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Game based approach for nutrition education

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Abstract

Nutrition education of people has been recognised as an important tool for promotion of nutritional status. It imparts knowledge about dietary requirements and food choices. Game based approach may be effective for imparting nutrition education; hence experiment was carried out with specific objectives to aware students about their dietary nutrients requirement and their sources. Carom is a popularly played game with family and friends and carom board game was modified and used. The game based approach was found effective to change in knowledge due to playing of developed educational carom. Difference in mean score was computed by paired 't' test, and it was significant at 0.05 level of probability, Hence concluded that the carom game was effective for imparting nutrition knowledge about food groups their sources functions, and recommended dietary allowances.

Keywords: Traditional, motifs, techniques, Bandhani

Introduction

A balanced diet provides all nutrients in required amount and proper portions. It can easily be achieved through a blend of basic food groups. Consumption of proper diet is a need of each stage of life for proper growth, development and healthy life. The major food issues of concerns are insufficient or imbalanced intake of food. The major nutritional problems in India are low birth weight, protein calorie malnutrition in children, chronic energy deficiencies in adults, micronutrient malnutrition and diet related non communicable diseases (ICMR, 2010) [5]. As per Census 2011, India, with a population of 121.1 Cr, has 16.45 Cr children in the age group 0-6 years and 37.24 Cr in the age group 0-14 years which constitute 13.59% and 30.76% of the total population respectively.

Nutrition education of people has been recognised as an important tool for promotion of nutritional status. It imparts knowledge about dietary requirements and food choices. Focused nutrition education using available resources and correcting dietary habits can ultimately improve iron intake (Reza and Maryam 2006) [9]. It appears feasible to educate students about healthy eating through play based educational methods rather than through prohibition or advice (Corbett and Lee 1992, Bartfay and Bartfay 1994).

Games are multi-dimensional structured entities that enable players to participate individually or in teams, in voluntary, competitive, physical or mental activities involving challenge and fantasy elements, following specific rules and restrictions in order to attain a goal - specified by the game itself and finally leading to a quantifiable outcome (Asgari & Kaufman, 2004; Charsky, 2010; Dempsey, Haynes, Lucassen, & Casey, 2002; Salen & Zimmerman, 2004; Zyda, 2005) [1, 2, 3, 8]. Previous game based approach was successfully involve, concentrate and increased the knowledge (S. Deshmukh 2017) [4]. Carom is a popularly played game with family and friends.

Learning, on the other hand, is an active process in which learners develop their own understanding by assembling facts, experience and practice (Jonassen, 1994). Thus, games have been suggested as potential learning environments because they have characteristics that are related to the way people learn, namely: activate prior knowledge, context, feedback and assessment, transfer, experiential, and social (Oblinger, 2004) [7]. Veronica Piziak *et al.* (2012) stated that this study was performed in a Texas Head Start population to evaluate a bilingual pictorial nutrition education game.

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Methodology

Educating children informally with the play way method may be effective. As they can enjoy playing as well as they gain knowledge about self-nutrition. Hence game-based approach was used with specific objectives to aware students about their dietary nutrients requirement and their sources and carom board game was modified and used.

Modified Carom

Traditional carom board has 19 pieces (Nine black, nine white and one pink). An experimental carom was designed, in which colour of carom pieces were modified. The carom pieces were coloured red as energy rich foods, yellow as body building foods, and green as protective foods. One piece was dark pink popularly known as Queen, most powerful carom piece, representing set of all essential nutrients. Locally available cheaper sources of the respective nutrient were painted on the piece of carom for example ber, guava, amla, drumstick leaves, etc. The game rules were finalised with prior trials. In each game session two to four players are required, before starting actual game the investigator explains purpose and game rules. When player strike the piece in hole, he has to read the content on that piece loudly and add at least two additional sources of the nutrient then only he win it, if failed he/she has to replace it on carom board. The winner has either to collect queen, or all coloured pieces in recommended amount (approx.) as per the Recommended Dietary Allowance (RDA) for their age group. The RDA for adolescent boys and girls was provided as reference while playing (ICMR 2010) [5].

Data Collection

The main object of the game was to sensitize the players about the dietary recommendation of nutrients and their

sources. The experiment was carried out in the village Shendgaon, district Amravati, Maharashtra. The 8 students from each class were selected on the basis of academic performance. Consecutive three games were played by each team. The non-participant observations were recorded for involvement of students and were played under supervision of the investigator.

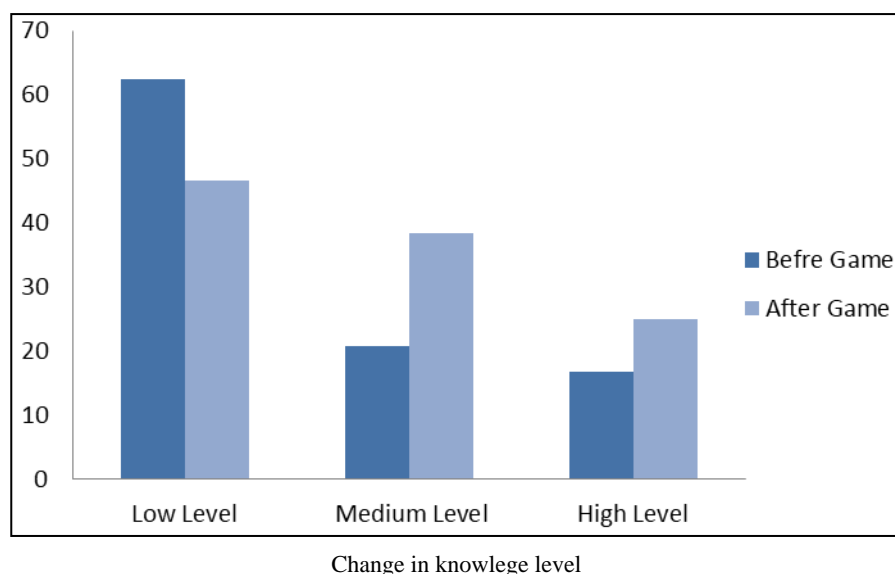
Knowledge is one of the impotent components to convert behaviour of an individual. For the present study, knowledge was operationlised as the information of the recommended nutrients and their source for examining knowledge of students about food group, the knowledge test was administered. Before introducing the nutrition game and immediately after finishing the game, knowledge test was employed to know change in knowledge.

Results and Discussion

The carom board game was designed and used for imparting knowledge about food groups and their sources functions and required amount for wellness of health.

The age of maximum respondents, 44.16 per cent was 10 to 12 years mean age was 13.5 yrs., studying in 5th to 6th std. and 30 per cent was were in 9th and 10th std. the previous year academic performance of 51 per cent students was very good followed by 30 per cent students had good academic scores. The mean time spent was 45.67 minute per game.

Knowledge index before playing game, 62.5 per cent were in low knowledge level and only 16.66 per cent were in high knowledge level. The mean knowledge score was 14.7, standard deviation 5.16. The mean knowledge score after playing game was 48.43 with SD 6.44. The knowledge level majority of students were improved. This improvement is due to active involvement and recalling, recognition and repetition of various foods and their functions.



Knowledge about recommended dietary allowances of nutrients was increased due to game. The rule of adding at least two names of the foods from same group motivate the students to recall and recognise foods and the colours of pieces were helpful to differentiate food groups and their specific functions for growth and development of individuals. The game based approach was found effective to change in knowledge due to playing of developed educational carom. Difference in mean score was computed by paired 't' test was significant at 0.05 level of probability, Hence concluded that the carom game was effective for imparting nutrition

knowledge about food groups their sources, functions, and recommended dietary allowances.

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