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Breakfast Skipping Pattern and its associated factors among adolescents

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Abstract
Background: *Skipping breakfast is emerging as one of the more common unhealthy dietary practices among adolescents. The development of these unhealthy eating habits during adolescence is leading hazardous health consequences and likely to continue into adulthood.*
Objective: *This study aimed to estimate the overall prevalence of skipping breakfast among adolescents of Rewa city M.P.*
Materials and Methods: *This was a cross sectional community based study, conducted among 423 adolescents of 10-19 year age group, who fulfilled the inclusion criteria. Multistage random sampling was adopted. The study was based on a modified questionnaire and standardized anthropometric measures were taken for collecting desired sample size.*
Results: *Out of 423 subjects pooled prevalence of skipping the breakfast was higher among the females as compared to males. Increasing trend shows with increasing age and education level. Subjects living with nuclear family and those stay away from the family had higher prevalence of skipping breakfast.*
Conclusion: *Skipping breakfast is more prevalent among the girls. Interventions are required to promote breakfast consumption adolescents population.*
Keywords: *Skipping breakfast, adolescents.*

Introduction

The term 'breakfast' in English refers to "to break a fast", which breaks the overnight fast that can be as long as 12 to 16 hours, from dinner of the previous night to the next morning. Breakfast should supply one-fourth of the daily requirement of energy.[1] Breakfast is the first meal of a day.

Breakfast is the most important meal of the day, because kick starts our metabolism, Recharge the body, begins burning calories starting in the morning, it helps recharge the body and brain. Nutrients missed by skipping breakfast cannot be compensated for in other meals. Regular consumption of breakfast may have a multitude of health benefits for adolescents including increased intake of essential nutrients, improved academic performance, improved behaviour, increased satiety, decreased hunger and decreased food intake.[2] Observational studies showed that regular breakfast consumption leads to a higher quality diet with increased amounts of fibre, calcium, vitamin A, vitamin C, riboflavin, zinc, and iron as well as decreased intake of calories, fat and

cholesterol compared to skipping breakfast. Incorporating the breakfast meal could also lead to improvements in blood lipid and insulin profiles if the meal is of high quality.[2,3]Eating a morning meal provides the brain with the necessary energy to perform cognitively and increase learning.

More specifically, breakfast enhances tasks involving processing of a complex visual display, spatial memory, short-term memory, and auditory attention.[2] Research examining the impact of school breakfast programs on cognitive function found that eating breakfast led to beneficial effects in children's behaviour and learning. When breakfast was provided at school, children demonstrated lower absence and tardiness rates, fewer other disciplinary conflicts and greater attention and energy to learn.[4] Although breakfast is supposed to be the most important meal of the day, it is the one that is most neglected. Skipping breakfast is one of the more common dietary practices among adolescents. The main reasons for skipping breakfast seem to be related to: Lack of time, lack of morning appetite, and for adolescents, concern about their body weight.[5]

Skipping breakfast is suggested to impair cognitive performance, due to the continuation of the overnight fasting condition when the morning meal is not consumed.[6] Morning meal boosts memory, Many studies indicates that skipping breakfast increased hunger which subsequently led to declines in attention and memory, impairing children to learn throughout the day, students who are given a low-glycemic breakfast are able to sustain attention longer than those given a high-glycemic breakfast.[7] Specifically, breakfast skippers faced problem to recall information, reduction in problem solving abilities, commit more errors on routine work.[8]Another study showed that students who participate in school breakfast programs have significantly higher math scores as compare to those who skip or rarely eat breakfast.[9]

Adolescents who eat breakfast think faster and clearer, solve problems more easily and are more efficiently. They are less irritable and aggressive, get tired less easily and interested in games and sports. While adolescents who skip breakfast feel tired, have less energy and slower reactions. They are unable to concentrate and think quickly and may suffer from stomachaches, headaches and feel grouchy.[10]

Many researches has shown that children who miss breakfast showed more behavioural, emotional and academic problems as compared to those who consistently eat breakfast.[10]

Breakfast skipping has also been associated with other negative behaviours involving reduced academic performance increased substance abuse, and various emotional problems.[6] Thus, encouraging breakfast consumption may be an important step toward improving overall health and well-being.

So Breakfast is one of the most integral components of an individual's diet and plays an important role in ensuring the good health and wellbeing of an individual. Despite the proven importance of this meal, it has been observed that it is often underrated and skipped, especially among the adolescents. Breakfast skipping is highly prevalent in many countries including the United States and Europe (10-30%), depending on the age group, reportedly being a more common occurrence in the children and adolescents and prevalence is increasing also among adolescents of developing countries too.[11]

The current study was conducted among adolescents of Rewa city to assess the prevalence of skipping breakfast and its associated factors and to change breakfast consumption habits to ensure enough energy and nutrient intake in the morning among adolescents of Rewa city.

Material and Methods

After approval of institutional ethical committee, this cross sectional community based study was conducted among adolescents 10-18 yr age group in Rewa city from January to December 2018. Primarily the study was carried out to find out prevalence of obesity among adolescents with breakfast consumption pattern was taken as its

associated factor. The Sample size was determined by taking 19.3% combined prevalence of overweight and obesity among adolescents by a systematic review of H. Ranjani[12] with relative precision 20% at 95% confidence interval . Sample size estimated was 418 .

A multistage random sampling procedure was adopted for the selection of study subjects. After obtaining ward list randomly nine wards were selected.46/47 subjects of 10 to 19 years age group were selected randomly from each ward. Thus 423 subjects who gave informed consent were included in the study and were assured of confidentiality and anonymity.

Definition: Potential Dietary Strategies-Incorporation of Breakfast: Breakfast can be defined as the first eating occasion of the day. This meal is usually consumed before 10:00 am and typically consists of 500 calories, making up 20%-35% of total daily energy needs.[13] Data was collected by researcher using semi-structured questionnaire consisting of information about demographic data, information about breakfast consumption pattern.

Breakfast frequency was assessed with the question, "During the past week, how many days did you eat breakfast?" Responses included <1time, 2-3 time, 4-5 times, 6-7 times in a week. Seriously ill subjects and those didn't give consent were excluded from study.

Data was entered in Microsoft Excel spread sheet, analysed and interpreted using Descriptive statistics. Chi square test of significance was used to find out the association between breakfast consumption pattern and sociodemographic variables at P value <.05 was considered significance

Result and Discussion

Table 1 shows Sociodemographic characteristics of Study Subjects. Among 423 study subjects 181(42.8%) were females and 242 (57.2%) were males. The majority of study subjects were in the age group of 16 – 19 years. Around two third of the study subjects have attained middle school education and studying in higher classes and colleges.55.3% subjects were having joint family, while most of subjects 86.3% were staying with their family.

Table 1: Sociodemographic characteristics of Study Subjects

Sociodemographic characteristics	No(n= 423)	Percentage
Gender		
Male	242	57.2
Female	181	42.8
Age		
10-15 years	136	32.2
16-19 years	287	67.8
Education attained		
Illiterate and primary School completed	53	12.5
6^{th} to 8^{th} class	85	20.1
9^{th} to 12^{th} class	201	49.4
Pursuing Graduation	76	18.0
Type of Family		
Joint	234	55.3
Nuclear	189	44.7
Residence		
Staying with family	365	86.3
Far away with family/ Hostel/ With friends	58	13.7

Association of breakfast skipping pattern with sociodemographic variable were shown in Table 2.Among males 8.3% had breakfast <1 times/weeks,12.8% 2–3 times/week,16.1%4-5 times / weeks, while only 62.8% had 6-7 times breakfast consumption. Among females 17.7% had breakfast <1 times/weeks,24.3% 2–3 times/week, 20.9%4-5 times / weeks, while only 37.0% had 6-7 times breakfast consumption. Prevalence of skipping the breakfast was

significantly higher among the females as compared to males (P value <0.00001). Among 10-15 year age group 9.6% had breakfast <1 times/weeks,13.2% 2–3 times/week,13.2%4-5 times / weeks, while only 63.9% had 6-7 times breakfast consumption. Among 16-19 year age group 13.6% had breakfast <1 times/weeks,19.8% 2–3 times/week,76.6%4-5 times / weeks, while only 45.9% had 6-7 times breakfast consumption. Prevalence of skipping the breakfast significantly increased with respect to increasing age (P value 0.018).Significant trend of skipping breakfast were found with higher education of subjects (P value <0.00001) and the subjects who were staying away from family ,had highly significant association with prevalence of skipping breakfast. (P value <0.00001).

Table 2: Association of breakfast skipping pattern with sociodemographic variable

Socio-demographic variable	Frequency of breakfast consumption per week				Total (%)	χ^2	P value
	<1 times/ weeks (%)	2–3 times/week (%)	4-5 times / weeks (%)	6-7 times /weeks (%)			
Gender							
Male	20 (8.3)	31 (12.8)	39 (16.1)	152 (62.8)	242	29.85	<0.00001
Female	32 (17.7)	44 (24.3)	38 (20.9)	67 (37.0)	181		
Age							
10-15 years	13 (9.6)	18 (13.2)	18 (13.2)	87 (63.9)	136	10.06	0.018
16-19 years	39 (13.6)	57 (19.8)	59 (76.6)	132 (45.9)	287		
Education attained							
Illiterate and primary School completed	3 (5.7)	5 (9.4)	7 (13.2)	38 (71.7)	53	89.78	<0.00001
6^{th} to 8^{th} class	6 (7.1)	10 (11.8)	13 (15.3)	56 (65.9)	85		
9^{th} to 12^{th} class	19 (9.5)	31 (15.4)	40 (19.9)	119 (56.9)	209		
Pursuing Graduation	24 (31.6)	29 (38.2)	17 (22.4)	6 (7.8)	76		
Type of Family							
Joint	23 (9.8)	25 (10.7)	38 (16.2)	148 (63.2)	234	31.68	<0.00001
Nuclear	29 (15.8)	50 (26.4)	39 (20.6)	71 (37.6)	189		
Residence							
Staying with family	33 (9.0)	48 (13.2)	69 (32.1)	215 (58.9)	365	81.25	<0.00001
Far away with family/ Hostel/ With friends	19 (32.7)	27 (46.6)	8 (13.8)	4 (6.9)	58		

Discussion

These studies assess the prevalence of skipping breakfast and its associated factors among adolescents 10-18 year age group of Rewa city, M.P., India. An important finding was that more than half of these subjects in Rewa city did not consume breakfast daily. In this study, non-daily consumption of breakfast was far greater among subjects staying away from family.

Raksha Goyal et al[14] in their study also found more than half (70.9%) prevalence of Breakfast skipping. **Monika Arora et al**[15] in their study explored the patterns of breakfast consumption among 8th and 10th grade students in Delhi, India

found that 30% of the total participants consumed breakfast less than daily and age and education were significantly associated with breakfast consumption. A although in their study they found significantly lower prevalence of breakfast skipping pattern among older students as compared to younger students (Chi-square statistic=12.09; P=0.027), and higher among 8th graders than 10th graders (Chi-square statistic=7.97; The prevalence was higher among subjects with higher SES, which was in concordance with our study the difference may be due to different sociodemographic variables. **Atul Watharkar et al**[16] In their study found 47.3% prevalence of skipping breakfast among students of age group 12-15 years in four schools of Kanpur, U.P. **Chitra U et al**[17] who carried out their study among urban schoolchildren found that Only 42.8% of the children ate breakfast regularly. Over half of the children skipped breakfast, ranging from daily to once in two weeks.

Skipping breakfast is more prevalent among the girls in our study, **Chitra U et al**[17] in their study also suggest that regular breakfast consumption is more common among girls in India. Though **M. arora et al**[15] did not find significant differences in the frequency of breakfast consumption between boys and girls, while **Croezen S et al**[18] and **Rampersaud GC**[19] et al in their study found higher prevalence among boys in the developed countries.

Increasing trend of skipping breakfast shows with increasing age and education level. Older students were found to skip breakfast more often in our study**. arora et al**[15] also found higher prevalence among older age groups and 10th graders as compared to younger age groups and 8th grades ,These findings are consistent with prior literature from developed countries from **Croezen S et al**[18] and **Rampersaud GC**[19] that suggests breakfast skipping increases with age.

Conclusion and Recommendation

Skipping breakfast is more prevalent among the girls. Increasing trend shows with increasing age and education level. Subjects living with nuclear family and those stay away from the family had higher prevalence of skipping breakfast.

More emphasis should be placed on breakfast habits, especially among adolescents because it's a time when behavioural patterns are developing and stabilizing.

There is scope for improvement, as most of the subjects in the present study did not eat breakfast daily. Schools or college have to organize some programs that can include promoting a healthy breakfast (eg, whole grain cereals, low-fat milk, and fresh fruit diets including nutrient- and fibre-rich carbohydrates).There should be provision of a short break in the morning, to allow students to consume breakfast. Encourage adolescents to eat breakfast that they carry from home. Many schools start very early in the morning, leaving no time for students to have a wholesome breakfast which is an important barrier to overcome. A supportive social environment to influence parents and peers has to build to promote breakfast consumption.

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