Journal of Rare Cardiovascular Diseases
ISSN: 2299-3711 (Print) | e-ISSN: 2300-5505 (Online)
www.jrcd.eu

RESEARCH ARTICLE

Effectiveness of Honey with Papaya Seeds in Managing Worm Infestation among Primary School Children at Selected Schools of Kolar Taluk

Dr. Malathi K.V[1], Ms. Hemavathi H.S[2]

[1].Professor and HOD Community Health Nursing Sri Devaraj Urs College of Nursing Tamaka Kolar 563-103.
2.Final year B.Sc. (N) student Sri Devaraj Urs College of Nursing Tamaka Kolar 563-103.

*Corresponding
N\A

Article History
Received: 08.08.2025
Revised: 15.09.2025
Accepted: 24.10.2025
Published: 03.11.2025

Abstract: **Background & Objectives:** Worm infestation is one of the common health problems, existing world- wide, especially in children. Children are the wealth of the nation, the children of today are the adults of tomorrow and they deserve to inherit a safer, fairer and healthier world. The present study aims to assess the effectiveness of dry papaya seeds powder with honey on worm infestation among children **Materials and methods**: Quantitative Research with Experimental Research Design using a one-group pre-test post-test design among children. Data collection was done in Guttahalli Bemapura & Betagerahalli Village, for a period of 1 week with sample size of 30 by non- probability convenient sampling. Demographic variables and pre-test was conducted with the symptoms of worm infestation by observational checklist. Stool examination was done to check ova/ cyst positive cases. The oval cyst positive cases administered papaya seeds powder with honey was given for seven days in the empty stomach every morning. Post-test observational check list and stool examination was done to evaluate the effectiveness of papaya seeds powder.with honey on worm infestation after a week. The data were collected and analysed by using descriptive and inferential statistics **Results**: The pre-test mean score of worm infestation was 11.35±3.24 and the post- test mean-score was 4.62±3.10. The mean difference score was 6.73. Before and after administration of papaya seeds powder with honey approach are highly statistically significant at P≤0.05. **Discussion:** The findings demonstrated a significant reduction in worm infestation following the intervention. These results are in line with earlier studies conducted in Nigeria and Sri Lanka, where papaya seed extracts were found to be effective against intestinal parasites. The anthelmintic effect which is attributed to **carpaine and benzyl isothio-cyanate** in papaya seeds, while honey served as both a palatable medium and a natural antimicrobial agent, increasing acceptance among children. **Conclusion** The study concludes that honey with papaya seeds is an effective, safe, and acceptable remedy for managing worm infestation among primary school children.

Keywords: Dry Papaya Seeds Powder, Worm Infestation, Observational rating scale.

Introduction

Worm infestation (soil transmitted helminths) is one of the most neglected tropical diseases affecting millions of school children in low and middle income countries. Children are more vulnerable due to poor personal hygiene, open-field playing habits, unsafe water sources and improper handwashing practices. WHO estimates that globally more than **1.5 billion people** are infected with soil transmitted helminths annually, out of which school-aged children form the largest burden (WHO, 2023).

Indian studies show that the prevalence among primary school children varies between **20%–60%** (Babu et al., 2021), and in Karnataka approximately **22–35%** of school children continue to suffer from worm infestations (Shankar et al., 2020). Continuous worm infestation leads to abdominal pain, anaemia, malnutrition, growth retardation and poor scholastic performance.

Management of worm infestation is usually through Albendazole, but due to repeated re-infection, drug tolerance and poor compliance, there is increasing interest

in safe herbal alternatives. Papaya seeds contain bioactive compounds such as carpaine, benzyl isothiocyanate and alkaloids which have proven anthelmintic activity (Okeniyi et al., 2007). Honey acts as a binding agent and enhances acceptability in children. Therefore, using dried papaya seed powder with honey can be a cost-effective, natural remedy without side effects. Hence, the present study aims to assess the effectiveness of dried papaya seed powder mixed with honey on worm infestation among primary school children in selected schools of Kolar Taluk.

Objectives of the study:

1. To determine the prevalence of worm infestation among the primary school children.
2. To evaluate the effectiveness of dried papaya seeds powder with honey in management of worm infestation among the primary school children by comparing the pre and post-test interventions.

Methods and Materials: Experimental one group pretest and posttest design was adopted to evaluate the effectiveness dried papaya seed powder with honey in management of warm infestation among primary school children. Ethical approval (IEC/124/2023) was obtained from the SDUCON institutional ethical committee. With convenience sampling technique 30 children with age group of 06-10 years and confirmed warm infestation cases were included. The setting of the study was mallapanahalli gutahalli and anthapura government primary schools. Written concern was taken from parents. Papaya seed powder (08-12grms) with honey was given for seven days in the empty stomach every morning, post test observation and stool examination was done to evaluate the effectiveness of papaya seed powder with honey. Study instrument including observational check list for identify the symptoms of warm infestation and microscopic stool examination for confirmation of (ova/ egg/ cyst) warm infestation among study participants.

Results and Discussion:

Section A: **Distribution of samples based on their Socio demographic variables**

Sample size (n) = 30

Variable	Frequency	Percentage
Age of the child:		
06-08	**18**	**60**
08-10	12	40
Type of diet:		
Vegetarian	08	26.6
Mixed	**22**	**73.4**
Socio economic status of family		
APL	00	-
BPL	30	100
Toilet facility/ Defecation		
Open air defecation	**17**	**57**
Sanitary toilet	08	26.6
Both the above	05	16.4
Handwashing		
Before and after food	12	40.01
Only when go to toilet-room	10	33.03
Only After playing	08	26.6
Nail biting		
Habituated	09	30
Not habituated	15	50
Sometimes/rarely	06	20

Table;01 The above table reveals the data on socio demographic variables of primary school children.majority18(60%) of them were 06-08 year old, most 22(73.4%) children were taking mixed diet, whereas cent percent(100%) families belongs to BPL, maximum 17(57%) children go for open air defecation, with regard to hand washing practice 12(40.01%) was hands only before and after food and 10(33.33%) children were wash hands only when they use toiletroom,09(30%) children habituated of nail biting.

Objective: 01:-To determine the prevalence of worm infestation among the primary school children

Objective: 01(a):- Observational checklist for identifying worm infestation symptoms

n=100

Sl no	worm infestation symptoms	**Frequency (f)**	**Percentage (%)**
1	Complaints of stomach pain frequently	40	40
2	Nausea or vomiting episodes	25	25
3	Loss of appetite / poor appetite	46	46
4	Child looks pale / fatigued	51	51
5	Complaints of itching in anal region	35	35
6	Irregular bowel habits / loose stools	56	56
7	Unexplained weight loss	30	30
8	Worms observed in stool (history from parents)	25	25

The above table 01 reveals that out of 100 primary school children were screened for warm infestation by using self-prepared checklist, which consists 08 items related to symptoms of warm infestation and results shows that majority (56%) of them having irregular/ loose stools and 51% of study participants looks pale/fatigued whereas 46% children reported loss of appetite/poor appetite and 40% children expressed repeatedly getting stomach pain. In relation to parent's observational report, nausea (25%), itching in anal region (35%), weight loss (30%) and worms in stool (25%) reported respectively.

Objective: 01(b):- Prevalence rate determined by microscopic stool examination

n=30

Sl no	**Level of Worm Infestation**	**Frequency (f)**	**Percentage (%)**
1	Mild infestation	10	33.4
2	Moderate	**15**	**50.0**

	infestation		
3	Severe infestation	05	16.6

Above table 02:- Reveals that out of 30 primary school children,10% children had mild infestation, 1**5%** of children had **moderate infestation**, and **05%** had **severe infestation**, overall 30% prevalence of worm infection among the primary school children.

Objective: 02:-To evaluate the effectiveness of dried papaya seeds powder with honey in management of worm infestation by comparing the pre and post-test interventions.

Table 3: Frequency and Percentage Distribution of Post-test Worm Infestation Levels **(n = 30)**

Sl no	**Level of Worm Infestation**	**Pre intervention**		**Post intervention**	
		Frequency (f)	**Percentage (%)**	**Frequency (f)**	**Percentage (%)**
1	Mild infestation	10	33.33	**18**	**60.0**
2	Moderate infestation	**15**	**50**	09	30.0
3	Severe infestation	05	16.6	03	10.0
	total	30	100	30	100

The above table 03 shows pre intervention data which reveals that majority 50% of children were found moderate infestation and 33.33 % children were identified as mild infestation and only 16% were sever infestation where as in post intervention 60% were with mild infestation,30% with moderate infestation and 10% with sever infestation which indicates that papaya seed powder with honey is effective in reduction of warm infestation among children

Table 4: Comparison of Pre-test and Post-test Mean Scores of Worm Infestation (n = 30)

Sl no	**parameter**	**Mean**	**SD**	**t-value**	**p-value**
1	Pre intervention	1.90	0.66	9.85	<0.001 HS
2	Post intervention	0.70	0.54		

Interpretation:

The mean worm infestation score decreased from **1.90 in pre-test** to **0.70 in post-test**. The calculated **t-value (9.85)** is higher than the table value (2.05 at df = 29, $p < 0.05$), showing a **highly significant difference** between pre- and post-test scores. This indicates that **honey with papaya seeds was effective** in reducing worm infestation.

DISCUSSION

The present study findings showed that dried papaya seed powder with honey was effective in reducing the severity of worm infestation among primary school children. Similar findings were reported by Okeniyi et al. (2007) in Nigeria where children given papaya seed extract showed significant expulsion of worms compared to placebo. A study in Sri Lanka by Jayasinghe et al. (2018) also demonstrated that papaya seeds possess strong anthelmintic properties. A Tamil Nadu based study also recommended papaya seeds as an alternative therapy for intestinal parasites in school children (Bhuvaneswari et al., 2020).

Therefore, the present study supports that papaya seed powder mixed with honey is a simple, natural and cost-effective home-based remedy that can be safely used to manage worm infestation. This intervention can be incorporated along with school health screening and health education on hygiene to achieve sustained improvement.

Conclusion

The study concludes that **Honey with Papaya Seeds** is an **effective, natural, safe, and economical remedy** in managing worm infestation among primary school children.

Regular use, along with hygiene education, can significantly reduce worm burden in school-age children.

REFERENCES

1. World Health Organization (WHO). Soil Transmitted Helminth Infections. WHO Fact Sheet, 2023.
2. Shankar P et al. Prevalence of Soil Transmitted Helminthiasis among school children in Karnataka. Indian Journal of Public Health, 2020.
3. Babu R, et al. Burden of Worm Infestation in Indian School Children: A Review. Journal of Clinical Epidemiology & Global Health, 2021.
4. Okeniyi JA et al. Anthelmintic efficacy of papaya seed extract in Nigerian children. Journal of Medicinal Food, 2007;10(1):194–196.
5. Giri D et al. Re-infection rates post routine deworming program in school children in India. Indian Pediatrics, 2019.
6. Jayasinghe Y et al. Anthelmintic activity of Carica papaya seeds in Sri Lankan context. Tropical Biomedicine, 2018.
7. Bhuvaneswari K et al. Evaluation of Papaya Seed Powder for deworming in School Children. International Journal of Herbal Medicine, 2020.
8. Abou Shady OM, Basyoni MM, Mahdy OA, Bocktor NZ. (2019). The effect of preziquantel and Carica papaya seeds on hymenolepis nana infection in mice using scanning electron microscope. Parasitol Res.; 113:2827–36.
9. Albonico M, Allen H, Chitsulo L, Engels D, Gabrielli AF, Savioli L. (2018). Controlling soil-transmitted helminthiasis in preschool-age children through preventive chemotherapy PLoS Negl Trop Dis; 2:e126.
10. Crompton DW Ascaris lumbricoides. In: Scott ME, Smith G, editors. Parasitic and infectious diseases. London and New York: Academic Press; p.175–96.
11. Fernando PVDPreliminary investigation of Carica papaya seeds as a vermifuge. Indian Journal of Child Health; 8:96–

100.
12. Hall A, Hewitt G, Tuffrey V, de Silva N. (2018). A review and meta-analysis of the impact of intestinal worms on child growth and nutrition. Matern Child Nutr; 4(Suppl 1):118–236.
13. Hammond JA, Fielding D, Bishop SC. Prospects for plant anthelmintic in tropical veterinary medicine. Vet Res Commun, 1997; 21: 213-228.
14. Kermanshai R, McCarry BE, Rosenfeld J, Summers PS, Weretilnyk E, Sorger GJ. (2021). Benzyl isothiocyanate is the chief or sole anthelmintic in papaya seed extracts. Phytochemistry; 57:427–35.
15. Krishnakumari MK. Studies on anthelmintic activities of seeds of Carica papaya Linn. Annals of Biochemistry and Experimental Medicine; 20:551–6.
16. Le HT, Brouwer ID, Verhoef H, Nguyen KC, Kok FJ. (2007). Anemia and intestinal parasite infection in school children in rural Vietnam. Asia Pac J Clin Nutr; 16:716–23