Research Article

Relationship between Breakfast and Academic Grades of Medical Students College in Queen Arwa University, Yemen

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Abstract:

The research was carried out to find out breakfast quality and their impact on student's grades among medical college-going students. A standardized questionnaire was introduced to students to collect their responses at Queen Aewa University, Sana'a, Yemen. 212 students of the university among them 35.6% were male and (64.6%) were female. A Survey is a questionnaire composed of demographic-related questions, other breakfast quality, and habits-related questions, nutritional health-related questions etc. The estimates of the breakfast quality of students were high, moderate, and low, 40.6%, 54.7%, and 4.7%, respectively. There wasn't a significant effect between Student grades and breakfast quality $P=0.668$, Eating breakfast $P=0.945$. During this study, it was observed that the majority of the university students obtained a medium level of breakfast. It is recommended for further study, increase the sample size and extend the age range to get better results.

Keywords:

Breakfast, Eating, Questionnaire, Quality, QAU, Yemen

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العلاقة بين تناول وجبة الإفطار والتحصيل الأكاديمي لطلاب الكلية الطبية في جامعة الملكة أروى، اليمن

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الملخص

يهدف هذا البحث إلى دراسة العلاقة بين جودة الإفطار والتحصيل الأكاديمي بين طلاب الكليات الطبية في جامعة الملكة أروى باليمن. تم استخدام استبيان موحد لجمع البيانات من 212 طالبًا، منهم 35.6% ذكور و64.4% إناث. شمل الاستبيان أسئلة حول العادات الغذائية، والجوانب الصحية، وتأثير تناول الإفطار على الأداء الأكاديمي. أظهرت النتائج أن 40.6% من الطلاب يتمتعون بجودة إفطار عالية، و54.7% بجودة متوسطة، و4.7% بجودة منخفضة. ومع ذلك، لم يكن هناك تأثير معنوي بين جودة الإفطار ومستوى التحصيل الأكاديمي (P=0.668) أو بين تناول وجبة الإفطار والأداء الدراسي (P=0.945). كما بينت الدراسة أن معظم الطلاب يتناولون وجبة الإفطار بمستوى متوسط، مما يشير إلى الحاجة إلى دراسات أوسع تشمل عينة أكبر وأعمار متنوعة لفهم العلاقة بشكل أعمق. توصي الدراسة بضرورة توعية الطلاب بأهمية الإفطار الصحي ودوره في تحسين الأداء الذهني والتحصيلي، خاصة في البيئات الأكاديمية.

الكلمات المفتاحية

وجبة الإفطار، الأكل، الاستبيان، الجودة، وحدة ضمان الجودة، اليمن

Introduction

Breakfast is most important meal of the day and usually taken after night fast or after a long gap. Various health surveys and cross-sectional studies reported morning meal positive effect on memory recall, children performance, mood, work performance, cognitive function, women health like irregular mensuration and reduction in obesity and effect on body mass index. Still people skip breakfast throughout the world due to several reasons like lack of time, family environment, single-parent family, not feeling hunger in morning or having several misconceptions like thinking of being obese. Skipping morning meal have an adverse effect on health.

Breakfast is considered the most crucial meal of the day as it is usually eaten after an overnight fast or an extended gap. Numerous health surveys and studies have demonstrated its beneficial effects, such as improved memory, enhanced academic and work performance, better mood, and cognitive function. It is also associated with positive outcomes for women's health, including regulating menstrual cycles and reducing the risk of obesity, as well as contributing to a healthier body mass index (BMI). Despite these benefits, many people worldwide skip breakfast due to reasons like time constraints, family dynamics, lack of appetite in the morning, or misconceptions such as believing it leads to weight gain. However, skipping breakfast can negatively affect overall health. [1,2]

Previous research suggests that skipping breakfast leads to adverse symptoms in students, such as fatigue, slow reaction and cognitive decline [1], and increases the risk of obesity, hypertension and heart disease [3,4]. Studies have revealed that individuals who eat breakfast demonstrate noticeably higher brain activity during task performance compared to those who skip it [5]. To sum up, the frequency of breakfast consumption plays a vital role in improving brain

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function and maintaining the physiological health of adolescents.

Breakfast is commonly considered the most significant meal of the day. Breakfast consumption is also associated with positive outcomes for diet quality, micronutrient intake, weight status, lifestyle factors as well as academic in some studies in many countries but in Yemen, there are no study regarding this topic also because of decrease of academic performance of Yemeni students we chosen this topic. The objective of study was to determine the relationship between breakfast quality and academic performance among medical students in QAU, Yemen.

Research Methodology

Study design

Cross-sectional study was performed during period of 2024.

Study area

The study was conducted at Queen Arwa University.

Population

The subjects were students including both boys and girls in the age group from 18 to 35 years who were studying in Queen Arwa University.

Sample size

The sample size was calculated according to Epi Inf. The final sample size was 212 students that participated in the study.

Data Collection Techniques

A structured questionnaire was used to collect the general information such as quality of breakfast, age, sex, educational level, nutritional assessments, BMI, Grade, Breakfast frequency and Specialization.

Demographic data

The name, gender, age, and age groups were specified from 18 to 30, area of residence, college, major, level, and average. The answers to the "average question" were: excellent, very good, good, acceptable, and weak.

Clinical data

The students' physical appearances were measured by the researchers such as skin, hair, nails and eyes.

Anthropometric data

The student's height and weight were measured by the researchers to calculate the student`s BMI.

Breakfast quality index

Questions were asked about the quality of breakfast, such as cereals, fruits, vegetables, dairy products, the absence of fatty acids, and eating breakfast, and the answers to the question were "4-5 times a week, 3-4 times, 1-2 times." The time for eating breakfast and the answer to the question was "7-8 hours, 8-9 hours, 9-10 hours, 10-11 hours." Reasons for eating breakfast, average, and place of eating breakfast.

Breakfast habits

At this stage, students need to meet their nutritional needs. They tend not to eat breakfast or do not eat breakfast. Skipping breakfast leads to behavioral changes and poor academic achievement, as well as a decrease in the number of vitamins and minerals. Not consuming breakfast leads to decreased academic achievement, hyperactivity., low attention span, and many more that will be discussed in this study article among students.

Evaluation students' academic achievement

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The questionnaire was used to collect data from Deanship of Student Affairs at Queen Arwa University about students' academic performances (Grade).

Variables

- Dependent Variables: Breakfast quality.
- Independent Variables: Students' grade.

Inclusion Criteria

- Both male and female
- Anyone who is students in QAU

Exclusion Criteria

- Person unwilling to do this study
- Anyone who isn't students in QAU

Data Analysis and Statistical Methods

The data were entered in Excel and SPSS for analysis.

Ethical consideration

An ethical clearance was granted by students and authorities of QAU.

Result and Discussion

Demographic characteristics distribution of selected sample

The table 1 showed the demographic characteristics distribution of selected sample. The percentages for men and women were 35.4% and 64.4%, respectively. According to the sample distribution of university students, 28.3% of students are between the ages of 18 and 20, and 67.0% are between the ages of 21 and 25.and 4.7% are between the ages of 25 and 30. Ninety-one percent of pupils resided in cities, while only 0.9% did so in rural areas. According to the university student sampling distribution, 31.1% of students were from the pharmacy, and 16.5% were from the laboratories. whereas the department of nutrition was 18.4%. Additionally, 34.0% of participants came from dental departments. 15.1% of students were in the first level, 9.4% were in the second, 26.9% were in the third, 23.6% were in the fourth, and 25.0% were in the fifth

Table 1 Socio-Demographic characteristics of the population of the study (n=212)

Variable		Number of participate	Percentage of participate
Gender	Male	75	35.4%
	Female	137	64.6%
Age of participant	18-20	60	28.3%
	21-25	142	67.0%
	25-30	10	4.7%
Residence area	City	210	99.1%
	Country	2	0.9%
Specification	Pharmacy	66	31.1%
	Laboratories	35	16.5%
	Nutrition therapy	39	18.4%
	Dental	72	34.0%
Level of education	1	32	15.1%
	2	20	9.4%
	3	57	26.9%
	4	50	23.6%
	5	53	25.0%

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Distribution of Grad of students, BMI and Breakfast quality

The distribution of students' grades, breakfast quality, and BMI among the chosen sample is displayed in Table 2. 35.4% of students are considered exceptional, and 41.0% are considered very good. Those who are good make up 17.9%, those who are accepted 1.9%, and those who are weak 3.8%. Poor quality students make up 4.7% of the student body, while medium quality students make up 54.7%.and are of high quality, accounting for 40.6%. Students who are underweight (18.9%), healthy (63.2%), overweight (16.5%), and obese (1.4%).

Table 2 Distribution of Grad of students, BMI and Breakfast quality among selected sample (n=212)

Variable		Number of participate	Percentage of participate
Grade	**Excellent**	75	35.4%
	Very good	87	41.0%
	Good	38	17.9%
	Accepted	4	1.9%
	Weak	8	3.8%
BMI (body mass index)	**Underweight**	40	18.9%
	Healthy	134	63.2%
	Overweight	35	16.5%
	Obesity	3	1.4%
Breakfast quality	**Poor**	10	4.7%
	Medium	116	54.7%
	High	86	40.6%

The impact of breakfast quality on student grade within the selected sample

Table 3 shows the impact of breakfast quality on student grade Within the selected sample. The percentage of students who received an excellent grade and had a breakfast quality index (poor) was 4.0%, a breakfast quality index (medium) was 57.3%, and a breakfast quality index (high) was 38.7%. The percentage of students who received a very good grade and had a breakfast quality index (poor) was 3.4%, Medium was 54.0%, while high breakfast quality was 42.5%. The percentage of students who received a good grade and had a breakfast quality index (poor) was 7.9%, Medium was 52.6%, High was 39.5%. The percentage of students who received an acceptable grade and had a breakfast quality index (poor) was 25.0%, Medium was 50.0%, and high was 25.0%. The percentage of students who received a weak grade and had a breakfast quality index (poor) was 0.0%, Medium was 50.0%, High was 50.0%.

Quality breakfast plays a crucial role in academic performance and cognitive development. Research indicates that breakfast consumption is linked to improved attention, memory, and overall academic performance[6,7]. Studies emphasize the importance of a nutritious breakfast, highlighting its impact on children's physical, psychological, and cognitive development [8]. Additionally, family environment and parental involvement are key factors in establishing healthy breakfast habits among children. The International Breakfast Research Initiative aims to establish breakfast-specific dietary guidelines based on nutrient intake data from various countries, emphasizing the significance of a well-rounded breakfast for overall health and well-being. In conclusion, a

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high-quality breakfast not only supports academic performance but also contributes to overall cognitive and physical development in children and adolescents.

Table 3 The relation between Breakfast quality and student grade among students' population

Variable (number of participates)		Students grade					P value
		Excellent	Very good	Good	Accepted	Weak	
Breakfast quality	Poor	3(4.0%)	3(3.4%)	3(7.9%)	1(25.0%)	0(0.0%)	0.668
	Medium	43(57.3%)	47(54.0%)	20(52.6%)	2(50.0%)	2(50.0%)	
	High	29(38.7%)	37(42.5%)	15(39.5%)	1(25.0%)	4(50.0%)	

Conclusion

During this study it has been observed that majority of the university students of Queen Aewa University, Sanaa Yemen is conscious about their health. The estimate of the breakfast quality of students were high, moderate and low, 40.6%, 54.7% and 4.7%, respectively. There weren't significantly affect between Student's grade and factors body mass index P=0.578 breakfast quality P=0.668. This study was done only on the students of Queen Aewa University, Sanaa Yemen so it only represents the breakfast status of this university student.

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