# **Original Research Article**

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# Assessment of deworming practice among mothers of under five children in Kancheepuram district

Dhanuraja V.1\*, Vijayakarthikeyan M.2, Krishnakumar J.3

Department of Community Medicine, Sree Balaji Medical College, Chennai, Tamil Nadu, India

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\*Correspondence: Dr. Dhanuraja V.,

E-mail: vdhanuraja@gmail.com

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#### **ABSTRACT**

**Background:** Worm infestation is a major problem in children from developing countries due to poor sanitary and hygienic conditions. As the worm infestation is highly associated with the anaemia in children and generalized malnutrition as well as micronutrient malnutrition it is important to assess the deworming practice among mothers of under five children. Thus this study was aimed to assess the deworming practice to their children among mothers of under five children in Kancheepuram district and to find out the association between education level of the mothers and deworming practice, residence (rural/urban) of the mothers and deworming practice.

**Methods:** A cross-sectional study was conducted among 208 mothers of under five children in the field practice area urban and rural health centre of Sree Balaji Medical College for duration of four month using a pretested questionnaire.

**Results:** Among 208 mothers 105 (50.5%) is from rural and 103 (49.5%) is from urban. Among them 40 (19.2%) were illiterate and 168 (80.8%) were literate. About deworming practice 40 (19.2%) mothers have never done deworming to their children, 32 (15.4%) mothers have done deworming to their children only after the worm infestation symptoms appears and 136 (65.4%) mothers have done deworming to their children regularly. Education level of the mothers (p=0.000) and the residence (rural/urban) of the mothers (p=0.000) are significantly related to the deworming practice.

**Conclusions:** Deworming practice among rural mothers and illiterate mothers is low. Hence awareness should be created among them about the deworming practice in preventing the complication caused by the worm infestation and should promote the habit of regular deworming to their children.

Keywords: Deworming, Worm infestation, Anaemia, Malnutrition

#### INTRODUCTION

More than 1 billion people are parasitized by soil-transmitted helminths (STHs), namely Ascaris lumbricoides, Trichuris trichiura and the hookworms (Ancylostoma duodenale and Necator americanus). In general rural areas are expected to have higher worm load, than urban area, because of the preponderance of those factors that perpetuates the continued existence of the worm, such as poverty, poor environmental hygiene,

and complete absence of municipal services. Poor environmental sanitation in communities, improper disposal of waste, like human feces and other organic wastes, gross environmental pollution with agrochemical and industrial waste and the steady contamination with water and air. Villagers and their children are living under the risk environments and are highly exposed to intestinal helminths infection throughout their life, further a wrong idea about the spread of worm infection and regular deworming may leave children openly

vulnerable. Most helminths infections, if left untreated, result in multi-year, chronic inflammatory disorders that cause both concurrent and delayed-onset pathology to the afflicted human host, it is now appreciated that chronic helminths infections are also linked to more insidious persistent health conditions such as anemia, growth stunting, and protein-calorie under nutrition, fatigue, and poor cognitive development.<sup>2-4</sup> This burden is high especially in rural areas due to the paucity of resources and neglected government interventions.<sup>5</sup> Thus, worm infestation as a public health problem needs immediate attention from policy makers in India. World Health Assembly called for the regular deworming for millions of children during last decades. Multiple factors pushing to achieve this are climate changes issues in different countries systems affecting for delivering deworming drugs.<sup>6</sup> A focus on using school systems may be key to achieving the worldwide goal. However, preschool and out-of-school children and pregnant women risk remaining untreated.<sup>7</sup> Latest estimates indicate that more than 880 million children are in need of treatment for soil-transmitted helminth infections. WHO's control interventions are based on the periodic administration of anthelminthics to groups of people at risk, supported by the need for improvement in sanitation and health education.8 WHO recommends periodic treatment with anthelminthic (deworming) medicines, without previous individual diagnosis to all at-risk people living in endemic areas. Treatment should be given once a year when the prevalence of soil-transmitted helminth infections in the community is over 20%, and twice a year when the prevalence of soil-transmitted helminth infections in the community exceeds 50%. Over 300 million preschool-aged and school-aged children were treated with anthelminthic medicines in endemic countries, corresponding to 30% of the children at risk.<sup>9</sup> As the worm infestation is highly associated with the anemia in children and generalized malnutrition as well micronutrient malnutrition the assessment of deworming practice among mothers to their children's is important .Hence, the evidence from this study would help to develop and guide strategies and educate the mothers about practice of regular deworming; therefore to prevent anemia and malnutrition among their children.

With this background, this study was planned to assess the deworming practise to their children among mother of under five children, in the rural and urban field practice area of our institution with the following objectives.

- To assess the deworming practice to their children among mothers of under five children in Kancheepuram district.
- To find out the association between education of the mothers and deworming practice, residence (rural/urban) of the mothers and deworming practice.

#### **METHODS**

#### Study design

This is a Cross sectional descriptive study carried out in UHTC/RHTC of Sree Balaji Medical college hospital, Kancheepuram, Tamil Nadu.

# Study population

Mothers of under five children residing at Anakaputhur and S. Padappai area of Kancheepuram district.

#### Study area

Field practice area of Urban Health and Training Centre (UHTC), Anakaputhur and Rural Health and Training Centre (RHTC), S.padappai of Sree Balaji Medical College and Hospital (SBMCH), Kancheepuram district, Tamil Nadu.

# Sample size

The sample size is 208. Calculated using the formula (n)= $4pq/L^2$  where p=68%, (from a study conducted among rural tribal mothers of under five children in Mohanpur block, west district of Tripura: a north eastern state of India) q=32%, L=10% of p=6.8 with a non response rate of 10% at 95% confidence and 5% level of significance.

## Sampling method

Convenient sampling.

#### Inclusion criteria

Mothers of under five children in Anakaputhur (urban area) and S.Padappai(rural area) were included in the study.

#### Exclusion criteria

Mothers of under five children who didn't gave consent to participate in the study are also excluded.

# Data collection

Data was collected using a pretested questionnaire to the mothers of under five children, for a duration of four month from July to October 2017.

# Statistical analysis

Data entry was done in Microsoft excel and analysis was carried out in SPSS 22. The association between education of the mothers of under five children and deworming practice, residence (rural/urban) of the mothers of under five children and deworming practice was done by chi square test. The level of significance was set at p value <0.05.

#### Ethical clearance and informed consent

The study was carried out after obtaining approval from the Institutional Ethical Committee of Sree Balaji Medical and Hospital, Chromepet. The participants were briefed about the purpose of the study and informed consent was obtained prior to the data collection.

#### **RESULTS**

Among 208 mothers of under five children who have participated in the study 40 (19.2%) were illiterate and 168 (80.8%) were literate (Figure 1) and 105 (50.5%) were from Rural area and 103 (49.5%) were from Urban area (Figure 2).

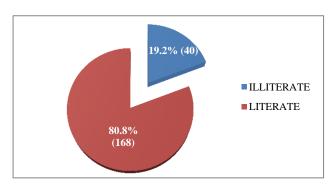


Figure 1: Education level of mothers of under five children participated in the study.

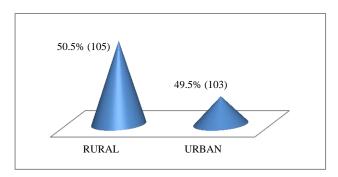


Figure 2: Residence of mothers of under five children participated in the study.

Among 208 mothers of under five children who have participated in the study, 40 (19.2%) have never done

deworming to their children, 32 (15.4%) have done deworming to their children only after the worm infestation symptoms appears and 136(65.4%) have done deworming to their children regularly (Figure 3).

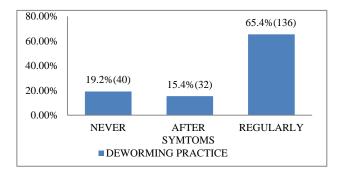


Figure 3: Deworming practice to their children among mothers of under five children participated in the study.

Table 1: Methods of getting/doing the deworming to their children by the mothers of under five children.

Methods of getting/doing the	n=168
deworming	(%)
Private practitioners	96 (57)
Government hospital	40 (24)
Home remedies	17 (10)
Counter medication	15 (9)

Out of 168 mothers who have done deworming to their children, 96 (57%) mothers consulted private practitioners, 40(24%) attended government hospital, 17 (10%) did home remedies and 15(9%) went for over the counter medication (Table 1).

Deworming practice to their children is low among the illiterate mothers of under five children when compared to literate mothers of under five children which is statistically significant (Table 2).

Deworming practice to their children is low among the mothers of under five children from rural area when compared to mothers of under five children from urban area which is statistically significant (Table 3).

Table 2: Deworming practice to their children and education of the mothers of under five children.

Education of mothers of under five children	Deworming	practice		Total (%)	P value	Chi square value
Illiterate	Never 24 (60%)	After symptoms 8 (20%)	Regularly 8 (20%)	40 (100)	-0.0001	59.091
Literate	16 (9.5%)	24(14.3%)	128 (76.2%)	168 (100)	<0.0001	Degree of freedom 2
Total	40	32	136			

Table 3: Deworming practice to their children and residence (urban/rural) of the mothers of under five children.

Residence of mothers of under five children	Deworming practice			Total (%)	P value	Chi square value
Rural	Never 32 (30.5%)	After symptoms 25 (23.8%)	Regularly 48 (45.7%)	105 (100)	- <0.0001 -	36.274
Urban	8 (7.7%)	7 (6.8%)	88 (85.5%)	103 (100)		Degree of freedom 2
Total	40	32	136	208		

#### DISCUSSION

The present study was conducted among rural and urban mothers of under five children population Kancheepuram district. A total of 208 mothers of under five children were selected after fulfilling the selection criteria. Majority of the mothers of under five children were literate 80.8% and nearly half of the selected mothers were from Rural area of Kancheepuram district 50.5% and another half of the mothers were from urban area of kancheepuram district 49.5%. In this study 65.4% of mothers have done regular deworming to their children. A study conducted in West district of Tripura reported 60% of mothers have done regular deworming to their children which is almost similar. And a study conducted in Zambia reported only 46.6% the difference might be due difference in level of education and socioeconomic status between study subjects. 10 The present study showed that 57% of mothers consulted private practitioners and 24% attended government hospitals for deworming of their children whereas in a study in Kep District, Kingdom of Cambodia 55.6% of mothers sought Private medical treatment and 22.2% sought Public Medical Services. 11 The deworming practice was significantly associated to be high among the mothers of under five children from urban area compared to mothers of under five children from rural area of Kancheepuram district (p<0.0001), this may be the reason for the high prevalence of worm infestation in rural area compared to urban area of Kancheepuram district.<sup>12</sup> The deworming practice was significantly associated to be high among the literate mothers compared to illiterate mothers of under five children (p <0.0001). A similar observation was reported from a study conducted in slum of Islamabad Pakistan.5

#### **CONCLUSION**

This Study concluded that the regular deworming practice to their children is poor among the mothers of under five children staying in rural area and illiterate mothers of under five children. Hence a multisectoral control approach of mass deworming programmes and health education to the parents about the importance of regular deworming practice in the control of worm infestation is required. Regular deworming practice could lead to the effective control of worm infestation and prevention of future complications due to worm infestation such as anemia, growth stunting, and protein-

calorie under nutrition, fatigue, and poor cognitive development.

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Ethical approval: The study was approved by the Institutional Ethics Committee of Sree Balaji Medical College and Hospital, Chromepet, Kancheepuram, Tamil Nadu

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