ASSESSMENT OF KNOWLEDGE ON CONTRIBUTORY FACTORS AND HEALTH RISK OF CHILDHOOD OBESITY AND ATTITUDE ON PREVENTION OF CHILDHOOD OBESITY AMONG PARENTS AT SELECTED URBAN PRIMARY SCHOOLS, WEST BENGAL

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Abstract

A descriptive survey was conducted for assessment of knowledge on contributory factors and health risk of childhood obesity and attitude on prevention of childhood obesity among parents at selected urban primary schools, West Bengal. The conceptual framework adopted for the study was based on Health Belief Model. A descriptive survey design was adopted. A stratified random sampling technique was used to select 100 samples. Khidderpore Milani primary school and Sarat Chandra Paul Girl's school (primary) was selected as the study setting. Data were collected using structured knowledge questionnaire and a structured five-point Likert Scale. The result revealed that 35 % of parents had very good knowledge and 46% of parents had high attitude in prevention of childhood obesity. A moderately positive correlation between knowledge on contributory factors and health risk and attitude on prevention ($r= 0.63$). There was a significant association between knowledge on contributory factors and health risk with type of family and level of knowledge of parents. The study had several implications in nursing practice, education, administration and research.

Purposes of the study

The primary goal of the study is to assess knowledge level of parents regarding contributory factors and health risk of childhood obesity, attitude of parents in prevention of childhood obesity among parents.

Objectives of the study

1. To determine the knowledge level of parents regarding contributory factors and health risk of childhood obesity.

2. To identify the attitude of parents in prevention of childhood obesity.

3. To find out the relationship among knowledge and attitude of parents regarding childhood obesity.

4. To examine the association of knowledge and attitude of parents on childhood obesity with selected demographic variables.

Research Methodology

Research Approach

Quantitative approach was adopted to conduct the study.

Research design

Descriptive survey research design was adopted in this study.

The schematic presentation of research design was presented in the next page.

Population

Population comprised the parents of children studying in class I to class IV, West Bengal

Sample

Parents of children studying class I to class IV at selected urban primary schools, West Bengal

Variables under the study

Research variable

• Knowledge regarding contributory factors and health risk of childhood obesity.

• Attitude on prevention of childhood obesity.

Demographic variables It includes age (in years), gender, type of family, number of family members, educational status, occupational status, monthly family income.

Setting of the study

For pilot study**-** Barisha Girls High School (Primary)

For final study**-** Khidderpore Milani Primary School and Sarat Chandra Paul Girl's School

Conceptual Framework

A conceptual framework is the both written and visual representation of the relationship between variables. The conceptual framework based on a literature review of existing studies and theories about the topic. The present study is based on the conceptual framework of "Health Belief Model".

The conceptual framework in the present study based on the "Health Belief Model" (Rosenstock's 1974 and Becker and my Maimen's) which established the relationship between the person beliefs and behavior. The model asserts that the perceived threat pretends by a health problem that influences a person's health behavior and it is also associated with actions aimed at reducing the threat and problem. This model is divided into 3 categories which include Individual perception, Modifying factors and Likelihood of actions.

Individual perception is the first component which includes perceived susceptibility and perceived threat of developing obesity among children related to lack of parent's knowledge about the causes of childhood obesity and the associated health risk related to early childhood obesity. For example, lack of knowledge about a child weight which indicating over weight or obesity and also about the nutrition, activity or physical exercise, rest and

sleep need to keep a child healthy and prevent obesity. Parents lack of knowledge about health complication associated with obesity, like cardiovascular, respiratory, renal, musculoskeletal complications etc.

Modifying factors are the modifying factors such as demographic variables, structural variables, cues to action. In the present study, demographic variables are age, gender, educational status, occupation, type of family, monthly family income.
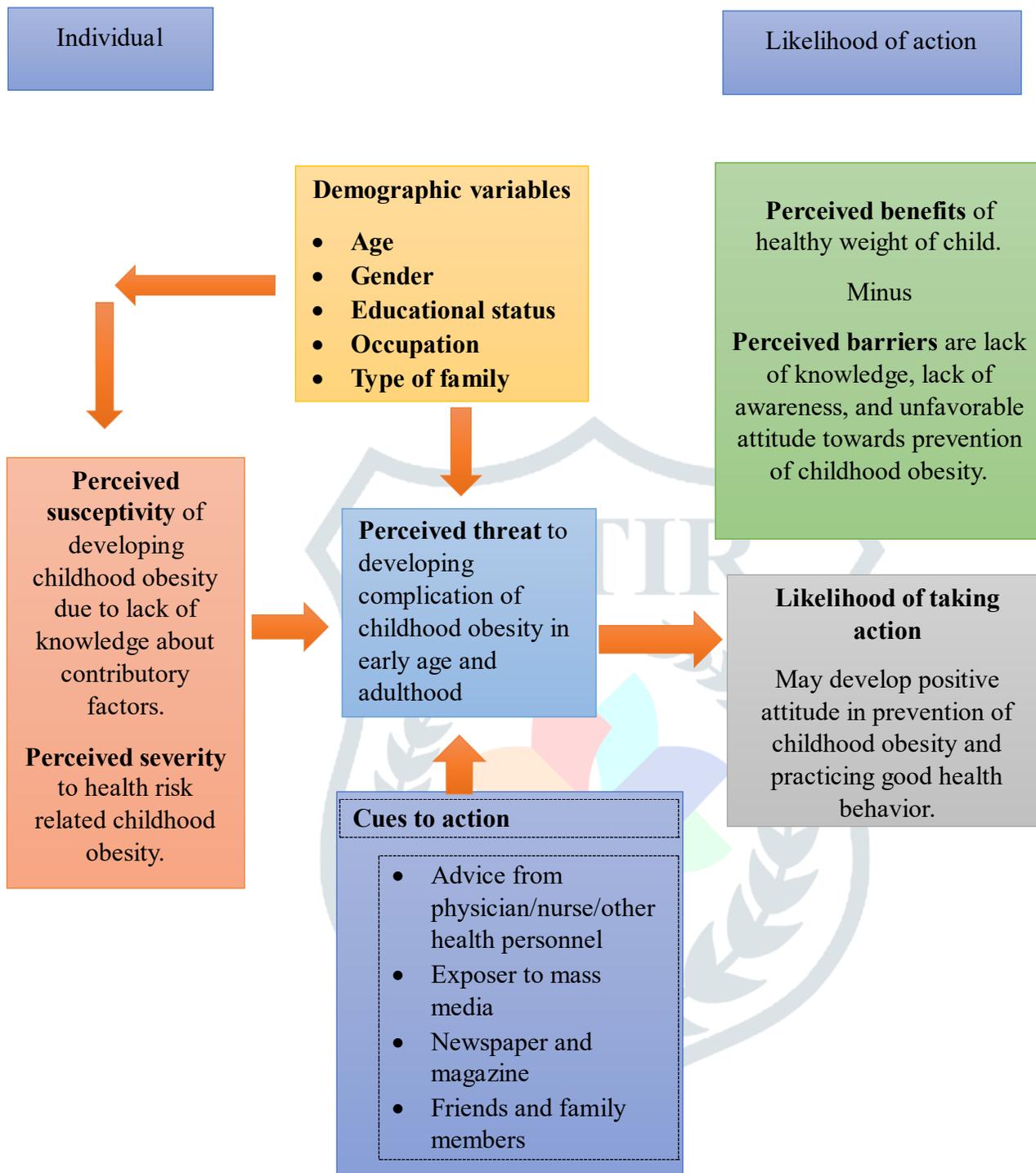
Structural variable includes knowledge on contributing factors and health risk of childhood obesity and attitude on prevention of obesity.

Cues to action is information related obesity prevention and taking advice from physician/nurse/other health personnel. Exposure to mass media, newspaper and magazine, friend and family members. The modifying factors help the parents to gain knowledge on cause and health risk associated with childhood obesity and developed positive attitude in prevention. Parents perceived threat to developing complication of childhood obesity.

Likelihood of action of the parents taking appropriate attitude in prevention of developing childhood obesity and its complication or health risks. They help the child to develop good health behavior.

A Perceived benefit of maintaining a healthy weight of the child by parents could help them to change their behavior. For example, if parents perceived childhood obesity is a disease and it is preventable by increasing knowledge, developing positive attitude and good health practice.

A Perceived barriers are in lack of knowledge, lack of awareness, and unfavorable attitude towards prevention of childhood obesity.

Individual

Likelihood of action

Demographic variables

- **Age**
- **Gender**
- **Educational status**
- **Occupation**
- **Type of family**

Perceived benefits of healthy weight of child.

Minus

Perceived barriers are lack of knowledge, lack of awareness, and unfavorable attitude towards prevention of childhood obesity.

Perceived susceptivity of developing childhood obesity due to lack of knowledge about contributory factors.

Perceived severity to health risk related childhood obesity.

Perceived threat to developing complication of childhood obesity in early age and adulthood

Likelihood of taking action

May develop positive attitude in prevention of childhood obesity and practicing good health behavior.

Cues to action

- Advice from physician/nurse/other health personnel
- Exposer to mass media
- Newspaper and magazine
- Friends and family members

N.B- --------------- Not included in this study

Figure 1 Showing Conceptual framework from health belief model of Ronsenstock, Strecher and Becker

Sample size calculation

Using the standard formula of power analysis sample size can be computed as

$N = Z^2 \times p(1-p)/E^2$ N = required sample size

Z= confidence level at 95% (standard value of 1.96)

p = estimated prevalence of childhood obesity in India

E = margin of error at 5% (standard value of 0.05)

p=6.2

N= (1.96) ² x0.06(1-0.06)/ (0.05)2 = 3.84 x 0.06 x 0.94/ 0.0025 = 86.63= 87

For final study-100 samples

For pilot study- 20 samples

Sampling technique

 Stratified random sampling technique was adopted for this study. parents of child studying in class I to class IV were selected as a sample.

Following steps were adopted by the researcher for development of stratified random sampling method for the present study

Data collection tool and technique:

Data collection is the most crucial and important aspects of collection of appropriate information, which provides necessary data to answer the question raised in the study

Table 1 Data collection tool and techniques

Sl. No	Variables to be measured	Name of tool	Technique
1.	Demographic variables	Structured interview schedule	Interviewing
2.	Knowledge about contributory factors and health risk of childhood obesity	Structured knowledge questionnaire	Interviewing

| 3. | Attitude on prevention of childhood obesity | Five point Likert scale | Interviewing |

Variables under the study

Research variable

- Knowledge regarding contributory factors and health risk of childhood obesity.

- Attitude on prevention of childhood obesity.

Demographic variables

- Age

- Gender

- Type of family

- Number of family members

- Education

- Occupation

- Family income/month

Section I: Findings related to demographic characteristics of parents.

Table 2 Frequency and percentage distribution of parents according to their age, gender and educational status

$n=100$ ($n_1=43$, $n_2=57$)

Variables	Fathers		Mothers	
	Frequency	Percentage	Frequency	Percentage
Age (in years)				
21-27	14	32.55	15	26.31
28-34	15	34.88	30	52.63
35-41	09	20.9	09	15.78
42-48	05	11.62	03	5.26
Educational status				
Illiterate	Nil		Nil	
Primary	03	6.9	11	19.29
Upper primary	15	34.88	13	22.80
Secondary	10	23.25	15	26.31
Higher Secondary	14	32.55	17	29.82
Graduate	01	2.32	01	1.75

Note: n_1-Father, n_2-Mother

Data presented in table 2 showed that majority (30; 52.63%) of the mothers and fathers (15;34.88%) belong to the age group of 28-34 years. Data also showed that maximum (17; 29.82%) of mothers completed higher secondary education and followed by (15;34.88 %) of fathers completed upper primary education.

Table 3 Frequency and percentage distribution of parents according to their occupation

$n=100$ ($n_1=43$, $n_2=57$)

	Fathers		Mothers	
Occupation	Frequency	Percentage	Frequency	Percentage
Business	10	23.25	01	1.75
Service	06	13.95	03	5.26
Labour	27	62.79	13	22.80
Home maker	Nil	-	40	70.17

Note: n_1-Father, n_2-Mother

Table 3 it is also observed that among parents' majority of mothers (40,70.17 %) were home maker and followed by (27;62.79 %) fathers were labour. Data also revealed that among the parents,(10;23.25 %) fathers had their own business.

Table 4 Frequency and percentage distribution of parents according to their type of family, monthly income and number of family members

n=100

Variables	Frequency, Percentage
Type of family	
Nuclear	65
Joint	31
Extended	04
Monthly family Income (Rs.)	
5000-10000	61
11000-16000	36
17000-22000	03
Number of family members	
1-3	38
4-5	48
6-7	14

Data presented in table 3 showed that maximum (65; 65 %) respondents belongs to nuclear family and majority (61;61%) parents had their monthly income of 5000-10000 and maximum (48;48%) parents had their 4-5 number of family members.

Table 5 Frequency and percentage distribution of parents according to their socioeconomical condition according to modified B.G. Prasad's socioeconomical scale (2022)

n=100

Socioeconomic scale	Frequency, Percentage
I (Upper class)	Nil
II (Upper middle class)	12
III (Middle class)	50
IV (Lower middle class)	37
V (Lower class)	01

According to modified B.G. Prasad's socioeconomical scale (2022), I-Upper class (>8217), II-Upper middle class (4109-8216), III- Middle class (2465-4108), IV- Lower middle class (1233-2464), V- Lower class (<1233).

Data presented in table 5 showed that majority (50; 50%) of parents belong to middle class and least of parents (1;1%) belongs to lower class as per modified B.G.Prasad's socioeconomical scale February 2022.

Section II Findings related to assessment of knowledge regarding contributory factors and health risk of childhood obesity.

Table 6 Distribution of maximum possible score, range, mean score, median and standard deviation knowledge of parents regarding contributory factors and health risk of childhood obesity

n=100

Variable	Range of score	Range of obtained score	Mean	Median	Standard deviation
Knowledge on contributing factors and health risk of childhood obesity	0-25	7-22	15.83	17	3.24

Data presented in table 6 indicated that the range of possible score was 0-25, range of obtained score was 7-22, mean knowledge score on contributory factors and health risk childhood obesity of the respondents was 15.83 ± 3.2and median was 17.

Table 7 Frequency and percentage distribution of parents according to their knowledge level on contributory factors and health risk regarding childhood obesity

n=100

Level of Knowledge	Range of Score	Percentage of score	Frequency, Percentage
Excellent	> 20	>80	03
Very good	18-20	71-80	35
Good	16-17	61-70	19

| Fair | 13-15 | 51-60 | 18 |
| Poor | ≤13 | ≤50 | 25 |

Maximum possible score =25

Minimum possible score = 0

Data presented in table 7 showed that majority (35; 35 %) of parents had very good knowledge regarding contributing factors and health risk related to childhood obesity.

Table 8 Domain wise distribution of mean score, mean percentage and rank of knowledge of respondents on contributing factors and health risk of childhood obesity

n=100

Domain	Maximum score	Mean score	Mean percentage	Rank order
Concept	2	0.87	43.5	4th
Nutrition	6	2.78	55.6	3rd
Activity and Rest	4	2.95	59	2nd
Health risk	13	9.23	71	1st

Data presented in table 8 indicated that the highest mean percentage (71%) score was in the area of knowledge on health risk followed by activity and rest (59%).

So, it explained that the maximum knowledge existed in this area regarding health risk associated with childhood obesity and maximum knowledge deficit was in the area of concept about childhood obesity.

Section III Findings related the attitude of parents in prevention of childhood obesity.

Table 9 Distribution of maximum possible score, range, mean score, median and standard deviation of attitude score of parents on prevention of childhood obesity

n=100

Variable	Range of Score	Range of obtained score	Mean	Median	Standard deviation
Attitude score on prevention of childhood obesity	10-50	26-48	37.67	38	5.49

Maximum possible score =10

Minimum possible score = 50

Data presented in table 9 indicated that the range of possible score was 10-50, range of obtained score was 26-48, mean attitude score on prevention of childhood obesity of the respondents was 37.67 ± 5.49 and median was 38.

Table 10 Frequency and percentage distribution of parents according to attitude on childhood obesity prevention

n=100

Attitude of parents	Range of score	Frequency and Percentage
Highly Favorable attitude	>38	46

Favorable attitude

	30-38	40
Unfavorable attitude	<30	14

Maximum possible score=50

Minimum score=10

Data presented in table 10 showed that majority (46; 46%) of parents had highly favorable attitude and followed by (40;40%) of favourable attitude in prevention of childhood obesity.

Section IV Findings showing relationship between knowledge on contributory factors and health risk of childhood obesity and attitude of parents.

Table 11 Findings showing relationship between knowledge on contributing factors and health risk of childhood obesity and attitude of parents in prevention

n=100

Variables	Mean	Median	SD	Correlation Coefficients (r)	t-value
Knowledge Score on contributory factors and health risk of childhood obesity	15.83	17	3.24		
				0.63	
					7.98
Attitude Score on Prevention	37.67	38	5.49		

$t_{0.001\ (99)}$=3.17

Data presented in table 11 depicted that r value between knowledge on contributory factors and health risk and attitude on prevention was 0.63 which indicating a moderately positive correlation between them.

The computed 't' value was found to the statistically significant as evident from table t value (3.17) at 0.001 level of significance, this showed that the obtained relationship was a true relationship and not by chance. It can be interpreted that increase level of knowledge enhances positive attitude among parents.

Section V Findings on the association of knowledge and attitude of parents on childhood obesity with selected demographic variables.

Table 12 Chi-square test o association between knowledge of parents with selected demographic variable n=100

Variable	Knowledge score			Chi square Value
	<Median	≥Median	Total	
Age (in year)				
21-35	40	40	80	0.16
36- 48	09	11	20	#
Total	49	51	100	
Gender				
Father	20	23	43	0.18
Mother	29	28	57	
Total	49	51	100	
Type of family				
Nuclear	24	41	65	10.83*
Joint	25	10	35	
Total	40	51	100	

$\chi2$ 0.05((1)=3.84　　# Yeates correction

Data presented in table 12 shows that the association between knowledge and age of the parents which is found to be statistically not significant.

Chi square test was computed to see the association between knowledge and gender of parents which is found to be statistically not significant.

Data of Chi square test also indicated that the association between knowledge and type of family of parents, which were found to be statistically significant at 0.05 level of significance. so, it can be concluded that knowledge of parents of the present study was associated with their type of family.

Table 13 Chi- square test association between knowledge of parents with selected demographic variables

n=100

Education	Knowledge score			Chi square Value
	<Median	≥Median	Total	
Up to secondary	38	26	64	
Above secondary	11	25	36	7.65*
Total	49	51	100	

χ^2 0.05((1)=3.84,

Data presented in table 13 showed that the association between knowledge and education of the parents which is found to be statistically significant at 0.05 level of significance. So, it can be concluded that knowledge of parents of the present study was associated with their education.

Table 14 Chi -square test association between attitude of parents and selected demographic variables n=100

Variables	Attitude score			Chi square Value
	<Median	≥Median	Total	
Age (in year)				
21-35	39	41	80	0.09
36- 48	09	11	20	#
Total	48	52	100	
Gender				
Father	21	22	43	0.02
Mother	27	30	57	
Total	48	52	100	
Type of family				
Nuclear	30	35	65	0.25
Joint	18	17	35	
Total	48	52	100	

$\chi 2$ 0.05((1)=3.84,p≤0.05 # Yeats correction

Data presented in table 14 showed that the association between attitude and age of the parents which is found to be statistically not significant.

Chi -square test was computed to see the association between attitude and gender of parents which is found to be statistically not significant.

Data also indicated that the association between attitude and type of family of parents, which is found to be statistically not significant.

Table 15 Chi- square test association attitude of parent and selected demographic variables

n=100

Education	Attitude score			Chi square Value
	<Median	≥Median	Total	
Up to secondary	31	33	64	
Above secondary	17	19	36	0.01
Total	48	52	100	

$\chi 2$ 0.05((1)=3.84,p≤0.05

Data presented in table 14 showed that the association between attitude and age of the parents which is found to be statistically not significant.

Discussion related to the other studies

Based on the present study and objectives of the study, a discussion has been made regarding the result obtained from other investigators.

Demographic variables

The findings also consistent with previous study of **Deepika, S. Rasiga , T. Sujatha (2021),** conducted a study to assess the knowledge of control of childhood obesity among mothers (120) of school-age children of 6-15years. The results revealed majority of respondent (81.4%) had moderate knowledge on childhood obesity.[35]

The present study is supported by previous study conducted **by Mohd Nor Shafina, Ariffien Abdul Rasyid et.al(2020),**families with higher household income, higher education of mothers and family history of obesity and type 2 diabetes had increased risk of higher BMI among their children.[31]

Finding related to knowledge of parents on contributory factors and health risk of childhood obesity

Discussion related to other studies

The present study is supported by previous study conducted by **Bariyyah Nur Khairul, Hatta Mohd, et.al (2018)** on 100 mother to assess knowledge, attitude and practices among mothers regarding childhood obesity. The study revealed the 23 to 87 mothers answered correctly on knowledge part.[31]

The findings is consistent with previous study of **Babela Robert Mabiala, Nika Evrard Romaric, (2016)** conducted a study on 254 parents to assess Knowledge, Attitudes, and Practices of Parents Facing Child and Adolescent Obesity. The result revealed that obesity-related knowledge was satisfactory in 83.5% of the cases, attitudes were correct in 29% of the cases, and the practices good in 25.6% of the cases.[39]

Finding related to attitude of parents in prevention of childhood obesity

The present study is supported by previous study conducted by **Chavan Ranjana, Ramesh Sharadha (2021)** to assess the attitude of the mothers towards childhood obesity. As per findings the respondents aware that obesity is serious health issue (60%), most of the samples are agreed for causative factors of Childhood Obesity. As per the findings 68 % respondents agreed for the advertisements of junk food attracts child to have junk/ fast food. More than half of the mothers aware about consequences of Childhood obesity whereas only 28% participants agreed for the skipping of the breakfast risk for obesity in children.[20]

The findings is consistent with previous study of **Arunachalam Samundeeswari, Kandasami Maheswari (2019)** performed a descriptive study carried out to assess the attitude of mothers about childhood obesity and its prevention. Among 120 obese children's mothers about 34.17% of mothers strongly disagree with obese children are healthy where as 28.17% of them agreed. Only 36.67% of mother's agreed that obesity is the major health problem.[2]

Finding related to relationship between knowledge and attitude

The present study is supported by previous study conducted by **NGT Mushonga, HA Mujuru, et.al (2021)** on 241 parents of preschool children to identify knowledge, attitudes and practices regarding overweight among preschool children. Result reviled that there was positive between knowledge and attitude score. [28]

Finding related to association of knowledge and attitude with demographic variable

The present study is supported by previous study conducted by **N.oswell, Byrne, et.al (2019),** to observe the FFE factor on parent's nutrition knowledge. Result showed that there was negatively associated with slowness in eating, low-income status. [40]

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