

A Study to Assess the Effectiveness of Snake and Ladder Game on Knowledge of Malnutrition among Schoolers in Selected School of Navi Mumbai

Pratibha Jadhav

Department of Pediatric Nursing, Bharati Vidyapeeth College of Nursing, Navi Mumbai, Maharashtra, India

Abstract

Aim: A Study to assess the effectiveness of snake and ladder game on knowledge of malnutrition among schoolers.

Method: The research design used was quasi experimental research design and simple random sampling technique was used. The sample of the study was consisting of 60 samples from selected School Navi Mumbai. Section 1: It deals with the analysis of the demographic data of the sample. Section 2: It deals with analysis of data related to effectiveness of snake and ladder game on knowledge of malnutrition. Section 3: It includes analysis of data to find the association between selected demographic variables with age, gender, birth order of child, family income. Family economic status, source of knowledge. Section 4: It deals with the analysis of data related to difference between pretest and post test knowledge score in various aspects of malnutrition.

Results: Based on the objective the data was analyzed using dependent t- test which is one of the best methods used for the study. Mean pre test knowledge score was 9.83 among schoolers. The mean post test knowledge score after administration of snake and ladder game was 15.47. The pre-post knowledge score difference was 6.43. So snake and ladder game was effective in improving knowledge regarding malnutrition among schoolers.

Conclusion: The study concluded that snake and ladder game can be used to improve knowledge among schoolers.

Keywords: Demographic variables, effectiveness of snake, ladder game, malnutrition, Navi Mumbai

INTRODUCTION

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 have 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. Malnutrition being a multifactor problem a combination of approaches such as nutrition education, fortification and enrichment of foods extending the existing food supplies and health measures are being emphasized in policy making and program implementation for the prevention of same.^[1]

Malnutrition is a worldwide problem that results from complex interaction between environment deprivations. Malnourished children typically experience a range of other environment difficulties associated with poverty such as poor housing, poor health-care weak family. There is need to understand the way child malnutrition poor health influence and assess and school participation of children.^[2]

Play is a fun, enjoyable activity that elevates child spirit and brightens our outlook there life. It expands self-expression, self-knowledge, self-actualization, and self-efficacy. Play

Access this article online

Website: <http://innovationalpublishers.com/Journal/ijnmi>

ISSN No: 2656-4656

DOI: 10.31690/ijnmi/57

Address for Correspondence:

Pratibha Jadhav, Department of Pediatric Nursing, Bharati Vidyapeeth College of Nursing, Navi Mumbai, Maharashtra, India. E-mail: saipratibha83@rediffmail.com

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution Noncommercial Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms

relieves feeling of stress and boredom, connect child in positive way, stimulates creative thinking and exploration, regulate child emotion, and boost our ego (Landreth, 2002). In addition, play allows child to practice skills and roles need for survival. Learning and development are best fostered through play.^[3]

Play therapy work on children to resolve their problems often, children have use up their own problem solving tool and they misbehave at home with friend and at school. Play therapy is utilized to help children to cope with difficult emotions and find solution to problem. Play therapy allows children to change the way to think about felled toward resolve their concerns.

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 develop bond with the entire family members in this game.^[4]

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. It is significant to note that, an overwhelming majority of these children that are 112.8 million will live in developing countries and more particularly with 70% of these children in Asian continent, particularly the south central region, and 26% in Africa. An additional, 165 million (29.0%) children will have stunted length/height secondary to poor nutrition.^[5]

The World Bank estimates that India is ranked 2nd in the world on the number of children suffering from malnutrition after Bangladesh. 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 suffers from wasting due to t seems that children have lack of knowledge about malnutrition so we have taken mal nutrition study.^[6]

A study was conducted by Mrs. Vimala Ramchandra and Emergency Response Unit research team at South Asian development sector 6, New Delhi, published on September 22, 2004.^[7] The study was related to effectiveness on snake and ladder game on primary school on poverty among children for primary school completion. The current study is a part of multisectoral research project on integrated Child Development in India supported by World Bank in 2001–2003. This study was commissioned in June 2002 with the objective of exploring the various factors that factors that contribute toward or impede successful primary school completion, with special reference to children living in diverse poverty situation. An earlier commissioned study provided conceptual framework and review and understands child development along an age continuum of 0–11 years to the final objective of successful completion of primary schooling. The result and found that the

snake and ladder game was effective to children by increasing the knowledge regarding poverty related to completion of primary school. Malnutrition is wide spread problem that results from complex interaction between environmental deprivation and under nutrition. There is need to understand the way child malnutrition and poor health influence access and school participation.^[7]

The objectives of the study were to assess the knowledge of malnutrition before administration of snake and ladder game among schoolers, to assesses the effectiveness of snake and ladder on knowledge regarding malnutrition among schoolers, and to assess the association between selected demographic variables and pre-test knowledge scores among the schoolers.

METHODS

Research methodology

Research approach is a systemic, objective method of discovery with empirical evidence and rigorous control. The control is achieved by holding conditions constant and varying only the phenomenon under study.

The research method adopted for the presented study is quantitative approach because the present study is aimed teaching program through snake and ladder game on malnutrition to 6th class student of Navi Mumbai. To evaluate effect of the intervention that is snake and ladder on the variable that is knowledge of secondary class student regarding malnutrition among schoolers in selected secondary school of Navi Mumbai.

Research design

The research design is the backbone of the structure of the study it provides a framework that supports study and holds together.

Pilot and Hungler (1995) stated that a research design incorporates the most important method methodological decision that a researcher make in conducting a research study. The research design helps the researcher in selection of subject for observation and determinants the type of analysis to be used to interrupt the data. The selection of the research design depends on the purpose of the study and the conditions under with the study are conducted.

In present study, the investigator has selected the quasi-experimental pre-test and post-test research design keeping in the view objectives of the study.

Variables

Independent variable

The independent variables are snake and ladder game.

Dependent variables

The dependent variable of the study is knowledge regarding malnutrition among schoolers in selected schools of Navi Mumbai.

Extraneous variables

The study is age, gender, birth order of child, income, and education of parents.

Population

According to Talbot, a population is a group whose members possess specific attribute that the researcher is interested in studying. In current study, population is schoolers.

Target population

In this study, target population consists of students studying in secondary schools of Navi Mumbai.

Accessible population

In this study, assessable population consists of students studying in selected secondary school of Navi Mumbai from 6th standard.

Sample and sample technique

According to Tablot, a sample is a portion of the population of interest.^[8] The process of sampling makes it possible accept a generalization to the intended population based on careful observation of variable with relatively small portion of the population.

In the present study, the sample was selected using simple random sampling method by the investigator from selected secondary schools Navi Mumbai. It was suitable keeping in the view the time provided data collection permission granted by concern authority of school.

Total sample size was 60 schoolers selected for main study that is fulfilled the sampling criteria.

Data collection techniques and tools

The most important and crucial aspect of any research are data collection which provide answers the question under study. The present study aimed at assessing effect of snake and ladder game on knowledge on regarding malnutrition among selected schools of Navi Mumbai. Semi-structure questionnaire on malnutrition was use for data collection. It consisted of a 30 multiple choice questionnaires to assess the effectiveness of snake and ladder game on knowledge regarding malnutrition among selected schoolers of Navi Mumbai.

All 30 items are multiple choice questions. One mark (+1) will be given for each correct response and (0) zero mark is given for each wrong response and also for not responded questions. The range of possible score varies from a minimum of 0 to maximum 30 marks which are represented in the form of percentage of interpretation, Table 1.

A formal permission is obtained on March 7, 2019, from the principal of Bharati vidyapeeth school of Belapur, Navi Mumbai. After identifying the samples, the objectives of the study were discussed with them. Group was divided into five subgroups. The investigator assured the subject about the confidentiality of the data. The investigator administered the questionnaire for the pre-test for 1 h. During the pre-test, participants were seated away from each other and discussion was not allowed among students to avoid bias. The snake and ladder game was disseminated to the group along with education on meaning, causes, management, and prevention

Table 1: Interpretation of knowledge score

Interpretation	Scoring percentage
Moderate	60–75
Adequate	>75
Inadequate	<50

Table 2: Representation of data collection

Sample size	Data and duration		
	Pre test	Snake and ladder game	Post test
Experimental group 30	1 h	35 min each group	1 h
Control group 30	1 h	-----	1 h

strategies of malnutrition for about 35 min. After that, post-test was conducted after 7 days [Table 2].

Analysis of demographic characteristics of samples

In this section, demographic data of the sample have been displaced to show the frequency distribution of the various demographic variables with the help of SPSS version 2.0 frequency, percent and cumulative percent have been calculated and the outcome of the data analysis is as follows

The above reveals data on age distribution of samples. About 3.3% were in 9–10 years, 26.7% were in 10–11 years, and 70% were in 11–12 years regarding data on gender distribution of samples. About 46.7% were males and 53.3% were females. About 3.30% were illiterates, 3.30% were primary, 66.80% were secondary, and 26.60% were graduate. About 20% are having family income in between Rs. 10,000–20,000 in between Rs. 20,001–30,000 were 46.7%, Rs. 30,001–40,000 were 23.3% and Rs. 40,001 above were 10%. Religion wise data show Christian were 0%, Hindu were 86.7%, Muslim were 3.3%, and others were 10%. Data on types of family distribution of samples reveal that 3.3% were single, 83.4% were nuclear, and 13.3% were joint [Table 3].

Section 2: Analysis of data related to effect of snake and ladder game on malnutrition

Mean, median and standard deviation of pre-test and post-test knowledge score of subject regarding malnutrition.

Data in Table 4 show that the mean post-test knowledge score ($Y = 15.97 \pm 0.24$) is higher than the mean pre-test score ($X = 9.83 \pm 3.74$) Tables 5 and 6.

To find out the significance difference between mean pre-test and post-test knowledge score paired “t” test was computed in data to test statistical difference of null hypothesis that is tested.

H_0 : The mean post-test knowledge score of the students regarding malnutrition will not be significant higher than the mean pre-test knowledge score at 0.001 levels.

Table 7 shows that 60% of the samples in the experimental group have adequate knowledge level after administration of snake and ladder game and 40% of the samples have moderate knowledge level.

Table 3: Demographic data

Characteristics	Category	Respondent	
		Number	Percentage
Gender	Male	14	46.7
	Female	16	53.3
Age (years)	9–10	1	3.3
	10–11	8	26.7
	11–12	21	70
Religion	Hindu	26	86.7
	Christian	0	0
	Muslim	1	3.3
	others	3	10
Parent education	Illiterate	1	3.30
	Primary	1	3.30
	Secondary	20	66.80
	Graduation	8	26.60
Types of family	Single	1	3.3
	Joint	25	83.4
	Nuclear	4	13.3
Income of family	10,000–20,000	6	20
	20,001–30,000	14	46.7
	30,001–40,000	7	23.3
	40,000 and above	3	10
Pre knowledge about malnutrition	Yes	1	3.30
	No	29	96.70
If yes, sources	Book	0	0
	Parent	0	0
	Friend	0	0
	TV	1	3.30
	others	0	0
Birth order	1 st	9	2.7
	2 nd	14	46.7
	3 rd	4	13.3
	4 th	3	10

Table 4: Data on knowledge score regarding malnutrition

Content	Mean	Median	SD
Pre-test	9.83	10	3.74
Post-test	15.97	28	0.24
Enhancement	6.14	18	3.50

SD: Standard deviation

Table 5: Data on effectiveness of snake and ladder game

Content	Mean knowledge	Mean difference	SD	t-value
Pre-test	9.83			
Post-test	15.97	6.14	0.680	24.6207

Coefficient value is 0.005. SD: Standard deviation

DISCUSSION

In our present study, it was found that the mean pre-test knowledge score was 9.83 among schoolers. The mean post-test knowledge score after administration of snake and ladder game was 15.47. The pre-post knowledge score difference was 6.43. Hence, snake and ladder game was effective in improving knowledge regarding malnutrition among schoolers.

Table 6: Data on association between pre-test knowledge score and selected demographic variables

Characteristics	Category	Respondent		Chi-square
		Number	Percentage	
Gender	Male	14	46.7	0.5433
	Female	16	53.3	
Age (years)	9–10	1	3.3	2.1264
	10–11	8	26.7	
	11–12	21	70	
Religion	Hindu	26	86.7	5.0794
	Christian	0	0	
	Muslim	1	3.3	
	Others	3	10	
Parent education	Illiterate	1	3.30	1.0005
	Primary	1	3.30	
	Secondary	20	66.80	
	Graduation	8	26.60	
Types of family	Single	1	3.3	2.8098
	Joint	25	83.4	
	Nuclear	4	13.3	
Income of family	10,000–20,000	6	20	0.6071
	20,001–30,000	14	46.7	
	30,001–40,000	7	23.3	
	40,000 and above	3	10	
Pre-knowledge about malnutrition	Yes	1	3.30	0.8179
	No	29	96.70	
If yes, sources	Book	0	0	0.8179
	Parent	0	0	
	Friend	0	0	
	TV	1	3.30	
	Others	0	0	
Birth order	1 st	9	2.7	1.3571
	2 nd	14	46.7	
	3 rd	4	13.3	
	4 th	3	10	

Table 7: Data on level of knowledge score

Interpretation	Pre-test	Post-test
	Frequency (%)	Frequency (%)
Moderate	1 (3.3)	12 (40)
Adequate	6 (20)	18 (60)
Inadequate	23 (76.7)	0 (0)
Total	30 (100)	30 (100)

A study was conducted by Anjani Devi and Kamla Devi in Chennai which is supporting the finding of the study.^[10] The study was related to the effect of snake and ladder game on knowledge regarding malnutrition. The objectives of the study are to assess the knowledge regarding malnutrition among school children. They selected the children's between the age group of 8–10 years of selected school Coimbatore. The present study aims to determine the effect of snake and ladder game on knowledge regarding malnutrition. The research design was pre-experimental one group, pre-test and post-test design was

adopted in the study. The sampling technique was stratified random sampling. The result of the study was snake and ladder game which is effective in improving knowledge regarding malnutrition among school children's.

CONCLUSION

The incidence of malnutrition is increasing day by day so the presence study to assess the effect of snake and ladder game on knowledge regarding malnutrition among the schoolers is useful in school setting. By which we can spread knowledge regarding malnutrition and can prevent malnutrition among children's.

REFERENCES

1. Planning Commission. Report of the Steering Committee on Empowerment of Women and Development of Children for the Tenth Five Year Plan (2002-07). New Delhi: Planning Commission; ???.
2. Lozoff B. Nutrition and behavior. *Am Psychol* 1989;44:231-6.
3. Helena N, Sharmila P. Effectiveness of origami on anxiety among hospitalized children admitted at selected hospital. *Int J Recent Sci Res* 2019;10:34084-6.
4. Ginott HG. *Group Psychotherapy with Children: The Theory and Practice of Play-Therapy*. United States: Rowman & Littlefield; 1994.
5. De Onis M, Blössner M, Borghi E, Frongillo EA, Morris R. Estimates of global prevalence of childhood underweight in 1990 and 2015. *JAMA* 2004;291:2600-6.
6. Gragnolati M, Breckenkamp C, Shekar M, Das Gupta M, Lee YK. *India's Undernourished Children: A Call for Reform and Action*. Washington, DC: The World Bank; 2006.
7. Ramachandran V, Jandhyala K, Mehrotra N, Krishnamurthy L, Periodi V, Saihjee A. Snakes and ladders: Factors Influencing Successful Primary School Completion for Children in Poverty Contexts, South Asian Human Development Sector Report No. 6. New Delhi: World Bank; 2004.
8. Talbot M, Hall K, Bucholtz M. *A Synthetic Sisterhood*. New York: Routledge; 1995.
9. Siwi IN, Widyaningrum R. Effectiveness of Bibliotherapy and Snake and Ladder Game's Therapy Combination Towards Hospitalization Stress in School Ages. In the First Asia-Pacific Partnership on Health and Nutrition Improvement (Aphni) Conference; ??? p. 84.
10. Ranjan A, Tandon A, Through Lrs AB, Bapuji AS. Commissioner Central Excise, Delhi V. M/s. Ace Auto Company Ltd., in 1101. *Shamshunnisa & Etc vs Additional Chief Sec. & Ors 1062 Anjani Molu Dessai vs State Of Goa & Anr* 997. 2010

How to cite this article: Jadhav P. A Study to Assess the Effectiveness of Snake and Ladder Game on Knowledge of Malnutrition among Schoolers in Selected School of Navi Mumbai. *Int J Nurs Med Invest*. 2020;5(1):6-10.