



International Journal of Nutrition and Agriculture Research

Journal home page: www.ijnar.com

<https://doi.org/10.36673/IJNAR.2021.v08.i02.A06>



FACTORS INFLUENCING CHILDHOOD OBESITY AND THE IMPACT OF VIDEO ASSISTED NUTRITION EDUCATION INTERVENTION ON 10-15 YEARS OLD

M. Pavithra^{*1}, J. Sumirthi¹, P. Priscilla¹

¹*Ganga College of Nursing, (Affiliated to the Tamil Nadu, Dr. MGR Medical University), Chennai, Tamil Nadu, India.

ABSTRACT

Aim and objective: Childhood obesity is one of the most challenging public health problems of the twenty-first century. In almost all countries, there has been a marked increase in childhood obesity prevalence over the past thirty to forty years. Both genetic and environmental factors contribute to a child's chance of being obese. This study assesses the factors influencing childhood obesity and the impact of video-assisted nutrition education intervention on 10-15 years old. **Materials and methods:** A cross-sectional study was conducted among 100 school children between the age of 10-15 years old. Purposive sampling technique was used to select the respondents. **Result:** The pre-test knowledge score of the respondents has the mean $\pm$ SD 2.62 ± 1.485 and in the post-test level of knowledge assessment, the subject's score has the mean $\pm$ SD of 5.617 ± 1.51 . The result was pre-test attitude assessment the score of the subject has the mean $\pm$ SD of 17.87 ± 2.024 and in the post-test level of attitude mean $\pm$ SD of 18.8 ± 1.968 . The data revealed that there was an increase in knowledge and attitude of the selected respondents after the nutrition education through the video-assisted program between pre and post-test assessment. The calculated value has the test of significance (t-value) which is less than 0.05. Hence it is concluded that the value obtained is highly significant. So, nutrition education imparted is more effective and useful to enhance the knowledge and attitude of the selected respondents.

KEYWORDS

Childhood overweight, Obesity, Knowledge, Attitude and Video assisted nutrition education intervention.

Author for Correspondence:

Pavithra M,
Ganga College of Nursing,
(Affiliated to the Tamil Nadu, Dr. MGR Medical
University), Chennai, Tamil Nadu, India.

Email: pavithramahes1999@gmail.com

INTRODUCTION

Childhood obesity is one of the most challenging public health problems of twenty first century. In almost all countries, there has been a marked increase in childhood obesity prevalence over the past thirty to forty years. There are both genetic and environmental factors which contribute to a child chance of being obese. Obesity is one of the leading risk factors for premature eat heach year. It was

linked to 4.7% a million deaths globally 8% of global deaths were attributed to obesity in 2017. One in five children and adolescents, globally are overweight¹.

Obesity during the childhood and adolescent period leads to health consequences currently and also increases the risk of obesity and its related complications in the latter part of life. Obesity may be associated with increased prevalence and early occurrence of diabetes mellitus, hypertension, coronary artery disease, orthopedic problems, mental disorders, and impaired quality of life².

Statement of the problem

Factors influencing childhood obesity and the impact of video assisted nutrition education intervention on 10-15 years old.

Objectives

To assess the level of nutritional knowledge and attitude among school children using a pre-test.

To evaluate the effectiveness of video assisted intervention on nutritional knowledge and attitude towards childhood obesity.

To determine the significant difference between pre-test and post-test levels of nutritional knowledge and attitude among school children on childhood obesity.

To associate the pre-test level of nutritional knowledge and attitude among school children with their selected demographic variables.

To associate the lifestyle changes with their selected demographic variables.

Null hypothesis

NH₁

There will be no significant association between pre-test level of nutritional Knowledge and attitude with demographic variables.

NH₂

There will be no significant association between behavioral and lifestyle changes with selected demographic variables.

Alternative hypotheses

AH₁: There is a significant difference between the pre-test and post level of nutritional knowledge and attitude among school children on Childhood obesity.

AH₂: There will be a significant association between the pre-test level of nutritional knowledge and attitude with demographic variables.

AH₃: There will be a significant association between behavioural and Lifestyle changes with selected demographic variables.

MATERIAL AND METHODS

A quantitative approach with the cross sectional study design was adopted in this study to assess the factors influencing childhood obesity and the impact of video assisted nutrition education intervention on 10-15 years old at Gobichettipalayam taluk. The sample for the study consists of children between the age group of 10-15 years old and the purposive sampling technique was used in this study. Total sample size was culminated to 100 in overweight and obese children between the age of 10-15 years old.

Description of the tool

The semi-structured questionnaire was prepared in both English and local language for collecting the data from the study sample. The tool consists of two sections.

Phase I: In phase I consisted of age, height, weight, BMI, family income, education of father and education of mother. (Anthropometric assessment, Clinical assessment, Dietary assessment).

Phase II: Depicts the nutritional knowledge and attitude on pretest and post test association between the respondents using the questionnaire.

Scoring and interpretation

Scoring key of nutritional knowledge

Consisted of 10 multiple choice items to assess the knowledge. Knowledge, each correct answer assigned score 'one' and 'zero' for the wrong. The total score was 10.

Scoring key of nutritional attitude

Consisted of 10 semi structural questionnaire to assess the nutritional attitude. 'Two' mark was allotted for the "sometimes" option, a 'three' mark was allotted for the "often" option, 'one' mark was allotted for "rare". Thus the maximum obtainable score was 30 marks.

Ethical consideration

The study objective, intervention, and data collection procedures was approved by the research and ethical committee of the institution. Informed consent was obtained from the overweight and obese children. The obese and overweight children was given the freedom to leave the study at their own will without assigning any reason. The benefits of video-assisted programme on childhood obesity was explained to the obese children involved in the study.

Statistical analysis

The data obtained through the questionnaire were coded, classified, and entered in to MS Excel sheets for further statistical analysis. Data recorded were analysed using SPSS version 21.0. Descriptive statistical techniques were used to provide a summary of data in the form of mean, median, and standard deviation for almost all the quantitative data.

RESULTS AND DISCUSSION

Among the 100 respondents, the majority of the population belongs to the age 13-15years (51%) and the remaining are aged between 10-13years (49%). According to the religious majority of children are Hindu (60%), Christian was (22%) and Muslim were (18%). The Family type of the informants was recorded in which majority of the family was nuclear (61%) and remaining are joint family (39%). Most of the fathers hold a certificate of middle school with (28%), followed by the graduate or post-graduate degree (25%), Only (19%) of them have completed high school and high secondary school and (18%) fathers were illiterate remaining (10%) held a professional degree.

According to the education of the mother majority of respondents are illiterate (28%) followed by high school and higher secondary school (26%). Only 24% held a degree in graduate and postgraduate and 18% professional degrees remaining are illiterate, Occupation of the head belongs to the majority of the respondents skilled workers, market sales, agricultural workers (35%) followed by technicians, associate professor, clerks (24%) and (20%) trade workers, machine operators and assemblers remaining were unemployed (12%). According to

family income majority of the respondents are held 10, 110-15, 159 income (10%) followed by 15, 160-20, 209 were (50%). Remaining are $\geq 40,430$ (20%).

Discussion

This chapter deals with the discussion part according to the results, obtained from statistical analysis based on the data of the study. The present study aimed to factor influencing childhood obesity and the impact of video-assisted nutrition education intervention on 10-15years old.

The first objective was to assess the pre and post level of nutritional knowledge and attitude among children. The data shows that among the 100 participants in the pre test 38(38%) had in adequate knowledge and 47(47%) had moderate knowledge and 15(15%) had adequate knowledge whereas the post-test level of knowledge scores shows a significant difference in 12(12%) had in adequate knowledge and 59(59%) had moderate knowledge and 29(29%) had adequate knowledge which shows that the video teaching program was effective.

Suparna Chakraborty *et al*, (2018) conducted study on that pre-test score of knowledge level among 60 respondents 48(80%) had in adequate knowledge, 12(20%) had moderately adequate knowledge and no subjects had adequate knowledge. After Planned Teaching Programme, 30(50%) had adequate knowledge, 26(43.33%) had moderately adequate knowledge and the remaining 4(6.67%) had inadequate knowledge. The post-test mean score was 19.70 with a standard deviation of 2.57, when comparing to the pre-test mean score of 7.44 with a standard deviation of 5.40, it was significantly higher and, which shows the Planned Teaching Programme was effective³.

The second objective was to assess nutritional knowledge and attitude among children. The data shows that before and after administration of video teaching program in the range 14, mean 3.0, standard deviation 1.314 and total mean percentage score was 10%, paired 't' value 17.674 was significant $p < 0.05$ level. It was evident that compared to the pre-test knowledge score there is a significant increase in the post-test level of nutritional knowledge scores.

Garggy Shaji *et al*, (2019) this study shows that 46.4% of adolescents had low knowledge on obesity, 46.9 have moderate knowledge, and only 6.7% of them had high knowledge on obesity. 24.6% of adolescents have negative attitude towards obese individuals, 68.2% had neutral attitude and only 7.3% had positive attitude towards obesity. As the age increases, there is increase in knowledge about obesity and positive attitude towards obese individuals⁴.

The third objective to assess participants in the pre-test had 12(12%), unfavorable attitudes and 70(70%) moderately favorable attitudes, and 18(18%) had favorable attitudes. The post-test level of attitude scores shows a significant difference in 5(5%) had unfavorable attitude and 57(57%) had moderately favorable attitude and favorable attitude 48(48%) which shows that video teaching program was effective. Study shows that before and after administration of video teaching program in the range 10, mean 0.283*, standard deviation 1.151 and total mean percentages core was 8.83%, paired 't' value 21.907* was significant $p < 0.05$ level.

Saskiyanto Manggabarani *et al*, (2020) this study showed that the value of nutritional knowledge and obesity in the control group (Mean=12.07; SD=1.44) was lower compared to the intervention group (Mean=13.50; SD= 1.99), but not statistically significant ($p = 0.523$).

Attitudes toward nutrition and obesity in the control group (Mean=11.50; SD=1.22) were lower than those in the intervention group (Mean = 13.00; SD= 1.78) and were statistically proven significant ($p = 0.008$).

The score of fast food consumption habits in the control group (Mean= 8.17; SD= 1.23) is lower than that of the intervention group (Mean=9.50; SD=1.17) and is statistically proven significant ($p < 0.001$)⁵.

The fourth objective to associate the Behavior and lifestyle characteristics of the children and their comparison with gender. There is a significant association between skipping meals ($p = 0.004953^*$) and outside foods ($p = 0.0001^*$). There is a significant association between physical activity ($p = 0.00057^*$) and outside foods ($p = 0.023585^*$) with their BMI. Hence alternative hypothesis was accepted when the null hypothesis was rejected. According to the data an association between Behavior and lifestyle characteristics of the children and their comparison with socio-economic status. There is a significant association between screening time ($p = 0.012122^*$) and skipping meals ($p = 0.1321^*$) with their socio economic status.

Scoring key of nutritional knowledge

Interpretation		
S.No	Interpretation	Knowledge
1	1-3	Inadequate knowledge
2	4-6	Moderate knowledge
3	7-10	Adequate knowledge

Scoring key of nutritional attitude

Interpretation		
S.No	Interpretation	Attitude
1	1-10	Unfavorable
2	11-20	Moderate favorable
3	21-30	Favorable

Table No.1: Percentage distribution of samples according to their pre and post-test level of nutritional knowledge among childhood obesity N=100

S.No	Level of nutritional knowledge				
	Scoring out of 10	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	Inadequate 1-3	38	38%	12	12%
2	Moderate 4-6	47	47%	59	59%
3	Adequate 7-10	15	15%	29	29%

Table No.2: Range, mean score, and standard deviation of pre-test and post-test level of nutritional knowledge and scores of the children among childhood obesity N=100

S.No	Knowledge domain	Maximum score	Respondents							
			Pre-test				Post-test			
			Range	Mean	SD	Mean %	Range	Mean	SD	Mean %
1	Knowledge	10	8	2.62	1.485	26.2%	6	5.617	1.51	56.17%

Table No.3: Standard deviation, range ‘t’ value regarding the level of table nutritional knowledge in before and after administration of video teaching program in school children N=100

S.No	Aspects of knowledge	Maximum score	Enhancement				Paired ‘t’ value	P value
			Range	Mean	SD	Mean%		
1	Knowledge	10	14	3.0	1.314	10%	17.674	P<0.05

5% level of significance

Table No.4: Percentage distribution of children according to their pre-test and post-test level of attitude among childhood obesity N=100

S.No	Level of attitude				
	Scoring	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	Unfavourable 1-10	12	12%	5	5%
2	Moderately favourable 11-20	70	70%	57	57%
3	Favourable 20-30	18	18%	48	48%

Table No.5: Range, mean score and standard deviation of pre-test and post-test level of attitude and scores of the school children among childhood obesity N=100

S.No	Attitude domain	Maximum score	Respondent							
			Pre-test				Post-test			
			Range	Mean	SD	Mean %	Range	Mean	SD	Mean %
1	Attitude level	30	8	17.87	2.02	59.56%	8	18.08	1.96	60.23

Table No.6: Standard deviation, range, ‘t’ value regarding the level of attitude in before and after administration of the video-assisted program in school children among childhood obesity. N=100

S.No	Aspects of attitude	Maximum score	Enhancement				Paired ‘t’ value	P value
			Range	Mean	SD	Mean%		
1	Attitude level	30	10	0.283	1.151	8.83%	21.907	P<0.05

5% level of significance.

LIMITATION

The study was limited to assess the effectiveness of video assisted nutrition education on nutritional knowledge and attitude among school children.

The study is limited to 60 days only.

CONCLUSION

The findings of the study concluded that knowledge about childhood obesity among school children were with moderate knowledge and negative attitude towards obesity. After administrated the video teaching program, found to be improved their nutritional knowledge and attitude among schoolchildren.

SOURCE OF SUPPORT

None

CONFLICT OF INTEREST

None declared

ACKNOWLEDGEMENT

The authors of this study gratefully acknowledged the help of the children who took part in this study, without whose contribution the present research would not have been completed and also thankful for public health department.

CONTRIBUTORS

PM: Conceptualization of the study, collection, analysis of the data, writing the manuscript, finalized the manuscript and will act as the guarantor of the paper; **SJ:** Conceptualization of the study, collection, analysis of the data, writing the manuscript, finalized the manuscript, **PP:** Edited and critically evaluated the manuscript.

BIBLIOGRAPHY

1. Anderson L N, Parkin P C, et al. Misclassification of child body mass index from cut-points defined by rounded percentiles instead of Z-scores, *BMC Res Notes*, 10(1), 2017, 639.

2. WHO. World Health Organization. Obesity, preventing and managing the global epidemic, *Report of a WHO Consultation on Obesity*, Geneva, 2020.
3. Suparna Chakraborty, Jeenath Justin Doss K. A study to assess the effectiveness of need based planned teaching programme on factors influencing childhood obesity among the mothers of school going children (6-12 years) in selected school at Rajkot, *Int. J. of Advances in Nur, Management*, 6(2), 2018, 140-142.
4. Garggysajji. A study to assess the knowledge and attitude towards adolescent obesity in private school Trissur district, Kerala, *J. of Community Medicine and Public Health*, 6(7), 2019, 3140.
5. Saskiyanto Manggabarani. The Effectivity of peer education module on knowledge, attitude, and fast food consumption in adolescents, *Journal of Health Promotion and Behavior*, 5(1), 2020, 35-42.

Please cite this article in press as: Pavithra M et al. Factors influencing childhood obesity and the impact of video assisted nutrition education intervention on 10-15 years old, *International Journal of Nutrition and Agriculture Research*, 8(2), 2021, 37-42.