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Assess The Effectiveness Of Child-To-Child Approach On Knowledge And Practice Regarding Unhealthy Eating Habits Among Peer Groups In Selected Schools

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ABSTRACT

Background

The critical role of child nutrition during school years, noting high rates of malnutrition in India, particularly in Bihar. Despite some progress, acute and chronic malnutrition remains significant issues due to factors like poverty, unhealthy diets, and insufficient dietary diversity. Processed food consumption and changing food habits have worsened the situation, especially in urban areas. Traditional nutrition interventions have had limited impact, prompting the need for more effective, context-specific approaches such as peer education. The urgent nutritional challenges in Bihar highlight the need for innovative, sustainable, and community-driven strategies to improve children's health and learning outcomes.

Objectives

- To assess and compare the pre-test level of knowledge and practice
- To assess and compare the post-test level of knowledge and practice
- To evaluate the effectiveness of child-to-child approach by structured teaching program on knowledge and practice
- To find the correlation of post-test levels of knowledge and practice of the study and control group

Methodology

This research uses a quasi-experimental design focused on a rural school in Jamuhar. The study sample consists of 60 children from peer groups in the 5th, 6th, and 7th standards. A non-probability random sampling technique was employed. Data collection involved a self-structured knowledge and practice questionnaire as the primary tool. Demographic information and responses to the questionnaire were collected for analysis. Statistical analysis was done using Pearson's correlation coefficient and Chi-square test to determine correlation and association with demographic variables.

Results

1. Demographic Profile: Respondents were mostly 9-10 years old, with balanced gender distribution, predominantly Hindu, living in concrete houses in joint families.

2. Pre-test Levels: Most had moderate knowledge (63.3%) and practice (70%) levels regarding unhealthy eating habits.

3. Effectiveness of Child-to-Child Approach:

- 60% of study group achieved high knowledge scores vs. 6.7% in control group.
- 73.3% of study group achieved high practice scores vs. 6% in control group.

4. Correlation with Demographics:

- Age correlated with both knowledge and practice.
- Sex and family income correlated with knowledge but not practice.
- Other demographics showed no significant association.

Conclusion

The child-to-child peer education approach significantly enhances both awareness and application of knowledge about healthy eating habits among rural school children. The statistically significant differences between groups, large effect sizes, and shifts in categorical performance underscore that peer-led, participatory interventions are more effective than traditional, teacher-centered methods in promoting healthy eating knowledge and behaviors. This evidence supports the wider adoption of the child-to-child approach in similar educational settings to combat unhealthy eating habits among schoolchildren.

Keywords: Child, Unhealthy Eating Habits, Child Nutrition, School

INTRODUCTION

Child nutrition during the school years forms the foundation for lifelong health and development. Globally, approximately 149 million children under five years are stunted, while 45 million are wasted, representing critical indicators of chronic and acute malnutrition respectively. In India, despite significant economic growth, child malnutrition remains a persistent public health challenge, with 35.5% of children under five being stunted and 19.3% being wasted according to NFHS-5 data.

Bihar, one of India's most populous states, faces particularly severe nutritional challenges. The state's nutrition indicators paint a concerning picture: 42.9% of children under five are stunted, 22.9% are wasted, and 8.8% are severely wasted. These figures represent not just statistics but reflect the lived reality of millions of children whose physical and cognitive development is compromised by inadequate

nutrition. The situation becomes more alarming when considering that even during the first six months of life, 31% of children in Bihar are wasted, indicating that nutritional problems begin very early in life.

The nutrition landscape in Bihar is characterized by a complex dual burden. While traditional undernutrition remains widespread, emerging patterns of unhealthy eating habits are increasingly observed among school-age children. The proliferation of processed foods, sugar-sweetened beverages, and energy-dense but nutrient-poor snacks in school environments has created new challenges for child nutrition. These unhealthy dietary patterns, often established during childhood, tend to persist into adulthood and contribute to the rising burden of non-communicable diseases.

School-age children represent a critical demographic for nutrition interventions. During this period, children develop food preferences, establish eating habits, and gain increasing autonomy over their food choices. Traditional nutrition education approaches, typically delivered by teachers or health professionals to passive student audiences, have shown limited effectiveness in creating sustained behavioral change. This limitation has prompted researchers and practitioners to explore more innovative, participatory approaches to nutrition education.

The child-to-child approach emerges as a promising alternative strategy for health and nutrition education. This peer-led methodology, first introduced in 1978 during the International Year of the Child, leverages the natural tendency of children to learn from and influence their peers. The approach recognizes that children can be effective change agents, not only for their own health behaviors but also for their families and communities.

Research evidence suggests that peer-led interventions can be particularly effective in changing dietary behaviors among adolescents and school-age children. A systematic review by academic researchers found that peer-led school-based interventions demonstrated significant improvements in dietary intake, including increased consumption of fruits and vegetables and reduced intake of unhealthy foods. The mechanisms underlying this effectiveness include increased relatability of peer educators, reduced power dynamics compared to adult-led education, and enhanced motivation through social modeling.

In the specific context of Bihar, where traditional hierarchical structures often limit open communication between adults and children, the child-to-child approach offers several advantages. It creates a more egalitarian learning environment, allows for culturally relevant communication methods, and builds on existing patterns of sibling and peer teaching that are common in many Bihari families. Furthermore, this approach is cost-effective and sustainable, making it particularly suitable for resource-constrained settings.

OBJECTIVES

1. To assess and compare the pre-test level of knowledge and practice regarding unhealthy eating habits among peer groups in study groups and control groups.
2. To assess and compare the post-test level of knowledge and practice regarding unhealthy eating habits among peer groups in study group and control groups.
3. To evaluate the effectiveness of child-to-child approach by structured teaching program on knowledge and practice regarding unhealthy eating habits among peer groups in study group.
4. To find the correlation post-test levels of knowledge and practice of the study and control group regarding unhealthy eating habits among peer groups with selected demographic variables.

MATERIALS AND METHODS

Material and Methods:

Research approach

In this study, the researcher had adopted the **Quantitative research approach**, as it allows for objective, statistical assessment of changes in knowledge and practices resulting from a structured intervention. By employing validated questionnaires and statistical analysis, we aim to reduce bias and enable generalization where possible.

Research design

The research utilizes a **quasi-experimental, non-equivalent control group pre-test/post-test design**.

Study group: Pre-test → child-to-child approach intervention → post-test

Control group: Pre-test → no intervention→ post-test

Setting of Study

The study site is a government-aided secondary school named **Kanya Madhya Vidyalaya** located in Jamuhar village, Rohtas, Bihar.

Population

Target population comprised all peer group currently enrolled in grades 5, 6, and 7 (ages 7–12). This age band was selected based on:

- Adequate reading and comprehension skills for self-report tools.
- Heightened peer influence in shaping habits.
- Sufficient cognitive maturity to participate in discussions, games, and role-plays on nutrition.

Accessible population comprised students enrolled in grades 5,6 and 7^{th} of specific peer groups that were available for study.

Samples

Using purposive, non-probability sampling in consultation with school administration, two comparable sections (one each for control and study) were selected from among grades 5, 6, and 7. Each group had 30 students, making for a total sample size of 60 participants.

- This permitted a manageable number for intensive small-group peer-led sessions, with sufficient power to detect moderate effect sizes in knowledge/practice improvement.
- Absentee students were followed up before post-testing whenever possible; no replacements were made to prevent selection bias.

Sampling Technique

Researcher are plan to adopt **non-probability purposive sampling** technique.

Sample Size

Each group consisted of 30 students, totaling **n=60**.

Variables

The core variables for the study are operationally defined and measured as follows:

- **Independent Variable:** Implementation of the child-to-child approach education intervention—a structured set of peer-led sessions using participatory methods, delivered over 2-day session study group.
- **Dependent Variables:**
- **Knowledge Score**: Total score (out of 15) on a validated questionnaire covering food groups, healthy/unhealthy eating, and consequences of poor diet.
- **Practice Score**: Total score (out of 15) on a peer-reviewed survey capturing frequency and type of food consumed, meal skipping, junk food/snack purchases, and self-reported meal hygiene behaviors.
- **Demographic variables:**
- Age of children
- Religion
- Educational status
- Type of house
- Type of family
- No. of family members
- Family income
- Educational status of parents
- Occupational status of parents

Inclusion Criteria:

- Enrolled in 5^{th}, 6^{th}, or 7^{th} standard.
- School going children aged between 7–12 years on date of data collection.
- Informed, voluntary consent from parent/guardian and student.

Exclusion Criteria:

- School going children below 7 years or above 12 years.
- Children who are not interested.

Limitation:

- This study is limited only to children of 5^{th}, 6^{th} & 7^{th} standard.
- Limited only to 7-12 years children
- Limited to children who can read and write English and Hindi.

Description of the Tool

Self –Structured questionnaire consisted of the two sections:

Section 1: Demographic data such as Age of children, Religion, Educational status, Type of house, Number of family member, family income, Education status of parents, Occupation status of parents, Type of family.

Section 2: Self structured questionnaire regarding the effectiveness of child-to-child approach on knowledge and practice regarding unhealthy eating habits among peer group in selected school, Jamuhar, Bihar.

Scoring

1. 0% - 5% - Low knowledge level
2. 6% - 10% -Moderate knowledge level
3. 11% - 15% -High knowledge level

And

4. 0% - 5% - Low Practice level
5. 6% - 10% -Moderate Practice level
6. 11% - 15% -High Practice level

MAJOR FINDINGS OF THE STUDY

Table: Chi square showing Correlation between post-test levels of practice regarding unhealthy eating habits among peer group with their demographic variables.

Socio-demographic	PracticeScore						Chi-sq.	Df	P-value
	low		Moderate		High				
	F	%	F	%	F	%			
1.Age									
A.7-8 year	8	47.1%	5	29.4%	4	23.5%	9.78	4	0.044
B.9-10 year	5	21.7%	10	43.5%	8	34.8%			
C.11-12year	2	10.2%	9	45.0%	9	45.0%			
2.Sex									
A.Male	8	25.8%	13	41.9%	10	32.3%	4.92	2	0.085
B.Female	7	25.9%	11	40.7%	9	33.4%			
C.Trans	0	0%	0	0%	0	0%			
3.Religion									
A.Hindu	11	26.2%	18	42.8%	13	31.0%	3.30	4	0.508
B.Islam	4	23.5%	7	41.1%	6	35.4%			
C.Christian	0	0%	1	100%	0	0%			
D.Others	0	0%	0	0%	0	0%			
4.Educational status									
A.5th class	6	28.6%	9	42.9%	6	28.5%	2.90	4	0.575
B.6th class	8	38.1%	7	33.3%	6	28.5%			
C.7th class	1	5.6%	8	44.4%	9	50.0%			
5.Type of House									
A.Mud house	2	50%	1	25.0%	1	25.0%	6.78	6	0.343
B.Concrete	9	18.8%	23	47.9%	16	33.3%			
C.Rented	4	50.0%	2	25.0%	2	25.0%			
D.Homeless	0	0%	0	0%	0	0%			

6.Type of family									
A.Nuclear	5	29.4%	6	35.5%	6	35.3%	1.27	4	0.866
B.Joint	10	25.0%	18	45.0%	12	30.0%			
C.Single parent	0	0.0%	2	66.7%	1	33.3%			
7.Educational status of parent									
A.10th pass	3	23.1%	6	46.2%	4	30.7%	8.1	6	0.232
B.12th pass	2	11.8%	10	58.8%	5	29.4%			
C.Graduarte	8	30.8%	11	42.3%	7	26.9%			
D.Post-grad	2	50.0%	1	25.0%	1	25.0%			
8.Family income									
A.>1lakh	1	33.3%	2	66.7%	0	0%	7.92	4	0.093
B1-4lakh	10	31.2%	16	50.0%	6	18.8%			
C.<1 lakh	4	16.0%	6	24.0%	15	60%			
9.Occupation of parents									
A.Govt. jobs	0	0%	2	100%	0	0%	5.64	6	0.464
B.Private sector	4	44.4%	4	44.4%	1	11.1%			
C.Agriculture	8	27.6%	13	44.8%	8	27.6%			
D.Others	3	15.0%	5	25.0%	12	60%			

Table-Showing the significant correlation between Demographics and Practice Scores. For practice scores, the chi-square analysis showed that only Age (χ^2=9.78, df=4, p=0.044) had a significant correlation with post-test practice levels. This suggests that age was the key determinant for better practice behaviors related to unhealthy eating habits, with older students practicing healthier habits post-intervention compared to younger students.

In contrast, sex, religion, family type, educational status, type of house, parental education, family income, and parental occupation did not show any statistically significant correlation with post-test practice scores (all $p > 0.05$).

IMPLICATION FOR PRACTICE

The present study has implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing practice:

- Nurses can use the Child-to-Child approach to educate children about various health topics, such as hygiene, nutrition, and disease prevention.
- Nurses can help children develop skills necessary for promoting health, such as handwashing, healthy eating, and first aid.
- Nurses can facilitate peer support among children, encouraging them to share their experiences and knowledge with each other.

- Nurses can work with children to reach out to their communities, promoting health awareness and practices beyond the school setting.

Nursing education:

- Children are empowered with knowledge and skills to make informed decisions about their health.
- Children are actively involved in the planning, implementation, and evaluation of health programs.
- Children learn from and teach each other about health issues.
- The approach involves not just children but also their families and communities in health promotion efforts.

Nursing administration:

- Nursing administrators can facilitate collaboration between healthcare professionals, educators, and community leaders to implement the Child-to-Child approach effectively.
- Nursing administrators can ensure that nursing staff and other healthcare professionals receive the necessary training and capacity building to implement the Child-to-Child approach.
- Nursing administrators can support community engagement and outreach efforts to promote the Child-to-Child approach and encourage community participation.
- Nursing administrators can advocate for policies that support the Child-to-Child approach and provide a framework for its implementation.

Recommendation:

- On the basis of the findings of the study following recommendation have to be made:
- A similar study can be done on large sample.
- A similar study can be done in a clinical teaching and demonstration in laboratory.
- A comparative study can be done to detect knowledge and practice among nursing students.
- A study can be done to assess the effectiveness of other pain relieve method.

Limitation:

- This study is limited only to children of 5^{th}, 6^{th} & 7^{th} standard.
- Limited only to 7-12 years children
- Limited to children who can read and write English and Hindi.

CONCLUSION

The child-to-child peer education approach significantly enhances both awareness and application of knowledge about healthy eating habits among rural school children. The statistically significant differences between groups, large effect sizes, and shifts in categorical performance underscore that peer-led, participatory interventions are more effective than traditional, teacher-centered methods in promoting healthy eating knowledge and behaviors. This evidence supports the wider adoption of the child-to-child approach in similar educational settings to combat unhealthy eating habits among schoolchildren.

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