Effectiveness of Nutrition Education on Knowledge and Attitude of Adolescent Girls towards the Concept of Aesthetic Foods

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Abstract

Objective: To assess and compare the effectiveness of Nutrition education on the knowledge and attitude of adolescent girls towards the concept of aesthetic foods. **Methodology:** Quantitative approach. A quasi-experimental design was adopted to assess the effectiveness of Nutrition education on knowledge and attitude towards the concept of aesthetic foods among 150 adolescent girls selected by a convenient sampling method studying undergraduate courses at a selected College in the Coimbatore district. Nutrition education about the role of nutrition on aesthetics was administered and the level of knowledge and attitude was assessed by using a self-structured knowledge questionnaire and a 4-point Likert scale and the pre and post-test levels of knowledge and attitude were compared. **Results:** The research findings revealed that the post-test mean knowledge score of adolescent girls was 7.64 with an SD of 1.04 and their post-test mean attitude score was 30.22 with an SD of 3.57. The calculated paired 't' value (55.222 and 31.529) for knowledge and attitude shows that there was a high statistical difference at p<0.001. **Conclusion:** The results revealed that nutrition education on aesthetic dietary practices was an effective method of education in enhancing the knowledge and attitude towards the concept of aesthetic foods.

Keywords: Aesthetic Foods, Knowledge and Attitude, Nutrition Education

1. Introduction

Adolescence is the child's progress into adulthood in which individual ceremonies and utilization might play a significant role[1]. Young people become progressively mindful of their bodies through social pictures and the pictures might drive them towards unhealthy behaviours[2].

The craving to work on one's own body and look great has been a longing in humankind since the tribal days. Cosmetic items have a most unimaginable side. The chemical compounds utilized in beauty care products might cause side effects on the skin and may likewise enter the skin and different organs causing carcinogenecity[3].

Skin acts as a characteristic obstruction among inner and outer conditions and thus plays a significant role in vital biological functions. Nutrition has a critical

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impact on strengthening the skin's capabilities to fight against multiple aggressions such as mechanical/chemical harms, micro-living beings and ultraviolet damage[4].

1.1 Objectives

- To compare pre and post-test levels of knowledge and attitude of adolescent girls towards the concept of aesthetic foods.
- To assess the effectiveness of Nutrition education on the knowledge and attitude of adolescent girls towards the concept of aesthetic foods.
- To correlate the mean differed level of knowledge score with attitude score of adolescent girls towards the concept of aesthetic foods.
- To associate the selected demographic variables, lifestyle patterns with mean differed level of knowledge and attitude score of adolescent girls towards the concept of aesthetic foods.

1.2 Statement of the Problem

"A quasi-experimental study to assess the effectiveness of nutrition education on knowledge and attitude of adolescent girls towards the concept of aesthetic foods at selected college in Coimbatore district".

1.3 Alternate Hypotheses

AH$_1$: There will be a significant difference between pre and post-test levels of knowledge and attitude of adolescent girls towards the concept of aesthetic foods.

AH$_2$: There will be significant effects of nutrition education on the knowledge and attitude of adolescent girls towards the concept of aesthetic foods

AH$_3$: There will be a significant correlation between the mean differed level of knowledge score and with attitude score of adolescent girls towards the concept of aesthetic foods.

AH$_4$: There will be an association between the selected demographic variables, and lifestyle patterns with mean differed level of knowledge and attitude score among adolescent girls.

2. Methodology

A Quasi-experimental design and Quantitative approach were adopted to assess the effectiveness of Nutrition education on the Knowledge and Attitude of adolescent girls towards the concept of aesthetic foods. The independent variable of this study was Nutrition education and the dependent variables were knowledge and attitude. The study was conducted at Dr RV Arts and Science College, Karamadai, Coimbatore District and the study samples included 150 adolescent girls studying in Undergraduate courses I, II and III years and were selected by using a convenient sampling technique.

The study consisted of a data collection tool and an interventional tool.

Part A: The data collection tool included six sections. Section A consisted of demographic variables, Section B consisted of Lifestyle and dietary patterns, Section

Table 1. Assessment of knowledge

Content	No. of Questions
Concept of aesthetic foods	10

Table 2. Soring and interpretations of knowledge

Scores	Level of knowledge
≤50%	Inadequate knowledge
51-74 %	Moderately adequate knowledge
75-100 %	Adequate knowledge

Table 3. Assessment of attitude

	Strongly agree	Agree	Disagree	Strongly agree
Positive statements	4	3	2	1
Negative statements	1	2	3	4

Table 4. Scoring and interpretations of attitude

Score	Level of attitude
≤ 50%	Unfavorable attitude
51-74%	Moderately favorable attitude
75-100%	Favorable attitude

C consisted of factors related to aesthetics, Section D consisted of an Assessment of Nutritional status, Section E consisted of a self-structured knowledge questionnaire and Section F consisted of 10 attitude statements towards the concept of aesthetic foods.

Part B: The Interventional tool (Role of nutrition on Aesthetics) was administered which included a multimedia video teaching the concept of aesthetic foods covering the factors affecting aesthetics, foods to be avoided, foods to be included and the relationship between nutrients and aesthetics which lasted for 15 minutes. The demonstration of Body Mass Index (BMI) calculation took about 5 minutes. Reinforcement through pamphlets was given.

After the intervention, a post-test on the level of knowledge and attitude among adolescent girls on the 7th day was done. The data collected were analysed to identify the effectiveness of Nutrition education among adolescent girls.

The findings proved that Nutrition education effectively improved the knowledge and attitude of adolescent girls towards the concept of aesthetic foods with improvement in the mean level of knowledge and attitude of adolescent girls.

2.1 Ethical Consideration

Ethical approval was obtained from the Institutional ethical committee and formal approval was obtained from the Principal, Dr RV Arts and Science College, Karamadai

to conduct the study in the College. The researcher has followed fundamental ethical principles.

2.2 Statistical Analysis

Quantitatively collected data were analyzed by using descriptive and inferential statistics. Frequency and Percentage distribution were used to analyze demographic variables, lifestyle and dietary patterns, factors related to aesthetics and nutritional status. Paired 't' test was used to compare the pre and post-test levels of knowledge and attitude. Karl Pearson's coefficient correlation was used to correlate knowledge and attitude. ANOVA was used to find out the association of knowledge and attitude with selected demographic variables and lifestyle patterns of adolescent girls.

3. Results

Most of the adolescent girls, 94 (62.7%) were in the age group of 19 years, 78 (52%) were living in a rural area, 89(59.33%) belongs to the Hindu religion, 71 (47.4%) are studying Undergraduate second year and 93 (62%) living in a nuclear family, 43 (28.7%) participant's father had middle school education and 52 (34.7%) participant's mothers had primary education, 53 (35.3%) participant's fathers were self-employed/semi-skilled worker and 74 (49.3%) participant's mothers are a homemaker and 39(26%) had a family monthly income of Rs.18,497-Rs.30,830.

75 (50%) adolescent girls would perform physical activity and 75 (50%) adolescent girls would not perform any kind of physical activity, 55 (36.6%) participants do walking, 86 (57.4%) would have a sleep 5 to 8 hours per day, 88 (58.7%) would drink about 2-3 litres of water per day, about the type of diet, 95 (63.4%) were non-vegetarian and 80 (53.3%) participants would consume three meals per day, 104 (69.3%) participants do not skip breakfast, among 46 (30.7%) participants, who skip breakfast weight loss was the major reason for 19 (12.7%) participants.

104 (69.3%) adolescent girls had an opinion that they are perfect, 81(54%) had neither thin nor fat desired body image and 127 (84.7%) participants have not followed any dietary practices for the aesthetics of their bodies and the 23 participants who reported that they were following dietary practices for aesthetics mentioned that they were consuming milk and banana for weight gain, and amla to prevent hair fall regularly.

85 (56.67%) participants were between 30-50 kg in body weight, 93 (62%) participants were between 151-170 cm in height, 94(62.67%) participants BMI range were 18.5-24.9, and 118 (78.67%) participants had Waist Hip Ratio > 0.8.

Table 5. Food frequency pattern of adolescent girls

Food items	Daily	Weekly once	Weekly twice	Monthly once	Occasionally	Rarely	Never
Cereals and cereal products	Rice (100%)	Wheat (44.67%) Finger millet (32.67%)		Maize (31.33%) Pearl millet (26.0%)			Maida (43.33%)
Pulses	-	Chickpea (34.0%) Soybeans (34.67%) Horse gram (28.67%) Green gram (30.0%)	Blackgram dhal (36.67%) Redgram dhal (46.67%)	-	-	-	-
Green leafy vegetables	Curry leaves (41.33%) Coriander leaves (46.67%)	-	-	-	Mint (35.33%) Spinach (36.67%) Cauliflower (40%)	Broccoli (34.0%)	-
Other vegetables	-	Ladies finger (59.33%) Drumstick (51.33%) Pumpkin (44.0%)	-	Brinjal (42.67%)	Beans (48.0%)	-	-
Pulses	-	Chickpea (34.0%) Soybeans (34.67%) Horse gram (28.67%) Green gram (30.0%)	Blackgram dhal (36.67%) Redgram dhal (46.67%)	-	-	-	-
Roots and Tubers	Onion (91.33%)	Carrot (48.0%) Beetroot (46.67%)	-	Potato (24.0%)	-	-	-

Milk & Milk products	Milk (77.33%) Curd (45.33%)	-	-	-	-	Paneer (20.0%)	Cheese (24.0%)
Fruits	Banana (36.0%) Tomato (78.67%)	Apple & Guava (33.33%) Papaya (36.0%) Orange (29.33%) Grapes (29.33%)	-	Gooseberry (28.0%) Pomegranate (36.67%)	-	-	-
Nuts and Dry fruits	Badam (29.33%)	-	-	-	-	Pista (22.67%) Groundnut (30.0%)	Raisins & Dates (28.0%)
Meat, Poultry and sea food	-	Chicken (50.67%)	Egg (40.0%)	-	-	Butter (44.0%)	Mutton (40.0%)
Fats & Oils	Groundnut oil (52.67%) Coconut oil (50.67%) Ghee (25.33%) Refined oil (27.33%)	-	-	-	-	Butter (44.0%)	-
Sugars	Refined sugar (74.0%) Jaggery (33.33%)	-	-	-	-	-	-
Others	-	-	-	Junk & fast foods (27.33%)	Carbonated juices (28.0%)		

Table 6. Effectiveness of nutrition education on knowledge and attitude of adolescent girls

N=150

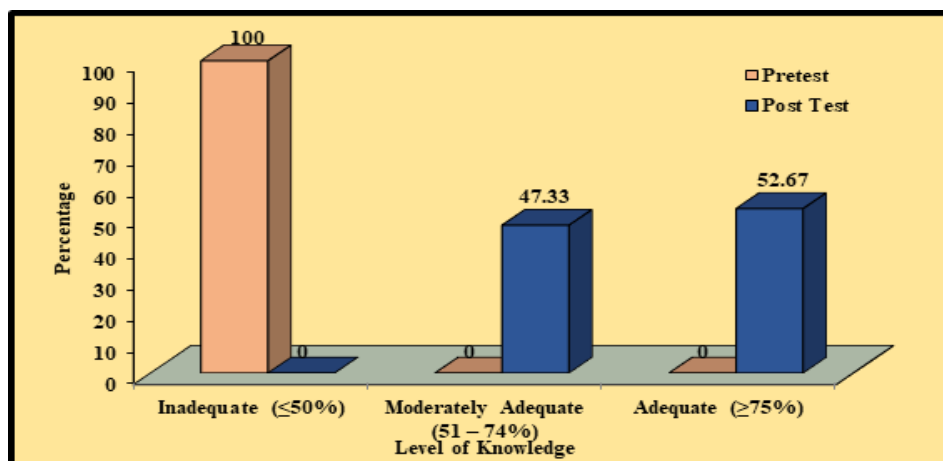| Variable	Test	Mean	S.D	Mean Difference	Paired 't' Test & p-value
Knowledge	Pre Test	2.28	0.91	5.36	**t = 55.222 p=0.0001, S*****
	Post Test	7.64	1.04		
Attitude	Pre Test	20.07	3.20	10.15	t = 31.529 p=0.0001, S***
	Post Test	30.22	3.57		

***p<0.001, S – Significant

Figure 1. Assessment and comparison of pre- and post-test level of knowledge of adolescent girls. N=150
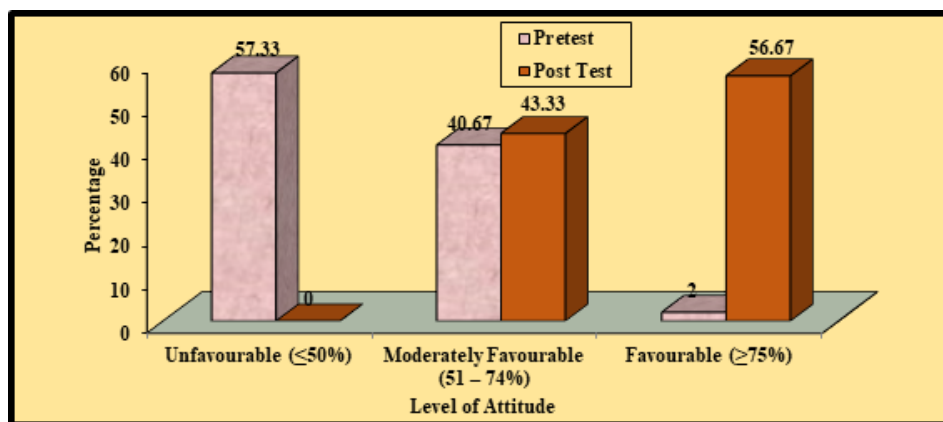

Figure 2. Assessment and comparison of pre- and post-test level of attitude of adolescent girls. N=150

93 (62%) participants do not have a sign of thin/depigmented hair, 81 (54.0%) girls do not have a sign of easily plucked hair, none of them have a sign of night blindness, 109(72.67%) girls does not have a sign of spoon-shaped nails, 139(92.67%) participants do not have a sign of transversed lines, 132(88.0%) adolescent girls do not have a sign of hyperpigmentation, 122(81.33%) girls does not have a sign of dry skin, 146(97.33%) girls does not have a symptom of bleeding gums, 126(84.0%) adolescent girls do not have a sign of loss of tooth enamel, 131(87.33%) adolescent girls does not have a sign of sore mouth and tongue.

The mean intake of energy was 1948.10 kcal/day, CHO was 129.27 g/day, Protein was 50.16 g/day, Fat intake was 32.77 g/day, Iron intake was 14.61 mg/day, and vitamin C was 30.43 mg/day.

Figure 1, 2 and Table 6 depicts the assessment and comparison of pre and post-test level of knowledge and attitude of adolescent girls towards the concept of aesthetic foods with paired t-test and it inferred high-level significant differences in knowledge and attitude at p < 0.001. Thus, Nutrition education towards the concept of aesthetic foods proved highly effective in improving the knowledge and attitude of adolescent girls.

The above Figure 3 depicts the association of selected demographic variables with mean differed knowledge score towards the concept of aesthetic foods among adolescent girls infers that there was more mean gain

Table 7. Correlation of the mean differed knowledge with attitude score of adolescent
girls   N=150

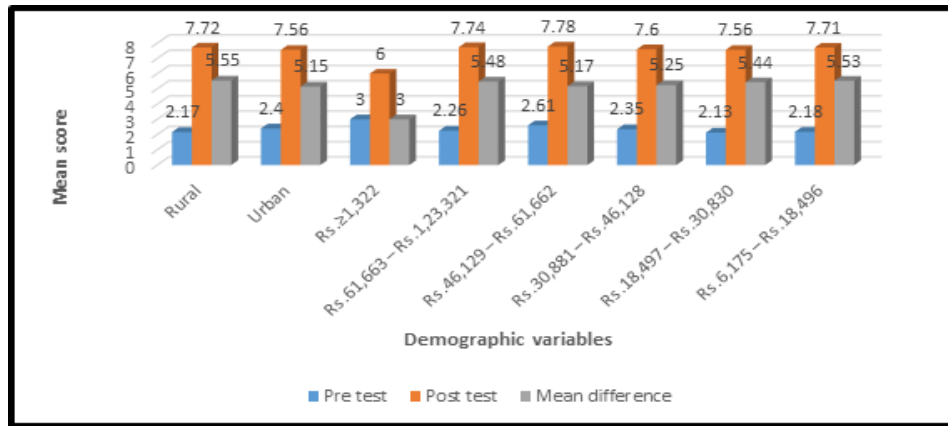| Test	Mean	S.D	Karl Pearson's Correlation 'r' value	Inference
Knowledge	5.36	1.19	r = 0.335 p=0.001, S***	Moderate positive correlation between knowledge and attitude
Attitude	10.15	3.94		

Figure 3. Association of selected demographic variables with mean differed knowledge.
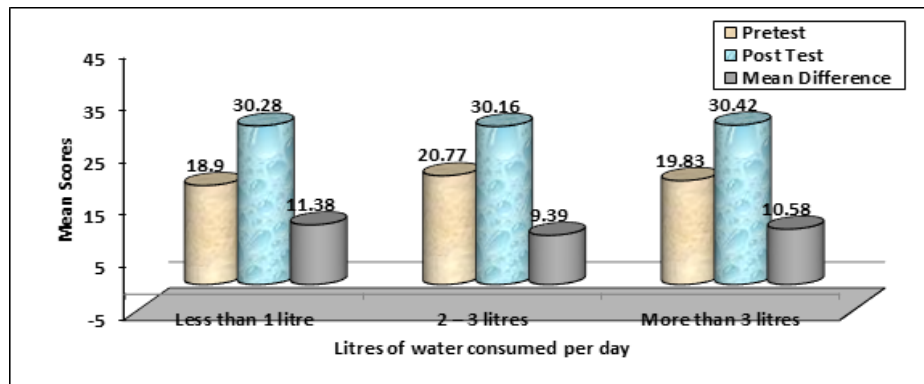

Figure 4. Association of selected lifestyle patterns with mean differed attitude.

score in knowledge in rural and family monthly income between Rs.6,175 – Rs.18,496

The above Figure 4 depicts the association of selected lifestyle patterns with mean differed attitude scores towards the concept of aesthetic foods among adolescent girls infers that there was more mean gain score in attitude in those who consume water less than 1 litre.

4. Discussion

The result clearly indicates that adolescent girls who received Nutrition knowledge had significant improvement in the level of knowledge and attitude with a more mean score.

The correlation of the mean differed knowledge and attitude scores was done using Karl Pearson's coefficient correlation and revealed that there was a moderate positive correlation between the knowledge and attitude scores of adolescent girls. Thus, Nutrition education has depicted that the improvement in the knowledge affected the enhancement of attitudes towards the concept of aesthetic foods among adolescent girls.

The adolescent girls who live in rural and whose family monthly income is between Rs.6,175-Rs.18,496 had shown more mean gain scores in knowledge and the adolescent girls whose water consumption pattern is about less than 1 litre had shown more mean gain scores in attitude. Thus, Nutrition education towards the concept of aesthetic foods was effective in enhancing the knowledge and attitude of adolescent girls.

5. Limitations

The investigator had difficulty in collecting National reviews related to aesthetic foods and also the investigator also had difficulty in obtaining setting permission from the institutions.

6. Conclusion

The study was aimed at assessing the effectiveness of Nutrition education on the knowledge and attitude of adolescent girls towards the concept of aesthetic foods.

Thus, the study findings state enriched evidence that Nutrition education was effective in enhancing the knowledge and attitude towards the concept of aesthetic foods.

7. Acknowledgement

8. Contributors

VS: Conceptualization of the study, data collection, data analysis, manuscript writing, finalized the manuscript and will act as the guarantor of the paper; **ER, SM, NG:** Conceptualization of the study, edited, critically evaluated and finalized the manuscript.

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