ISSN No: 2456-2165 https://doi.org/10.38124/ijisrt/25jun640

Assessing the Effectiveness of a Structured Teaching Programme on Knowledge of Worm Infestation and Prevention Among Mothers of Under-Five Children within a Selected Rural Area of Kuppam, Chittoor District, AP

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Publication Date: 2025/07/02

Abstract: Children residing in low and middle-income nations remain predominantly afflicted by worm infections. Such intestinal parasitic burdens can profoundly impede physical development and nutritional well-being. Addressing this, the present study was meticulously designed to assess the efficacy of a structured teaching programme in enhancing the comprehension of worm infestation and its prevention among mothers of children under five within a designated rural locale near Kuppam. Prior to the intervention, knowledge levels regarding worm infestation among participants were largely insufficient. Indeed, only a limited number, 28.8% (36 individuals), possessed moderately adequate understanding, while a substantial majority, 71.2% (89 individuals), exhibited poor knowledge. However, a striking transformation occurred after the five-day educational program provided to mothers of under-five children. The post-test results revealed a dramatic improvement, with 76.0% (95 individuals) demonstrating adequate knowledge, 6.4% (8) reaching a moderately adequate level, and only 17.6% (22) still showing poor knowledge. This significant disparity between pre- and post-education knowledge underscores the program's effectiveness. The mean knowledge score rose considerably, from a baseline of 8.70 (SD ±2.795) to 24.03 (SD ±8.309) post-intervention, confirming the highly positive impact of the education on mothers of young children, as evidenced by the significant t-statistic of 19.763.

Keywords: *Effectiveness, Health education, Knowledge, Worm infestation, Under five children Mothers.*

How to Cite: S. Sukanya; S. Subhavelvizhi; Vinaya Thomas; Treesa Thomas; Sai Chandana; V. Sinthya; Y. Sunitha; (2025) Assessing the Effectiveness of a Structured Teaching Programme on Knowledge of Worm Infestation and Prevention Among Mothers of Under-Five Children within a Selected Rural Area of Kuppam, Chittoor District, AP. *International Journal of Innovative Science and Research Technology,* 10(6), 2321-2324. https://doi.org/10.38124/ijisrt/25jun640

I. INTRODUCTION

The formative years of childhood undeniably present a period of elevated risk concerning morbidity and mortality. Frequently, the myriad health issues confronting children – notably infections, parasitic infestations, and malnutrition – are deeply intertwined, collectively impeding healthy growth and development. Among these challenges, parasitic infestations constitute a major public health concern globally, with worm infestations standing out as a particularly widespread problem among children. The World Health Organization estimates approximately 1.4 billion people worldwide host at least one type of intestinal worm. In India specifically, such infestations are particularly pronounced in warm, humid regions experiencing heavy rainfall, such as the west coast. Common helminths found here, including roundworm, hookworm, pinworm, and tapeworm, are typically acquired orally, percutaneously, or through a combination of both routes.

II. MATERIALS AND METHODS

A. Research Approach and Design

Employing a quantitative methodology, the study assessed knowledge concerning worm infestation and prevention among mothers of under-fives in rural Kuppam, AP. A pre-experimental, one-group pretest-posttest design was utilized.

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B. Setting and Population

The present study was conducted at rural areas of kuppam like Beggilipale, and Nalagampalli which are 2-3 kilometers away from the PES College of nursing, kuppam, Chittoor dist., Andhra Pradesh. These villages consist of approximately of 150 families. These villages have all the facility like electricity, water and etc. few of the mothers reside in pakka house and some them in kaccha house. All the mothers of under five children.

C. Sample Size and Sampling Technique

Utilizing Cochran's formula, the sample size was set at 125 mothers, factoring in a 3.8% expected adequate knowledge prevalence (from a similar study), a 95% confidence level, 5% margin of error, and 10% for non-response. Participants were subsequently chosen via convenience sampling, based on their availability and willingness.

D. Inclusion and Exclusion Criteria

Mothers with children under five years living in the selected rural areas of Kuppam, utilizing rural services, and willing to give informed consent. Mothers unable to understand or respond to questionnaires in Telugu, Tamil, or English were excluded.

E. Data Collection Tool

A structured questionnaire, comprising two sections, was created:

Section A: consist of socio demographic data of the study subject like age of the mother and child, type of family, religion, area of living, occupational status of mother, education status of mother, income. Section B:consist of questionnaire was used to determine the knowledge regarding worm infestation and its prevention among mother of under five children.

F. Validity and Reliability

Content validity was ensured through expert consultation in nursing, medicine, and statistics. Reliability was tested using Cronbach's Alpha (r = 0.75) during a pilot study with 10 mothers, who were not part of the main study.

G. Ethical Considerations

Formal ethical clearance was secured from PESIMSR, Kuppam's Institutional Research and Human Ethics Committees. Concurrently, permission was obtained from the local Child Development Project Officer. Participants then provided informed written consent, following a clear explanation of the study's purpose and confidentiality.

H. Data Collection and Analysis

Following tabulation, analysis proceeded using SPSS. Descriptive statistics, including frequency, percentage, mean, and standard deviation, characterized demographics and knowledge levels; the Chi-square test investigated associations with select variables. Statistical significance was set at $p < 0.001$.

III. RESULTS

A. Demographic Profile of Participants

A total of 125 mothers participated. The majority (33.8%) were aged over 22-25 years of mother and (37.6%)were aged 2-3 years of child Regarding education status of mother (42.4%)primary school. Occupational status of mother(44%)were private employee. A majority of families (52.8%) had a monthly income of 20001-30000. Most of the families were living in a rural area(48.8%) The vast majority ((43.2%) were nuclear families.

B. Knowledge Levels Regarding prevention of worm infestation

Out of 125 mothers, 89 (71.2%) demonstrated poor knowledge, 36 (28.8%) had a moderate level of knowledge, and non of them had adequate knowledge.95(76.0%) had adequate knowledge,8(6.4%) of them had moderate knowledge, and 22(17.6%) of them had poor knowledge regarding the health prevention of worm infestation Fig. 1

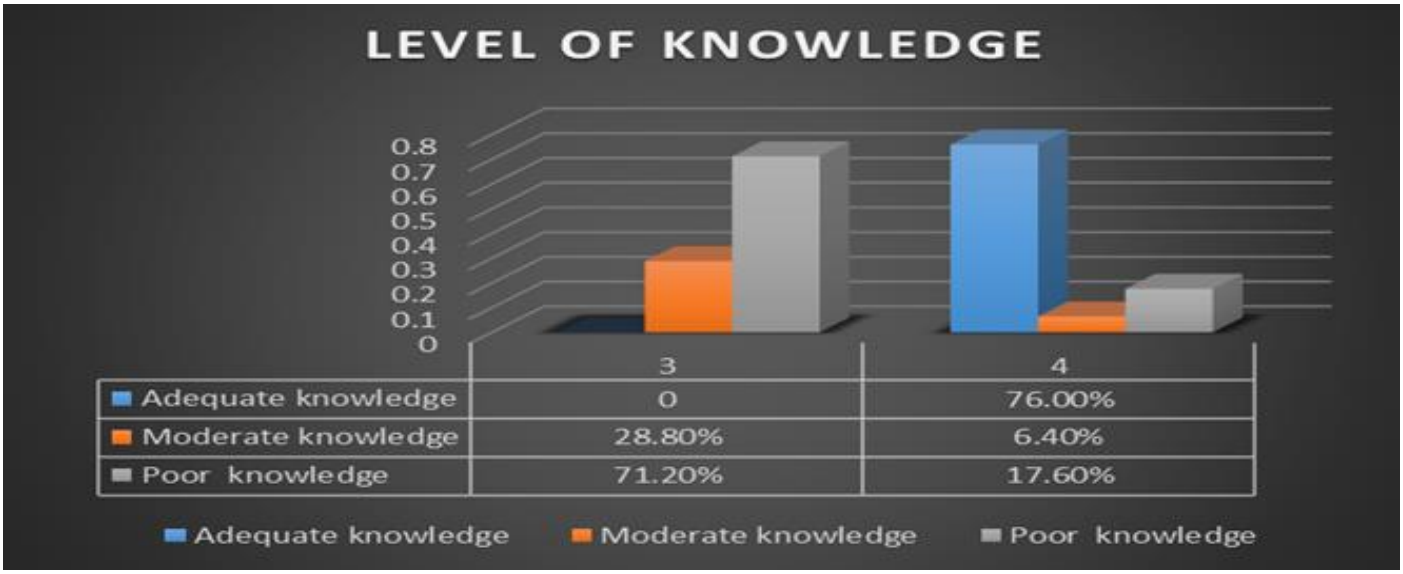

Fig 1 Knowledge Levels Regarding prevention of worm infestation

ISSN No: 2456-2165 https://doi.org/10.38124/ijisrt/25jun640

C. Association between Knowledge Levels and Demographic Variables

Mothers' knowledge concerning worm infestation and its prevention for children under five demonstrated no significant link to demographic characteristics.

IV. DISCUSSION

Assessing rural mothers' understanding in Kuppam regarding worm infestation prevention via Anganwadi centres, this study revealed a significant majority (76.0%, n=95) possessed adequate knowledge, with fewer exhibiting moderate (6.4%, n=8) or limited (17.6%, n=22) comprehension. This highlights a significant gap in understanding. These findings are consistent with other studies in India that have reported varying, often suboptimal, levels of maternal knowledge concerning ICDS services.

The significant association between knowledge and maternal education, paternal education, maternal occupation, housing type, and participation in health education programs underscores the influence of socioeconomic and educational factors. Mothers with higher education and those in professional occupations likely have better access to information and a greater capacity to understand health messages. The positive impact of participation in health education programs suggests that such interventions are effective in improving awareness. Anganwadi workers in rural areas being the primary source of health information emphasizes their crucial role and the need for their continuous training and empowerment.

The study's limitations include its conduction in only two villages, potentially limiting generalizability, and reliance on self-reported responses, which may be subject to social desirability bias. Nevertheless, the findings provide valuable insights into the current knowledge landscape and identify vulnerable subgroups needing targeted educational interventions.

V. CONCLUSION

Findings suggest many mothers of young children across rural Kuppam have limited knowledge concerning prophylactic measures against worm infestation. Maternal education, occupation, living area, and participation in health education programs were significantly associated with the level of knowledge. These results underline the vital need for targeted health education programs, particularly for mothers with limited education, non-professional employment, and challenging housing environments. Strengthening community engagement and educational interventions through Anganwadi workers and other healthcare channels can enhance the utilization and effectiveness of these nutritional programs, ultimately contributing to improved child health outcomes in rural India.

ACKNOWLEDGMENT

We extend our Special thanks to the IRC and IEC of PESIMSR. We also deeply thank all the mothers who participated in this study for their valuable time and cooperation.

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