



Assessment of Knowledge about National Deworming Day and Impact of Deworming Training among Rural School Teachers in Maharashtra

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ABSTRACT

Soil transmitted helminths are cosmopolitan in distribution. In India it affects 241 million children aged mainly 3-8 years. These children account for over 68 percent of children in this age group and close to 28 percent of children worldwide who are thought to be at risk of soil transmitted helminthes infections. Study was conducted in rural schools in a Sangli district of Maharashtra. Online questionnaire was circulated to teachers out of 160 teachers 40 teachers didn't give consent in the form for participating in study. So, N=120 individuals who have given consent to participate in the study.

Keywords: Helminths infections, Cosmopolitan, Questionnaire

INTRODUCTION

Soil transmitted helminths are cosmopolitan in distribution. In India it affects 241 million children aged mainly 3-8 years. These children account for over 68 percent of children in this age group and close to 28 percent of children worldwide who are thought to be at risk of Soil transmitted helminths infections. It severely affects their physical wellbeing in turn it affects their educational outcome.

These parasite illnesses are spread easily among children through contact with infected soil and are caused by poor sanitation and hygiene. Chronic worm infection in children has far reaching and severe repercussions. In India, undernutrition and anaemia in children are well documented: Over 7 out of 10 children aged 6 to 59 months are anaemic, with anaemia rates much higher in rural areas. In India, about half of children under the age of five are stunted and about 43% are severely stunted. The prevalence of anaemia and underweight in girls and boys aged 15-19 years is 56 percent and 30 percent, respectively.

Worm infestation is a major public health problem; it poses greater threat to child's survival. Initiative like mass level deworming program can reduce the burden of infection. Rather than creating additional new distribution routes, the school and Anganwadi based deworming programme approach for mass deworming provides an easy means to reach large numbers of target-age group children using existing infrastructure. The goal of national deworming day is to provide a comprehensive solution to ensure that every child in our country is worm-free [1].

Periodic mass deworming, appropriate sanitation to reduce soil contamination with infective eggs and comprehensive health education to prevent reinfection were three significant and crucial strategies for long-term worm infection control and elimination [2].

Deworming is well regarded as a cost-effective strategy to improve scholastic attainment and health in school-aged children who have a high prevalence and severity of Soil Transmitted Helminth (STH) infections and bear the majority of the disease burden [3]. Deworming treatments have been demonstrated to be effective in lowering worm infestations in school-aged children [4-6].

MATERIALS AND METHODS

- **Study design:** Cross sectional study.
- **Study population:** Rural school teachers.
- **Study site:** Online based survey among rural school teachers.
- **Study tool:** Semi structured questionnaire.
- **Study period:** February 2021.

Study was conducted in rural schools in a Sangli district of Maharashtra. Online questionnaire was circulated to teachers out of 160 teachers. 40 teachers didn't give consent in the form for participating in study. So, N=120 individuals who have given consent to participate in the study. This study is conducted through online Google forms which is a cloud based data management tool.

Semi structured questionnaire is sent to rural public school teachers which contains questions that evaluates Knowledge attitude and perception of school teachers on soil transmitted helminthes infection.

RESULTS

The results show in Table 1.

Table 1 Demographic characteristic of Teachers.

Demographic characteristics	Number of teachers	Percentage (%)
Female	88	73.33
Male	32	27.5
Age group		
20-40	89	74.16
40-60	31	25.8

Majority 89 (74.16%) teachers are in age group of 20-40 years. Regarding gender of the teachers, 88 (73.33%) were females (Table 2).

Table 2 Overview of teachers on NDD.

National deworming day	Teachers (n)	Percentage
10-Feb	78	65
10-Mar	19	15.83
10-Aug	13	10.83
10-Apr	10	8.33
Public health concern	Teachers (n)	Percentage
Yes	107	89.16

No	6	5
May be	7	5.83
Person to person transmission	No. of teachers	Percentage
Yes	14	11.6
No	99	82.5
May be	7	5.8
Diseases that are covered under NDD	No. of teachers	Percentage
Water borne	21	17.5
Worm infestation	95	79.16
Don't know	4	3.33

Total 78 (65%) have registered their answers as 10 Feb and 107 (89.16%) felt that worm infestation in children is public health concern.

Only 14 (11.6%) has registered that Person to person transmission happens. 95 (79.16%) has rightly said that worm infestation is covered under national deworming day (Table 3).

Table 3 knowledge assessment of teachers on soil transmitted helminths.

Age group of children covered under NDD	No. of Teachers	Percentage
1-19 years	63	52.5
1-5 years	39	32.5
6-19 years	18	15
Symptoms of worm infestation	No. of Teachers	Percentage
Stomach pain	90	76.9
Worm in stools	66	55.7
Fatigue	25	21.4
Fever	19	16.2
Vomiting	33	28.2
Why deworming is important?	No. of Teachers	Percentage
Child grows faster and healthier	53	44.9
Learns better	7	5.9
Resistant to other infection	75	63.6
Attends school regularly	13	11
Wash infrastructure in school	No. of Teachers	Percentage

Wash hand and hygiene	52	43.33
Water sanitation and hygiene	65	54.16
Water hygiene	3	2.5

63 (52.5%) said age group of Children Covered under NDD is 1-19 years. Symptoms of worm infestation have been given as a multiple choice question. 90 (76.9%) have registered stomach pain as major symptom for worm infestation. 66 (55.7%) have registered worms in stool as major symptom for worm infestation. 25 (21.4%) have registered fatigue in students as major symptom for worm infestation (Figure 1). 19 (16.2%) have registered fatigue in students as major symptom for worm infestation. 33 (28.2%) have registered vomiting as major symptom for worm infestation. Deworming importance has been recorded as multiple choice answers (Figure 2). 53 (44.9%) teachers felt that deworming children is important because child grows faster and healthier. 7 (5.9%) teachers felt that deworming children is important because children learns better. 75 (63.6%) teachers felt that deworming children is important because children become resistant to other infection. 13 (11%) teachers felt that deworming children is important because children attend school regularly because of deworming. 65 (54.16%) teachers rightly documented wash infrastructure in school is water sanitation and hygiene (Table 4).

Ways of transmission of soil transmitted helminths

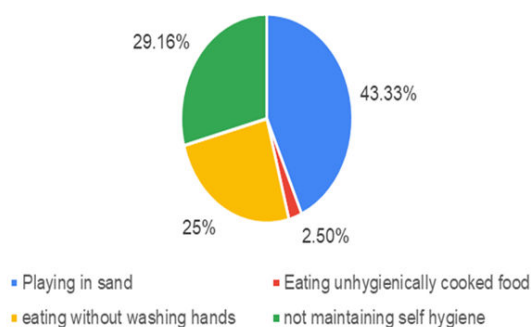


Figure 1 Ways of transmission of soil transmitted helminths.

Methods to Prevent spread of infection

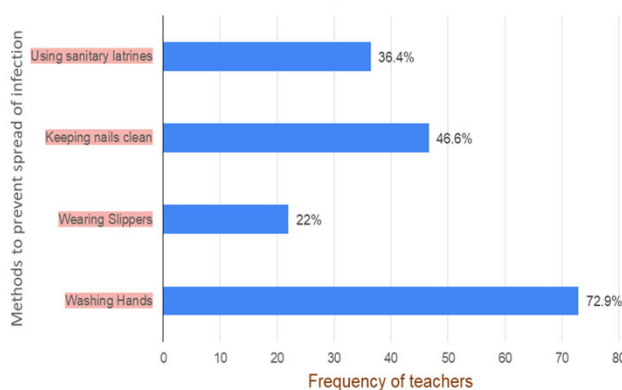


Figure 2 Methods to prevent spread of infection.

Table 4 Knowledge on treatment of helminths.

Albendazole can be combined with IFA tablets	No. of teachers	Percentage
Yes	34	28.3

No	59	49.1
Don't know	27	22.5
Is it safe for children to consume the deworming tablet without having a meal?	No. of Teachers	Percentage
Yes	15	12.5
No	99	82.5
Don't know	6	5
Can deworming tablet be given to a sick child?	No. of Teachers Teachers	Percentage
Yes	34	28.3
No	78	65
Don't know	8	6.66
Mop Up Day (MUD)	No. of Teachers	Percentage
To give deworming tablet if dose is missed	79	65.83
Parents teachers meeting day	15	12.5
Day for vaccination in school	15	12.5
Sports day	11	9.16
Treatment given in case of worm infestation	No. of Teachers	Percentage
Albendazole	102	85
Iron tablet	10	8.33
Paracetamol	8	6.66

59 (49.1%) teachers think that Albendazole can be combined with IFA tablets. 99 (82.5%) teachers think that it is safe for children to consume the deworming tablet without having a meals. 79 (65.83%) teachers think that mop up day means they give deworming tablet if it is missed. 8 (6.6%) teachers think that deworming tablet can be given to a sick child. 102 (85%) said Albendazole is the treatment given for worm infestation (Table 5).

Table 5 Practices of teachers regarding drug administration.

Underwent Training for deworming	No. of teachers	Percentage
Yes	48	40
No	72	60
Response in case of adverse effects(first response)	No. of Teachers	Percentage
Report to nearby health Centre	115	95.83

Report to headmaster	1	0.83
Report to parents	4	3.33
Response when child chokes the tablet	No. of Teachers	Percentage
Allow the child to cough and give him or her drinking water	22	18.33
Pat with the hand on the upper back of the child to dislodge the object from the airway	66	55
Call for helpline nearest hospital	32	26.66
Period of stay after taking tablet	No. of Teachers	Percentage
1 hour	23	19.16
2 hour	8	6.66
30 minutes	69	57.5
half day	20	16.66

69 (57.5%) has said thirty minutes as period of stay after taking tablet. 66 (55%) has said rightly Pat with the hand on the upper back of the child to dislodge the object from the airway when child chokes the tablet (Table 6).

Table 6 Association between sociodemographic details and deworming training underwent.

Age Group	Number (%)	P value
20-40	89 (74.16%)	0.376
40-60	31 (25.8%)	
Training underwent	Number (%)	P value
yes	42 (40%)	<0.0001
no	78 (60%)	

Questions in the questionnaire have been taken from the operational guidelines for health workers and each correct answer of the study group is given score. Total score of 12 is calculated. Those who have scored equal to or more than 50% right answers are considered satisfactory and those who score less than 50% answers are considered not satisfactory score. 48 teachers out of 120 had undergone training for deworming. Correlation between age and the score is done and found that

P value=0.376. Since, P value is >0.05 both the variables age and score secured by teachers on assessment of knowledge on deworming are not statistically significant.

Mean score is 6.3 ± 2.23 . 68 teachers had satisfactory score with mean 8 ± 1.22 . Teachers who had scored satisfactorily had been compared with not satisfactory score, p value is <0.001 so that we conclude that the score is statistically significant.

Table 7 Mean score of 68 teachers (satisfactory) and 52 teachers (not satisfactory).

Score	Number of teachers	Mean \pm SD	P value
Satisfactory	68	8 \pm 1.22	<0.0001
Not satisfactory	52	4 \pm 0.95	

DISCUSSION

Njomo DW et al. had conducted a cross sectional study among preschool teachers in Kenya. They had reported that preschool teachers lacked information about deworming and worm infestation among children, therefore training them to help with community sensitization and drug administration would be beneficial. According to the findings, pre-school teachers are a potential resource should be used to teach young children basic water and sanitation practices.

AL-Delaimy AKA et al. had conducted a cross sectional study to assess health education learning package among school children in Malaysia and reported that there was a significant link between demographic variables and knowledge, such as the source of information (clinics/hospitals, mass media and the internet), signs and symptoms (lack of appetite, blood in stool and poor performance), preventive measures (washing hands before eating, washing vegetables before consumption and boiling drinking water) and transmission.

In the present study teachers who had attended awareness programs and training has scored significantly well compared to teachers who are not trained. Blanton E, et al. has done a study to evaluate role of school children in promotion of water treatment and handwashing in schools. Students and teachers received training on hygiene by which student absenteeism had drastically reduced.

Ziegelbauer et al. had study on effect of sanitation on soil transmitted helminths; they had reported that use of sanitary latrine can decrease the burden of Soil transmitted helminths infection.

CONCLUSION

Preschool children and school age children are at high-risk groups for worm infestation. School teachers play an important role in educating the students and their parents about importance of deworming and sanitation that can improve their overall health and quality of life.

Hence this study is conducted to assess knowledge perception and behaviour of school teachers on soil transmitted helminths infection.

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