

Effectiveness of Snake & Ladder Game on Knowledge and Attitude regarding Personal Hygiene among School Children in Selected Rural Schools at Mangalore

Sumasree¹, Sujatha R²

Abstract

In a Karnataka, a school survey of 1st to 5th standard students between the age of 6 and 12 years was conducted to assess the impact of snake & ladder game on their understanding and practice of hygiene. Amongst the selected students, 76.65 percent had disorders of skin and its appendage due to lack of personal hygiene. Nevroid conditions were seen in 21.96 percent students. Communicable dermatoses were noted in 19 percent students and nutritional deficiencies were seen in 6.71 percent students. The students were made to practice the snake & ladder game. The post-test revealed that the snake & ladder game helped students develop better understanding of concept of hygiene.

India is the second most populous country in the world, with over 1.34 billion (1,349,398,487) population (696 million male and 652 million female). Out of it, half is between 10-25 years. The health habits of school children regarding personal hygiene, nutritious diet, clean surrounding, exercise, rest and recreation, if inculcated at an early age, remain with person throughout life and help to develop as healthy citizens. School is the best place for giving health education on health-related topics. Personal hygiene is important in every stage of life, but cleanliness habits start in childhood. Kids who learn what it is and how to follow proper hygiene practices will usually carry that into adulthood. Hygiene education starts with the family and eventually youngsters can follow cleanliness rules on their own.

With a view to making learning effective as well as interesting, various media and materials should be used in schools. They should be less expensive and easily available. Education and entertainment can be well integrated through their use and children's learning can be joyful activity. It has been confirmed that play-way method enables the teacher to teach effectively and pupils to learn efficiently.

'Snake & Ladder' is a very simple childhood racing board game played among children, its see-sawing nature makes it popular. The game does not need any specific skill to play. It gives a very relaxed feel throughout the game.

The authors are: 1. MSc Nursing student, 2. Professor and Head, both at Nitte Usha Institute of Nursing Sciences, Paneer, Derlakatte, Mangalore (Karnataka).

UNESCO conducted a pilot study project in "games and other experimental activities for teaching of science to children". Almost every one likes to play and such a desire continues throughout one's life. Psychologists say that play is not just a filling in of an empty period, or just a relaxation or leisure activity, but it is an important learning experience. Snake & ladder is a popular board game for children in many countries of the world. It is easy to make from basic materials and can be adopted to suit many learning situations. Snake & ladder can also assist in developing basic arithmetic skills such as counting and also improve communication.

In the developing countries like India, due to poor hygienic practices the school-age children often experience increased burden of communicable diseases, that decreases their ability to attend school regularly and to learn their full potential, which affects their long term overall development.

Based on the literature investigations and experiences, investigators felt that, childhood is the best time for children to learn hygiene behaviours. Hence it was decided to study the effectiveness of snake & ladder game in terms of gain in knowledge and change in attitude regarding personal hygiene.

Objectives

The study was undertaken with the following objectives:

1. To assess the level of knowledge and attitude on personal hygiene among school children.

2. To find the effect of snake & ladder game on knowledge regarding personal hygiene among school children.
3. To find out the association between pre-test knowledge and attitude with selected demographic variables.

Conceptual Framework

The conceptual frame work of the present study was developed by the investigator based on modified Imogene King's Goal Attainment Model (1981). This model focuses on interpersonal relationship between the client and the nurse in four phases (Fig 1).

Review of Literature

A study was conducted to determine the effectiveness of snake & ladder game on knowledge of common ailments among 60 primary school children in Bangalore, selected by purposive sampling. Around 75.3 percent had a good knowledge regarding dental caries and 42.5 percent had knowledge on worm infestation. The findings showed that the post-test knowledge scores were higher than the pre-test knowledge scores and the differences between the pre-test and post-test scores.

A pre-experimental study was conducted to analyse the influence of health education using snake & ladder educative game towards the knowledge and the attitude of choosing healthy snacks of 30 fourth graders in SDN Sawotratap III Gedangan Sidoarjo. The result showed that health education using snake & ladder educative game had significant influence to improve the knowledge ($p=0.00$) and attitude ($p=0.00$) in choosing healthy snacks.

An experimental study was conducted to determine the teaching of basic health concepts to school-age children and the effectiveness of an educational strategy based on traditional children's games among children from 9 to 11 years old. The study concluded that using games that include health and hygiene messages can be an alternative for teaching basic health concepts.

Methodology

Evaluative research approach and pre-experimental design was used in the present study conducted in two selected rural schools at Mangalore. Study population was the school children in the age groups 8-10 years. Out of 156 rural schools, two were selected through simple random sampling. From the selected schools 100 students between the ages 8 to 10 years were selected randomly. Children who were having difficulties in visual acuity, chronic illness and behavioural problems were excluded. The data col-

lection instruments had three parts.

Tool I - Demographic Proforma (7 items)

Tool II - Knowledge questionnaire on personal hygiene (29 questions)

Tool III - Attitude scale on personal hygiene (23 items)

Data Collection Process

Formal written permission was obtained from the Block Educational Officer, Mangalore and also from the principals of both the schools. Consent from their parents and verbal consent from the students was taken. The purpose of the study was explained and confidentiality was assured to the participants. A pre-test was conducted using a structured questionnaire. Students were asked questions to fill the demographic proforma initially and then proceed to the knowledge questionnaire and attitude scale. The participants were divided into six groups, each group having six children in order to supervise correctly and conveniently. On the same day snake & ladder game was administered. The participants were re-assessed on the day 8 following snake & ladder game.

Results

Distribution of samples according to demographic characteristics: Most of the children ($n=38$, 38%) were in the age group of 9 years and 36 (36%) were second order in the family. Majority of children ($n=53$, 53%) were female and 36 (36%) had two siblings. Highest number ($n=53$, 53%) of children lived in joint family. More than half of the students' fathers (57%) and mothers (44%) had studied up to secondary education.

Fig 2 reveals that most of school children (86%) had average level of knowledge at the time of pre-test. At post-test almost 92 percent school children had good level of knowledge on personal hygiene.

Item wise knowledge on personal hygiene:

Concept of personal hygiene: During the time of pre-test only 9 percent of children were aware that, "personal hygiene practice will help to keep our body clean and healthy", the number tremendously increased by 82 percent.

Care of scalp and hair: At pre-test nearly 55 percent of children were aware about "sharing of comb and towel causes spreading of infection" and in post-test 81 percent had knowledge regarding the same.

Care of eyes and ear: During the pre-test only 49 percent of children knew that "if excess ear wax we have to consult a doctor", after intervention the number increased by 92 percent.

Oral hygiene: At pre-test only 15 percent of the chil-

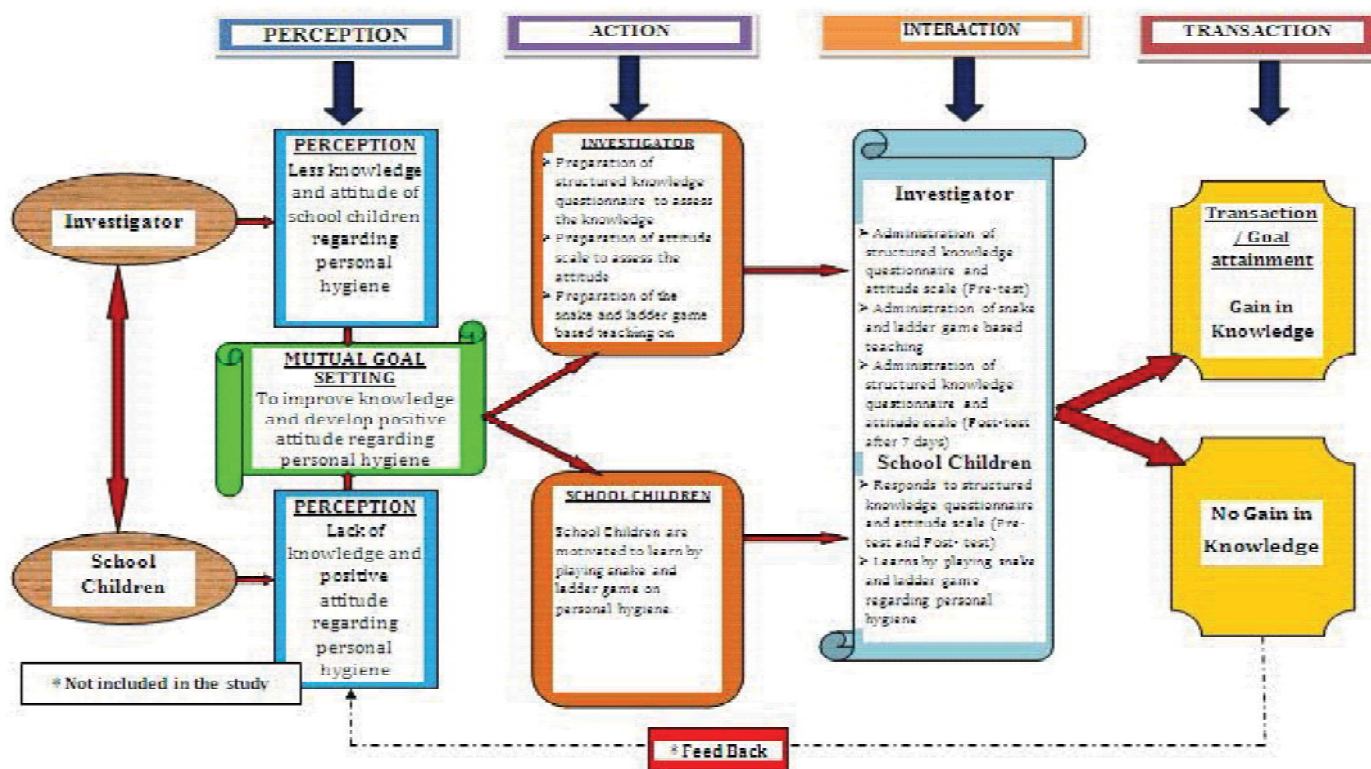


Fig 1: Conceptual framework based Modified Imogene King's Goal Attainment Model (1981).

dren were aware that, “for healthy teeth fluoridated toothpaste is needed”. After the intervention through snake & ladder game on personal hygiene it increased by 62 percent.

Skin care: During pre-test “Scabies is caused by poor personal hygiene” was known only to 22 percent of children; after intervention the number increased to 75 percent.

Hand and foot care: During pre-test only 39 percent had knowledge regarding “hand washing using soap and water after defaecation will prevent faecal-oral route transmission of germs.” It increased by 72 percent during post-test after intervention on personal hygiene.

Nail care: “Trimming toe nails straight prevents ingrown toe nails” was known to 22 percent of students during pre-test and the percentage rose to 77 percent during post-test after intervention.

Cloth hygiene: Most of the children (77%) were aware that “using soap and water is the best way to remove dirt from clothes” in pre-test, and in post-test it increased by 90 percent after intervention.

Table 1 reveals that at the time of pre-test most of school children (54%) had neutral level of attitude towards personal hygiene which was increased to 85 percent positive level of attitude in the post-test .

Item-wise attitude on personal hygiene

- During pre-test, only 12 percent of children

strongly disagreed on “avoid hair washing daily” but after intervention it increased by 46 percent.

- “Taking bath after meals will increase digestion” was strongly disagreed by 22 percent of children during pre-test and after intervention it increased by 53 percent.
- Only 21 percent of children were strongly disagreed “using fingers rather than tooth brush” during pre-test and it was uplifted to 55 percent during post-test after intervention.
- During pre-test only 2 percent of children strongly disagreed “nail biting promotes blood circulation to nails” but after intervention it boomed to 56 percent.
- Only 10 percent of children strongly disagreed on “healthy diet will not makes healthy teeth” it tremendously increased by 52 percent during post-test after intervention.
- “Finger nails should be trimmed straight across” was strongly disagreed by 16 percent of children during pre-test and after intervention it increased by 43% in post-test.

Effectiveness of snake & ladder game on knowledge and attitude regarding personal hygiene among school children: In order to find significant difference between mean knowledge and attitude scores paired ‘t’ test was used. To test the significance, following hypothesis was stated.

Table 1: Distribution of participants according to the level of attitude on personal hygiene (n=100)

Level of attitude	Pre-test attitude scores		Post-test attitude scores	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Negative [22-51]	7	7	--	--
Neutral [52-80]	54	54	15	15
Positive [81-110]	39	39	85	85

Table 2: Difference between pre-test and post-test knowledge and attitude score

	Scores	Minimum	Maximum	Mean	SD	t value	p value
Knowledge	Pre-test	8	16	15.25	3.33	19.05	<0.001 HS ** (p < 0.05)
	Post-test	20	29	24.07	3.09		
Attitude	Pre-test	47	52	73.62	14.1	7.926	<0.001 HS ** (p < 0.05)
	Post-test	95	110	87.4	87.4		

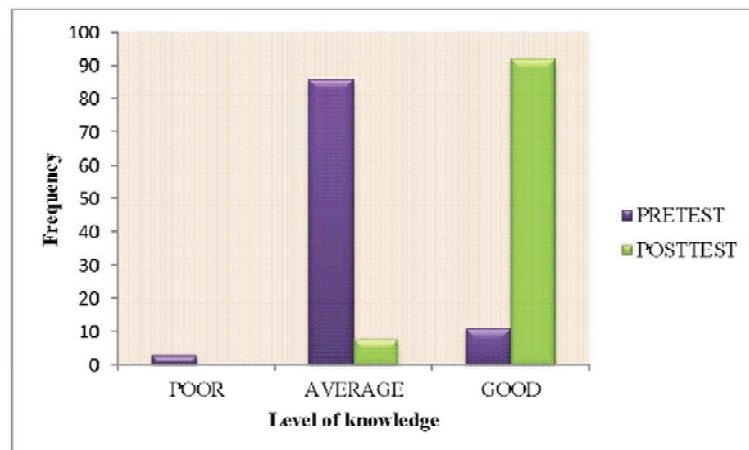
t₉₉ = 2; p < 0.05 = level of significance; HS ** = Highly Significant

H₁: There will be a significant difference between the pre-test and post-test knowledge & attitude score of school children exposed to snake & ladder game. In order to test the research hypothesis (H₁) null hypothesis (H₀₁) was formulated.

H₀₁: There will be no significant difference between the pre-test and post-test knowledge and attitude score of children exposed to snake & ladder game.

So it is evident that calculated 't' value is greater than the 't' table value (t₉₉=2) and p value is <0.05 for both knowledge and attitude at 0.05 level of significance. This shows a significant difference between the mean pre-test and post-test knowledge score as well as the mean attitude score. Hence, the research hypothesis (H₁) is accepted and null hypothesis (H₀₁) is rejected at 5 percent level of significance. So, the snake & ladder game is effective in improving the

Fig 2: Distribution of children as per level of knowledge regarding personal hygiene (n=100)



knowledge and attitude among children regarding their personal hygiene at 5 percent level of significance.

Association between the pre-test knowledge and attitude score of school children with selected demographic variables: There is no association between pre-test knowledge score and selected demographic variables. Hence the null hypothesis (H₀₂) is accepted and research hypothesis (H₂) is rejected at 5 percent level of significance.

Discussion

The findings of the present study were supported with one done to assess the awareness of hygienic practices in Government Raj Bhavan School, Hyderabad which shows that majority of the subjects (70%) had moderate awareness. A similar study on oral health-related knowledge, attitude, and practices among 12-year-old school children studying in rural areas of Panchkula showed that only 25 percent of subjects cleaned their teeth more than once in a day and had poor knowledge, attitude and practices.

Another study on effectiveness of puppet shows on knowledge regarding personal hygiene among primary school children at Bangalore also supports the present study where majority of the subjects (63.3%) had inadequate knowledge.

From the above findings it is concluded that knowledge level on personal hygiene among school children was average which can be due to poor parental instructions. The children were not aware about the consequences of poor personal hygiene and were simply following the traditional routine practices such as bathing daily, brushing etc.

There was significant difference between the mean pre-test and post-test knowledge and attitude scores, proving that the snake & ladder game is effective in enhancing knowledge and attitude regarding personal hygiene among school children.

The present study is supported by the study conducted in Mangalore on effectiveness of planned teaching programme on personal hygiene shows that the mean percentage of pre-test knowledge score was 49.45 percent with mean SD (19.74 ± 2.877) and mean post-test score was 79.9 percent with mean SD (31.96 ± 2.303). Our findings are also supported by a similar study in Mangalore on effectiveness of snake & ladder game on personal hygiene among school children revealing that after the administration of snake & ladder game the post-test knowledge score (23.66) was higher than the pre-test knowledge score (18.02) and the differences between

the pre-test and post-test knowledge score were statistically significant ($t_{49}=21.85$, $p<0.05$)

The above mentioned studies and the findings of the present study clearly show that the snake & ladder game is an effective strategy to improve knowledge and attitude on personal hygiene among school children; play way method is also helpful to increase children's spirit of co-operation. Play is always a better method to teach more effectively.

Nursing Implications

Nursing Practice

(a) Nurses working in paediatric wards should be keen observers of the hygienic status of the children and reduce the health problems due to poor personal hygiene. (b) Snake & ladder game on personal hygiene can be used on children at clinical settings, rehabilitation centres and community health centres for improving their knowledge on personal hygiene.

Nursing Administration

The administrator should take active initiative and develop practical information regarding personal hygiene in the hospital and community settings.

The nurse administrators have the responsibility to provide nurses with staff development opportunities and also adequate resources for the educational programmes.

Nursing Education

(a) Nursing personnel should be given in-service education to update their knowledge and various play way methods to promote personal hygiene; (b) Nursing students should be made aware of the importance of educating the public, parents and school children regarding importance of personal hygiene.

Nursing Research

(a) Nurses need to engage in multidisciplinary research so that it will help to improve their knowledge. They should take initiative to conduct research on health promotion of school children. (b) Nurse researcher can conduct research on "Games as an Alternative for Health Teaching" to improve the knowledge of children on various health aspects.

Recommendations

1. A similar study can be repeated on a larger sample for better generalisation of the findings.
2. A similar study can be conducted to assess the knowledge and attitude of (a) school children and (b) parents, on personal hygiene using time series design.

3. A qualitative study can be conducted with school children describing their experience and perceptions about personal hygiene.
4. A comparative study can be undertaken to compare the knowledge and attitude of school children regarding personal hygiene from rural and urban area.

Conclusion

Personal hygiene is important in every stage of life to decrease the rates of transmissible diseases. Good cleanliness habits started in childhood will usually extend to adulthood. Children are more receptive to learning and are very likely to adopt healthy behaviours at younger age. It has been confirmed by all that play-way method enables the teacher to teach effectively and pupils to learn efficiently.

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