



Review Article

Knowledge of Malnutrition among Schoolers: Via Snake and Ladder Game

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Abstract

Malnutrition is a major problem which has been receiving progressive attention through the entire 5-year plan which further extension and intensification in the 7th 5-year plan more emphasis has been laid for up lifting the weaker and vulnerable section of population with a focus on the tribal and scheduled castes. Malnutrition is a condition that results from eating a diet in which one or more nutrients are either not enough or are too much which involves calories, protein, carbohydrates, vitamins, or minerals in diet and causes health problems among children's. Snake and ladder game is a most popular game in many countries of the world. It is cheaper to computer game made up of plastic, it also help in developing social skills in children, this game teaches learn to accept winning and losing situation that is the true spirit of sport man ship, try to win next time, and learn from the mistake that have been done earlier. It also develops team work in them and strategy, skills in children. It is a great way to bond with the entire family members in this game. The World Health Organization estimates that by the year 2015, the prevalence of malnutrition will have decreased to 17.6% globally, with 113.4 million children younger than 5 years affected as measured by low weight for age. The prevalence of underweight children in India is among the highest in the world and is nearly double than that of sub-Saharan Africa. In India, 20% of children under 5 years suffer from wasting due to it seems that children have lack of knowledge about malnutrition so we have taken mal nutrition study. Malnutrition is most of the common problem occurring now days. The incidence of malnutrition is increasing day by day so the present article is discussing about the snake and ladder game on knowledge regarding malnutrition. The purpose of this review is to provide the updated and comprehensive information about the knowledge of student regarding malnutrition and its prevention.

Key words: Demographic variables, effectiveness of snake, ladder game, malnutrition

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Introduction

It is observed that the malnutrition problem in India is a concentrated phenomenon that is a relatively small numbers of states, districts, and villages account for a large share of malnutrition burden – only five states and 50% of villages account for about 80% of the malnutrition burden. Each

year approximately 2.3 million deaths among children in developing countries are associated with malnutrition.^[1] The current changing dietary patterns are also affecting the nutrition status of children. The study was conducted in Pimpri Chinchwad Municipal Corporation (PCMC) school Pune among the school children (It has been observed that the setting for this selected school of PCMC Pune). Non-proximity purposive sampling technique was used for selection of 60 samples. It was observed that pre-test knowledge score of school going children revealed that 1.67% of the sample has poor level of knowledge, 86.67% had average level of knowledge score, and 11.67% have good level of score.^[2] Malnutrition among under five children is a major public health problem in India. Nobel laureate Amartya Sen has always maintained that “Hunger is quiet violence” which appear more realistic year by year as India struggles to combat malnutrition. According to the Global Nutrition Report 2018, India is facing a major malnutrition crisis as it holds almost a third of world's

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burden for stunting.^[3] The finding should be alarming for the policymaker because when India began the National Family Health Survey, its stunting and wasting among children were on par with Thailand has all but overcome the problem while we have made slow and uneven progress, even after then president Pranab Mukerjee launched a nationwide mass communication campaign against malnutrition in November 2012, with actor Amir Khan as its face.^[4] Hence, with help of this research, we selected malnutrition with effective way of snake and ladder game. Children do not have nutrition importance and knowledge regarding diet. Hence, by child to child program spread of malnutrition will be effective and useful to schooler's children.

Operational Definition

Assess

According to Oxford dictionary, it means to make a judgment about the nature or quality of somebody/something. In this present study, it means finding out.

Effectiveness

According to Oxford dictionary, it means the degree to which something is successful in producing a desired result, success. In this present study, effect refers to the difference in pre-post-test scores of knowledge among students regarding malnutrition.

Snake and ladder game

According to Oxford dictionary, it means a board game in which player move counters toward a goal at a top of the board, gaining, and advantage by moving up pictures of ladder or disadvantages by moving down picture of snakes. In this present study, it refers to knowledge to school regarding the advantages of malnutrition and ill effect of undernourished.

Knowledge

According to Oxford dictionary, it means factual information that a person knows. In this present study, knowledge refers to awareness among students regarding malnutrition.

Malnutrition

According to Oxford dictionary, it means lack of proper nutrition, caused by not having enough to eat, not eating enough right things or being unable to use the food that one does eat. In this present study, malnutrition refers to deficiency of imbalances in a person's intake of energy and nutrients.

Schooler

According to Oxford dictionary, it means a pupil attending a school of the specified kind or being educated in the specified way. In the present study, it refers to children age between 11 and 12 years at selected school Navi Mumbai.

Input

It has been defined as any form of information and material that enters into the system through a boundary. In this review we focus on the student knowledge as well as level of understanding. In this study, their initial knowledge will assist by the pre-test.

Throughput

According to this theory, throughput is a process that occurs at some point between the input and output process and enables the input to be transferred in such a way that it can use rarely by the system. In this study, snake and ladder game on malnutrition will be prepared and administered to the student in selected school of Navi Mumbai.

Output

It is any information or material that is transferred in to the environment. In this study, output refers to gain in knowledge scores in post-test in the group, post-test will be conducted on 7th day of plan teaching program on malnutrition.

Delimitation

Snake and ladder game is given only once.

Student is studying in secondary school between the age group of 6 and 12 years.

Study Based Review of Literature

Review of the literature is a key step in research process. Review of the literature refers to an extensive, exhaustive, and systematic examination of publication relevant to the research project. A researcher analyses existing knowledge before developing into a new area of study while conducting a study, when interoperating the results of the study, and when making adjustment about application of a new knowledge in nursing practices.

The review of the literature is defined as a growth, comprehensive in depth, systemic and critical review of scholarly publications, unpublished scholarly print materials, audio-visual materials, and personal communications.

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In this study, the review of literature is dividing into four parts:

1. Review of literature related to malnutrition in children.
2. Review of literature related to games.
3. Review of literature related to general snake and ladder games.
4. Review of literature related to effectiveness of snake and ladder game on malnutrition.

Malnutrition in Children: Widespread Information

The study was conducted by W. J. Poster at in Khartoum state, Sudan, to assess the prevalence of malnutrition among children under 5 years old. A cross-sectional community-based descriptive study was conducted, to collect primary information from household using a scientific questionnaire, anthropometric measurements, and clinical evaluations of the malnourished children to check the presence of severe protein energy malnutrition. The results showed that socioeconomic factors, poor nutrition, and mothers' knowledge feeding practices led to increase in the prevalence of malnutrition. Mid-upper arm circumference indicator showed that 20.9% of children were badly nourished and 79.1% of the children were nourished. In addition, to poor economic situation, the study found that about 15.4% of children were underweight, 8.8% were moderate underweight, and 6.6% were severe underweight. The prevalence of wasting was 21.1% and the prevalence of pf stunting was 24.9%.^[5]

A study was conducted by Yadav *et al.* in Haryana. The study was an epidemiological study of malnutrition among under five children of rural and urban Haryana. A community-based cross-sectional survey was conducted in children of 3–6 months age living in the urban and the rural field practice areas of the department of community medicine Maharishi Markandeshwar Institute of Medical Sciences and Research, Muallana, Ambala, during January 2012–December 2012. The study was for nutritional status, socio-demographic measures were obtained from structured questionnaire and followed by anthropometric assessment using standard methods z score from anthropometric data was calculated by the World Health Organization (WHO). The result found that 41.3% children were underweight and 14% were severe underweight. Female children were more nutritionally deprived than males. Among socio-demographic factors maternal educational and working status as well as socioeconomic status in class and rural background of family at greater impact on nutritional status of child.^[6]

Review of Literature Related to Game

The study was conducted by Vazquez *et al.* PLoS One 2018. The study was related to efficacy of video game-based interventions for active aging. The aim of these systematic review and meta-analysis was to determine the efficacy of video game for active aging and to examine the influence of potential moderator variables. A systematic research was done using the following database: Medline, psycInfo, EMBASE CINAHL, and the COCHRANE central register of control trails. An evaluation of the methodological quality of the articles and a meta-analysis and moderator analysis was conducted. The results show that total of 22 articles depicting 21 randomized controlled trials (RCT) with 1125 participants were included in the study. The result indicated that video game-based interventions produced positive effects on objectively measured physical health, negative effects, and social health, with small effect

size. The magnitude of this effect was moderated by the presence of sub-clinical conditions of participants. The methodological quality of the study was acceptable, the weakest area been external validity.^[7]

The study was conducted by Maheu-Cadotte *et al.* The study was related to the impact of design elements on engagement and educational outcomes in health-care professional and students. The aim of this systematic review is to identify, appraise an synthesize the best available evidence regarding the effectiveness of SGs and the impact of Des on engagement and educational outcomes of health-care professional and students. The method was quantitative. The findings show that the research received no specific grant from any a funding agencies in the public, commercial, or not-for profit sectors.^[8]

The study was conducted by Rahmani and Boren Games health j. 2012. The study was related to video-games and health improvement. There are potential benefits of playing video-games for health improvement such as increasing knowledge about health-related issues by playing educational games and fighting a sedentary lifestyle by playing extra games. Several electronic databases were searched for RCTs testing video-games on health outcomes that were published in English between January 2000 and April 2012. The results show that 45 articles meet the eligibility criteria and were categorized into five groups: (1) Video-games and patient pain and stress reduction, (2) video-game and patient behavioral change, (3) video-games and patient rehabilitation, (4) video-games ask diagnostic tools, and (5) video-games and cognitive ability.^[9]

Review of Literature Related to General Snake and Ladder Game

The study was conducted by Prasanthi and Lakshmi in Bengaluru. The study was to determine the effectiveness of snake and ladder game on knowledge of common ailments among primary school children. A pre-experimental and evaluative research approach was used with one group pre-test post-test design to evaluate the effectiveness of snake and ladder game on knowledge on common element. The sample composed of 60 primary schools children. A purposive sampling technique was used. The participant included in the study was between the age group of 11 and 12 years. The maximum number of children (32) was male. All the responded (60) were found urban residential place. Maximum number of children was Hindu by religion. Maximum number of children is from nuclear family. Conclusion of the study was snake and ladder game which was effective in improving knowledge regarding common ailments among primary school children.^[10]

Review of Literature Related to General Snake and Ladder Game

The study was conducted by Dhanashreekutwal and Vaishalijagtap. The study was to assess the effect of snake

and ladder on knowledge regarding balance diet among children in selected school in PCMC. The research design was used pre-experimental one group pre- and post-test research design. The present study is based on general system model by Ludwig bon bertalanffy. The setting for the study selected school of PCMC Pune non-probability purposive sampling technique was used for 60 samples. The result was observed that pre-test knowledge score school going child relived that is 1.67% of the samples had poor level of knowledge score, 86.67% had average level of knowledge score, and 11.67% had good level of knowledge score in post-test (1.67%) of the samples had average level of knowledge score. It has been observed that pre-treatment knowledge average mean score is 9.68 and after teaching average score rises to 17.38. The researchers can conclude that at 5% level of significance and 99% of freedom there is significance rise in average knowledge score after playing game since all the P values accept P value occupation of father and mother. $P > 0.05$, there is no significance association between any of the variables accept occupation of father and mother.^[11]

Review of Literature on Effectiveness of Snake and Ladder Game on Malnutrition

The study was conducted by Sivaranjani *et al.* in 2016. The study was conducted to assess the effect of snake and ladder game on malnutrition among school children at Sri Rama Krishna Matriculation School, Coimbatore. The research design used for the present study was pre-experimental one group pre-test post-test design. Using proportionate stratified random sampling technique, 45 samples were selected and their knowledge regarding malnutrition was assessed by structured questionnaire. The obtained data were analyzed using paired t -test. The mean score before and after education was 13.68 and 33.31 and the standard deviation (SD) was 5.61 and 6.62, respectively, with the mean difference of 19.63. The calculated t -value 19.62 was greater than the table value at 0.001 level of significance. Hence, it was concluded that snake and ladder game was effective in enhancing the knowledge regarding malnutrition among school children.^[12]

The study was conducted by Kanungo *et al.* Kolkata India. Twenty years after the implementation (1995) of the mid-day meal program to improve nutritional status and academic efficiency among school children, under-nutrition remains major concern in India effort to qualify the problem and identify the determinants were handful especially in the eastern part of the country thus the purpose of the study was to determine the burden and predictors of under-nutrition among primary and upper – a primary school children in East India. Using stratified cluster random sampling proportional recruitment, a multistage cross-sectional study was conducted involving all 20 educational districts of West Bengal, a highly populous state in East India. During 2041–15, using structured questionnaire standard

anthropometry and laboratory testing a representative sample of 24,108 primary and upper-primary students from the whole state of West Bengal was interviewed and assessed. Among 24,108 recruited student age between 6 and 13 years, the prevalence of under-nutrition was alarming high (about 23%) furthermore, over half of the student (54%), Were at risk of developing malnutrition on the other hand, 17% student had ideal nutrition status. The prevalence of under-nutrition was high among school children's in the study area. School-based intervention targeting high-risk, under-privilege children, especially in rural area with lower parental education and poor level of sanitary practices seem to be urgently require.^[13]

The study was conducted by Ifrahmh, Department of Statistics Lahore College related to an exploratory study on risk factors of malnutrition in children. This study was focuses on the most important hazards of malnutrition. This is a cross-sectional study which includes 361 children in both genders. The assessment of malnutrition is done using anthropometric measures and two methods; z -score and % of median are used. These cases are defined as any child among 6 months–5 years of age who was below -2 SD from median weight of his/her age as plotted on the growth chart and the control is defined as any child under 5 years who was above -2 SD from median weight for his/her age as plotted on the growth chart by the WHO. The sampling technique in the study is cluster sampling. There were 21.88% children of age 6 months–1 year, 29.37% children of age 1–2 years, 24.65% children of age 2–3 years, 13.30% children of age 3–4 years, and 10.80% of children of age 4–5 years. The hosmer and lemeshow test which is consider top be the more reliable test in log regression is used to test the hypothesis that observed data are significantly different from predicated value from the value from the model that is adequacy test. According to the results, $P = -0.956$ which is in significance indicates that the model does not differ from the observed data significantly and hence model is appropriate and it fits the data adequacy.^[14]

A study was conducted by Pushpam in Tamil Nadu. The study was a pre-experimental study to evaluate effectiveness of snake and ladder game on knowledge of environmental sanitation among middle school children in selected school in Madurai. A pre-experimental research design was used to evaluate the effectiveness of snake and ladder game on environmental sanitation. Purposive sampling technique was used to select 60 middle school children. The data were collected using a structured questionnaire prepared by the researchers. The data were tabulated, analyzed, and interpreted using descriptive and inferential statistics and kindly show that 23 middle school children had good knowledge and 31 had average knowledge in post-test. The calculate t -value (22.709) was found to be highly significant at the level of $P < 0.05$. These shows that knowledge shows that the knowledge of environmental sanitation among middle school children increased after the snake and ladder game on environmental sanitation. The research approach was quantitative.^[15]

Discussion

Malnutrition is most of the common problem occurring nowadays. The incidence of malnutrition is increasing day by day, so the presence was conduct to assess the effect of planned teaching program on knowledge regarding malnutrition among the selected schoolers. The purpose of the study is to assess the knowledge of student regarding malnutrition and its prevention.

The comparison between levels of knowledge shows the significant difference in pre- and post-test knowledge score. We can observe the level has been increased in post-test evaluation. This shows that snake and ladder game is useful.

Conclusion

Review article conclude that malnutrition is most of the common problem occurring nowadays. The incidence of malnutrition is increasing day by day, so the presence was conduct to assess the effect of planned teaching program on knowledge regarding malnutrition among the selected scholar student. The purpose of the study is to assess the knowledge of student regarding malnutrition and its prevention.

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