

<https://doi.org/10.33472/AFJBS.6.6.2024.1664-1674>



African Journal of Biological Sciences

Journal homepage: <http://www.afjbs.com>



Research Paper

Open Access

## Assessing the awareness about the harmful health effects of skipping breakfast among school going adolescents – A pre-experimental study

Mrs. Swati Chandrahas Kurane<sup>1</sup>, Ms. Jessica Mali<sup>2</sup>

1. Assistant Professor, Department of Medical Surgical Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli, Sangli Maharashtra
2. Clinical Instructor, Department of Medical Surgical Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli, Sangli Maharashtra

**Corresponding Author:** Mrs. Swati Chandrahas Kurane<sup>1</sup>

Volume 6, Issue 6, May 2024

Received: 09 March 2024

Accepted: 10 April 2024

Published: 20 May 2024

[doi:10.33472/AFJBS.6.6.2024.1664-1674](https://doi.org/10.33472/AFJBS.6.6.2024.1664-1674)

### ABSTRACT -

A pre-experimental study was conducted to assess the effectiveness of structured teaching programme on knowledge regarding harmful health effects of skipping breakfast among school children at selected schools of Sangli Miraj Kupwad corporation area. The objectives of the study were to assess the existing knowledge regarding health effects of skipping breakfast and to assess the knowledge score regarding health effects of skipping breakfast after structured teaching programme and to compare between the pre and post knowledge score regarding health effects of skipping breakfast. A quantitative study was conducted to assess the knowledge regarding health effects of skipping breakfast among school children at selected school of Sangli Miraj Kupwad corporation area. Total 100 samples were selected by simple random sampling method. A structured knowledge questionnaire of 11 item was administered to collect the data. r value of both the tools was greater than 0.7 and tool was considered as reliable. As the pre-test mean was 5.26 and post-test mean was 8.79, p value is 0.00001 it is highly significant as the p value is less than 0.05 therefore there is improvement in knowledge score of school children after plan teaching programme suggesting that the plan teaching programme was effective.

**KEY WORDS** -Knowledge, Planned Teaching programme, skipping breakfast.

## **INTRODUCTION –**

The provision of energy & nutrients throughout the days extremely important & breakfast has been considered an important dietary factor for energy regulation. Adolescence is an important period for the development of physical health. Regular breakfast consumption is important for ensuring healthy growth & development in adolescents. An international study found that irregular breakfast consumption rates ranged from 27.4% to 62.2% in adolescents<sup>1</sup>.

Adolescents who tended to skip breakfast were more likely to have lower levels of physical activity<sup>2</sup>. In children, skipping breakfast is correlated with higher levels of blood glucose, triglycerides and very low-density lipoprotein cholesterol<sup>3</sup>.

Skipping breakfast can affect school children physical and mental development. The main reasons for skipping breakfast in school children seem to be related to; Lack of time, Lack of morning appetite<sup>4</sup>.

Several studies have associated skipping breakfast with cardio metabolic risk factors such as obesity, high blood pressure, diabetes & metabolic syndrome. For the school children breakfast consumption is associated with large positive outcomes including better school attendance, academic performance, nutrient intake, fitness & appropriate body weight. On other hand missing breakfast has been associated with adverse effect on cognitive function, academic performance, school attendance, psychological function & mood in children<sup>4</sup>.

In the adolescent period lifestyle patterns are developed, including breakfast consumption<sup>5</sup>. Skipping breakfast is a common practice among university students, which has been shown in various studies, e.g., in Barbados, Grenada and Jamaica, 48.2% of females and 41.6% of males<sup>6</sup>, in Bahrain 50%, 47.7% in Turkey, and significantly increases the risk of overweight/obesity, cardio metabolic risk factors, type 2 diabetes and heart disease<sup>7-11</sup>. Most studies investigating the association between skipping breakfast and health compromising behaviours and mental health have been conducted with single health risk variables, among adolescents and in high-income countries<sup>12</sup>. There is particularly a lack of studies investigating the effect of skipping breakfast on multiple health risk variables among university students from low- and middle-income countries and across a number of countries, which prompted this study<sup>13</sup>.

## **BACKGROUND OF STUDY:**

Breakfast consumption is an important aspect of a healthy lifestyle, improving nutrient intake and providing energy for physical and cognitive function<sup>2,14</sup>. Breakfast skipping among children is associated with poorer school attendance and academic performance, reduced wellbeing, and unhealthy dietary and physical activity behaviors<sup>5,6,14</sup>, each of which continue to have adverse effects throughout the life course<sup>7,8</sup>. Breakfast consumption is associated with positive outcomes for diet quality, micronutrient intake, weight status and lifestyle factors. Breakfast has been suggested to positively

affect learning in children in terms of behaviour, cognitive, and school performance. However, these assertions are largely based on evidence which demonstrates acute effects of breakfast on cognitive performance. Less research which examines the effects of breakfast on the ecologically valid outcomes of academic performance or in-class behaviour is available. The effects of breakfast in different populations were considered, including undernourished or well-nourished children from different socio-economic status (SES) backgrounds.

Nutrients and energy during the day are necessary, and breakfast is taken as a significant dietary source for energy<sup>9</sup>. In students, the consumption of breakfast is proportional to many positive outcomes including; regular attendance and maintenance of body weight<sup>10</sup>. Additionally, all types of positive effects like enthusiasm, interest, energy level, mental alertness, joy, and will power increase sharply in the morning to noon period and is more prominent in regular breakfast eaters<sup>10</sup>. Breakfast also enhances the ability to focus and reduces failures in attention and cognition during the day especially in the case of multifaceted visual jobs<sup>15</sup>. According to some surveys, about 36% of adolescents skip breakfast<sup>16,17</sup>. Adolescence is a period of extreme physical, cognitive and psychosocial development therefore; there is a need of a balanced diet during period<sup>18</sup>. There is an increased prevalence of skipping breakfast observed in age < 25 year and this decrease with the increase in age<sup>19</sup>. The research proposes that adolescent have poor eating habits like skipping breakfast and taking snacks usually in mid-morning<sup>20</sup>. Skipping breakfast may have grave health problems as it is reported that there is an increased risk of heart disease in people who regularly skip breakfast<sup>14</sup>.

Skipping breakfast is related to adverse effects on class attendance, academic performance, emotional status and mood especially in the ages of adolescence<sup>16</sup>. Additionally skipping breakfast may reduce body energy for the duration of the day and it is difficult to compensate for this morning energy by taking nutrients for the rest of the day<sup>17</sup>. It is observed that breakfast skippers begin to ingest a diet higher in fats and have reduced intakes of vitamins and minerals in comparison to breakfast consumers, thereby enhancing the chances of getting gastrointestinal disease later in life<sup>18</sup>. Skipping breakfast means a decrease in carbohydrates in morning hours, which results in a low level of blood sugar (a good energy source). This may affect the ability to focus on work and performance of mental issues as well as a decrease in physical activity<sup>18</sup>.

Some studies relate the health of adolescent with breakfast consumption. It is noted that skipping breakfast is now becoming a regular habit of every age group and it usually starts from adolescence<sup>18</sup>. The current survey was conducted among nursing students of B.V.D.U. Con Sangli, with the aim of finding the factors associated with avoiding or skipping breakfast and the effects of health.

#### **PROBLEM STATEMENT:**

A study to assess the effectiveness of structured teaching programme on knowledge regarding health effects of skipping breakfast among school children at selected school of Sangli Miraj Kupwad corporation area.

### **OBJECTIVES:**

1. To assess the existing knowledge regarding health effects of skipping breakfast.
2. To assess the knowledge regarding after structured teaching program.
3. To compare between pre & post knowledge score regarding health effects of skipping breakfast.

### **HYPOTHESIS:**

H0: There will be no significant difference between pre & post knowledge regarding health effects of breakfast skipping.

H1: There will be significant difference between pre& post knowledge regarding health effects of breakfast skipping.

### **VARIABLES:**

#### Demographic Variables:

In this study, the demographic variables were age, gender, type of family, mostly used type of family, previous knowledge regarding health effects of skipping breakfast and if yes: sources of knowledge Magazine, Newspaper, Television, Internet etc.

#### Dependent Variable:

Knowledge regarding health effects of skipping breakfast.

#### Independent variable:

Planned teaching programme on health effects of skipping breakfast.

### **RESEARCH METHODOLOGY:**

Research approach: - Quantitative research approach.

Research design: - One group pertest, post-test research design.

Population: - A population of study is the children studying in selected schools.

Research setting: - Research study was done at Emmanuel school Sangli.

Sample: - In the study samples collected or participants are children studying in selected school in Sangli, Miraj and Kupwad Corporation area.

Sample size: - Total sample size is 100.

Sampling technique: - Simple random sampling technique was chosen.

Sampling criteria: -

- Inclusion criteria:
  - Age group of 12 to 15 years.
  - Those who understand English, Marathi, Hindi language.
- Exclusion criteria:
  - Whose parents not willing to give permission in study.

**Tool and technique:**

Tool: Structured knowledge questionnaire on health effects of skipping breakfast.

Technique: Simple random sampling technique was chosen.

Development of tool: Review of literature (text book, journal and website), personal consultation with guide, research coordinator, subject, experts.

Validation of tool: 20 experts did the content validity of the tool.

The experts were selected from various fields based on the topic i.e.

- Medical Surgical Nursing = 13
- Community Health Nursing = 2
- Child Health Nursing = 03
- Mental Health Nursing = 01
- Statistician= 01

**Reliability of tool:**

The test-retest method was used for the reliability assessment of questionnaire and the reliability coefficient was calculated as the correlation coefficient. The reliability coefficient of knowledge questionnaire was 0.85 which is more than 0.7 hence the tool was found to be reliable.

**Data collection process:**

- 1) Permission will be taken from Emmanuel school.
- 2) Select sample as per criteria.

- 3) Prior consent will be taken from student's parent.
- 4) Data will be collected by using structured questionnaire.
- 5) Administer planned teaching programme by power point presentation.
- 6) After 7 days post-test will be taken.

### Data analysis:

Descriptive statistics -

- Frequency and percentage distribution of demographic data
  - Frequency and percentage distribution of pre-test knowledge score and post-test knowledge score.
  - Comparison between the pre-test knowledge score mean and post-test knowledge score mean
- Inferential statistics – Paired 't' test was used.

### RESULTS –

**Table no.1 Frequency and Percentage distribution of demographic variables n= 100**

Variable		Frequency	Percentage
Age	12	5	5
	13	43	43
	14	32	32
	15	20	20
Gender	Male	53	53
	Female	47	47
Family type	Joint	36	36
	Nuclear	64	64
Previous knowledge	Yes	29	29
	No	71	71

### Demographic variables –

Baseline characteristics of the study participants are depicted in table no.1. Our study enrolled a total of 100 school aged adolescents with a mean age of 13.5 years, including 53 boys and 47 girls. Maximum students (64%) belong to nuclear families. 71% students had no previous knowledge about harmful effects of skipping the breakfast.

**Table No. 2 Pre test and post Level of knowledge –**

**n=100**

	Pre test	Post test

Level of knowledge	Frequency	Percentage	Frequency	Percentage
Adequate (0-6)	14	14%	88	88%
Inadequate (7-11)	86	86%	12	12%

Level of knowledge was assessed by structured questionnaire. The scores were recorded pre-test and post-test manner. For the assessment purpose the score range 0 to 11 divided into the two groups like, Inadequate (0-6 score) and Adequate (7-11 score). The table no.2 shows that, assessment of the knowledge regarding health effects of skipping breakfast among school children at selected schools.

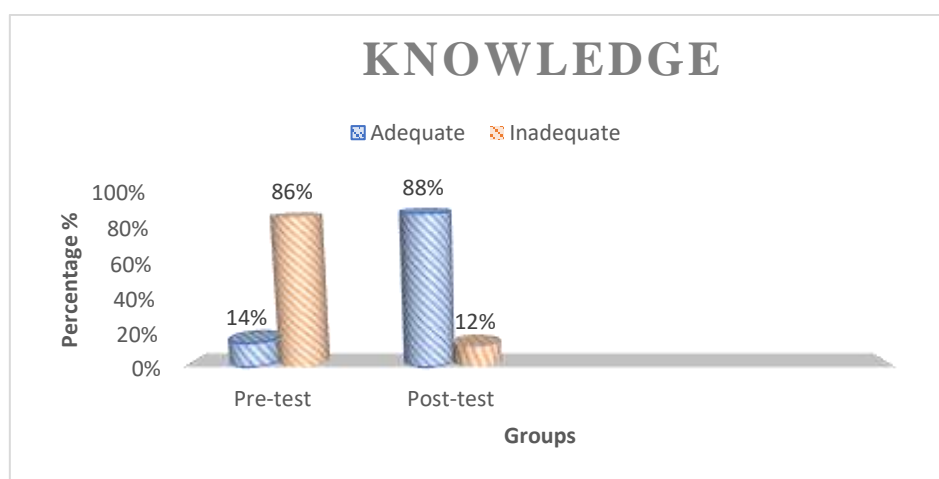


Fig.1 Bar diagram of Level of knowledge

Comparison of the pre-test and post- test knowledge-

Table no.3 shows the comparison of the pre-test and post-test knowledge scores. N=100

Level of knowledge	Mean	SD	t value	df	p value
Pre-test	5.26	1.32284	16.5772	99	0.00001
Post-test	8.79	1.65325			

From above pre and post-test mean score it is clear, there was significant increase in knowledge score regarding health effects of breakfast skipping after structured teaching programme.

The p value is 0.00001 which is less than 0.05. Which shows that there is significant increase in post-test knowledge.

## **DISCUSSION –**

Skipping breakfast was found to be associated with low energy levels, cognitive dysfunction and abdominal obesity in school children. The aim of this research was to assess the level of knowledge about skipping breakfast in adolescent school children in order to develop targeted preventive measures. We assessed the pre-existing knowledge by structured questionnaire, followed by a teaching program about detrimental effects of skipping breakfast. The post-test knowledge was assessed by the same questionnaire.

Significant number of children (86%) were not aware of the detrimental effects of skipping the breakfast. In fact, 50% of the children skipped breakfast on the day of evaluation itself. This highlights the importance of increasing the awareness among children and parents about breakfast skipping. Breakfast plays a positive role in maintaining a cognitive function among school children<sup>2</sup>. Timely breakfast fulfils the nutritional needs of adolescents during morning hours. Previous studies suggest that non breakfast skipper children have higher physical fitness levels and motor function skills compared to others<sup>1</sup>.

There is considerable evidence from systematic reviews for children and adolescents that eating breakfast is associated with a reduced risk of becoming overweight or obese and a reduction in body mass index (BMI)<sup>21,22</sup>. Skipping breakfast is correlated with higher levels of blood glucose, triglycerides and very low-density lipoprotein cholesterol<sup>23</sup>.

Our study demonstrated the need for increasing the awareness about breakfast skipping among children and parents, since most of the participants had inadequate knowledge. We also noted that, there were no gender related differences about level of knowledge among children.

Skipping breakfast is one of the modifiable influencing factors among adolescent schoolchildren. Interventions that influence the behaviours that are tailored to the identified target groups are necessary. Parents should be informed about the importance of healthy lifestyle and health-conscious behaviours. Apart from importance of regular breakfast sufficient physical activity, responsible media consumption and avoiding fast-food should be emphasised. Parents should be encouraged to demonstrate their own healthy breakfast habits to their wards as a role model. Thus, the parents should be involved to promote their child's health for the success of intervention. At school level, the teachers should check and induce the habit of regular and healthy morning breakfast on daily basis.

In our study, lack of time was the most common cause of breakfast skipping. It is a modifiable factor and efforts should be done at organisational level. Early school timings, long distance travel for



the school are some of the reasons contributing to lack of time. Total 64 children were from nuclear families with working parents. Botheration of reaching to office on time, dropping their child to the school in time are some of the common issues faced by the parents daily. Parents themselves may not be able to do daily breakfast which in turn is affecting their children. Rearranging the office and school hours to consider the breakfast skipping as an important health issue, should be done at organisational and policy maker level.

Some other factors are non-modifiable like difficult socioeconomic circumstances, single parenthood, migrating conditions, low family education level etc. Many of them are aware of the importance of healthy lifestyle however there is a lack of necessary resources to implement it. Such families with poor socioeconomic background need to be supported and provided with financial assistance for regular breakfast and healthy meals at school. Government is already running such schemes like mid-day meal in some states. The policy makers should extend their efforts at national level to provide such benefits to maximum number of families.

#### **CONCLUSION -**

Skipping breakfast is a major nutritional and developmental problem for school going adolescents. It has to be addressed with targeted interventions. Children, parents and school teachers should be involved in these interventions to promote health-conscious behaviours. Families with difficult socioeconomic conditions should be supported by government induced breakfast/meal programmes. Further policymakers should enhance the community support programmes nationwide to cope up with the breakfast skipping.

- **Funding: Self-funding**
- **Conflict of interest: No any conflict of interest.**
- **Acknowledgement: Authors are thankful to management team of BVPune & BVDU, Pune**

#### **REFERENCES –**

1. Hu J, Li Z, Li S, Li H, Wang S, Wang S, et al. Skipping breakfast and physical fitness among school-aged adolescents. *Clinics*. 2020;75: e1599. DOI: 10.6061/clinics/2020/e1599.
2. Wesnes KA, Pincock C, Scholey A. Breakfast is associated with enhanced cognitive function in schoolchildren. An internet-based study. *Appetite*. 2012; 59: 646–9.
3. Kesztyüs, D., Traub, M., Lauer, R. *et al.* Skipping breakfast is detrimental for primary school children: cross-sectional analysis of determinants for targeted prevention. *BMC Public Health* **17**, 258 (2017). <https://doi.org/10.1186/s12889-017-4169-z>.

4. Y. V. N. Durga, V. Chandrakala, Effectiveness of power point assisted teaching on knowledge regarding breakfast skipping among school children at a selected school, Hyderabad, Telangana, International Journal of Nursing Education and Research, 2022, Volume: 10, Issue: 3.
5. Blondin SA, Anzman-Frasca S, Djang HC, Economos CD. Breakfast consumption and adiposity among children and adolescents: an updated review of the literature. *Pediatric Obesity*. 2016; 11:333–48.
6. Lundqvist M, Ennab Vogel N, Levin L. Effects of eating breakfast on children and adolescents: A systematic review of potentially relevant outcome in economic evaluations. *Food Nutr Res*. 2019; 63: 1618.
7. Lynch JW, Davey-Smith G. A Life Course Approach to Chronic Disease Epidemiology. *Annu Rev Public Health*. 2005; 26 (1):1–35.
8. Hertzman C, Boyce T. How Experience Gets Under the Skin to Create Gradients in Developmental Health. *Annu Rev Public Health*. 2010; 31: 329–47.
9. Spence C (2017) Breakfast: the most important meal of the day? *Int J Gastron Food* 8:1-6
10. Sandercock GRH, Voss C, Dye L (2010) Associations between habitual school-day breakfast consumption, body mass index, physical activity and cardiorespiratory fitness in English schoolchildren. *Eur J Clin Nutr* 64: 1086-1092.
11. Gardner MP, Wansink B, Kim J, Park SB (2014) Better moods for better eating? : How mood influences food choice. *J Consum Psychol* 24: 320-335.
12. Scholey AB, Harper S, Kennedy DO (2001) Cognitive demand and blood glucose. *Physiol Behav* 73: 585-592.7.
13. Schusdziarra V, Hausmann M, Wittke C, Mittermeier J, Kellner M, et al. (2011) Impact of breakfast on daily energy intake - analysis of absolute versus relative breakfast calories. *Nutr J* 10: 1-8.

14. Rampersaud G, Pereira M, Girard B, Adams J, Metz J. Breakfast Habits, Nutritional Status, Body Weight, and Academic Performance in Children and Adolescents. *J Am Diet Assoc.* 2005; 105: 543–760.
15. Mahoney CR, Taylor HA, Kanarek RB, Samuel P (2005) Effect of breakfast composition  
Kant AK, Graubard BI (2006) Secular trends in patterns of self-reported food consumption of adult Americans: NHANES 1971-1975 to NHANES 1999-2002. *Am J Clin Nutr.* 84:1215-1223
16. Pendergast FJ, Livingstone KM, Worsley A, McNaughton SA (2016) Correlates of meal skipping in young adults: a systematic review. *Int J Behav Nutr Phys Act* 13: 1.
17. Ostachowska-Gasior A, Piwowar M, Kwiatkowski J, Kasperczyk J, Skop- Lewandowska A, et al. (2016) breakfast and other meal consumption in adolescents from southern Poland. *International J Environ Res Public Health* 13: 453.
18. Sakurai M, Yoshita K, Nakamura K, Takamura T, Nagasawa SY, et al. (2017) Skipping breakfast and 5 year changes in body mass index and waist circumference in Japanese men and women. *Obesity Science & Practice* 3: 162-170.
19. Piernas C, Popkin BM (2009) Snacking increased among US adults between 1977 and 2006. *J Nutr* 140: 325-332.
20. Timlin MT, Pereira MA (2007) Breakfast frequency and quality in the etiology of adult obesity and chronic diseases. *Nutr Rev* 65: 268-281.
21. Szajewska H, Ruszczyński M. Systematic review demonstrating that breakfast consumption influences body weight outcomes in children and adolescents in Europe. *Crit Rev Food Sci Nutr.* 2010;50(2):113–9.
22. de la Hunty A, Gibson S, Ashwell M. Does regular breakfast cereal consumption help children and adolescents stay slimmer? a systematic review and meta-analysis. *Obes Facts.* 2013;6(1):70–85.
23. Freitas Júnior IF, Christofaro DGD, Codogno JS, Monteiro PA, Silveira LS, Fernandes RA. The association between skipping breakfast and biochemical variables in sedentary obese children and adolescents. *J Pediatr.* 2012;161:871–4.