

# Effectiveness of Child to Child Approach on Prevention and Management of Worm Infestation Among School Children: A Literature Review

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## Abstract

This Intestinal worm infestations are widely prevalent in tropical and subtropical countries and occur where there is poverty and poor sanitation. The child to child approach is an educational process that links children learning with fusion action to promote the health well-being and development of themselves their families and their communities. The objective of the present study is to evaluate the effectiveness of the Child to Child approach on the prevention and management of worm infestation among school children in the changeset, Kancheepuram district, Tamil Nadu. Quantitative approach and pre-experimental one group pretest, post-test design was adopted based on the inclusion and exclusion criteria. The total number of 100 children were selected by the non-probability convenient sampling technique. The tool used for the study comprises two sections section A and Section B. Section A comprised of demographic data which includes age, gender, siblings. Occupation of mothers, Toilet facilities, water facilities. Section B comprises a structured questionnaire that was developed by the researcher to assess the knowledge on Prevention and management of worm infestation among school students which includes forty questions to answer the questionnaire. The results of the study are before giving Child to Child approach in the value of which is pretest level of knowledge showed that 50 (50%) students have inadequate knowledge and 50 (50%) students have moderately adequate knowledge none of them have adequate knowledge. After giving the Child to Child approach the level of knowledge showed that 22(22%) students have moderately adequate knowledge 78(78%), students have adequate knowledge none of them have inadequate knowledge The investigator found that Child to Child approach in improving the level of knowledge on prevention and management of worm infestation. ( $t=31.15$ ;  $p=0.0001$ ).

**Keywords:** Knowledge and practice; Iodised and non-iodised; Householders.

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## INTRODUCTION

WHO (2012) reported that globally there are 1221-1472 million cases of Ascariasis, 750-1050 million cases of Trichuriasis, and 740-1300 million cases of a hookworm infestation. Stephenson L.S (2000) explained that Intestinal worm infestation is a global health problem and is a matter of serious concern for third world countries. The burden of disease due to these intestinal parasites is an

estimated 22.1 million disability adjusted life years (DALYs) lost for hookworm, 10.5 million for Ascaris; and 6.4 million for Trichuris. Awasthi S (2008) described that Helminthes infections are more prevalent among school children aged 5-14 years. More than 610 million children of school age are at risk of morbidity due to schistosomiasis or soil transmitted helminthiasis. Overall, they constitute 12 percent of the total disease burden in children. Crompton (2002) reported heavy hookworm burden is the major etiology for iron deficiency anemia in young children. Bhardwaj AK (1992) suggested that the Child to Child approach was developed for the International Year of the Child (1979) by a group of health and education professionals. The founder is Hugu Hawes, a senior educationalist, and Dr. David Morley is a senior pediatrician. They introduced Child to Child as a new way of providing health education to school-aged children. The goal was to improve health and reduce infant mortality by engendering positive health practices among children. The child has the power to spread health messages. Children have a very important role to play in the health of the community, not merely by keeping healthy by the care of adults but also by passing on health messages to younger brothers and sisters, friends and thus jointly cooperating to become a positive force for health. Rupa Ashoka Varma (2015) explained that health education to school children is the most effective method for the protection and promotion of their health. School children are more open-minded and are likely to be receptive to changes in ideas and agreeable to modifications of their habits. Innovative approaches to education for health are essential to gain interest, support involvement, and commitment. The investigator came across the problems of environmental sanitation and poor hygiene in communities during the field experience. It was identified that children and their families do not possess basic knowledge of worm infestation, though it is a preventable condition. However, they knew that the worms live in the gastrointestinal tract. Hence the investigator felt that there was a strong need to educate children and their families with minimum costs, within a short time with maximum effectiveness regarding worm infestation and its prevention.

**Index Terms:** Prevention, Management, worm infestation, Child to Child approach, school children.

**DESIGN:** A literature review

## MATERIAL AND METHOD

Pub med, research gate, Google scholar database were used to search the literature, Studies were included only if the data on Child to Child teaching approach on worm infestation.

## OBJECTIVES

The Objectives of this study was to systematically review the literature to:

- I. The literature review would be easily accessible.
- II. It is related to the study and will be helpful in my further study.

## INCLUSION AND EXCLUSION CRITERIA

Studies were included only if the data on the prevalence of worm infestation were available. studies published from January 2005 to November 2019 were considered, the studies which were revealing prevalence differences in gender were included. The conferences articles, abstract, case report was excluded.

## METHOD

### *Data and Sources of Data*

#### *Literature search*

A literature review search was carried out in the following electronic bibliographic databanks: Medline /PubMed and the Google Scholar, including all publications up to September 2019. Search words Child to Child teaching approach on worm infestation. Restriction based on 2000 JAN to September 2020 publication year.

## RESULT

Thirteen full-text articles that met the inclusion criteria are involved in the literature review. The literature review revealed that the workers belong to the age group of 35-40 years and who has work experience of more than 30 years.

Fig. 1: Flow Chart`

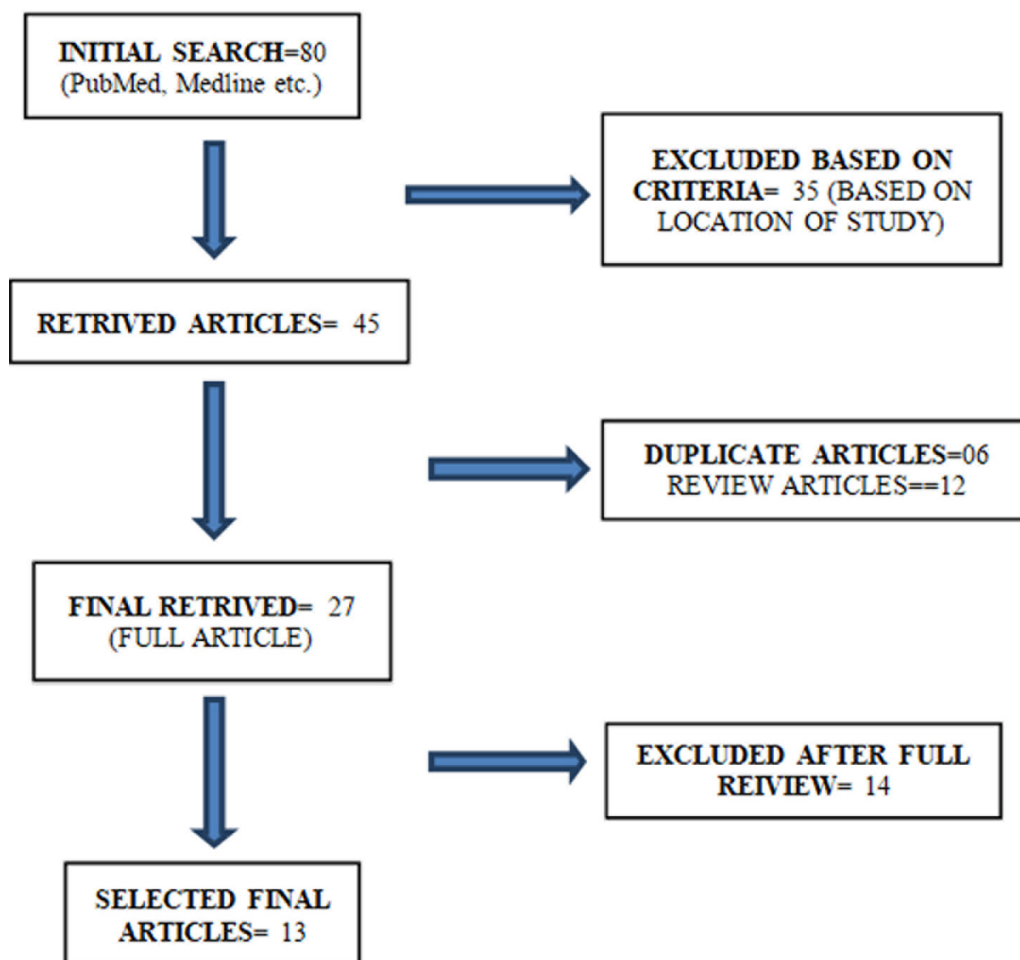


Table: 1

Study No	Author detail with year of publication	Region of study	Study design	Study sample	Period	Gender	Major findings
1	Leena K.C. & Sr. Jacinta D'Souz	Mangalore	Quasi-experimental	100		Male Female	The study found the mean difference in the knowledge scores of children significant in the traditional health education group (t=5.61, p<0.05), Child to Child group (t=6.42, p<0.05).A significant difference in the post health education knowledge scores was observed (t=2.06, p<0.05). A significant association was found between pre-health education knowledge scores and 2 education of parents(x =9.74, p<0.05). The study concludes that proper training of peers and motivation the Child to Child approach to health education improves the knowledge level of children on common issues concerning children in an effective way.

2	S. prathaban	Paruvachi, erode district	Descriptive	100 mother	4 weeks	Female	The result revealed that the majority 42% of the mothers moderately adequate knowledge regarding worm infestation and 44% of them had fair practices towards the prevention of worm infestations. Demographic variables have influence on the knowledge and practices of mother regarding worm infestation among the school age children. There is a positive relation between knowledge and practice regarding worm infestation among the school age children.
3	Kalaivani E., G. Ambujam	Karaikal, Puducherry	Non-experimental Comparative study	150 Mother		Female	This study revealed that in urban area the majority of the mothers of school going children 37%(28) had adequate knowledge, 40%(30) had moderately adequate knowledge and 23%(17) had inadequate knowledge regarding worm infestation. Also revealed that in rural area the majority of the mothers of school going children 35%(26) had inadequate knowledge, 36%(27) had moderately adequate knowledge and 29%(22) had adequate knowledge regarding worm infestation. Mean and standard deviation (SD) of the urban and rural area mothers of school going children respectively 16.8±4.77, 15.01±5.16.
4	Dandagi SR, Moreshwar SA, Raddi SA	Government schools at Karnataka	Experimental study	120			The pre test knowledge of 21.75%, where aspost test knowledge was 64% and the gain in knowledge was 42.25% after the administration of structured teaching programme. The findings on pre-test assessment of knowledge regarding prevention of worm infestations showed that 50 (41.66%) children had average knowledge and 70 (58.33%) had poor knowledge. After the administration of planned teaching programme, the pre-test and post-test data analysis revealed that the mean post-test score (30.85±4.08) was higher than the mean pre test score (8.78±3.8).
5	Swarajyam Y	Bangalore	Descriptive survey	100 mother		Female	The characteristics of the mothers in terms of their percentage distribution were, majority 45% were in the age group of 26-30 years, 32% had completed secondary education, 58% were housewives, 35% of subjects had family monthly income of 2,001-3,001 Rs per month, 57% of subjects belong to nuclear families, 53% of mothers had two school age children, 69% had habit of consuming mixed diet, 71% were practicing open air defecation, majority 72% had no pet animals and 49% acquired knowledge about worm infestation through friends and relatives.

6	S Santhana lakshmi	Rathinapuri and Sidhapudur	True experimental	120		Male female	Among control group, in pre and post test there was significant association found between level of knowledge on practice and type of family ( $\chi^2=9.62$ , $\chi^2=12.85$ respectively). In pre test there was significant association found between level of knowledge on practice and sex ( $\chi^2=6.96$ ), method of disposal of household waste ( $\chi^2=20.09$ ) except for the other demographic variables.
7	Awasthi, S., Varma, T., Kotecha, P. V., Venkatesh, V., Joshi, V., & Roy, S.	Uttar Pradesh and Jharkhand	Cross sectional study	926	3 months	Male female	Combined prevalence of infestation with intestinal geohelminths treatable by albendazole and other intestinal parasites non-treatable by albendazole was 50.3% (457/909) and 51.6% (469/909), respectively. Exclusive use of hand pump water (OR = 1.79, CI = 1.36-2.35, P < 0.001) and use of hand pump water plus field defecation increased risk of geohelminthic infection (OR = 1.75 CI = 1.34-2.30, P < 0.001) while use of well water (OR = 0.45 CI= 0.33-0.60, P < 0.001) and exclusive use of soap and water practice for hand washing after defecation was protective (OR = 0.54, CI = 0.40-0.73, P < 0.001) Since almost half the children are infected with intestinal geohelminths treatable by albendazole, targeted deworming of population in this age group should be considered.
8.	Radhika, P	Government Rajaji Hospital, Madurai	Pre-experimental design	60 mother	Aug-Sept 2014	female	In pre-test, most of the mothers of under five children (66.7%) are in poor knowledge, 30% are average knowledge and only 3.3% are in very poor knowledge on prevention of worm infestation. In post-test, 63.3% of mothers of under five children are in excellent knowledge and 36.7% are in good knowledge on prevention of worm infestation. In pre-test, very poor, poor, and average scorer were gained good and excellent knowledge in post-test on prevention of worm infestation. It represented that self instructional module was significantly very effective.
9.	Mamata Promod Kasle	Kolhapur	Pre-experimental study	60 children		Male Female	In pretest maximum subjects 31 (51.68%) had poor knowledge and 28 subjects (46.66%) had average knowledge and 1(1.66%) of the subjects had good knowledge, where as in posttest 42 (70.00%) subjects had average knowledge, 14 (23.34%) of subjects had good knowledge and 04(6.66%) of the subjects had poor knowledge. The calculated paired 't' value (t cal = 7.8) is greater than tabulated value (t tab = 2.00). This indicates that the gain in knowledge score is significant at P<0.05).

10	Rana, S., Settipalle, J. M., & Kaur	Panjab	pre- experimental research study	250		Male female	The result that pre-test knowledge means score was found to be 11.54 as compared to the post test mean score of 16.41. Further, the enhancement of mean score was found to be 4.87. However, the statistical paired t-test indicate the enhancement of knowledge was found to be highly significant ( $t=12.88$ , $p<0.05$ ) revealing the effectiveness of health educational package on knowledge regarding prevention of worm infestation. It is concluded that health educational program showed the highly significant effect on knowledge regarding prevention of worm infestation.
11	NazizBasir	Kashmir	Pre- experimental study	60 mother		Female	Mean knowledge score 62.26 obtained by the subjects in post test was higher than mean knowledge score 42.7 in the pre test and with the improvement score as 19.56. There was a significant difference between pre-test and post-test knowledge score at $p<0.05$ . the result of the study revealed that the planned teaching programme was significantly effective in improving the knowledge of mothers of under children regarding prevention of worm infestation.
12	Sah RB, Yadav S, Jha PK	Nepal	cross- sectional study				Overall intestinal parasitic infestation was found to be 31.5%. Around 13% of the study population was found to be infested with helminthes and 18.5% of the study population was protozoa infected. Not using soap after defecation, not wearing sandals, habit of nail biting and thumb sucking were found to be significantly associated with parasitic infection.
13	Stephanie M. Davis,* Caitlin M. Worrell, Ryan E. Wiegand, Kennedy O. Odero, Parminder S. Suchdev, Laird J. Ruth, Gerard Lopez, Leonard Cosmas, John Neatherlin, Sammy M. Njenga, Joel M. Montgomery, and LeAnne M. Fox	Marani district, Kenya	Cross sectional survey	692	April- June 2012	Male female	Nairobi has low reported STH prevalence. The SAC and PSAC were randomly selected from the International Emerging Infections Program's surveillance platform. Data included residence location and three stools tested by Kato-Katz for STHs. Prevalences among 692 analyzable children were any STH: PSAC 40.5%, SAC 40.7%; Ascaris: PSAC 24.1%, SAC 22.7%; Trichuris: PSAC 24.0%, SAC 28.8%; hookworm $<0.1\%$ . The STH infection prevalence ranged from 22% to 71% between sub-village sectors. The PSAC have similar STH prevalences to SAC and should receive deworming. Small areas can contain heterogeneous prevalences; determinants of STH infection should be characterized and slums should be assessed separately in STH mapping.

## RESULTS AND DISCUSSION

Literature review suggests that these are few factors influencing the prevalence such as age, socio economic condition and working experience ,gender ,vaccination. Study done by the Manglore city concludes that proper training of peers and motivation the Child to Child approach to health education improves the knowledge level of children on common issues concerning children in an effective way as well as a descriptive study shows that the result revealed that the majority 42% of the mothers moderately adequate knowledge regarding worm infestation and 44% of them had fair practices towards the prevention of worm infestations. A non-experimental comparative study revealed that in urban area the majority of the mothers of school going children 37%(28) had adequate knowledge, 40%(30) had moderately adequate knowledge and 23%(17) had inadequate knowledge regarding worm infestation. Also revealed that in rural area the majority of the mothers of school going children 35%(26) had inadequate knowledge, 36%(27) had moderately adequate knowledge and 29%(22) had adequate knowledge regarding worm infestation as well as a experimental study done at the governments schools of Karnataka revealed the pre test knowledge of 21.75%, where aspost test knowledge was 64% and the gain in knowledge was 42.25% after the administration of structured teaching programme.

## CONCLUSION

Literature review reveals that the Child to Child approach to health education improves the knowledge level of children and somewhat positive as well as negative by affecting the socio demographic variables in every different population. So, the result shows the average knowledge of the study.

## IMPLICATION TO NURSING PRACTICE

Nursing care includes preventive, promotive, curative and rehabilitative services. There are many new initiative would be taken in prevention of hepatitis B infections, which would help in improving health among the individuals and health care professionals and prevalence would identify the cases and help to cure and prevent further infection among the health care personnel's.

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