pISSN 2394-6032 | eISSN 2394-6040

# **Research Article**

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20161633

# Breakfast eating habits and its association with mental wellbeing and mindful attention awareness among university students of Pune district, Maharashtra, India

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Received: 19 April 2016 Accepted: 13 May 2016

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### **ABSTRACT**

**Background:** To study the effect of breakfast eating habits on mental distress and mindful attention awareness of 18-24 year old young adults.

**Method:** Cross-sectional study with simple random sampling technique was carried out in 3 universities in Pune, Maharashtra. A total of N=206 subjects aged between 18-24 year participated in the study. Mental well-being was screened for mental distress and mindful attention using Hopkins symptoms checklist-10 and mindful attention awareness scale respectively. Breakfast eating habits was accessed qualitatively and quantitatively using food frequency questionnaire. Anthropometric data and lifestyle pattern was assessed using structured questionnaires. Statistical analysis included descriptive statistics, chi square and correlation tests.

**Results:** A total of 42.23% subjects skipped their breakfast and 57.76% subjects ate their breakfast. Amongst those who ate breakfast 23.2% consumed it daily. Most common reason reported for breakfast skipping included getting up late (37.3%). When compared across genders females skipped breakfast more often (60.3%) as compared to males (33.3%). Significant association was found between breakfast eating habits with mental distress (p<0.001) and mindful attention awareness (p<0.001). Also consumption of milk was significantly associated with lower mental distress and improved mindful attention (p<0.001).

**Conclusion:** These findings support the concept that breakfast is the most important meal of the day and skipping breakfast may result in poor mental distress and mindful attention their by resulting in poor overall mental well-being of 18-24 year old young adults.

Key words: Breakfast, Mental wellbeing, Mental distress, Mindful attention

### **INTRODUCTION**

Breakfast is an integral part of a balanced dietary pattern. It serves as a foundation of eating forth day and is defined as the first meal of the day that breaks the fast after longest period of sleep, consumed within two to three hours of waking; and is comprised of food or beverage from at least one food group. Breakfast consumption is associated with better health status at any age and its consumption is an important element for

nutritional well-being, influencing the adequacy of total daily energy and nutrient intake.<sup>2</sup> Breakfast eating is one of the facet of a healthy lifestyle that that may help contribute to the short and long term health and wellbeing across all ages.<sup>3</sup>

Everyone out of three people skip breakfast and this detrimental practice progressively increases from childhood to adulthood. Young adulthood is a difficult period of transition from adolescence to adulthood, with

increasing challenges and pressures. This transition may translate into unhealthy dietary practices, breakfast skipping being one of them. More than any other meal, breakfast eating is probably the first to get compromised as a result of poor time management, leading to wrong choices of breakfast options, thus compromising the quality of breakfast.<sup>4</sup> Amongst those who have breakfast most of them may not have a nutritious one which may influence their lifestyle and affect cognitive performance, particularly in the domains of memory and attention.<sup>5</sup> Lack of time and lack of appetite have been considered as the main cause for passing over breakfast. The consequences of skipping breakfast such as cognitive failures, lapses in attention and concentration along with mental distress in young adults can affect their academic performance.6

Breakfast consumption has been associated with better mental health in children, but the relationship between breakfast and mental health in adults is less well known. Thus the present study aimed at investigating the effect of breakfast eating habits on mental wellbeing in terms of mental distress and mindful attention awareness of 18-24 years old adults.

#### **METHODS**

### Study design and sample

This was a cross sectional study that was conducted among 230 students aged 18-24 years using simple random sampling technique at different universities across Pune. Out of these 230 students 24 were excluded for incomplete questionnaires. Individuals who were known case of any psychological disorder or disease were excluded from the study. Thus, a total number of 206 subjects were included in the study.

### Data collection

Data collection was done through an interview method and self-administered questionnaires adopted from previous studies were used.<sup>7,14</sup> Questionnaires were pretested on a sample size 30 after taking consent of the subject. The shortcomings were looked upon and changes were incorporated in the questionnaire.

The final questionnaire aimed at collecting data under different categories including socio demographic status, anthropometric measurements, lifestyle pattern, breakfast eating habits, and food frequency questionnaire along with screening of mental wellbeing. Mental wellbeing screening included two scales, Hopkins symptom checklist (HSCL-10) and this scoring method was based on the likert 4 point scale where individual can score minimum score of 10 and a maximum score of 40.<sup>7</sup> It basically measured the anxiety and depression among participant. The second scale was Mindful Attention Awareness Test (MASS), this scale assessed a core

characteristic of dispositional mindfulness namely, attention to what is taking place in the present.<sup>14</sup>

#### Ethical consideration

The present study was approved by research advisory committee (RAC) of university. Permissions were taken from the Institute head and head of the departments. Subject information sheet was provided to the participants and the objectives were explained. Later, a written consent was obtained from those who agreed to participate in the study for conducting the survey.

### Statistical analysis

Data was entered into SPSS (version 22) and the data was cleaned and checked for any error. Frequencies were tabulated, Chi square test and correlation were used to identify difference in proportion and association and the level of significance was set as p <0.05.

### **RESULTS**

The aim of the study was to investigate the effect of breakfast eating habits on mental well-being of 18-24 years old adults with respect to mental distress and mindful attention awareness.

The results have been interpreted as per the following categories:

# Socio-demographic characteristics

**Table 1: Socio-demographic characteristics.** 

Socio-demographic	Frequency	Percent
characteristics Age	(n)	(%)
18-20	121	58.8
21-24	85	41.3
Gender		
Male	138	67.0
Female	68	33.0
Year of education		
UG	170	82.6
PG	36	17.5
Living arrangements of subject	ts	
Hostelites	96	46.6
Localites	110	53.3
Total	206	100.0

As per the above Table 1, the mean age of subjects was 20.07±2.00 and maximum percent of study population was present in age group of 18-20 years (58.8%). Among 206 subjects 67% were males whereas 33% were females. A total of 82.6% subject's belonged to undergraduate studies and only 17.5% belonged to post

graduate studies. 46.6% subjects were staying at Hostel and 53.3% subjects were either stayed alone, on rent or with their parents.

### Anthropometric characteristics

Table 2: Height and weight of the subjects.

Anthropometry	Frequency (n)	Minimum	Maximum	Mean SD
Height (cm)	206	121.0	193.0	169±10.00
Weight (kg)	206	37.0	110.0	63.85±11.59

Table 3: BMI of the subjects.

BMI category	BMI classification	Frequency (n)	Percent (%)
Underweight	<18 kg/m²	18	8.7
Normal weight	18-22.9 kg/m²	111	53.9
Pre-obese	23-27.4 kg/m²	67	32.5
Obese grade I	27.5-32.4 kg/m²	9	4.4
Obese grade II	32.5-37.4 kg/m²	1	0.5
Total		206	100.0

When anthropometric characteristics were assessed, the minimum weight reported was 37 kg and maximum weight was 110 kg with a mean weight of 63.85±11.59. The minimum height reported was 121 cms and maximum height was 193 cm with a mean of 169±10.00 cm. BMI was assessed according to WHO standard classification. Out of 206 subjects, 53.39% were in the Normal weight category, 32.5% were in the preobese category where as 4.4% were in obese grade I category.

## Lifestyle pattern

Lifestyle pattern was assessed to check the habits of smoking and alcohol consumption. Out of total subjects 23 males and 8 females smoked daily whereas 94 males and 49 females never smoked and rest 21 males and 11 females were occasional smokers. 2 males and 1 female consumed alcohol daily and 81 males and 40 females never consumed alcohol rest 55 males and 27 females were either consuming weekly, 2-3 times a week or occasionally. The studies say that in adults, smoking, and more frequent alcohol use are associated with breakfast skipping. §

# Breakfast eating habits

Table 4: Breakfast eating habits.

Importance of breakfast	Frequency (n)	Percent (%)
Yes	127	61.7
May be	51	24.8
No	28	13.6
Total	206	100.0

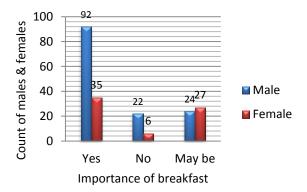


Figure 1: Importance of breakfast across gender.

Among total 206 subjects, 61.7% gave importance to breakfast and 13.6% did not give importance to breakfast, 24.8% were not sure about its importance. Thus more than half of the study subjects 127 (61.7%) considered breakfast important. When checked across gender males consider breakfast as an important meal (44.7%) than females (17%).

Table 5: Breakfast eating habits.

Breakfast eating habits	Frequency (n)	Percent (%)
Daily	48	23.3
4-6 times a week	37	18.0
2-3 times a week	23	11.2
once a week	11	5.3
skips breakfast	87	42.2
Total	206	100.0

When daily breakfast eating habits were checked a total of 42.23% subjects skipped their breakfast and 57.76% subjects ate their breakfast. Amongst those who ate breakfast 23.2% consumed it daily.

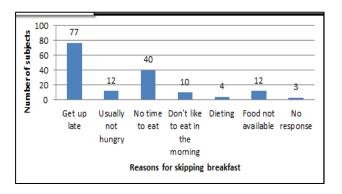


Figure 2: Reasons for skipping breakfast.

There were multiple reasons for skipping breakfast, but most common were getting up late (37.3%), followed by having no time (19.4%) and other reasons like not being hungry in the morning, not liking to eat in the morning, due to dieting and no food availability. These findings were supported by another study carried out by bid good and cameron who identified the most common reasons given for skipping were not liking to eat particular meals and lack of time. Apart from this it was seen that the living arrangements of subjects also affects breakfast eating habits. Those who were staying in hostel, tend to eat their breakfast regularly than localites. The students staying alone or on rent tend to skip breakfast more often. This can be due to the reasons reported earlier.

# Mental wellbeing

Table 6: Mental distress and mindful attention awareness.

	Score	Frequency (n)	Percent (%)
Mental	Yes (>16)	104	50.5
distress	No (<16)	102	49.5
	Total	206	100.0
Mindful	Poor (<45)	116	56.3
attention	Good (>45)	90	43.7
awareness	Total	206	100.0

Mental distress was checked using Hopkins checklist-10. According to this scale, 50.5% subjects were mentally distressed where as 49.5% of the population had no mental distress. Similarly mind full attention was assessed using Mindful attention awareness scale. It was seen that, 56.3% population had poor mindful attention awareness and 43.7% had good mindful attention awareness.

Study done by A P smith have proved that eating breakfast regularly improves mental wellbeing and

reduces stress in the form of a reduced cortisol level among adults. Similar findings were also seen in our study, amongst 119 breakfast eaters, 91 had no mental distress and out of 87 breakfast skippers 76 had mental distress. <sup>1,10,11</sup>

A significant difference in proportion between the breakfast eating habits and mindful attention awareness was found among subjects (p <0.001) among 119 breakfast eaters 84 had good attention awareness whereas among 87 breakfast skippers 81 had poor mindful attention awareness. Similar result was also found in the study carried out in haidrabad, it showed that regular habit of eating breakfast as opposed to irregular consumption or skipping breakfast altogether had a beneficial influence on attention concentration. <sup>12</sup>

### Breakfast quality

The most preferred daily consumed foods were nuts, egg, milk, tea and coffee. Junk food was preferred 5-6 times a week by population. Fruits were preferred 3-4 times a week whereas idli, ready to eat cereals and carbonated beverages were preferred 1-2 times a week.

Table 7: Breakfast eating habits and mental well-being.

No Mental Distress	Mental Distress	Good mindful attention awareness	Poor mindful attention awareness	Total
28	91	84	35	119
76.5%	23.5%	70.6%	29.4%	100%
11	76	6	81	87
12.6%	87.4%	6.9%	93.1%	100%

Table 7: Correlation between mean daily consumption of milk with mental distress and mindful attention awareness.

Mean daily consumption of milk R-value		Mental distress	Mindful attention
		-0.236	0.309
	p-value	**0.001	**0.000

<sup>\*\*</sup>Significant at 1% level.

### **DISCUSSION**

Apart from this, the significant correlation was present in between milk consumption and mental distress, indicating that consumption of milk in breakfast increases mind full attention awareness. This finding is supported by the study carried out by O'sullivan, which showed that milk, the most popular breakfast item provides calcium which is involved in the release of neurotransmitters. <sup>13</sup> Milk also contains tryptophan, a precursor to serotonin and a neurotransmitter involved in psychological process.

### **CONCLUSION**

Findings of this study support the concept that breakfast is the most important meal of the day. Skipping breakfast may result in mental distress and poor mindful attention. The dietary habits of the subjects revealed that the breakfast meal composition lacked in core food groups suggesting poor breakfast quality. A significant association (p<0.005) was found between milk consumption and mental well-being suggesting that intake of milk with breakfast improves mental well-being of the subjects. Hence, this study recommends that awareness and education about healthy breakfast eating practices should be incorporated at college level.

#### ACKNOWLEDGEMENT

Authors thank all the study participants who willingly participated in the study and respective universities for permitting the conduct of research work.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: Research advisory committee of Symbiosis School of Biomedical Sciences, Symbiosis International University, Pune

### **REFERENCES**

- 1. Smith AP. Stress, breakfast cereal consumption and cortisol. Nutritional Neuroscience. 2002;5(2):141-4.
- 2. Gikas Á, Ôriantafillidis JK, Perdikaki P. Breakfast skipping and its association with other unhealthy food habits among greek high school adolescents. Ann Gastroenterol. 2003;16:321-7.
- 3. O'Neil CE, Byrd-Bredbenner C, Hayes D, Jana L, Klinger SE, Stephenson-Martin S. The role of breakfast in health: definition and criteria for a quality breakfast. J Acad Nutr Diet. 2014;12(114):S8-S26.
- 4. Rampersaud GC, Pereira MA, Girard BL, Adams J, Metzl JD. Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents. J Am Diet Assoc. 2005;105(5):743-60.

- Huang CJ, Hu HT, Fan YC, Liao YM, Tsai PS. Associations of breakfast skipping with obesity and health-related quality of life: evidence from a national survey in Taiwan. International Journal of Obesity. 2010;34(4):720-5.
- Adolphus K, Lawton CL, Dye L. The effects of breakfast on behaviour and academic performance in children and adolescents. Frontiers in human neuroscience. 2013;7:425.
- 7. Chaplin K, Smith AP. Breakfast and snacks: associations with cognitive failures, minor injuries, accidents and stress. Nutrients. 2011;3(5):515-28.
- 8. Khuon F, Lavelle J. Indochinese versions of the hopkins symptom checklist-25: a screening instrument for the psychiatric care of refugees. Am J Psychiatry. 1987;144(4):497-500.
- 9. Bidgood BA, Cameron G. Meal/snack missing and dietary adequacy of primary school children. J Am Diet Assoc. 1992.
- 10. Smith AP. Breakfast and mental health. Int J Food Sci Nutr. 1998;49(5):397-402.
- 11. Smith AP, Clark R, Gallagher J. Breakfast cereal and caffeinated coffee: effects on working memory, attention, mood, and cardiovascular function. Physiology and Behavior. 1999;67(1):9-17.
- 12. Gajre NS, Fernandez S, Balakrishna N, Vazir S. Breakfast eating habit and its influence on attention-concentration, immediate memory and school achievement. J Pediatr. 2008;45(10):824.
- 13. O'Sullivan TA, Robinson M, Kendall GE, Miller M, Jacoby P, Silburn SR, et al. A good-quality breakfast is associated with better mental health in adolescence. Pub health nutr. 2009;12(02):249-58.
- 14. Khuon F, Lavelle J. Indochinese versions of the hopkins symptom checklist-25: a screening instrument for the psychiatric care of refugees. Am J Psychiatry. 1987;144(4):497-500.

Cite this article as: Khanna S, Dharap A, Gokhale D. Breakfast eating habits and its association with mental wellbeing and mindful attention awareness among university students of Pune district, Maharashtra, India. Int J Community Med Public Health 2016;3: 1584-8.