

“Prevalence of Malnutrition and Effectiveness of a Nutrition Education Programme Using an Information Booklet among School Children Aged 6–14 Years in Selected Rural Areas of Gurugram, Haryana”

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ABSTRACT

Background: Malnutrition remains a major public health challenge among school-age children, negatively impacting growth, cognitive development, immunity, and academic performance. Rural children are especially vulnerable due to poor dietary habits, limited nutritional awareness, and socioeconomic constraints.

Aim: To assess malnutrition prevalence and evaluate the effectiveness of a nutrition education program using an information booklet among school children aged 6–14 years in selected rural areas of Gurugram, Haryana.

Methods: A quantitative pre-experimental one-group pre-test post-test design was conducted with 100 purposively sampled school children. Data collection included a demographic questionnaire, anthropometric measurements, and a structured knowledge questionnaire. The nutrition education program was delivered via an information booklet. Data were analyzed using descriptive and inferential statistics. **Results:** The prevalence of underweight was 58%, stunting was 24%, and 64% showed varying degrees of undernutrition. The mean knowledge score significantly increased from 6.4 ± 2.8 to 12.8 ± 2.1 post-intervention ($t = 18.72, p < 0.001$). Significant associations were found between post-test knowledge scores and selected demographic variables.

Conclusion: Malnutrition was highly prevalent among participants. The nutrition education program significantly enhanced knowledge about malnutrition, underscoring the importance of school-based nutrition education and regular nutritional assessments.

Keywords: Malnutrition, School Children, Nutrition Education, Information Booklet, Rural Children, Nutritional Status

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INTRODUCTION

Malnutrition is a condition that arises when the intake of nutrients is inadequate, excessive or imbalanced. It deals with undernutrition, overweight, obesity, stunting, wasting, and micronutrient deficiencies. School children are one of the most vulnerable groups to be affected by malnutrition since they are at a vital period of growth and development. Proper nutrition is crucial in childhood for physical health, cognitive development, immunity, and academic achievement.

Malnutrition remains a major public health problem worldwide. According to the World Health Organization (WHO), malnutrition encompasses undernutrition, including stunting, wasting, underweight, and micronutrient deficiencies, as well as overweight and obesity. Among school-age children, malnutrition can adversely affect physical growth, learning capacity, immunity, school attendance, and academic performance. The National Family Health Survey-5 (NFHS-5, 2019–21) reported that 35.5% of children

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under five years of age in India are stunted, 19.3% are wasted, and 32.1% are underweight. Although these indicators have improved compared to NFHS-4, the burden remains a major public health concern. Haryana, despite being one of the economically progressive states of India, continues to face nutritional challenges among children. Analysis of NFHS data from Haryana indicates the persistence of stunting, wasting, and underweight among children, particularly in rural areas. Rural populations often experience disparities in access to quality nutrition, healthcare services, and nutrition-related education, increasing the risk of malnutrition among school-going children.

MATERIALS AND METHODS

Study Design:

Quantitative pre-experimental one-group pre-test post-test design.

Study Setting:

Selected rural schools of Gurugram, Haryana.

Study Population:

School children aged 6–14 years.

Sample Size:

100 participants.

Sampling Technique:

Purposive sampling.

Data Collection Tools:

1. Demographic questionnaire
2. Anthropometric assessment (Height, Weight, BMI, MUAC)
3. Structured knowledge questionnaire

Intervention:

Nutrition education programme using an information booklet.

Statistical Analysis:

Descriptive statistics, paired t-test, Chi-square test.

RESULTS

In the study of 100 school children, most participants were aged 12–14 years (74%), predominantly male (72%), and primarily from rural areas (56%). Anthropometric assessment revealed a high prevalence of malnutrition: 58% were underweight based on BMI classification, while only 24% had normal nutritional status. According to WHO growth indicators, 24% were stunted, 32% were underweight, and 64% showed varying degrees of undernutrition based on MUAC assessment. The mean knowledge score increased significantly from 6.4 ± 2.8 pre-test to 12.8 ± 2.1 post-test ($t = 18.72$, $p < 0.001$), demonstrating the effectiveness of the nutrition education program. Significant associations were observed between post-test knowledge scores and factors including age, area of residence, family size, mother's education, family income, source of drinking water, and government nutrition scheme beneficiary status ($p < 0.05$).

DISCUSSION

This study assessed the prevalence of malnutrition and evaluated the effectiveness of a nutrition education

program using an information booklet among school children aged **6–14 years** in selected rural areas of Gurugram, Haryana. The findings showed that **58%** of participants were underweight according to BMI classification, while **24%** were stunted and **32%** were underweight based on WHO growth indicators. These results align with studies from rural India, which report a high burden of undernutrition among school-aged children due to inadequate dietary intake, limited nutritional awareness, poverty, and restricted access to health services.

The prevalence of undernutrition in this study was higher than that reported by NFHS-5 and several urban school-based studies. This disparity may stem from the rural setting, socioeconomic inequalities, differing dietary habits, and lower utilization of government nutrition programs. Conversely, some studies have documented lower undernutrition rates and higher normal nutritional status, likely due to better parental education, improved socioeconomic conditions, and greater access to health and nutrition services.

Additionally, **18%** of the children were classified as overweight or obese, echoing recent Indian research highlighting the emerging double burden of malnutrition—where undernutrition coexists with overweight and obesity. This shift may be linked to changing dietary patterns, increased consumption of energy-dense foods, and reduced physical activity among school children.

Regarding knowledge assessment, **48%** of participants had poor knowledge about malnutrition before the intervention. After the nutrition education program, the proportion with good knowledge increased to **68%**, and the mean post-test knowledge score was significantly higher than the pre-test score ($t = 18.72$, $p < 0.001$). These findings are consistent with studies by Kaur et al., Sharma et al., and others, who reported significant improvements in nutritional knowledge following structured educational interventions. The success of the program may be due to the simplicity, accessibility, and repeated usability of the information booklet, which enhanced understanding and retention of key nutritional concepts.

CONCLUSION

The present study revealed a high prevalence of malnutrition among school children aged 6–14 years in rural Gurugram, with undernutrition being the predominant nutritional concern. The nutrition education programme using an information booklet significantly improved knowledge regarding malnutrition. School-based nutrition education and periodic nutritional screening should be strengthened to improve child health outcomes.

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