

Assessment of the Knowledge and Practice regarding Prevention of Worm Infestation among Mothers of Children in a Selected Rural Community of West Bengal

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Abstract

A research work was undertaken to analyse the knowledge and practice regarding prevention of worm infestation among the mothers having children between 2-12 years of age. The objective of the study was to assess the level of knowledge and practices of mothers regarding prevention of worm infestation as measured by structured interview schedule. The conceptual framework adopted for the study was based on "Health Belief Model". Data was collected from 100 mothers using convenient sampling technique. Validity of the tool was evaluated by 10 experts. Reliability of the tool was established by Karl Pearson's product moment correlation coefficient formula. The study result revealed that 13 percent of mothers have excellent knowledge, 59 percent good, 27 percent average and 1 percent below average knowledge regarding prevention of worm infestation, 37 percent of the mothers had poor practice. Association was found out between knowledge of mothers and selected demographic variables. The study has various implications in nursing services, nursing education, nursing administration and research. This study can be replicated on large sample, so that findings can be generalised to a large population.

Worm infestation is any macro-parasitic disease of humans and other animals in which a part of body is infected with the parasitic worms. Its affects are poor birth outcome, poor cognitive development and poverty. It is estimated (WHO, 2014-15) that approximately 1.5 billion people were infected with soil transmitted helminthiasis. Areas with the highest prevalence of the helminthiasis are tropical areas including Sub-Sahara Africa, central and east Asia, and America.

Need for the study: Worm infestation causes increase in morbidity rate among children. It causes various complications among the children like anaemia, growth retardation, malnutrition etc. Mother is the primary caregiver of a child, so increase in knowledge of mother regarding prevention of worm infestation can reduce the morbidity of worm infestation and its complication.

A study conducted by Fatma (2011) to assess the prevalence and predisposing factors regarding intestinal parasitic infection among rural primary school pupils showed that giardia lamblia was found in 12.5 percent of the faecal samples. Worm infestation has remained major zoonotic disease in India, especially among children (Basir, 2014). The various childhood problems are interrelated with children's development and growth, the most common ones being

infection, malnutrition and parasitic infestations. A study conducted by Bhattacharya et al (2011) to assess knowledge, attitude and practice regarding water handling, sanitation and defaecation among mothers of children below 5 years of age showed that hand washing with soap & water after defaecation was practiced by only 22 percent of samples.

Hence the investigators found it is relevant to conduct a study to assess the knowledge and practice of mothers regarding prevention of worm infestation.

Objectives

This study sought:

- To assess the knowledge of mothers regarding prevention of worm infestation in children.
- To assess the practice of mothers regarding prevention of worm infestation in children.
- To find out the association between knowledge of mothers and selected demographic variables.

Assumptions: (i) Mothers of children in a rural community may have poor knowledge regarding prevention of worm infestation, (ii) Mothers of children in a rural community may have poor practice regarding prevention of worm infestation.

Conceptual Framework

The conceptual framework of the study based on

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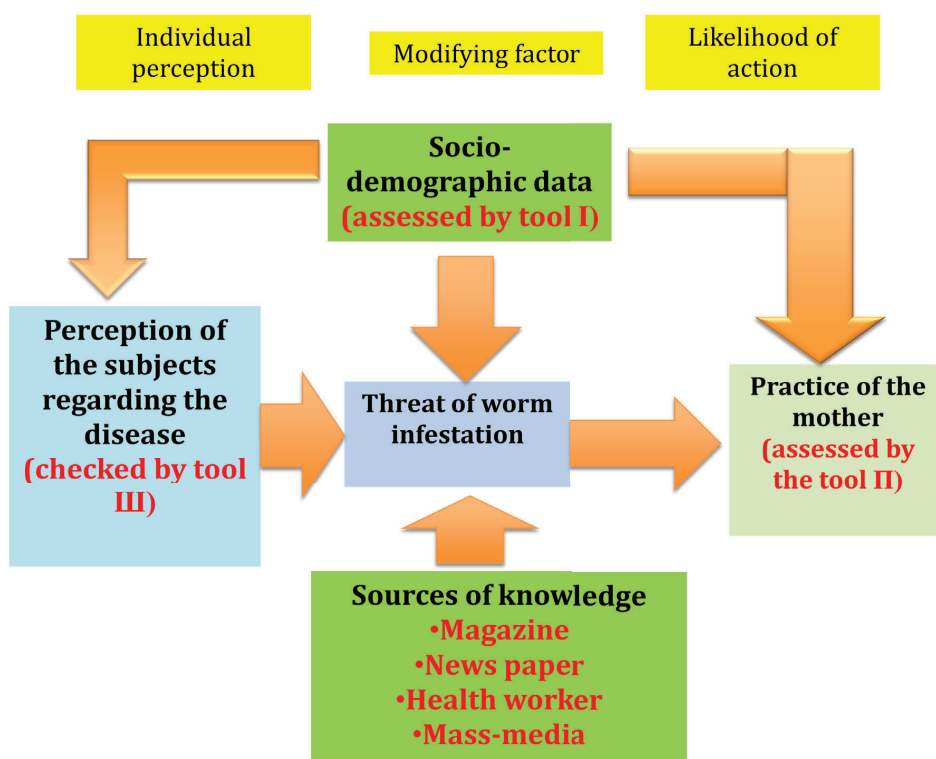


Fig 1: Health Belief Model.

the Health Belief Model by Rosenstoch & Becker and Maiman in 1975 which is addressed the relationship between a person's belief and behaviour. Health Belief Model helps to understand factors influencing patient's perception, belief and behaviour to plan care likely to be most effective in assisting patient in maintaining or restoring health and preventing illness (Fig 1).

Review of Literature

Worm infestation has remained a major zoonotic disease in India, especially among children. The developmental ages of childhood has higher risk of mortality and morbidity.

A study to assess the prevalence and pattern of *Ascaris lumbricoides* infestation among 600 primary school children showed that overall prevalence of *Ascaris* infection was 22.7 percent (Duru B et al, 2015). Also, the prevalence of *Taenia* infestation and associated risk factors among 935 school children was high i.e. 5.5 percent (Bilakshan et al, 2012). The prevalence rate of intestinal parasite was 21.4 percent as studied by Yogyata & Binita Singh (2011) among 5990 samples of five years in Ujjain.

Bhattacharya et al (2011), in a study to assess the prevalence of hookworm infestation and its linkage with four anaemia in districts of West Bengal revealed that it is most prevalent in Hoogly (25%), South 24 Parganas (8%) and Kolkata (0.15%).

A cross-sectional study was conducted by Verma et al (2014) in Jhajjar, Haryana on determinants of

hookworm infestation among 200 school going children. The study found that 70 percent subjects had unclean hands, nearly 76.5 percent subjects had untrimmed nails, 38.5 percent had practiced in open field defaecation and 32.5 percent subjects had habit of eating food fallen on ground.

A comparative study (Sharma et al, 2014) was conducted at Ludhiana, Punjab to assess the knowledge regarding worm infestation in children among urban and rural mothers attending OPD. Results showed that awareness of mothers in the urban area was higher (18.36%) than in rural area.

A study to assess the knowledge and practice of mothers on intestinal helminthiasis in Mahanpur Block, Tripura (Amar Tripura et al, 2013) revealed that 41.9% mothers had poor knowledge about worm infestation.

The prevalence of nutritional status (Francis et al, 2012) among 432 children between the age group of 6 to 14 years diagnosed with hookworm infestation at Wakiso district, Uganda, revealed that among them prevalence of stunting was 22.5 percent, underweight 5.3 percent and moderate acute malnutrition 18.5 percent.

Methodology

In the present study, quantitative research approach with a descriptive research design was used.

Setting: The study was conducted in rural community of Chandidoulatabad, Bishnupur-1, South 24 Parganas, West Bengal. In this village most of the people belonged to Hindu and Muslim religion.

Sample and Sampling Technique: The study sample included the mothers of children of a selected rural community in Bishnupur-1. Convenience sampling (which is a non-probability sampling) technique was used in selecting the subjects. Mothers having children between 2-12 years of age, and those who could understand Bengali were included.

Size: A total of 100 mothers were chosen to study the knowledge and practice regarding prevention of worm infestation.

Tool: A structured interview schedule was used to collect the data on the reported practice of mothers and their knowledge regarding prevention of worm infestation. The validity of the tool was done by ex-

perts from the field of research, nursing and education to check for its completeness in terms of content

and clarity of language. The reliability of the tool was done by test-retest method and was calculated by using Karl Pearson's product moment correlation coefficient formula and it was proved that the tool was strongly positive. The reliability coefficient was found to be 0.9. Thus, the tool was considered to be highly reliable.

Table 1: Frequency and percentage distribution of samples characteristics (N=100)

1	Child's Age	Frequency	Percentage (N=100)
	Toddler	10	10
	Preschooler	39	39
	Schooler	51	51
2	Education of mother		
	Illiterate	61	61
	Class 8th	28	28
	Class 10th	7	7
	Class 12th	2	2
	Graduate	2	2
3	Education of father		
	Illiterate	46	46
	8th pass	34	34
	10th pass	17	17
	12th pass	1	1
	Graduate	2	2
4	Occupation of father		
	Labourer	48	48
	Shopkeeper	3	3
	Driver	5	5
	Farmer	5	5
	Business	18	18
	Fishers	3	3
	Others	18	18
5	Occupation of mothers		
	Housewife	94	94
	Labourer	5	5
	Servant	1	1
6	Family Income		
	1000-5000	62	62
	5001-10000	35	35
	10001-15000	3	3
7	Type of Toilet		
	Indian	95	95
	Western	1	1
	Open field defecation	4	4
8	Type of drainage system		
	Open drainage system	100	100
	Closed drainage system	0	0
9	Place of defecation		
	Toilet	75	75
	Open field	25	25
10	Practice score		
	Satisfactory	63	63
	Unsatisfactory	37	37
11	Knowledge score of respondents		
	Below average	1	1
	Average	27	27
	Good	59	59
	Excellent	13	13

Data Collection Process

Written permission was taken from the Block Medical Officer of Health of selected rural community. The ethical clearance was obtained from the college. Informed consent was taken before the data collection. The association was done using Fisher's test.

Results

The study participants comprised of 100 mothers. Out of 100 study subjects 95 percent had Indian toilet, 1 percent had western toilet and 4 percent had no toilet. With regard to the drainage system, table 1 shows that all (100%) had open drainage system.

Fig 2 to Fig 5 show the distribution of study subjects according to child's age/educational qualification of mothers/ family income/ knowledge of mothers.

It was found that 59 percent mothers had good knowledge, 27 percent mothers had average knowledge, 13 percent mothers had excellent knowledge and 1 percent had poor knowledge.

The mean, median, mode and standard deviation was calculated and it was found to be 18, 16.3, 16 and 1.5 respectively (Table 2). According to Fisher's exact test it was proved that there is a significant association between mothers' knowledge and education level of mothers at 0.05 level of significance and degree of freedom of 1 and the significant value is 0.0114 (Table 3).

According to Fisher's exact test it was proved that there is no relation between mothers' knowledge and socio-economic status of the family at 0.05 level of significance and degree of freedom of 1 and the significant value is 0.1273 (Table 4).

Discussion

Worm infestation remains one of the main problems of child development. Since mothers play a vital role in developing healthy life style among children it is very important to empower those with knowledge and practice about prevention of worm infestation.

A study conducted by Ray (2015) on knowl-

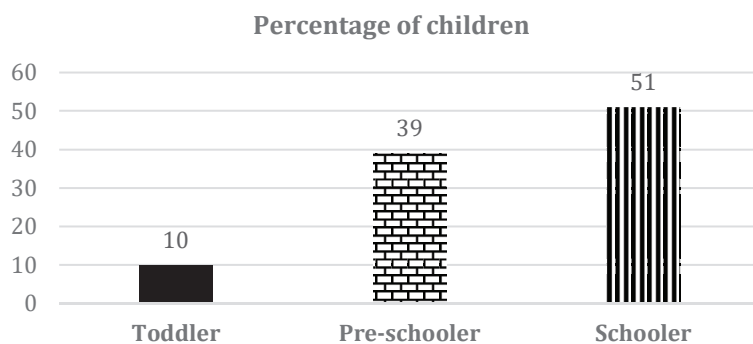


Figure 2: Distribution study subjects according to child's age.

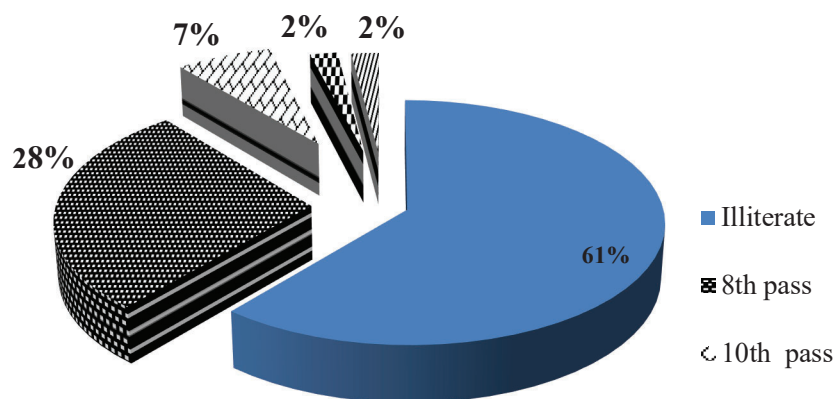


Figure 3: Distribution of mothers as per their educational qualification.

edge of mothers regarding worm infestation in selected slums of Pune City showed that 75 percent of the mothers were having average knowledge, 22 percent of mothers had poor knowledge and only 3 percent of mothers were having good knowledge regarding worm infestation. In this study only 59 percent of the mothers had good knowledge, 27 percent average knowledge and only 13 percent had excellent knowledge.

Implications

For nursing profession: The study will help health care provider to adopt specific strategies to change the knowledge and practice of mothers towards better prevention. The study provides empirical evidence based on which further research can be done.

For community health nurse: Community health nurse can improve de-worming practice by providing anti helminthic drug. She can give health education regarding measures for prevention of worm infestation.

For local administrator: Panchayat can improve sanitation and drainage system.

Limitations

As the study was limited to a small sample, it limits the generalisation of the study. Only assessing verbalised practice leads to bias in the study. Study was limited to only one community setting and data was collected from only the mothers who were available at the time of data collection.

Recommendations

This study can be replicated on large number of sample. A study can be done by assessing the actual practice. A quasi-experimental study can be conducted by using pre-test and post-test method by organising structured teaching programme. A comparative study can be done on knowledge and practice of mothers regarding prevention of

worm infestation between urban and rural community.

Conclusion

Worm infestation is a common zoonotic problem in India, especially among children. The parasitic infestations are acquired by ingestion, inhalation or penetration of the skin by the infected worms. Maximum knowledge score was 22, mean value 16.3,

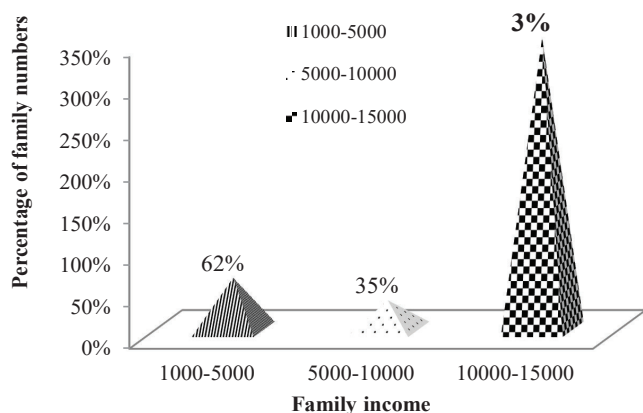


Figure 4: Distribution of study subjects as per family income.

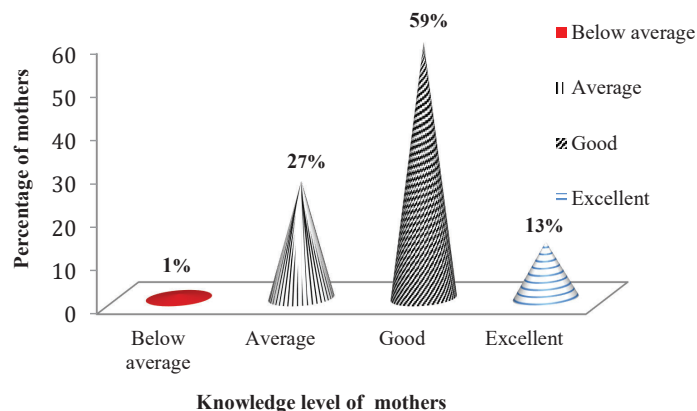


Figure 5: Distribution according to knowledge level of mothers.

Table 2: Distribution of the knowledge score of mothers in mean, median, mode and standard deviation (N=100)

Central tendency	Mode	Mean	Median	Standard Deviation
Knowledge score	18	16.3	16	1.5

Table 3: Association between the knowledge level and educational level of mothers

Knowledge level of mothers					
Education level of mothers	Below median	At and above median	df	Level of significance	f-value
Up to class 8	53	35	1	0.05	*0.0114
Above class 8	2	9			

Table 4: Association between knowledge level and socio-economic status of family

Knowledge level of mothers					
Socio-economic status	Below median	At and above median	df	Level of significance	f-value
Up to Rs 5000 / month	16	36	1	0.05	0.1273
Above Rs 5000 / month	18	20			

median value 16 and standard deviation 1.5. It was also found that 63 percent of mothers followed special measures to prevent the worm infestation. From this study it can be concluded that majority of the mothers have good knowledge but poor practice to prevent worm infestation.

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