

Association of Breakfast Routine with Quality Of Life and Sleep Quality in University Students; A Cross Sectional Survey

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ABSTRACT

Background: The relationship between certain breakfast consumption habits and mental health has been reported previously, many observational studies showed association between breakfast routine and academic performance. However, few studies regarding sleep quality with breakfast consumption have been carried out.

Objective: To determine the association of breakfast routine with quality of life and sleep quality in university students.

Methods: This was a cross sectional survey conducted among 490 students of Doctor of Physical Therapy, using the sample of convenience. The included students were both male and female, aged 20-27 years old and studying in their 3rd or above professional year. The students with a diagnosed psychological disorder and on a diet plan for weight reduction were excluded. The questionnaire was comprised of demographics such as age, body mass index, academic year, gender, self-perceived quality of sleep, grade in academic assessment, dietary habits and breakfast consumption frequency.

Results: The main results showed that 68.6% students between 20-23 years and rest of 31.4% were between 24-27 years of age and gender majority were female 77.3%. According to self-perceived sleep, there were 82.7% having good sleep quality and 17.3% having poor sleep quality. The findings regarding consumption showed that majority 50.4% were taking breakfast 5-7 days a week, 27.6% occasionally 3-4 days/week and 22% rarely. Chi Square test showed that either food consumption routine or type were not associated with academic performance (p value 0.264, 0.188 respectively) or sleep quality (p value 0.997, 0.959 respectively).

Conclusions: Breakfast habits are not significantly associated with academic grades. Also, there is no significant association found between breakfast habits and sleep quality.

Keywords: quality of life, sleep quality, breakfast habits, academic grades

INTRODUCTION

There has been a lot of research done on eating habits and their relationship to academic performance and sleep quality. Nutrition and dietary choices influence the concentration of vitamins, sugar, and mega-3 fatty acids in the blood, which in turn influences the functioning of the brain's attention centre.(1-5) Furthermore, the impact of dieting on a wide range of mental health disorders, particularly among women, has received a lot of attention. In recent years, there has been less emphasis placed on the need to eat meals on a regular basis for one's mental health.(6, 7) According to Smith, several studies have been published on the relationship between neurological concerns and breakfast consumption.(8, 9) The current study is also looking into the impact of consistent healthy behaviours on mental health which may further impact quality of sleep and academic performance. In the past, many explanations have been proposed to explain the association between eating breakfast on a regular basis and having good mental health. Previous literature has demonstrated that eating breakfast cereal on a constant basis improves mood, memory, and driving ability. According to research, regular breakfast consumption is also connected with improved sleep quality and bowel function, both of which are crucial in the mediation of psychological well-being. Breakfast's impact on fatigue reduction is possibly the most significant thing to consider when it comes to mental wellbeing. With a few exceptions, many findings on consuming breakfast and its relation with the development of mental health have relied on narrow sample sizes and only included adult individuals. Chen and colleagues conducted a prospective study on the factors influencing the quality of life in Japanese children aged 12 to 13.(10, 11) Bull has found that skipping breakfast daily was associated with dieting in adolescents, that negroes skipped breakfast more offently than white people, and that people from England and Wales had breakfast less frequently than people from Northern and Southern Ireland in a review of dietary habits in adolescents.(12) A survey of Norwegian teenagers from various ethnic backgrounds indicated that they had a wide array of food habits and diets to choose

from.(13) A variety of factors could influence the academic performance which may have roots into dietary habits directly or indirectly. The study was conducted in a bid to investigate a relationship between breakfast routine and academic performance along with quality of sleep.

MATERIAL AND METHODS

The study was cross sectional, conducted among 490 students of Doctor of Physical Therapy, using the sample of convenience. Due to maintain anonymity, the names of university have been concealed. The included students were both male and female, aged 20-27 years old and studying in their 3rd or above professional year. The students with a diagnosed psychological disorder and on a diet plan for weight reduction were excluded. All the included students signed consent form and filled in the questionnaire which was given as hands out and collected back on spot. The questionnaire was comprised of demographics such as age, gender, academic year, and body mass index; grade in academic assessment, self-perceived quality of sleep; dietary habits and breakfast consumption frequency. SPSS 20.0, IBM software was used to analyse data such as frequency, percentage, and chi square test for association. Ethical approval was taken from Link Medical Research Institute, Lahore.

RESULTS

The descriptive results as shown in Table 1, regarding age showed that there were 68.6% students between 20-23 years and rest of 31.4% were between 24-27 years of age, regarding gender majority were female 77.3%, regarding academic year majority were 68.6% year, 29.2% from fourth and 2.2% were from fifth year. The results regarding Body mass index showed an 87.3% having normal weight, 10.2% overweight and 2.4% were under weight. According to self-perceived sleep, there were 82.7% having good quality and 17.3% having poor sleep quality.

The results regarding study questions (Table 2) of academic performance showed that there were 34.5% students with A+,

63.5% grade A and 2% were having grade B. Most students reported an average focus during the class. The findings regarding consumption showed that majority 50.4% were taking breakfast 5-7 days a week, 27.6% occasionally 3-4 days/week and 22% rarely. Furthermore, there were 15.3% students taking junk food as routine diet and 84.7% were taking traditional type of food. However, Chi Square test showed that either food consumption routine or type were not associated with academic performance (p value 0.264, 0.188 respectively) or sleep quality (p value 0.997, 0.959 respectively).

Table 1: Demographics

	No. of Students=490	Percentage=100%
Age		
20-23 years	336	68.6
24-27 years	154	31.4
Gender		
Male	111	22.7
Female	379	77.3
Academic Year		
Third	336	68.6
Fourth	143	29.2
Final	11	2.2
BMI Categories		
Under Weight	12	2.4
Normal	428	87.3
Overweight	50	10.2
Sleep Quality		
Poor	85	17.3
Good	405	82.7

Table 2: Academic Performance and Dietary Routine

	No. of Students=490	Percentage=100%
Last Grade based on CGPA		
A+	169	34.5
A	311	63.5
B	10	2.0
Class Focus		
Less Focus	75	15.3
Average Focus	383	78.2
Not noticed	32	6.5
Breakfast Consumption Frequency		
Rare (0-2 days/ week)	108	22.0
Occasional (3-4 days/week)	135	27.6
Frequent (5-7 days/weeks)	247	50.4
Food Type		
Junk	75	15.3
Traditional	415	84.7

Table 3: Association of Food Consumption and Academic Performance

Association	P Value
Food Type vs Last Grade based on CGPA	0.188
Food Type vs Sleep Quality	0.959
Routine vs Last Grade based on CGPA	0.264
Routine Type vs Sleep Quality	0.997

DISCUSSION

The objective of our study was to determine an association of breakfast frequency with academic performance and sleep quality. Although, there was no statistically significant association, yet it revealed the important findings. Most students were females and under 23 years of age. The gender distributed is like most of past studies conducted among university students.(14, 15)

Almost negligible percentage of students were falling in low grade category. Breakfast consumption routine showed that majority were taking breakfast regularly and small percentage of 22% were taking breakfast occasionally 1 to 2 days a week. These contrary results, as compared to many previous studies.(16, 17) Similarly, the breakfast consumption routine was not associated

with sleep quality, while many past studies have shown a link with frequency and psychosocial health of students.(17, 18) However, there may be other undiscovered confounding factors such as type of routine food consumption, family food traditions, family structure and institute environment and training quality of institute.

Recently, many studies have reported that 'some aspects of brain function and development is somehow related with the breakfast consuming habits' e.g. neuronal activity and cognitive performance. Therefore, a good quality breakfast is highly recommended for the nourishment and development of the brain in adults. Moreover, Grantham-McGregor's reviewed the paper and determined the various key facts that students have shown good focus during studies when they have a high quality breakfast than those who tends to skip. Thus, it has been suggested that there is strong association between having breakfast daily and engagement in college or university which includes different factors such as showing attendance, enrolment, class room behaviour and achievements. Adolescence has its effects on males and females differently, and effects of breakfast consuming habits on academic grades tend to have more impact on the female adults than the male students.(19)

One of the previous studies has recommended that there are certain factors which can reduce the occurrence of chronic diseases in individuals such as increasing the consumption of fast-absorbable and shortfall nutrients and minimizing the consumption of energy dense and fatty foods. Therefore, it is strongly suggested that having breakfast daily is considered to be a positive modulator of diet quality. The current study also showed improvements in diet quality as shown by the reduction in evening snacking behaviour of carbohydrate- and fat-rich foods, which occurred after the consumption of breakfast compared with breakfast skipping. Thus, although breakfast did not result in decreased daily calories, breakfast consumption is considered to be an important strategy to improve diet quality. (20)

Eating behaviours is considered to be an important key factor of sleep health. As circadian rhythm disturbance is associated with ingestion and omission of food consuming habits (sleep-wake time in mostly individuals leads to disturbance in metabolism disturbances and circadian misalignment).Moreover, it is suggested that skipping the breakfast has negative impact on sleep- wake cycle and overall sleep health, which, contrary breakfast is crucial factor in establishing ingestive behaviour throughout the day.(21)

Recently, one of the studies reported that breakfast consumption has many beneficial effects which include, as suggested by Smith, after a long night's fast; consuming high energy breakfast and cereals has improved bowl functions and overall health.

Secondly, the strong association between brain developmental neuronal activity which effects on learning and memory with regularly having breakfast showed better recalling the events occurred in past and maintaining the energy build up in the body. Thirdly, there can be information bias in the form of misclassifications. It is, however, unlikely that a student with a stressful thoughts and lack of good quality of sleep have reported more frequent skipping of morning energy intakes and lower academic grades than a student who regularly consumes breakfast. Hence; there is one way suggested to minimize the effects of non-differential misclassification is to obtain objective and refined knowledge about its outcome or exposure. Therefore, parents must be kept aware of potential benefits of eating breakfast daily is one of the public health impact of this study.(22)

One of the evidence shown that there was a strong association of self-perception of medical students with the daily eating behaviour and breakfast consumption. The prevalence of daily breakfast consumption in medical students who have a good self-perception about sleeping quality was significantly higher than for students with a bad self-perception. Moreover, there was a strong correlation between daily breakfast consumption improving the sleep quality and overall mental health. Although, poor and

disturbed sleep prone to have less frequent meals and can bring difficulties in waking up on time. One study recommended that adult population prone to have great risk in poor appetite with poor-quality sleep, which can lead to other factors such as lack of nutrients and energy. Thus, Poor quality sleep is directly associated with an increased risk of poor appetite, these findings showed that public health managers should pay more attention to medical students' sleeping quality. (23)

There is another finding which is showing that poor academic records have association between breakfast consumption and well-being of an individual. (24)

CONCLUSIONS

Breakfast habits are not significantly associated with academic grades. Also, there is no significant association found between breakfast habits and sleep quality.

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