of the disease. They believed that children should not be allowed to eat sweets, drink milk and eat raw foods.

Table 1: Response to ever heard of worm infestation.

	Mothers' response whether ever heard of worm infestation		Total
Status of literacy of mothers	Yes	No	Total
	N (%)	N (%)	N (%)
literate	159 (83)	31 (16)	190 (52)
Illiterate	136 (80)	35 (20)	171 (48)
Total	295	66	361

Table 2: Perception of causes of worm infestation among mothers of an urban slum of Vadodara city.

	Perception of causes of worm infestation		
Status of literacy	Correct answers	Incorrect answers	Total
	N (%)	N (%)	N (%)
Literate	42 (26)	117 (74)	159 (54)
Illiterate	50 (37)	86 (63)	136 (46)
Total	92 (31)	203 (69)	295

Chi-square: 3.65; p=0.05.

Table 3: Level of literacy and health seeking options for worm infestations.

	Treatment option a	Treatment option availed	
Status of literacy	Doctor	Others	Total
	N (%)	N (%)	N (%)
Literate	52 (88)	07 (12)	59
Illiterate	46 (88)	06 (12)	52
Total	98 (88)	13 (12)	111

Thirty-nine percent of mothers answered that passing worms in stool was the symptom of worm infestation, 45% knew that pain in abdomen could be due to worms while 25 mothers answered that peri-anal itching; dribbling saliva could be due to worm infestations. Vomiting, fullness of abdomen and worms in vomitus could also be there. Four mothers told that asking for more food and crying excessively was also a symptom of worm infestation.

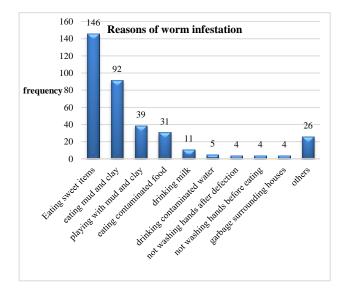


Figure 1: Reasons of worm infestation as perceived by mothers in an urban slum of Vadodara.

Majority of the mothers (90%) believed that, for the complaint of worm infestation, they should consult doctors. Four mothers responded that Aganwadi worker can provide some medicines. Seven mothers had faith in home remedies like butter milk and were of the faith that spicy food can be helpful in curing the disease.

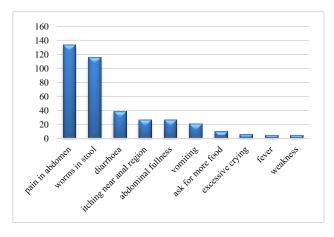


Figure 2: Knowledge regarding symptoms of worm infestation among mothers in an urban slum of Vadodara city.

On asking whether their children ever suffered from worm infestation, 37% gave positive response. Of these 110 incidences, 53 mothers answered positive for their children having passed worms in stool. Pain in abdomen was the complaint by 63 mothers, peri-anal itching was answered by 11 mothers. Other complaints were vomiting, asking for more food, eating more, grinding teeth, weakness and weight loss. Eighty eight percent mothers consulted doctors for the treatment of worm infestation of their children irrespective of their literacy status. Children were taken to Anganwadi workers by four mothers for treatment. Four took medicine from medical-store without doctor's prescription. Four did not perceive the need of treatment (Table 3).

Almost 95% mothers stopped giving sweet food to their children and 49% mothers started washing hands before eating. Four mothers did not allow their children to eat from food wanders, milk and tea. Some had misbelief that eating spicy food; buttermilk could kill the worms in intestinal gut.

Out of 295 mothers who had ever heard about worm infestation, 54% were literate and 46% were illiterate. Thirty-one percent of mothers gave correct answer when asked about the cause of worm infestation. Out of literate mothers, 26% mothers gave correct causes of the disease occurrence and transmission compared to 36% mothers who were illiterate.

Literacy has made no difference in health seeking behavior. Eighty-eight percent of mothers went to doctor for treatment regardless of their literacy status whereas other 12% opted for over the counter treatment, home remedies and one mother felt it as harmless.

DISCUSSION

In developing countries, significant causes of morbidity are attributed to soil transmitted helminthes. Though many studies have been conducted worldwide to study prevalence of helminthes none to our knowledge have studied the knowledge, attitude and practice regarding intestinal helminths in India. 9-12

This study was conducted in our field area to assess the baseline knowledge, attitude and practice of the community mother, who are mostly involved in care of their children. A similar approach has been illustrated by Friedman et al. ¹³ This would help in preparing counseling guidelines and awareness programs regarding intestinal helminthes. This adds community health approach to our study. This approach is helpful to understand the baseline knowledge and practice, and take actions accordingly. ¹⁴

In this study, majority of the mothers were aware of intestinal worm infestation. The finding that literacy has less role in prevention of worm infestation has also been found in the study conducted by Salam et al. It is a usual hypothesis that literacy improves knowledge regarding health issues. However, in the study, it was observed that illiterate mothers had similar understanding regarding intestinal helminthes, the related knowledge and awareness.

Thus, awareness campaign can be targeted towards all groups, irrespective of their literacy levels. Similar findings have been observed in the study conducted at Amalapuram. We observed that many misconception were present regarding attitude and practice towards health care and treatment of intestinal worm infestations.

CONCLUSION

Majority of the mothers were aware about occurrence of intestinal worm infestations but they had incorrect knowledge about its causes, symptoms, preventive measures and treatment. The literacy status of mothers does not make any difference in knowledge and practice regarding worm infestation. However, most of them adopted good practices for treatment and prevention in their children.

Recommendations

There is need to see the impact of health education regarding prevention and treatment of worm infestation in this urban slum area of Vadodara city for reducing the burden of worm infestation.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- 1. Salam N, Azam S. Prevalence and distribution of soil-transmitted helminth infections in India. BMC Public Health. 2017;17(1).
- National Family Health Survey. Available at: http://rchiips.org/nfhs/factsheet_nfhs-4.shtml. Accessed on 16 November 2019.
- 3. Shobha M, Bithika D, Bhavesh S. The prevalence of intestinal parasitic infections in the urban slums of a city in Western India. J Infect Public Health. 2013;6(2):142–9.
- 4. WHO/PAHO/UNESCO report. A consultation with experts on amoebiasis. Mexico City, Mexico 28-29, 1997. Epidemiol Bull. 1997;18(1):13-4.
- 5. Kobayashi J, Hasegawa H, Forli AA, Nishimura NF, Yamanaka A, Shimabukuro T, et al. Prevalence of intestinal parasitic infection in five farms in Holambra, São Paulo, Brazil. Rev Inst Med Trop Sao Paulo. 1995;37(1):13–8.
- 6. Yusof AM, Md Isa ML. Intestinal helminths and protozoa infection among parents of school children in Malaysia. J Biotechnol Strateg Heal Res. 2017;1(2):75–82.
- 7. Tripura A, Reang T, Tripura K, Roy A. Study of Knowledge and practice on intestinal helminthiasis among rural tribal mothers of under five children in Mohanpur Block, West District of Tripura: a North Eastern State of India. J Evol Med Dent Sci. 2013;2(47):9081–7.

- 8. Park K. Park's Textbook of Preventive and Social Medicine. Jabalpur: Banarsidas Bhanot; 2015.
- 9. Sachdeva S, Taneja N, Dwivedi N. Knowledge, attitude and practices studies conducted amongst medical students of India. Int J Community Med Public Health. 2018;5(9):3913.
- Acka CA, Raso G, N'Goran EK, Tschannen AB, Bogoch II, Séraphin E, et al. Parasitic worms: Knowledge, attitudes, and practices in western côte d'ivoire with implications for integrated control. PLoS Negl Trop Dis. 2010;4(12):1–14.
- 11. AlYahya IA, Almohsen HA, AlSaleem IA, Al-Hamid MM, Arafah AM, Turki YA, et al. Assessment of knowledge, attitude, and practice about first aid among male school teachers and administrators in Riyadh, Saudi Arabia. J Fam Med Prim Care. 2017;6(2):169–70.
- 12. Mekonnen HS, Ekubagewargies DT. Prevalence and factors associated with intestinal parasites among

- under-five children attending Woreta Health Center, Northwest Ethiopia. BMC Infect Dis. 2019;19(1):1–8
- Friedman SL, Allhusen V, Belsky J, Booth-laforce C. Child care and mother-child interaction in the first 3 years of life. NICHD Early Child Care Research Network. Dev Psychol. 1999;35(6):1399– 413.
- 14. Dongre AR, Deshmukh PR, Garg BS. A community based approach to improve health care seeking for newborn danger signs in rural wardha, India. Indian J Pediatr. 2009;76(1):45–50.

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