

A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME REGARDING WORM INFESTATION AMONG SELECTED ELEMENTARY SCHOOL CHILDREN AT GUNTUR DISTRICT, A.P

K. LALITHA¹, R. PUSHPAMALA² & R. JAMUNA RANI³

¹Principal, Research Scholar, Lalitha College of Nursing, Old Guntur, Andhra Pradesh, India

²Research Scholar, Nurse Educator, King Saud Bin Abdul Aziz University of Health Sciences, Jeddah, Saudi Arabia

³Research Scholar, Balu Medicals, Kalingarayan Palayam, Erode, Tamil Nadu, India

ABSTRACT

The Worm *Ascaris lumbricoides* is the most common intestinal parasite in the World infecting and estimated 3.5 billion people. It is also largest of the worms reaching an average of 40 cm (16 inches) in length. It can be as a pencil and weight almost as much. It is pink with bright red “speed” stripes. Females grows in intestine producing an enormous a No. of eggs estimated to be 27 million in her life time of a year.

KEYWORDS: Agricultural Purposes, Worm Infestation, Sampling Technique

INTRODUCTION

The eggs expelled in the feces can live outside the body for up to 7 years in the worm soil. Food, water and soil contamination are the means of infection for human. When larvae hatch they travel to various parts of the body – lungs, brain, eye.

Globally 3.5 billion people are infected with intestinal worms. Of which 1.15 billions are with roundworm. 1.3 billion people with hookworm and 1.05 billion people whipworm. In India, the problems is likely to be more common because of bad hygiene, poor awareness, illiteracy, misbeliefs, poverty and a variety of allied factors.

OBJECTIVES

- To assess the knowledge of elementary school children regarding worm infestation.
- To evaluate the effectiveness of structured teaching programme regarding worm infestation.
- To associate the relationship between the elementary school children regarding worm infestation and demographic characteristics.

Main Types are Hookworm, Roundworm, Pinworm, Tape Worm

Ascaris lumbricoides known as roundworms. It resembles an ordinary earthworm being cylindrical and pointed at both ends. It is pinkish grey in colour adult female may measures 12-14 inches where the male may be 8 to 10 inches long. The female lays numerous eggs a day.

Eggs are not infective but the larvae are maturation of the egg takes place after few weeks while it is still in the soil. Such eggs enter the alimentary tract of a man by ingesting contaminated food, vegetables or through contaminated

fingers. After swallowing, the eggs reach the duodenum where the shell gets dissolved and the embryo comes out. They perforate the mucous membrane of the intestine, enters lymphatics, blood stream, and through it to heart, and from there passes on to the lungs.

Then they penetrate the alveoli of the lungs, come to trachea, esophagus and reaches intestines, where they lay eggs. In 1995, The “WHO” estimated that there were 250 million persons infected with *Ascaris lumbricoides* and 60,000 persons died from ascariosis.

Mode of Transmission of Roundworm Infestations

By ingestion of infective eggs from soil contaminated with human faeces contained eggs, but not directly from man to man. Salads and other food eaten raw are the common vehicles. Contaminated soil may be carried long distances on feet or footwear into houses, transmission of infection by dust is also possible. Children of 3-8 years whose fingers become contaminated while playing on open ground are also the source. The worms can live 1-2 years in their host. Eggs that are passed in the stool develop and hatch out into larvae under favourable conditions such as a damp soil, moistness, darkness etc. This larvae undergoes two moults before becoming infective which takes nearly 3 days. After this larvae remains viable and active for 2 months under moist surroundings. When a human bare foot comes in contact with the contaminated soil, this larvae enters the skin.

Sometimes when people use their hands in such a contaminated soil for agricultural purposes. The larvae can enter through the skin of hand too. After gaining entry into the human body, they reach the alveoli of the lungs through the blood circulation, then reach bronchi, trachea and finally reach the intestines in a week's time. Here, the larvae get attached to the buccal mucosa of the intestines, feed and grow till they become 4 mm in length and then the 4th moult occurs in duodenum where it attains sexual maturity in 3-4 weeks with such attachment, they seek blood and cause the following effects such as anaemia, abdominal pain, puffiness of face, oedema of legs, palpitation, loss of appetite etc. Threadworm the eggs are swallowed and the larvae hatch out in the duodenum.

They came down in caecum where they develop into adult worms and attach themselves to the mucosa of caecum and large gut. The female worm leaves the intestine and reaches the anal region where the eggs are deposited they become through contaminated fingers. Guinea worm this it is thread like, smooth, round and white in colour. The whole of the worm is occupied by uterus which is stuffed with embryos. There are nearly 3 million embryos per worm. Pin worm Infestation direct transfer of infective eggs by hand from anus to mouth of the same or new host, ordinarily through clothing, bedding, food (or) other articles contaminated with eggs of the parasite. Dustborne infection inhalation is possible. In heavily contaminated households, eggs are infective within a few hours, eggs are infective within a few hours after leaving gastrointestinal tract.

WHO Observations

Every year 1,400 million children worldwide are infected with worm infestation. Most of the children are affected with one kind of helminthian factors responsible for increased prevalence of worm infestation are unhygienic practice, improper disposal of waste and use of polluted water. We can reduce the prevalence of these disease condition through the study and by creating the awareness to the mothers about worm infestation of the children.

RESEARCH METHODOLOGY

An observational study design was used to assess the effectiveness of structured teaching programme regarding worm infestation among selected elementary school children at Guntur District, A.P. Setting of the study urban area in Guntur, Nallacheruvu.

Accessible Population is the aggregate of cases that conform to the designated criteria. The mothers who have children(9-10 years) in Nallacheruvu, Guntur District belongs to this category here. Sample Size Samples were 50 selected by using purposive sampling technique. Sampling criteria, inclusion criteria of the present study are students willing to participate and available during data collection, age group of 9-10 years, V class students, both male and female children. The tool used for the data collection was a structured interview schedule.

Ethical Consideration

Formal written permission was obtained from the officer of the urban health centre at Nallacheruvu in Guntur District for conducting the study. The methods of data collection adopted for the study was structured self administered questionnaire. After a brief introduction about themselves the investigator explained the nature of the study. Thus a rapport was established with the children and their consent to participate in the study was obtained.

ANALYSIS AND INTERPRETATION OF DATA

Section-I

Table 1: Frequency and Percentage Distribution of Primary School Children Regarding Worm Infestation According to Their Backgrounds N = 50

S.No.	Demographic Variables	Frequency	%
1.	Age		
	• 9-10 years	40	80%
	• 7-8 years	5	10%
	• 6-7 years	5	10%
2.	Education		
	• 5 th class	40	80%
	• 7 th class	5	10%
	• 10 th class	0	0
3.	Type of disposal		
	• Open air defecation	40	80%
	• Sanitary latrine	10	20%
	• Public sanitary	0	0
4.	Habits		
	• Nail biting	40	80%
	• Teeth grinding	2	4%
	• Playing in ground	5	10%
5.	Dietary habits		
	• Vegetarian	5	10%
	• Non veg	5	10%
	• Mixed	40	80%
	• Others	0	0

Table 1: Contd.,

6.	Body build		
	• Thin	4	8%
	• Moderate	45	90%
	• Overweight	1	2%
7.	Disposal of solid waste		
	• Open dumping method	30	60%
	• Burning	10	20%
	• Closed dumping	7	14%
	• A and B	3	6%

Table shows the distribution of school children according to background factors such as age, education, type of disposal, habits, dietary habits, body build & disposal of solid waste. 50 school children were included in the study, they were observed at school set up.

Regarding the age, majorities 40(80%) belongs to age group of 9-10 years and 5(10%) belongs to age group of 6-7 years, 5(10%) belongs to the age group of 7-8 years. Education, 40(80%) are 5th class, 5(10%) are 7th class, and 5(10%) are 8th class. Type of disposal 40(80%) are open air defecation, 10(20%) are sanitary latrine. Habits of children, 40(80%) are nail biting, 2(4%) are teeth grinding, 5(10%) are playing in ground, 3(6%) are both. Dietary habits of children, 5(10%) are vegetarian are 5(10%) are non veg, 40(80%) are mixed type. Body build, 4(8%) are thin, 45(90%) are moderate, 1(2%) are over weight. Disposal of solid waste, 30(60%) are open dumping method, 10(20%) are burning, 7(24%) are closed dumping, 3(6%) are using open dumping method and burning.

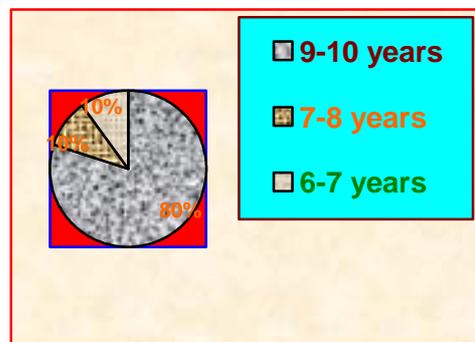


Figure 1: Pie Diagram Showing Percentage Distribution of Respondents Based on Age of Children



Figure 2: Pie Diagram Showing Percentage Distribution of Respondents Based on Habits of the Children

Section – II - Knowledge

The data were collected using structured questionnaire. Knowledge of primary school children on the prevention of worm infestation in the pretest and post test

Table 2: Shows Levels of Knowledge of Primary School Children in the Pre Test & Post Test N=50

Sl. No.	Primary School Children Knowledge	Pre Test		Post Test	
		No. of Persons	%	No. of Persons	%
1	Correct answer	20	40%	45	90%
2	Incorrect answer	30	60%	5	10%

In the pretest 20(40%) primary school children knows correct answers, 30(60%) primary school children doesn't know correct answers. In the post test 45(90%) primary school children knows correct answer and 5(10%) primary school children doesn't know the correct answer.

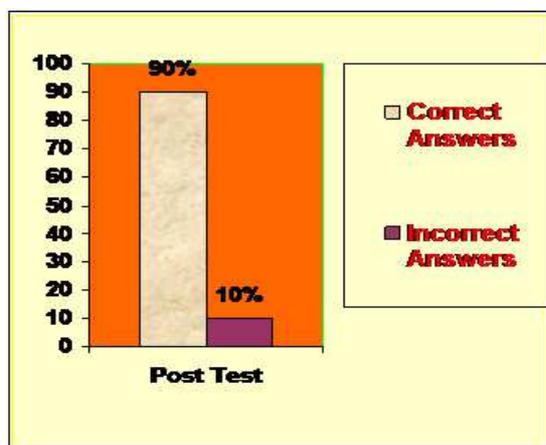


Figure 3: Bar Diagram Showing Percentage Distribution of Knowledge of Primary School Children Regarding Prevention of Worm Infestation in Post Test

Table 3: Frequency and Percentage Distribution of Primary School Children Knowledge Regarding Worm Infestation N=50

Sl. No	Content	Yes		No	
		No. of Children	%	No. of Children	%
1.	Roundworm infestation is caused by which organism	19	38%	31	62%
2.	Hookworm infestation occurs through	13	26%	37	74%
3.	Secondary symptoms of roundworm	19	38%	31	62%

Table shows about causative organism for round worm, hookworm infestation occurs through, secondary symptoms of roundworm infestation, regarding the causative organism of round worm infestation, majority 31(62%) were respond correctly, least 19(38%) were not respond correctly.

Causative organism for hookworm infestation, majority 37(74%) were respond correctly, least 13(26%) were not respond correctly. Secondary symptoms of round worm infestation, majority 31(62%) were not responding correctly, least 19(38%) were responding correctly.

Section-III-Attitude

This section describes the pretest and post test knowledge findings of attitude of primary school children regarding prevention of worm infestation. The data were collected using structured questionnaire. The third section of structured questionnaire has 12 items on prevention of worm infestation. Attitude of primary school children on prevention of worm infestation in the pretest and post test. In the pretest 10(20%) primary school knows correct answers and 40 (80%) doesn't know correct answers. In the post test 44(88%) primary school children knows correct answers and 6 (12%) primary school children doesn't know correct answer.

Table 4: Frequency and Percentage Distribution of Elementary School Children's Attitude Regarding the Prevention and Control of Worm Infestation

S. No.	Content	Positive Attitude	%	Negative Attitude	%	Neutral Attitude	%
1.	Worm infestation occurs from unhygienic habits	46	92%	4	8%	0	0
2.	Hookworms may spread through open air defecation	38	76%	2	4%	10	20%
3.	Roundworm infestation mainly occurs through feco-oral route	45	90%	2	4%	3	6%

Table shows the distribution of school students according to worm infestation and types of worm infestation unhygienic habits, hookworm may spread to open air defecation regarding worm infestation will occurs through unhygienic practice, majority 46(92%) were have positive attitude, 4(8%) having negative attitude.

Hookworms may spread through open air defecation, majority 38(76%) were having positive attitude, and 10(20%) were having neutral activity and 2(4%) were having negative attitude. Roundworm infestation will occurs through feco-oral route majority, 45(90%) were having positive attitude and 3(6%) were having neutral attitude, 2(4%) were having negative attitude.

Findings: The findings were furnished based on the objectives of the study.

Objective-1: To Assess the Knowledge of Elementary School Children Regarding Worm Infestation

- Majorities of the children 40(80%) are having knowledge regarding roundworm infestation and 10(20%) are having poor knowledge regarding roundworm infestation.
- Majorities of the children 42(84%) are having knowledge regarding hookworm infestation and 8(16%) are having poor knowledge.
- Majorities of the children 35(70%) are having knowledge regarding pinworm and 15(30%) are having poor knowledge regarding pinworm infestation.

Objective-2: To Evaluate the Effectiveness of Structured Teaching Programme Regarding Worm Infestation

- Majorities of the primary school children 10(20%) are having positive attitude regarding causes of roundworm infestation and 40(80%) of children are having negative attitude regarding causes of roundworm infestation.
- Majorities of the school children 44(88%) are having positive attitude regarding prevention of worm infestation and 6(12%) of school children are having negative attitude regarding prevention of worm infestation.

- Majorities of the school children 38(76%) are having positive attitude regarding of worm infestation and 12(24%) of school children are having negative attitude regarding preventive measures of worm infestation.

Objective-3: To Associate the Relationship between Elementary School Children Regarding Worm Infestation and Demographic Characteristics

- Majorities of school children, 37(74%) were adopted good practices regarding the care of anaemia and least 13(26%) were adopted poor practice regarding care of anaemia.
- Majorities of the school children, 38(76%) were adopted good practice regarding the home remedies for proper cooking of meat and least 12(24%) school children adopted poor practice regarding home remedies regarding proper cooking of meat.
- Majorities of the school children, 32(64%) were adopted good practice regarding the treatment of roundworm infestation and least 18(36%) of children were adopted poor practice regarding the treatment of roundworm infestation.

RECOMMENDATIONS

- A similar study can be undertaken with a large sample to generalize the findings.
- Replication of this study can be done with large samples in different settings to validate and generalize the findings.
- The same study can also be undertaken in urban area or in different settings.
- Similar studies could be conducted on various types of disease like worm infestation, anaemia, itching of genital area and other skin diseases.
- A study on the attitude, practice, knowledge of primary school children regarding common health problems of children can also be undertaken.

IMPLICATIONS

The results of this project have implications on nursing practice, nursing education, administration and nursing research.

Nursing Practice

- Nurses working in the community play a role in identifying common health problems in children.
- The nursing personnel can organize regular meetings for school children to impart knowledge, attitude, practice about the common health problem of the children. It helps the children in the growth and development.

Nursing Education

- All the health team members in the community must have a social consciousness and motivate the children in prevention of worm infestation.
- The children are provided awareness in controlling the worm infestation.

- They can be educated in prevention of nutrition deficiency disorders like anaemia.
- The children are also taught in prevention of worm infestation and other diseases by proper vaccination, maintaining good environmental hygiene, safe surroundings, and proper supplementations of dietary measures through health education programme.
- The study insists that the need for educating children regarding prevention of anaemia, control of worm infestation. In hospital in certain outpatient departments like paediatrics and maternity center, the students are utilized to teach childrens about common health problem of worm infestation.

Nursing Research

In depth studies of various factors contributing to worm infestation, anaemia, itching can be conducted. Large scale studies can be conducted with regard to prevention and control measures likes appropriate treatment, proper immunization, proper hygiene, and environmental hygiene.

CONCLUSIONS

Now a days, the under 5 mortality rate is high due to poor knowledge of children. So the government is providing immunization and child services like mid-day meal programme and providing free of care in PHC's and Sub-Centers.

OPERATIONAL DEFINITIONS

Knowledge: It refers to ideas expressed by the mother related to worm infestation of preschool children.

Attitude: It refers to feelings expressed by the mothers regarding worm infestation of preschool children.

Practice: It refers to verbal statement related to the measures taken by the mother in relation to worm infestation of preschool children.

Mothers: Women living in a family with children up to age of five years.

Round Worm Infestation: Ascariasis

Hook Worm: Ancylosstoma Duodenate

Pin Worm: Enterobiasis.

REFERENCES

1. Park's, "Textbook of Preventive and Social Medicine", 20th edition, published by M/s. Banarsidas Bhanot Publishers, Jabalpur (MP), India.
2. D.(Mrs.) Kasturi Sundar Rao, "An Introduction to Community Health Nursing", 1st edition, published by K.V. Mathew for B.I. Publications, Pvt. Ltd., page no. 198-202.
3. Parul Datta, "Textbook of Paediatric Nursing", 11th edition, published by Jaypee Brothers, Medical Publishers Pvt. Ltd, page no. 267-271.
4. C.P. Baveja, "Textbook of Medical Parasitology", Published by Arya Publishing Company, page no. 134-157.

5. K.D. Tripathi, "Textbook of Essential of Medical Pharmacology", 6th edition, published by Jaypee Brothers, Medical Publishers Pvt. Ltd., page no.808-816.
6. Kamala. G, "Textbook of Community Health Nursing-I", published by Florence Publishers, page no. 335-338.
7. Meenakshi Masish, "Communicable Diseases", 1st edition published by N.R. Publishers, Indore, page no.183-185.
8. Neelam Kumari, "A Textbook of Community Health Nursing-I", 1st edition, published by P.K. Jain, Vikas and Co., Jalandar City, page no. 467-469.
9. Kozer, "Textbook of Fundamentals of Nursing", 8th edition, published by Audrey Berman, page no. 303-304.
10. Paniker, "Text of Parasitology", 6th edition, published by Jaypee Brothers Pvt. Ltd., page no. 190-194.
11. B.T. Basavanthappa, "Textbook of Community Health Nursing", Second edition, published by Jaypee Brothers, Medical Publishers Pvt. Ltd., page no. 771-775.
12. K. Park, "Essential of Community Health Nursing", 4th edition, published by Paras Medical Books Pvt. Ltd., page no. 176-177.
13. S. Kamalam, "Essential in Community Health Nursing Practice", 2nd edition, published by Jaypee Brothers Pvt. Ltd., page no. 496-498.
14. Nightingale Nursing Times, volume-6, No.12, March 2011, Published by Ashok Jain on behalf of Nightingale Education Society, page no. 13-14.
15. Nightingale Nursing Times, Vol.3, Issue 12, March 2008, Published by Ashok Jain on behalf of Nightingale Education Society, page no. 65-67.

