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A Study to Evaluate the Effectiveness of Snake and Ladder Game on Knowledge Regarding Nutritional Practices Among Children in Selected School at Hubballi

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Abstract:

Background: Children are precious not only to their parents and families but also to the community, nation, and world. Addressing the nutritional problems faced by children at an early age through proper practices is crucial. The play-way method, such as the Snake and Ladder game, has been shown to be an effective teaching tool to promote good nutritional practices among children. The aim of the study was to assess the knowledge regarding nutritional practices among school children, evaluate the effectiveness of the Snake and Ladder game in improving their nutritional knowledge, and determine the association between pre-test knowledge scores and selected demographic variables. **Methods:** An evaluative study was conducted among 30 school children from a Government Primary School in Hubballi using a pre-experimental one-group pre-test post-test design. Data were collected through a structured knowledge questionnaire. **Results:** In the pre-test, 20 children (66.6%) had average knowledge, 6 children (20%) had good knowledge, and 4 children (13.4%) had poor knowledge. In the post-test, 29 children (96.6%) had good knowledge, 1 child (3.4%) had average knowledge, and none had poor knowledge. There was a significant gain in knowledge of 41.4% among children exposed to the Snake and Ladder game. The paired 't' test value ($t_{cal} = 11.15$) at $p<0.05$ level of significance confirmed that the mean post-test knowledge scores were significantly higher than the mean pre-test scores. **Conclusion:** The study concluded that the

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Snake and Ladder game is an effective method for increasing and updating children's knowledge regarding nutritional practices.

Key Words: Snake & Ladder Game, knowledge, Nutritional Practices, School Children.

Introduction:

"Tell me and I forget, Teach me I remember, Involve me and I learn"

- ***Benjamin Franklin***

Ensuring a balanced diet and regular exercise is crucial for school-aged children, as it supports their overall health and development. These children need to consume a variety of foods from all food groups to get the necessary vitamins and minerals. However, their food choices can be influenced by factors like school meals, home environment, peer influence, and media exposure.[1]

Human rights are essential for everyone, including children, allowing them to make decisions about their health and treatment options. Children's nutrition is particularly important, as it can have long-term effects on their physical and mental health.[2] Nutrition knowledge is key to promoting healthier eating habits, but attitudes toward healthy eating also play a significant role. [3]

The global food market has led to changes in dietary patterns, with more people consuming energy-dense diets high in fat and low in unrefined carbohydrates. This shift has negative effects on health, emphasizing the need for education on healthy eating habits, especially for children. [4]

Children spend a significant amount of time away from their parents, making friends and media influential in shaping their dietary practices. [5] Lack of knowledge and misconceptions about nutrition can lead to unhealthy food choices among children in developing countries. [6]

Education about nutrition and health at school, home, and community centers is vital for instilling the importance of nutrient-dense foods in combating health disorders. School-age children are particularly receptive to educational messages and can play a crucial role in spreading awareness about healthy eating habits in society. [7]

Play is a natural and enjoyable way for children to express themselves and learn. Educational games, like the snake and ladder game, can promote interest in health and nutrition, as well as problem-solving skills. This game, deeply rooted in local customs and practices, teaches children about hygiene practices through fun and engaging gameplay. [8]

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Material And Methods:

The research adopted an evaluative research approach, employing a pre-experimental design with a one-group pre-test, post-test design. The study was conducted at Government Junior Primary School in Nekaar Colony, Vidyanagar, Hubballi, focusing on 4th and 5th standard students as the target population. A sample size of 30 students was selected using a non-probability purposive sampling technique.

The inclusion criteria for sample selection included children who were present during data collection, while the exclusion criteria included children who were sick or too agitated at the time of data collection.

The tool used for the research was a structured interview schedule, consisting of two sections. Section I comprised socio-demographic data with 9 items, while Section II contained the structured interview schedule with 25 items assessing knowledge regarding nutritional practices. Each correct answer was scored 1 mark, and each incorrect answer scored 0.

Additionally, a modified version of the snake and ladder game was developed, incorporating concepts related to nutritional practices. The game featured 100 square boxes, with nine ladders indicating the advantages of good nutritional practices and nine snakes indicating the ill effects of poor nutritional practices. During the game, six children played at a time, tossing a dice to move coins and receiving explanations about nutritional practices based on their moves. The first player to reach the 100th square box received a gift as an appreciation.

To develop the lesson plan, extensive literature review was conducted from books, journals, published and unpublished studies, electronic media, and websites. Expert opinions and suggestions were also considered to design the structured teaching program.

Results:

Section- I Findings related to socio-demographic variables of subjects

Regarding age, half of the subjects (50%) were aged between 8-9 years, while the other half (50%) were aged between 9-10 years. The majority of the subjects (63.3%) were female, with the remaining (36.7%) being male. In terms of class, half of the subjects (50%) were in the 4th standard, and the other half (50%) were in the 5th standard. Regarding birth order, the highest number of subjects (43.3%) were second-born, followed by 30% being first-born, and 26.7% being third-born or later. Concerning family type, half of the subjects (50%) belonged to nuclear families, while the other half (50%) belonged to joint families. The majority of the

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subjects (80%) practiced Hinduism, with a small percentage (3.3%) practicing Christianity, and the remaining (16.7%) practicing Islam. In terms of paternal occupation, the highest percentage (43.3%) were self-employed, followed by an equal percentage (43.3%) working in the private sector, and the remaining (13.3%) employed in government jobs. The majority of the subjects (83.3%) followed a flexitarian (mixed) diet, while the remaining (16.7%) were vegetarian. Most of the subjects (73.3%) had prior knowledge of nutritional practices from health professionals or teachers, while the rest (26.7%) did not.

Section- II Analysis and interpretation of knowledge scores of subjects who have participated in the study regarding Nutritional Practices.

Table 1: Mean, Mode, Standard Deviation and Range of knowledge scores of subjects regarding Nutritional Practices.

Aspects of Analysis	Mean	Median	Mode	Standard deviation	Range
Pre-test	13.8	13	13	5.30	18
Post-test	24.16	25	25	1.91	07
Difference	10.36	12	12	3.39	11

Table 1 reveals that the pre-test mean knowledge score was 13.8, median- 13, mode-13, standard deviation-5.30, range-18. The overall difference in mean knowledge score was 10.36, median-12, mode-12, standard deviation-3.39 & range11

Table 2: Frequency and percentage distribution of knowledge scores of subjects regarding Nutritional Practices.

Level of Knowledge	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good (19 and above)	06	20	29	96.6%
Average (09 – 19)	20	66.6	01	3.4%
Poor (09 and below)	04	13.4	00	00

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Table 2 shows that distribution of level of knowledge on children regarding Nutritional Practices during pre-test and post-test. Most of them in pre-test 20 (66.6%) had average knowledge, 6 (20%) had good knowledge and 04 (13.4%) had poor knowledge. In post-test maximum subjects 29 (96.6%) had good knowledge, 01 (3.4%) had average knowledge and none of them had poor knowledge.

Table 3: Pre-test, Post-test percentage of knowledge scores of subjects regarding Nutritional Practices

Items	Total Scores	Mean % knowledge scores of subjects		
		Pre-test	Post-test	Gain in knowledge
Structured knowledge interview questions.	750	55.2	96.6	41.4

Table 3 reveals that there was 41.46% gain in knowledge after the administration of Snake and Ladder game

Testing of hypothesis

Calculated t-value (t_{cal} = 11.15) was greater than the tabulated t-value (t_{tab} = 2.045). This indicates that the gain in knowledge score was statistically significant at 0.05 level of significance. Therefore, Snake & Ladder game on Nutritional Practice was effective in improving the knowledge of subjects.

Section- III Analysis and interpretation of data to find out an association between pre-test knowledge scores of subjects with their selected socio demographic variables.

There was no association between pretest knowledge scores and selected demographic variables.

Recommendations:

This study suggests several recommendations for future research and educational practices. Firstly, researchers should replicate similar studies in diverse settings to validate the effectiveness of educational interventions. Secondly, a comparative study between junior and senior primary school children could provide insights into age-related differences in health education needs. Additionally, nurses can use the snake and ladder game as a playful teaching method, while teachers in special schools can integrate it into their routine to convey health-

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related information effectively. These recommendations aim to enhance health education strategies for school-aged children.

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