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Mansi Tiwari
Department of Food Science and
Nutrition, College of Community
Science, Assam Agricultural
University, Jorhat, Assam, India

Breakfast consumption pattern and its effect on the nutritional status of hostel boarders of Jorhat, Assam, India

Mansi Tiwari

Abstract

Background: Breakfast is one of the central components of daily nutrient requirement and it greatly affects the nutritional status of a person. Skipping of breakfast affects the overall health and well-being of an individual and has been commonly seen in the young adults and adolescence. Therefore, keeping these points in view a research investigation was designed to study the breakfast consumption pattern and its association with the nutritional status of hostel boarders of Jorhat, Assam.

Methods: A total of 400 hostel boarders were selected randomly from hostels of Jorhat city. A validated questionnaire was used to collect information on the socio-demographic profile, food habit, breakfast consumption and frequency of skipping. Anthropometric indices such as height and weight were measured.

Results: The study comprised of 48.50% male and 51.50% female with mean age of 21.41 years. Majority (92.75%) of the population were non-vegetarian and consumed three meals a day (66.25%). Most (46.50%) of the hostel boarder consumed cereal-based products in their breakfast on a daily basis. The study also revealed that 48.25% of the population skips breakfast of which 12.50% skips breakfast daily, 46.00% skips 1-2 times/week, 21.25% skips 3 times/week and 19.50% of the population skips breakfast more than 3 times/ week. The data on nutritional status revealed that 64.50% population had normal weight while 20.00 and 15.50% were underweight and overweight respectively. Hence the study calls for the need to aware the hostel boarders regarding the significance of breakfast consumption in order to improve their nutritional status.

Keywords: Breakfast, hostel, boarders, meals, skipping, nutritional status, Jorhat, Assam

Introduction

Breakfast, as the name suggest is the most vital meal of the day taken after a prolonged overnight fast. It is one of the central components of daily diet in terms of its contribution to an individual's daily nutrient requirement. It is considered to have a crucial role in maintenance of overall physical and mental wellbeing. Breakfast intake is said to replenish the glycogen stores and stabilize the insulin level. A person with the habit of routine breakfast consumption tends to have a healthy diet pattern with higher inclusion of foods such as cereal grains, milk, fruits and vegetables as compared to foods high in saturated fats, salt and sugar (Haire-Joshu *et al.* 2011) [5]. Moreover, it has also been associated to higher micronutrient intake (Desmukh *et al.* 2010; Barr *et al.* 2014; Min *et al.* 2011) [2, 9], thereby contributing to daily nutritional needs. In spite of a wide array of benefits posed by breakfast consumption, yet the frequency of skipping breakfast as compared to other meals of the day is more pronounced. Several potential mechanisms exist which flags effect of breakfast on appetite, fat metabolism, energy expenditure and body weight (Astbury *et al.*, 2011; Farshchi *et al.*, 2005; Leidy and Racki 2010) [1, 4, 7]. Moreover, studies have also reported a net negative energy balance associated with breakfast skipping (Kral *et al.*, 2011; Levitsky and Pacanowski 2013) [6, 8]. This is mainly because skipping breakfast adversely affect the overall health and thus make the body enter into starvation mode, leading to over eating in the later part of the day. Skipping of breakfast has been more commonly seen during the transition period to adulthood (Pendergast *et al.*, 2016) [11]. During this period many changes take place which contributes to diseases in later phase of life. Studies have shown that the meal skipping habit accompanied with higher consumption of fast food, snacks and fries are more frequently seen among hostel boarders (Osako *et al.*, 2005) [10]. This faulty eating habit during this period in turn may lead to chronic diseases like obesity, diabetes and hypertension (Seo *et al.*, 2011) [12]. Therefore, considering the above facts the study was conducted to study the breakfast consumption pattern of the

Corresponding Author:
Mansi Tiwari
Department of Food Science and
Nutrition, College of Community
Science, Assam Agricultural
University, Jorhat, Assam, India

hostel boarders and its impact on the nutritional status of individuals residing in Hostel.

Materials and Method

A cross-sectional study was carried out to assess the breakfast consumption pattern and its impact on the nutritional status of among the hostel boarders residing in the Jorhat, Assam. For the study purpose, a total of 400 hostel boarders residing in 10 different hostels of Jorhat were selected by employing simple random sampling. The respondents selected were in the age group of 18-28 years who were staying in the hostel during the investigation. Data on socio-demographic profile, food habit, breakfast consumption pattern and frequency of skipping meal were collected using a pre-set structured questionnaire. The nutritional status of the respondents was evaluated using anthropometric assessment which included measurement of height and weight followed by BMI calculation. The calculated BMI was compared with the standard BMI classification given by WHO and respondents were grouped as underweight, normal, overweight and obese respectively. The data collected were coded and tabulated using MS Excel and data obtained was analysed statistically using SPSS version 20.

Results and Discussion

The socio-demographic profile of the respondents is depicted in Table 1. The age of the respondents ranged from 18-28 years with mean age of 21.41 years. Majority of the studied population were in the age group of 18-20 years (48%), followed by 20-25 years (40%) and 25-28 years (12%). The study population comprised of 48.50% of male and 51.50% of female. By far the socio-economic status is concerned, the major respondents belonged to lower middle (40%) and upper middle (36.50%) class. A major chunk of the studied population belonged to nuclear family (86%) and were Hindu (85.00%) with majority of them staying in hostel for 1-3 years (39.00%).

Table 1: Socio-demographic profile of the study population

Parameters	Category	Frequency	Percentage (%)
Age in Years	18-20 years	192	48.00
	20-25 years	160	40.00
	25-28 years	48	12.00
Sex	Male	194	48.50
	Female	206	51.50
Socio-economic status	Upper	46	11.50
	Upper middle	146	36.50
	Lower middle	160	40.00
	Lower	48	12.00
Family type	Nuclear	344	86.00
	Joint	46	11.50
	Extended	10	2.50
Religion	Hindu	340	85.00
	Muslim	32	8.00
	Christian	22	5.50
	Buddhist	4	1.00
	Others	2	0.50
Duration of hostel stay	<1 year	134	33.50
	1-3 years	156	39.00
	3-5 years	44	11.00
	5-10 years	60	15.00
	>10 years	6	1.50

Table 2 shows the distribution of respondents on the basis of their food consumption pattern. The table shows that majority

of the boarders were non-vegetarian (92.75%) with most of then taking three meals a day (66.25%) followed by two meals a day (21.50%). Out of the total studied population 52.00% of them skipped at least one meal a day. A poor frequency of breakfast consumption was also observed with only 51.75% of the respondents taking breakfast regularly. 12.50 per cent of the respondents skipped breakfast every day, 46.00% skipped 1-2 times/week, 21.25% skipped 2-3 times/week and 19.50% skipped breakfast more than 3 times/week. Varied reasons were mentioned by the studied population for skipping breakfast of which lack of time (55.50%) took the highest position, followed by do not like food served (30.00%). The respondents, however also complained of experiencing problems such as hunger (39.50%), tiredness (16.50%), headache (15.00%), stomacher ache (13.50), sleepiness (11.50%) and un-mindfulness (4.00%) on skipping breakfast.

Table 2: Distribution of respondents according to their food consumption pattern

Parameters	Category	Frequency	Percentage
Food habit	Vegetarian	29	7.25
	Non-vegetarian	371	92.75
No. of meals per day	Two	86	21.50
	Three	265	66.25
	More than three	49	12.25
No. of meals skipped	One	208	52.00
	Two	12	3.00
	None	180	45.00
Regular breakfast consumption	Yes	207	51.75
	No	193	48.25
Frequency of skipping breakfast	Everyday	50	12.50
	1-2 times per week	184	46.00
	2-3 times per week	85	21.25
	More than three times per week	78	19.50
Reason for skipping breakfast	Does not feel hungry	48	12.00
	Not enough time	222	55.50
	Breakfast is not prepared on time	12	3.00
	Don't like food served	120	30.00
Feeling after skipping breakfast	Hungry	158	39.50
	Headache	60	15.00
	Stomach ache	54	13.50
	Tiredness	66	16.50
	Sleepiness	46	11.50
	Unmind-fullness	16	4.00

The nutritional status of the respondents in terms of their BMI is given in Table 3. Majority of the studied population were normal (64.50%). The study showed that a multitude of the respondents were also underweight (20%) and overweight (15.50%).

Table 3: Distribution of respondents according to their nutritional status

Nutritional status	BMI (Kg/m ²)	Frequency	Percentage (%)
Underweight	<18.5	80	20.00
Normal	18.5-24.9	258	64.50
Overweight	25-29.9	62	15.50

The study showed that (table 4) most of the respondents consumed cereal or cereal based products on a daily basis (46.50%), pulse or pulse-based products are taken by only 52.50% of the hostel boarders daily, 24.50% of the total

boarders consumes vegetables or vegetable-based products daily. It was observed that the consumption of fruits among hostel boarders were very less with 55.00% of them seldom taking fruits. A high consumption of processed foods such as

chips, biscuits fast food etc were found to be very common among the boarders accounting for 24% of the boarders consuming them on a daily basis.

Table 4: Percentage distribution of frequency of different food consumed in breakfast

Category	Everyday	1-2 times/week	3 times/week	More than 3 times/week	Rarely or never
Cereal or cereal based	46.50	29.00	10.00	12.00	0
Pulse or pulse based	52.50	16.50	8.00	4.50	18.50
Vegetables (green leafy vegetables, other vegetables)	24.50	26.50	12.00	7.00	30.00
Fruits and fruit based	0.02	31.00	9.00	3.00	55.00
Egg and meat products	6.00	57.00	8.50	4.00	24.50
Processed foods such as chips, biscuits, chocolate, cake, fizzy drinks etc	24.00	31.00	11.50	6.50	27.00

Conclusion

From the study it can be concluded that a large no. of hostel boarders has the habit of skipping breakfast due to one or several reasons which ultimately affects the nutritional status of the population. A strong positive correlation has been found in the study between frequency of skipping breakfast and BMI. It has been seen that there is need for interventions programs aimed at decreased skipping breakfast among hostel boarders of Jorhat, Assam.

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