

BREAKFAST EATING HABITS AMONG MEDICAL STUDENTS

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SUMMARY

Background: Breakfast is often thought to be the most important meal of the day as it is known to provide energy for the brain and improve learning. It is also known to contribute significantly to the total daily energy and nutrient intake. Skipping breakfast may affect performance during the rest of the day.

Aim: To determine the level of breakfast skipping among medical students and its effect on their attention span and level of fatigue during clinical sessions.

Design: A descriptive cross-sectional study of breakfast eating habits among medical students at the University of Ghana Medical School, Korle Bu-Accra.

Setting: The University of Ghana Medical School, Korle Bu-Accra.

Method: Questionnaires were distributed to second year (pre-clinical) medical students studying the basic sciences and clinical students in ophthalmology to be self-administered. Interview data was captured and analyzed using SPSS version 17.0.

Results: The total number of pre-clinical students recruited was 154 and clinical students 163 bringing to a total of 317 students made up of 203 males and 114 females (M: F=1.8:1). The overall breakfast skipping among the students was 71.92%. The prevalence among the pre-clinical students was 76.62% and clinical students 67.48%. Generally, breakfast skipping was significantly related to fatigue and poor attention during clinical sessions.

Conclusion: This study suggests that the medical students, both pre-clinical and clinical, skip breakfast and this may affect their studies adversely

Keywords: breakfast skipping, medical students, fatigue, attention span, breakfast habits

INTRODUCTION

Often breakfast is thought to be the most important meal of the day as it is known to provide energy for the brain and improve learning. It is also known to contribute significantly to the total daily energy and nutrient intake.¹ It has been suggested that skipping breakfast may have deleterious effects upon various aspects

of cognitive functioning.² Hunger in the morning can affect performance at school mainly due to lack of concentration³ (Nicklas, 2007). Pollitt and others reviewed the literature regarding the educational benefits of school feeding programmes and concluded that lack of breakfast may affect learning and attention.⁴

Studies show that many young adults have the habits of skipping meals especially breakfast.⁵ In a study among adolescent students in Oslo, the researchers concluded that skipping breakfast was a common feature among these students. They implied that skipping breakfast could cause mental distress and affect academic performance.⁶ There is also this perception that fatigue is a common problem in medical students. It is believed to be highly related to dietary habits, especially skipping breakfast, and may be a cause of poor academic performance.⁷ (BP, 1989)

Several reasons for skipping breakfast have been suggested including financial constraints, habitual, unavailability of time to prepare breakfast among others.⁸ In the university of Ghana medical school, some lecturers observed that a significant number of medical students on rotation to ophthalmology subspecialty become fidgety and disinterested long before the close of the session at half past one o'clock in the afternoon. Informal discussions with the students revealed that some of them skip breakfast.

The reasons for skipping breakfast were not forthcoming from these discussions. In this study, we hope to find out whether there is really a high prevalence of breakfast skipping among this group of students and also determine the factors contributing to the poor breakfast habits. Level 200 students (pre-clinical students in their first year in medical school) were included in the study.

We thought it would be useful to investigate the level of breakfast skipping in this group (pre-clinical) of students as well so that the results of this study could be used for future interventions in the medical school.

This is therefore, a pilot study investigate our observations, following which we hope to perform a more comprehensive study based on our preliminary findings in this study.

METHOD

This was a descriptive cross-sectional study performed among medical students in the university of Ghana medical school. The study group included second year (pre-clinical) medical students studying the basic sciences and clinical students in ophthalmology.

The pre-clinical students live on the university of Ghana main campus and are picked up early mornings at about 6.30 am (about an hour journey) to the medical school for basic science lectures which start at 8.00am.

The clinical students have formal lectures scheduled for 8.00 am to 9.00am, but some lectures are rescheduled at 7-8 am. Clinical sessions start at 9.00am. A semi structured questionnaire was distributed to the students to self-administer. The questionnaire enquired information on demographic and socio-economic data, breakfast eating patterns, the type of breakfast taken and reasons for skipping breakfast.

Other questions asked were related to students' perception of attention span and fatigue in relation to breakfast eating habits. Breakfast skipping in this context was defined as missed breakfast at least once, from Monday to Friday in a week.

The study covered the period the students were doing their ophthalmology rotations in the academic year 2011-2012. An informed consent was obtained from all who volunteered to participate in the study. The study was approved by the ethical and protocol review committee of the university of Ghana medical school. Data was captured and analyzed using SPSS version 17.0.

Quantitative and qualitative analysis were performed to determine frequency and pattern of missing breakfast, factors that determine breakfast skipping and association between breakfast skipping and student's perception of effect on concentration during clinical sessions was also undertaken.

RESULTS

The total number of pre-clinical students recruited was 154 and clinical students 163 bringing to a total 317 students. There were 203 males and 114 females (M:F=1.8:1). Table 1 shows the characteristics of students recruited.

Table 1 Background characteristics of students

		Pre-Clinical		Clinical		Total	
		No.	%	No.	%	No.	%
Sex	Male	109	53.7	94	46.3	203	100.0
	Female	45	39.5	69	60.5	114	100.0
	Total	154	48.6	163	51.4	317	100.0
Age	Mean		20.57		23.64		22.14
	(SD)		0.91		1.82		2.11
	Amount Available						
For food	Mean		407.79		261.58		294.52
	(SD)		256.76		111.06		138.81

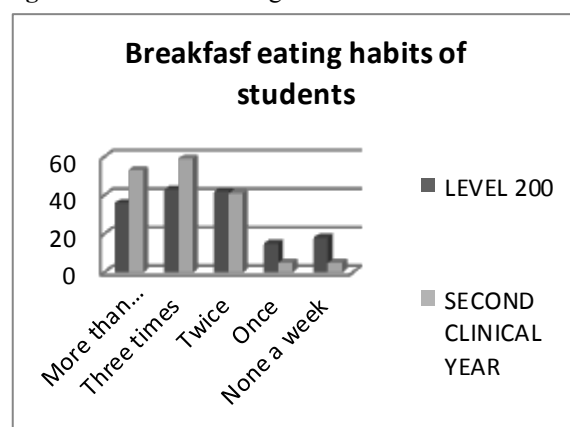
Table 2 shows the prevalence of breakfast skipping among the students. The overall breakfast skipping among the students was 71.92%. The prevalence among the pre-clinical students was 76.62% and clinical students 67.48%. There is a statistically significant association in breakfast skipping between the clinical and pre-clinical year class respectively (p-value= 0.01).

Table 2 Prevalence of breakfast skipping

Group	No. of students	No. skipping bf.	Prev. skipping (%)
Pre-clinical	154	118	76.62
Clinical students	163	110	67.48
Males	203	143	70.44
Females	114	85	74.56
Total (sex & class)	317	228	71.92

There is statistically significant relationship in breakfast skipping between the clinical and pre-clinical year class respectively at $\alpha = 5\%$, Chi sq. =17.88, df =4, p =0.001. There is statistically significant relationship in breakfast skipping between the males and females respectively at $\alpha = 5\%$, Chi sq. =10.86, df = 4, p = 0.028.

Figure 1 Breakfast Eating Habits of Students



The prevalence of breakfast skipping among females was significantly higher (74.56%) than in males (70.44%). On the average, the students (pre-clinical and clinical) took breakfast three times a week (mean 2.32; and SD 1.16). Fig 1 shows the breakfast eating habits and Table 2 breakfast skipping habits of students in both groups.

The clinical students were asked to indicate whether or not they felt tired or lost concentration on a score of 1-5 when they had had or had skipped breakfast. The results are shown in table 3. The students indicated that they were not tired during the clinical session when they had breakfast (mean score 1.89; SD 1.31) but felt tired during the clinical session when they had not had breakfast (mean score 4.20; SD 1.29).

Table 3 Number of breakfast eaten per week as related to level of fatigue

Score/level of fatigue during clinical session when student had breakfast						
No/WK	1	2	3	4	5	total
≥4	27	15	4	0	7	53
3	28	21	1	0	8	58
2	26	7	2	1	5	41
1	3	1	0	0	0	5
0	2	3	0	0	0	5
Total	86	47	7	1	20	161
Score/Level of fatigue during clinical session when student had no breakfast						
≥4	7	1	7	9	29	53
3	2	0	5	8	44	59
2	4	3	2	7	25	41
1	2	0	0	0	3	5
0	1	0	1	0	3	5
Total	16	4	15	24	104	163

There is no statistically significant association between the number of breakfast taken per week and level of

fatigue when student had breakfast at $\alpha = 5\%$, Chi sq. = 13.08, df = 16, p = 0.67.

There is no statistically significant association between the number of breakfast eaten per week and level of fatigue when student had no breakfast at $\alpha = 5\%$, Chi sq. = 20.57, df = 16, p = 0.19

They also indicated that they were alert by the end of the clinical session at 1:00pm when they had had breakfast (mean score 1.73; SD 1.07), but lost concentration by the end of the session at 1:00pm when they had not had breakfast (mean score 4.04; SD 1.33).

There is a weak negative linear relationship between how often per week breakfast is taken and the student fatigue during the clinical session ($R = -0.027$; $p = 0.71$; $\alpha = 0.05$) suggesting that breakfast skipping is related to poor concentration.

The students were asked to indicate how tired and how alert they felt by the end of the clinical session on days that they had or had not had breakfast on a scale of 1-5. Over 82% (135) indicated they did not feel tired when they had had breakfast; 86.2 (141) felt they were very alert when they had breakfast.

On the other hand the majority felt tired and lost concentration when they had had no breakfast. (Table 4)

Table 4 Level of fatigue/alertness on a day when student had eaten or not eaten

Levels of alertness or fatigue	1	2	3	4	5	Total
	No.(%)	No.(%)	No.(%)	No.(%)	No.(%)	
FATIGUE						
When eaten	88(54.00)	47(28.80)	7(4.30)	1(0.60)	20(12.30)	163
When not eaten	16(9.80)	4(2.50)	15(9.20)	24(14.70)	104(63.80)	163
ALERTNESS						
When eaten	88(54.00)	53(32.50)	11(6.70)	-	11(6.70)	163
When not eaten	15(9.20)	13(8.00)	9(5.50)	38(23.30)	88(54.00)	163

On a scale of 1 to 5 1 is not tired or very alert; 5 is very tired or not alert

The majority of students (183/317; 67.5%) cited lecture schedule as a major cause of skipping breakfast. They indicated that lectures were too early so they would be late for lectures if they had to take breakfast. Financial constraints came second with 42(15.5%) respondent indicating that they would only spend on breakfast if other things were catered for.

In allocation of funds available to them, breakfast was not high on the list. Other reasons (17%) for skipping breakfast included available place to buy food (sometimes food vendors did not come early), lack of appetite or not hungry, volume of work, normal habit, oversleeping, spiritual (fasting), and bus schedule when the

pre-clinical students had to be picked from the university campus to the medical school early mornings.

Type of breakfast

For breakfast, thirty two percent of the students had beverage and bread with or without eggs or a sandwich, 27.1% had snacks (fizzy drink with pastry or bread), another 27.1% had heavy local meal (e.g. waakye, kenkey and fish, jollof, ampesi). Some 13.6% had cereal (koko, hausa koko, cornflakes) and bread. Most of the students buy breakfast from food vendors.

Desired changes in programme

When asked what changes the students felt should be effected to improve the programme, majority of the respondents suggested that the school should give an official time for breakfast and lecture should not start before 8.00am. A few suggested that the school should provide breakfast. The clinical students suggested that they would prefer to spend a shorter time at the clinic daily and some suggested that seats should be provided for students at the clinic as they thought long hours of standing contributed to their fatigue. Some of the pre-clinical students suggested that the bus schedule should be changed to give them enough time to eat before the first lecture of the day.

DISCUSSION

Breakfast is known to be an important aspect of one's lifestyle. Several studies have shown that breakfast skipping is common among young adults in colleges and universities. Breakfast skipping may be associated with the skipping of other meals, snacking and the consumption of fast foods of poor nutritional value. In a study by Siega-Riz et al, 1 in 3 teenagers in high schools consumed nothing or water, cordial, coffee, tea or soft drink for breakfast.

In another study among adolescents in schools in Queensland, 23 per cent aged 16-18 years have breakfast less than five times per week. Their results also suggest that the older the cohort the more likely participants were to skip breakfast. In our study the prevalence of breakfast skipping at least once in a week was very high, about 72% with a slightly higher prevalence among females and among pre-clinical students (77% as against 67%). It is obvious then that the habit of skipping breakfast does not start during the clinical years.

The reasons given for skipping breakfast are not different from what other studies reported. In a study among undergraduates in a public university in Kuala, the reasons the students gave for skipping breakfast were more of personal choice such as no time to eat, did not like to eat early, no appetite or oversleeping.¹¹ The major reason for our students skipping breakfast is that of availability of time to eat before the first lecture of the day.

Factors associated with this include an early bus schedule from the main university campus from Legon to the medical school and the rescheduling of some lectures for the clinical students at 7.00am.

About 15% of the students stated financial reasons for skipping breakfast. For most of these, breakfast was not a priority in the management of their finances.

It is possible that these students are not aware of the risks of skipping breakfast and the benefits of taking a good breakfast. The study did not cover this aspect. Cooksey in a study among teenagers found that skipping breakfast was more frequent when eating alone, or when breakfast had to be prepared by the teenager's themselves.¹² Other reasons stated were personal as reported in the Kuala study. These include availability of food to purchase, lack of appetite or not hungry, normal habit, oversleeping, spiritual (fasting).

This study confirmed our observation that lack of breakfast contributed to fatigue and lack of concentration among the clinical students. Although there was no significant association between the numbers of times breakfast was skipped from Monday to Friday, overall over 78.5% (128/163) of the clinical students confirmed that they felt tired or very tired when they had no breakfast. On the other hand, about 83% (135/163) felt only slightly tired or not tired at all when they had breakfast.

Other studies have shown similar trends. In one university, the prevalence of fatigue was as high as one-quarter of total new entrant student. Other factors related to fatigue include lack of sleep and lack of exercise. These factors were not considered in this study. Regarding the types of food students had for breakfast, most of the students had healthy diet of sandwiches, with beverage or cereal or local balanced diet (waakye, kenkey, jollof, ampesi with appropriate source).

However 27% had snacks (fizzy drinks with pastry) which are unhealthy. The students were conscious that the current conditions relating to their breakfast eating habits are not the best. Consequently, the suggestion from the students that the school should provide breakfast, and a dedicated time for breakfast, is worth considering. The suggesting that lectures should start not earlier than 8.00 am is also valid since this will provide adequate time for having a good breakfast in a relaxed environment.

CONCLUSIONS

This study suggests that the medical students, both pre-clinical and clinical, skip breakfast to the detriment of their studies. To correct this, it is expedient for the school to provide breakfast and a dedicated time for breakfast as was the situation about 3 decades ago.

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