(RESEARCH ARTICLE)

A study to assess the knowledge regarding obesity and its long-term complications among adolescents from selected higher secondary school, Udupi

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Abstract

Teenagers from a chosen higher secondary school in Udupi were asked to rate their awareness of obesity and its long-term consequences using descriptive research methods and a descriptive survey approach. A systematic, self-administered knowledge questionnaire was developed to evaluate adolescents' knowledge of obesity in light of the nature of the problem and to meet the study's aims. The validity and reliability of the tool were confirmed by interaction with guides and professionals in the fields of medicine and nursing. The study was carried out in the Udupi Christian English Medium School. 100 teenagers were chosen using the purposive sampling method. A structured knowledge survey was utilized to collect the data. Collected data was analysed by using descriptive and inferential statistics. The majority on the obesity spectrum, 16 (16%) and 84 (84%) of the teenagers had moderate knowledge scores. An examination of the adolescents' knowledge score on obesity by area reveals that the average knowledge score was 16.62, the mean percentage was 47, and the standard deviation was 3.186. Knowledge scores were significantly correlated with the chi square value of characteristics like family type. Additional factors include age, gender, birth order, religion, family income, parents' occupations and levels of education, nutrition, habit of consuming junk food, means of transportation to school, leisure activities, length of time spent watching TV, and length of time spent playing video games. Exercise, issues of any kind, family history of obesity, and personal history of obesity do not significantly correlate. Therefore, the hypothesis H1 is partially accepted. According to the survey, most teenagers didn't know much about obesity and its long-term effects. An incomplete statistically significant correlation was observed between the knowledge score of teenagers and demographic factors.

Keywords: Knowledge; Adolescents; Obesity and its long-term complications

1. Introduction

A child is one of God's wonderful creations. Healthy citizens are essential to the health of a country. A healthy child grows into a healthy adult. The child is the country's future citizen, and today's kids are its greatest resource for a healthy future.1. Maintaining life requires a healthy diet. Numerous studies have demonstrated that eating habits are formed early in infancy and typically persist into adulthood. As a result, what the kids consume today will definitely affect how healthy they are later in life. Promoting normal growth and development, preventing nutritional deficiency states, and aiding in the prevention of both acute and chronic illnesses are the goals of a healthy diet for children. Nutrition serves as both a basis and an input.2. Food, whether solid or liquid, provides growth, maintenance, repair, or reproduction materials and energy for the body upon swallowing, supply substances which normally regulate the production of energy or the process of growth, repair or reproduction.3Man has exhibited much thought and fore sight in cultivating variety of grains, foods, vegetables, nuts and oil seeds in rearing birds and animals for use as food. A

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balanced diet comprises of healthy and diverse foods is key to promoting good health.4.The World Health Organization reports that 155 million children aged 10-15 are overweight globally, with 1228 in India obese. Urban population quality of life has led to a significant increase in childhood and adult obesity. Identifying at-risk children and preventing obesity is crucial, with the term "overweight" often used due to its less stigmatizing nature.5School health nursing involves educating children about healthy practices during their early developmental stages, preventing adult disorders like smoking, alcoholism, and physical inactivity. Nurses assess knowledge, attitudes, and practices towards these risky behaviors and initiate measures to alleviate them.6

Objectives

- To assess the knowledge regarding obesity and its long-term complications among adolescents from selected higher secondary school, Udupi.
- To find out the association between knowledge scores of adolescents regarding obesity and its long-term complications and the selected demographic variables.

1.1. Assumptions

The study assumes that,

- Adolescents are vulnerable to obesity and its long-term complications.
- Adolescents may have some knowledge regarding obesity and its long-term complications.

1.2. Delimitations

The study will be delimited to the adolescents who,

- Studying in selected higher secondary school, Udupi.

1.3. Hypotheses

H1: There will be a significant association between knowledge regarding obesity and its long-term complications with selected demographic variables.

2. Methodology

2.1. Research approach

The research approach adopted for this study is descriptive survey approach to assess the knowledge regarding obesity and its long-term complications.

2.2. Research design

Descriptive design were used in this study

2.3. Research settings

Setting refers to the area where the study is conducted. The study was conducted in Christian English Medium School, Udupi District.

2.4. Population

This study focuses on adolescents at Christian English Medium School in Udupi District, as per Talbot's definition of a population with specific attributes to study.

2.5. Sample and sample size.

In this study samples were drawn by using non probability purposive sampling technique, the samples were adolescents and the sample size is 100.

2.6. Sampling technique

Perten's optimum survey sample is efficient, representative, reliable, and flexible, with 100 adolescents selected using non-probability purposive sampling technique.

2.7. Development of tool

The investigator developed a structured knowledge questionnaire to assess adolescents' understanding of obesity and its long-term complications, using a data collection tool that guides observations and measures data in a systematic and uniform manner.

2.8. Description of the tool

The tool for data is a self-administered questionnaire which consists of two parts.

- Part – A: consists of selected socio demographic variables such as age, education, gender, birth order, type of family, religion, family income, education of father and mother, occupation of father and mother, diet, practice of consuming junk foods, mode of transportation to school, leisure time activity, duration of watching TV, duration of playing games. Family history of obesity, personal history of obesity, any problems and exercise. This section consists of 24 items.
- Part – B: consists of structured knowledge questionnaire regarding obesity. This section consists of 35 items on introduction, definition, incidence, causes, risk factor, signs and symptoms, diagnostic evaluations, management and complications.

3. Results

- Section I

This section deals with the demographic characteristics of the sample.

- Section II

This section deals with the knowledge scores of the adolescents

- Part A: Overall knowledge scores of the adolescents.
- Part B: Area wise knowledge scores of the adolescents.
- Section III

This section deals with the findings related to association between knowledge scores of the adolescents with selected demographic variables of the study.

3.1. Section I

3.1.1. Demographic characteristics of the adolescents

Table 1 Distribution of frequency and percentage of adolescents based on their demographic characteristics N=100

Sl. No	Demographic variables	Options	Frequency (f)	Percentage (%)
1.	Age in years	13	35	35
		14	36	36
		15	25	25
		16	04	04
2.	Gender	Male	48	48
		Female	52	52

3.	Religion	Hindu	63	63
		Christian	13	13
		Muslim	24	24
		Others	00	00
4.	Class of study	8th standard	35	35
		9th standard	36	36
		10th standard	29	29
5.	Birth order	First	36	36
		Second	29	29
		Third	25	25
		Fourth & above	10	10
6.	Type of family	Joint	12	12
		Nuclear	88	88
7.	Family Income	Below Rs.25000/-	36	36
		Rs.25001-50000/-	24	24
		Rs.50001-100000/-	28	28
		Above Rs. 100001/-	12	12
8.	Education of father	No formal education	11	11
		Primary	10	10
		Higher secondary	15	15
		Graduation	62	62
		Post Graduation	02	02
9.	Education of mother	No formal education	22	22
		Primary	12	12
		Higher secondary	15	15
		Graduation	47	47
		Post Graduation	04	04
10.	Occupation of father	Government	24	24
		Private	36	36
		Self-employed	28	28
		Daily wages	12	12
11.	Occupation of mother	Government	10	10
		Private	26	26
		Self-employed	24	24
		Daily wages	12	12
		Home maker	28	28
12.	Diet	Vegetarian	12	12
		Non vegetarian	48	48

		Mixed	40	40
13.	Practice of consuming fast & junk foods	Yes	92	92
		No	08	08
14.	Mode of transport to school	By walk	13	13
		By vehicle	75	75
		By cycle	12	12
15.	Leisure time activity	Reading books	13	13
		Listening music	22	22
		Playing games	28	28
		Watching TV	25	25
		Sleeping	12	12
16.	Duration of watching T.V on week Days	About 1 hour	12	12
		2 hours & above	88	88
17.	Duration of watching T.V on Holidays	Less than 3 hours	12	12
		More than 3 hours	88	88
18.	Duration of playing games in the mobile or computer per day	About 1 hour	10	10
		2 hour	15	15
		3 hours & above	75	75
19.	Family History of Obesity	Yes	68	68
		No	32	32
20.	Personal history of Obesity	Yes	11	11
		No	89	89
21.	Type of Problem	Chest pain	05	05
		Joint pain	06	06
		Breathing difficulty	07	07
		Hypertension	02	02
		No problem	80	80
22.	Are you doing exercise	Daily	06	06
		Regular	22	22
		Irregular	72	72

3.2. Section II

This section deals with the knowledge scores of the adolescents Part A: Overall knowledge scores of the adolescents.

Table 2 Distribution of the knowledge score regarding obesity N=100

SL.NO	Overall knowledge	Frequency (f)	Percentage (%)
1	POOR KNOWLEDGE	84	84
2	MODERATE KNOWLEDGE	16	16

3	ADEQUATE KNOWLEDGE	-	-
TOTAL		100	100

According to Table-2, majority 84 (84%) adolescents had poor knowledge score and 16 (16%) adolescents had moderate knowledge score on obesity.
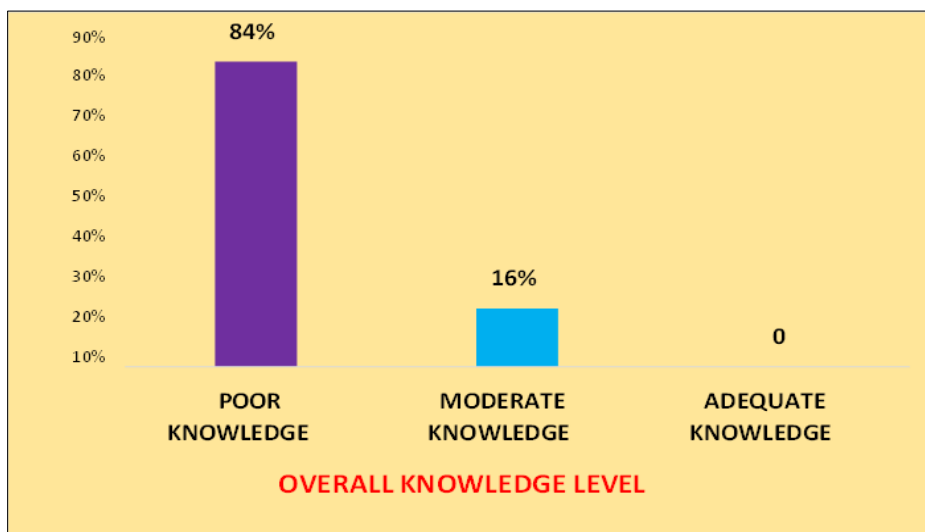

Figure 1 Bar diagram representing percentage distribution and number of subjects based on overall knowledge level regarding obesity

Part A

Area wise knowledge scores of the adolescents.

Table 3 Area-wise analysis of knowledge scores regarding obesity N=100

Sl.no	Area	Maximum score	Mean	Mean percentage	Standard deviation
1	General information about obesity	05	2.15	43	0.957
2	Causes of obesity	09	4.98	55	0.816
3	Prevention & control of obesity	11	5.29	48	0.577
4	Complications	10	4.20	42	0.836
TOTAL		35	16.62	47	3.186

The table 3 shows area-wise analysis of knowledge score of adolescents regarding obesity shows that overall knowledge mean was 16.62 and mean percentage was 47 with standard deviation of 3.186

3.3. Section III

Table 4 Association between knowledge scores and demographic variables of the study. Table 4: Distribution of the samples on association between knowledge score and selected demographic variables N=100

Demographic Variables	Options	f	%	< median	> median	Chi square value	P value	Remarks
Age in years	13	35	35	21	14	0.443	0.931	NS

	14	36	36	23	13			
	15	25	25	15	10			
	16	04	04	3	1			
Gender	Male	48	48	30	18	0.009	0.921	NS
	Female	52	52	32	20			
Religion	Hindu	63	63	33	30	0.636	0.816	NS
	Christian	13	13	8	5			
	Muslim	24	24	15	9			
	Others	00	00	-	-			
Class of study	8th standard	35	35	21	14	0.383	0.825	NS
	9th standard	36	36	24	12			
	10th standard	29	29	19	10			
Birth order	First	36	36	22	14	0.617	0.892	NS
	Second	29	29	18	11			
	Third	25	25	14	11			
	Fourth	10	10	7	3			
Type of family	Joint	12	12	11	1	4.807	0.028	S*
	Nuclear	88	88	52	36			
Monthly income	Below Rs.25000/-	36	36	24	12	0.627	0.89	NS
	Rs.25001-50000/-	24	24	14	10			
	Rs.50001-100000/-	28	28	19	9			
	Above Rs. 100001/-	12	12	8	4			
Education of father	No formal education	11	11	8	3	0.934	0.994	NS
	Primary	10	10	6	4			
	Higher secondary	15	15	9	6			
	Graduation	62	62	42	20			
	Post Graduation	02	02	1	1			
Education of mother	No formal education	22	22	15	7	0.721	0.948	NS
	Primary	12	12	8	4			
	Higher secondary	15	15	9	6			
	Graduation	47	47	31	16			
	Post Graduation	04	04	2	2			
Occupation of father	Government	24	24	15	9	0.684	0.876	NS
	Private	36	36	21	15			
	Self-employed	28	28	19	9			
	Daily wages	12	12	7	5			
Occupation of mother	Government	10	10	6	4	0.356	0.852	NS
	Private	26	26	14	12			

	Self-employed	24	24	14	10			
	Daily wages	12	12	8	4			
	Home maker	28	28	19	9			
Dietary pattern	Vegetarian	12	12	8	4	0.329	0.847	NS
	Non vegetarian	48	48	29	19			
	Mixed	40	40	23	17			
Practice of junk food	Yes	92	92	67	25	0.389	0.532	NS
	No	08	08	5	3			
Mode of	By walk	13	13	9	4	0.65	0.722	NS
transporat	By vehicle	75	75	43	32			
	By cycle	12	12	7	5			
Leisure time activity	Reading books	13	13	8	5	0.54	0.969	NS
	Listening music	22	22	15	7			
	Playing games	28	28	20	8			
	Watching TV	25	25	16	9			
	Sleeping	12	12	8	4			
Watching TV in days	About 1 hour	12	12	9	3	1.123	1.289	NS
	2 hours & above	88	88	52	36			
Watching TV in holidays	Less than 3 hours	12	12	6	6	0.45	0.568	NS
	More than 3 hours	88	88	54	34			
Duration of playing games	About 1 hour	10	10	6	4	0.216	0.897	NS
	2 hour	15	15	9	6			
	3 hours & above	75	75	41	34			
Family history	Yes	68	68	39	29	0.036	0.848	NS
	No	32	32	19	13			
Personal history	Yes	11	11	7	4	0.03	0.86	NS
	No	89	89	59	30			
Type of problem	Chest pain	05	05	3	2	0.155	0.997	NS
	Joint pain	06	06	3	3			
	Breathing difficulty	07	07	4	3			
	Hypertension	02	02	1	1			
	No problem	80	80	45	35			
Exercise	Daily	06	06	3	3	0.497	0.622	NS
	Regular	22	22	15	7			
	Irregular	72	72	42	30			

Table value-3.87, df-1, $p < 0.05$; *S-Significant, *NS- Not significant

To see the association between the knowledge score with selected demographic variables, hypothesis is formulated and tested by using chi-square test.

The table 4 showed association of knowledge score with selected demographic variables. The variables such type of family had significant association with the knowledge scores. The other variables like age, education, gender, birth order, religion, family income, education of father and mother, occupation of father and mother, diet, practice of consuming junk foods, mode of transportation to school, leisure time activity, duration of watching TV, duration of playing games. Family history of obesity, personal history of obesity, any problems and exercise does not show any significant association. Hence, the hypothesis H1 is partially accepted.

4. Discussion

The findings of the study discussed under following headings:

4.1. Presentation of the data:

- Section I: This section deals with the demographic characteristics of the sample.
- Section II: This section deals with the knowledge scores of the adolescents
  - Part A: Overall knowledge scores of the adolescents.
  - Part B: Area wise knowledge scores of the adolescents.
- Section III: This section deals with the findings related to association between knowledge scores of the adolescents with selected demographic variables of the study.

4.1.1. Section I: This section deals with the demographic characteristics of the sample.

The study surveyed 14-year-olds, predominantly Hindu, Muslim, and Christian, from nuclear and joint families. The majority were self-employed, non-vegetarian, and consumed fast and junk food. Transportation to school was mainly by vehicles. Leisure activities included playing games, watching TV, listening to music, reading books, and sleeping. Most respondents had no problems, while 77% had breathing difficulties, 66% had joint pain, 55% had chest pain, and 22% had hypertension.

4.1.2. Section II: This section deals with the knowledge scores of the adolescents

Majority 84 (84%) adolescents had poor knowledge score and 16 (16%) adolescents had moderate knowledge score on obesity.

4.1.3. Section III: Association between knowledge with selected demographic variables

The second objective is to find out the association between knowledge scores of adolescents regarding obesity and its long-term complications and the selected demographic variables.

The study found a significant association between family type and knowledge scores, while other variables like age, education, gender, religion, income, and lifestyle did not show a significant association, indicating partial acceptance of hypothesis H1.

5. Conclusion

The study revealed that majority of adolescents had poor knowledge regarding obesity and its long-term complications. There was partial statistically significant association found between knowledge score of adolescents and demographic variables.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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