

# Breakfast Adherence and Factors Associated with Missing Breakfast among Students of JIPMER, Puducherry - A Descriptive Study

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## Abstract:-

**Introduction:** Breakfast is the first meal of a day. The word in English refers to breaking the fasting period of the previous night. While breakfast is commonly referred to as “the most important meal of the day.” Some epidemiological research indicates that having breakfast high in rapidly available carbohydrates increases the risk of metabolic syndrome. Present professional opinion is largely in favour of eating breakfast. Most of us skip breakfast for various reasons without being aware of its consequences. So the present study aims to assess the breakfast compliance and factors associated with breakfast skipping among students of JIPMER, Pondicherry.

**Methodology:** A cross sectional descriptive research design was used. The study included total 356 students studying in JIPMER. Convenient sampling technique was used. A validated semi-structure questionnaire was prepared to assess the breakfast compliance, and the behaviors leading to skipping of breakfast among the student of JIPMER. Sample size was calculated using Open-Epi version-3. Data collection was done within 3 days with coded sheets of samples.

**Results:** The present study revealed that only 9.8% participants have never skipped breakfast. 19.7% skipped 3 times in a week, 22.5% skipped twice in a week and 48.0% skipped once in a week. The students also understand the importance of breakfast in our everyday lives. 60.7% of sample revealed that having breakfast keeps them healthy while 29.5% admitted that breakfast helps them to pay more attention in their works and 9.8% revealed it did not help them. The factors that were associated with skipping of breakfast included: due to emotional reasons, non-availability of traditional foods, hindrance of environmental hygiene of dining area for those who resides in the hostel as well as getting up late. 51.4% sample revealed skipping breakfast due to getting up late, 28.9% due to disliking of food, 11.0% due to not feeling hungry and 8.7% did not skip due to any of the above-mentioned reasons.

**Conclusion:** One time study was conducted among 356 students in JIPMER, semi-structured questioners was prepared to assess the breakfast compliance and breakfast skipping behavior. Health education was given regarding not skipping breakfast and information regarding the importance of taking breakfast and how to plan their time and budget. Pamphlets were given for further reference.

**Keywords:-** Breakfast Compliance, adherence, Skipping Breakfast, Students of JIPMER, Behaviour.

## I. INTRODUCTION

Breakfast is the first meal of a day. (1) The word in English refers to breaking the fasting period of the previous night. (2) While breakfast is commonly referred to as “the most important meal of the day”(3-4). Not only that, but breakfast is key to jumpstarting our metabolism, he says. “In order for other tissues to respond well to food intake, you need an initial trigger involving carbs responding to insulin. Breakfast is critical for this to happen,” Karpe says. (3) Some epidemiological research indicates that having breakfast high in rapidly available carbohydrates increases the risk of metabolic syndrome.(5) Present professional opinion is largely in favor of eating breakfast.

Breakfast vary widely throughout Asia. In India, there are at least 25 types of breakfasts, each consisting of a choice of over 100 different food items.(6)

Shannon R. Weston, MPH, a certified diabetes educator at UT Health School of Nursing in Houston says that “people who eat breakfast are more likely to practice lifestyle behaviours associated with an ideal body weight and good health”. (7)

Skipping the morning meal can throw off your body’s rhythm of fasting and eating. When you wake up, the blood sugar your body needs to make your muscles and brain work their best is usually low and breakfast helps replenish it.(8)

Most of us skip breakfast for various reasons without being aware of its consequences. So the present study aims to assess the breakfast compliance and factors associated with breakfast skipping among students of JIPMER, Puducherry.

“Eat breakfast like a king, lunch like a Prince and dinner like a Pauper” (Sifferlin 2013). In Mediterranean countries, the breakfast has been recognized as one of the most important meal of the day. Probably the most appealing benefit is that breakfast “Jump starts your metabolism and thus help burn more calories throughout the day (9). Various studies have found different benefits of starting your day with breakfast including

- Having an optimal BMI
- Meeting recommendations for fruits and vegetables consumption
- Having higher daily calcium intake
- Having higher daily fibre intake
- Having better performance.

## II. OBJECTIVES

- To assess the breakfast compliance among the students of JIPMER
- To assess the factors associated with breakfast skipping among the students of JIPMER
- To find the proportion of breakfast skipping among the students of JIPMER

## III. RESEARCH APPROACH

For the current study, quantitative research approach has been adopted. Students habits towards breakfast compliance are assessed through validated questionnaire.

### A. RESEARCH DESIGN

The research design used for the present study was cross sectional descriptive research design.

### B. VARIABLES

- *Independent variable*  
Socio demographic variables such as, Age, gender, education, religion, residence, native place, income
- *Outcome variable*  
Breakfast compliance

### C. SETTING

The study was conducted in JIPMER, Puducherry.

### D. POPULATION

- *Target population*  
In this study, the target population refers to all students of JIPMER Puducherry.

### E. SAMPLE

The sample of the present study comprises Nursing students, Allied Medical Science students of JIPMER who were present at the time of data collection.

### F. SAMPLE SIZE CALCULATION

Assuming alpha error of 5%, confidence interval of 95%, absolute precision of +/-5% and anticipated prevalence as 60%, the required sample size is 356. Sample size was calculated using Open Epi version 3.

### G. Sampling Technique

A list of students from each year is collected by and convenient sampling is done

### H. Criteria For Sample Selection

- *Inclusion criteria*  
Students of JIPMER who are willing to participate and students who are available during the time of data collection
- *Exclusion criteria:*  
No exclusion criteria

### I. DEVELOPMENT OF DATA COLLECTION INSTRUMENT

Data collection instrument include self-structured questionnaire (developed by the researchers with a review of articles and opinion from experts) and validated from dietary department of JIPMER by three expert dieticians.

### J. DESCRIPTION OF THE DATA COLLECTION INSTRUMENT

The data collection instrument consists of 2 parts namely Socio-demographic variables, and questions related to breakfast compliance.

#### ➤ Section A: Demographic Information

This section deals with socio-demographic variables. It includes variables such as age, gender, educational status, religion, residence, income.

#### ➤ Section B

Consists of 15 questions related to breakfast compliance, distribution of lifestyle characteristics and habits which was pretested and validated by three experts of Dietetics Department, JIPMER.

Among 15 questions, 6 items were “Yes or No” type and remaining 9 items were rating scale type.

### K. SCORING AND INTERPRETATION

Questionnaire on breakfast compliance: Questions were dichotomous questions and multiple choice questions. Scores for dichotomous questions were given as 1 for yes and 0 for No, for multiple choice questions option A =1, B=2,C=3.

The score was interpreted by comparison of mean scores of breakfast compliance.

### L. VALIDITY

The tool was validated from 3 Dieticians from dietary department of JIPMER.

### M. ETHICAL CONSIDERATION

Prior permission was obtained from the Nursing Research Monitoring Committee (NRMC) and Institute Ethics Committee (IEC-JIPMER) to protect the human subjects from risk. Project no. JIP/CON/IEC/M.Sc./2019/GP/IV. Written informed consent was obtained from the participants

before they were enrolled in the study.

**N. PILOT STUDY**

The pilot study was carried out among 19 nursing students in JIPMER to ensure the feasibility of the intervention.

**O. DATA COLLECTION PROCEDURE**

The data collection was carried out after obtaining necessary ethical committee approval. An informed consent was obtained from participants after which, the questionnaire were distributed. The data was collected within 3 days using a questionnaire which includes demographic information, breakfast compliance and factors associated with breakfast skipping. Students who follow the inclusion criteria were enrolled in the study.

**P. PLAN FOR DATA ANALYSIS**

- Data were entered into Microsoft excel sheet and analyzed using SPSS
- Categorical variables like gender, education, monthly income, residence, religion were summarized as proportions with 95% confidence interval.
- Continuous variable age is described by mean with standard deviation with 95% confidence interval.

**A. SECTION I – BASELINE CHARACTERISTICS OF STUDY PARTICIPANTS**

**IV. ANALYSIS AND FINDINGS**

This chapter deals with data collected from 356 participants. The data collection was based on the objectives of the study and organised, tabulated, analysed and interpreted by descriptive and inferential statistics. Data are presented under the following headings.

The study findings are as follows;

- **SECTION I – BASELINE CHARACTERISTICS OF STUDY PARTICIPANTS**  
Table no 1 : Distribution of socio-demographic characteristics and variables among study participants.
- **SECTION 2 – PROPORTION OF PEOPLE SKIPPING BREAKFAST**  
Table no 2 : Proportion of people skipping breakfast.
- **SECTION 3 – FACTORS ASSOCIATED WITH BREAKFAST SKIPPING**  
Table no 3 : the factors that are associated with breakfast skipping among students.

Table 1: represents the socio-demographic characteristic and variables among the study participants

Sl. No.	Socio-demographic variables	Frequency (n=356)	Percentage (%)
1.	<b>Age</b>		
	17-23	301	(85%)
	24-30	50	(14%)
	31-37	5	(1%)
2.	<b>Gender</b>		
	Female	279	(78.4%)
	Male	77	(21.6%)
3.	<b>Education</b>		
	UG	300	(84.3%)
	PG	51	(14.3%)
	PBD	5	(1.4%)
4.	<b>Residence</b>		
	Hostel	242	(68%)
	Dayscholar	114	(32%)
5.	<b>Religion</b>		
	Hindu	257	(72.2%)
	Muslim	33	(9.3%)
	Christians	57	(16.0%)
	Others	9	(2.5%)
6.	<b>Native</b>		
	South Indian	259	(72.8%)
	North Indian	96	(27.0%)
	Coastal areas	1	(0.3%)
7.	<b>Monthly income</b>		
	0-6000(lower class)	123	(34%)
	7,000-10,000(lower middle)	59	(17%)
	11,000-45,000(middle class)	135	(38%)
	46,000-70,000(upper middle class)	33	(9%)
	>70,000(upper rich class)	6	(2%)

Frequency and percentage wise distribution of selected demographic variables among students residing in JIPMER is shown in table 1.

- Regarding age, 85% (301) subjects belong to age group of 17-23 years, 14%(50) belongs to age group of 24-39 years, 1 %(5) belongs to age group of 31-37 years.
- Regarding gender, 78.4 %(279) subjects were female and 21.6% (77) subjects were male.
- Regarding education, 84.3%(300) subjects were undergraduate, 14.3%(51) students were post graduates, 1.4%(5) subjects were post basic diploma students.

- Regarding residence ,68%(242) were staying in hostel and 32%(114) were dayscholars.
- Regarding religion ,72.2% (257) were hindu, 9.3%(33) were muslim, 16%(57) were Christian and 2.5% (9) belongs to other religion.
- Regarding native 72.8% (259) were south indian, 27% (96) were north indian and 0.3%(1) was from coastal area.
- Regarding monthly income, 2%(6) falls under upper rich class,9%(33) falls under upper middle class,17%(59) falls under lower middle class, 38%(135) falls under middle class , 34%(123) falls under lower class

**B. SECTION 2 – PROPORTION OF PEOPLE SKIPPING BREAKFAST**

Table 2: Proportion of people skipping breakfast

Sl.no	Characteristics of skipping	Frequency	Percentage(%)
1	<b>Skipping breakfast</b>		
	No	151	42.4
	Yes	205	57.6

➤ *Interpretation of table 2*

Frequency and percent wise distribution of proportion of people skipping breakfast and not skipping breakfast is shown. Among 356 subjects 42%(151) were skipping breakfast and 58 %(205) were having regular breakfast.

**C. SECTION 3 – FACTORS ASSOCIATED WITH BREAKFAST SKIPPING**

Table 3: Distribution of lifestyle characteristics among the study participants

Sl.no	Lifestyle Characteristics	Frequency	Percentage (%)
1	<b>Eating breakfast every day</b>		
	No	151	42.4
	Yes	205	57.6
2	<b>Breakfast from outside</b>		
	No	155	43.5
	Yes	201	56.5
3	<b>Spending more money for breakfast</b>		
	No	262	73.6
	Yes	94	26.4
4	<b>Skipping breakfast due to emotional reasons</b>		
	No	220	61.8
	Yes	136	38.2
5	<b>Skipping due to non-availability of traditional food</b>		
	No	240	67.4
	Yes	116	32.6
6	<b>Environmental hygiene hinders in taking breakfast</b>		
	No	130	36.5
	Yes	226	63.5
7	<b>Frequency of skipping breakfast</b>		
	Always	17	4.8
	Often	120	33.7
	Rarely or no skipping	219	61.5
8	<b>Number of days a week they skip breakfast</b>		
	Never skip	35	9.8
	More than 3 times in a week	70	19.7

	Twice in a week	80	22.5
	Once in a week	171	48.0
9	<b>Reason for skipping breakfast</b>		
	Not skipping	31	8.7
	Getting up late	183	51.4
	Not hungry	39	11.0
	Disliking of food	103	28.9
10	<b>Amount of time to eat breakfast</b>		
	Less than 5 mins	65	18.3
	5 to 10 mins	229	64.3
	More than 10 mins	62	17.4
11	<b>Feels hungry during classes before lunch</b>		
	always	195	54.8
	sometimes	156	43.8
	never	5	1.4
12	<b>Preparation of breakfast</b>		
	self	23	6.5
	parents	112	31.5
	hostel cook	221	62.1
13	<b>Understanding the importance of breakfast</b>		
	It helps me to be healthy	216	60.7
	It helps me pay attention	105	29.5
	It doesnot help me	35	9.8
14	<b>Breakfast companion</b>		
	alone	54	15.2
	with family	175	49.2
	with friends	127	35.7
15	<b>Perception on skipping breakfast</b>		
	feel hungry	173	48.6
	feel tiredness(sick)	153	43.0
	Dont feel any difference	30	8.4

➤ *Interpretation of table 3-*

- Frequency and percent wise distribution of people who eats breakfast everyday and those who doesnot eat everyday are shown. Among 356 subjects 42%(151) were not eating breakfast everyday and 58 %(205) were having regular breakfast.
- Frequency and percent wise distribution of people who eats breakfast from outside and those who doesnot eat are shown. Among 356 subjects 44%(155) were not having breakfast from outside and 57 %(201) were having breakfast from outside.
- Frequency and percent wise distribution of people who felt spending more money for breakfast and those who doesnot are shown. Among 356 subjects 74%(262) did not felt spending more money on breakfast and 26 %(94) felt spending more money for breakfast.
- Frequency and percent wise distribution of people who Skips breakfast due to emotional reason and those who doesnot are shown. Among 356 subjects 62%(220) who does not Skips breakfast due to emotional and 38 %(136) Skips breakfast due to emotional reasons.
- Frequency and percent wise distribution of people who Skips breakfast due to non availabilty of traditional food and those who doesnot are shown. Among 356 subjects 67%(240) who does not Skips breakfast due to non availabilty of traditional food and 33 %(116) Skips breakfast due to non availabilty of traditional food.
- Frequency and percent wise distribution of people whose environmental hygiene (Food preparation/Serving/ Dining) Hinders them to take breakfast and those who doesnot hinder are shown. Among 356 subjects 37%(130) whose environmental hygiene (Food preparation/Serving/ Dining) doenot Hinders them to take breakfast and 63 %(226) whose environmental hygiene (Food preparation/Serving/ Dining) Hinders them to take breakfast.
- Frequency and percent wise distribution of people how frequently they skip breakfast are shown. Among 356 subjects 5%(17) who always skip breakfast , 34%(120) who often skips and 61%(219) who rarely or never skips breakfast .

- Frequency and percent wise distribution of people how many days of a week, do they skip breakfast. Among 356 subjects 48%(171) who skips breakfast once in a week, 22%(80) who skips twice in week, 20% who skips more than 3 times in a week and 10%(35)who never skips breakfast .
- Frequency and percent wise distribution of people for the reason for skipping breakfast . Among 356 subjects 29%(103)who skip breakfast due to dislike of food, 11%(39) who skips due to not feeling hungry, 51%(183) who skips due to getting up late and 9% who doesnot skip due to any reason.
- Frequency and per cent wise distribution of people for the amount of time a person takes to have breakfast. Among 356 subjects 18% (65) takes more than 10mins, 64%(229) takes 5 to 10mins and 18%(65) takes less than 5mins to complete their breakfast.
- Frequency and per cent wise distribution of people who feels hungry during classes before lunch time. Among 356 subjects 55%(195) who always feels hungry during classes before lunch time, 44%(156) who sometimes feels hungry during classes before lunch time, 1%(5) who never feels hungry during classes before lunch time.
- Frequency and per cent wise distribution of people according to preparation of breakfast. Among 356 subjects 62%(221) whose food is cooked by hostelcook, 31%(112) whose food is prepared by parents , 7%(23) whose food is prepared by self.
- Frequency and per cent wise distribution of people who feels eating breakfast is beneficial. Among 356 subjects 61%(216) who feels eating breakfast keeps them healthy, 29% (105) who feels eating breakfast helps them to pay attention, 10%(35) who feels eating breakfast is not beneficial.
- Frequency and per cent wise distribution of people with whom they feel comfortable to have breakfast. Among 356 subjects 49%(175) feels comfortable with family to have breakfast,36%(127) feels comfortable with friends to have breakfast, 15%(54) who alone feels comfortable to have breakfast.
- Frequency and per cent wise distribution of feelings of people when they donot eat breakfast. Among 356 subjects 49%(173) people feel hungry when they donot eat breakfast,43%(153) subjects people feel tired when they donot eat breakfast,8% (30) donot feel any difference when they donot eat breakfast.

## V. DISCUSSION

### A. *The first objective was to assess the breakfast compliance among the students of JIPMER.*

The present study revealed that only 9.8% participants have never skipped breakfast. 19.7% skipped 3 times in a week, 22.5% skipped twice in a week and 48.0% skipped once in a week. The students also understand the importance of breakfast in our everyday lives. 60.7% of sample revealed that having breakfast keeps them healthy while 29.5% admitted that breakfast helps them to pay more attention in their works and 9.8% revealed it did not help them.

### B. *The second objective was to assess the factors associated with breakfast skipping among the students of JIPMER*

The factors that were associated with skipping of breakfast included: due to emotional reasons, non-availability of traditional foods, hindrance of environmental hygiene of dining area for those who resides in the hostel as well as getting up late. 51.4% sample revealed skipping breakfast due to getting up late, 28.9% due to disliking of food, 11.0% due to not feeling hungry and 8.7% did not skip due to any of the above-mentioned reasons.

### C. *The third objective was to assess the proportion of breakfast skipping among students of JIPMER.*

Out of 356 number of samples, 279 (78.4%) samples were female and remaining 77 (21.6%) were male. Total of 242 samples (68 %) were hostelers and remaining 114 (32%) were day scholars. Total of 42.4% did not have breakfast everyday while 57.6% agreed having breakfast more often by skipping at least thrice in a week. Only 9.8% i.e. 35 samples revealed that they have never skipped their breakfasts.

### D. *Overall findings:*

Students who skipped more than twice in a week were considered as breakfast skippers that accounts for 42.2% and who never skipped or skipped breakfast once in a week accounted for 57.8%.

### E. *Related study:*

Javaid, et al (2018) conducted a cross-sectional study among 100 students of Saudi Medical School to assess breakfast skipping and its effect on emotional and academic behaviour. Data was collected by questionnaire which consists of two parts: the first part was based on details about types and reasons behind skipping breakfast and second part consists of aspect of negative feelings and academic performance of the student. Students who skipped their breakfast occasionally were labelled as breakfast skippers. Getting up late, not being hungry or not liking food was the reasons for skipping breakfast (14).

## VI. LIMITATIONS

- The data collection period was only 3 days.
- The study was limited only to JIPMER students.

## VII. CONCLUSION

One time study was conducted among 356 students in JIPMER, semi-structured questioners was prepared to assess the breakfast compliance and breakfast skipping behaviour. Health education was given regarding not skipping breakfast and information regarding the importance of taking breakfast and how to plan their time and budget. Pamphlet were given for further reference, there is a lot of reasons reason behind the skipping of breakfast and further studies must be carried out to know the reasons and help to come up with the solutions to the problem.

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