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Research paper

Breakfast Habits and Supplement Intake Among Health Sciences Students in Universiti Teknologi MARA, Selangor

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Abstract

There are high numbers of supplement usage among students with lack of knowledge regarding their side effects and health benefits. The purpose of this study is to assess the supplement usage and breakfast habits among undergraduate students. A total of 138 participants completed a questionnaire on breakfast habits and supplement usage. Less than half of the students consume supplements (34.8%). Most of the students consume supplement to improve energy and vitality (64.15%). Vitamin C is the most popular type of supplement consumed (79.5%). All students consume breakfast but 54.34% of them tend to skip breakfast due to lack of time (65.3%) and prefer to sleep longer (46.67%). The students also prefer to have ready to eat meals like bread, toast, hot drinks and cereal. Present findings propose empowering the nutrition education to increase knowledge on supplement and breakfast intake among students.

Keywords: *Supplement Usage, Breakfast Habit, Health Sciences Students*

1. Introduction

The Academy of Nutrition and Dietetics [1] define breakfast as the first meal of the day. It is consumed after sleep within a period of 2 to 3 hours of waking. Besides that, the breakfast can be eaten anywhere and consists of beverage or food from at least one food group. A study stated that there is a high prevalence of skipping breakfast among university students and also added that more males skip breakfast than females [2]. Besides that, a study in 2011 conducted in Malaysia among selected universities also shared the same results where it was highlighted that there was a presence of unhealthy eating behaviour among universities students and one of the most common habit is skipping breakfast [3]. Meanwhile, a cross sectional study conducted among medical schools in Malaysia supported the previous studies which stated that less than 50% of the participants had breakfast daily [4].

There is a lack of studies that associate eating habits with academic performance among undergraduates. However, there is a strong association between academic performance with dietary behaviour [2]. An example of poor dietary behaviour is skipping meals such as breakfast which, in turn, can affect memory, attendance rate, academic performances, mood and psychosocial function. In addition to that, students may experience fatigue, loss of attention, perception deficit and headaches [5].

Furthermore, the author added that irregular eating patterns or a decrease in the number of meals may lead to an increase in fat synthesis and storage. This is a serious matter because it was reported that an estimated prevalence rate of meal skipping among the population of young adults vary between 24% and 87% [6].

Dietary supplement is defined as any product other than tobacco which is used to supplement a diet that contains or bears one or more of the following ingredients: a vitamin, a herb or botanical, an amino acid, a mineral, a supplement used by a person to supplement their diet by raising their total dietary intake, or a concentrate, extract, constituents or mixture of any ingredient stated before [7].

Based on the research it was found that the usage of dietary supplements is high among undergraduate students. A study found that it is a common practice for medical students especially females to consume supplements [8]. A similar result was found in India where almost half of the students in a health sciences faculty consumed dietary supplements [9]. The authors also remark that the majority of the users are female. In Malaysia, it is also a common practice among health science students and females to consume dietary supplements [10]. However, although the dietary supplements were high, the knowledge on the health benefits and the side effects were lacking [10-11].

Excessive consumption of dietary supplements is always a cause for concern due to potential adverse effects like neurological disturbances, hepatotoxicity, drug interaction and gastrointestinal symptoms [9]. In fact, although high expenses had gone to the use of dietary supplements, numerous studies reported that these usages do not have enough evidence to protect and prevent morbidity or mortality caused by major diseases and, somehow, might even be harmful [11].

The purpose of this study is to assess the dietary supplements usage as well as breakfast habits among undergraduate students. Before the data analysis, it was expected that the number of supplement users and breakfast skippers among students in this study to be high. This study will provide an understanding on the sup-

plement and breakfast habits of students. The results can be used as a guideline for the educational institution to promote a healthier environment in the university

2. Methodology

A total of 138 students from faculty of healthy science of Universiti Teknologi MARA (UiTM) were selected by using the convenience sampling method. Prior to the data collection, the board of UiTM ethics committee had approved this study (REC/138/17). A consent form was given and students in this study were fully voluntary. This cross sectional study was conducted on students that fulfilled the inclusion criteria, which were full – time registered students in the range of 18 – 26 years old while those who were bedridden or pregnant were excluded. Data was collected from April to August 2017. Students were given a questionnaire consisting of three sections. Section A was on socio-demographic data, section B was on dietary supplements intakes and section C was on breakfast intakes. The administration of the questionnaire was through collective administration in the place where a large number of students assembled in one place like the university hall. Before the questionnaire was given to the students, the investigator conducted a face-to-face interview where investigator explained first about the purpose of the study, the questionnaire section and then left the students to answer the questionnaire in 20 minutes. Then, the questionnaire was submitted to the investigator. The data was then coded and analysed using statistical analysis via SPSS Version 21.

2.1. Socio-Demographic Information

Information including current living arrangement, academic year, field of study, date of birth, age, sex, ethnicity and others was self-reported.

2.2. Dietary Supplement Assessment

To investigate the dietary supplement usage among undergraduates, the Dietary Supplement Usage questionnaire was used. The ques-tionnaire was adopted from a previous study which had been con-ducted among students. The approval was obtained from the author prior to the onset of the study [10]. The questionnaire consists of two sections where it requested the students to report on the usage of selected 43 dietary supplements and the reasons for taking them. This questionnaire was self- reported by the students. The reliability of the total score for this questionnaire was determined using Cronbach's alpha = 0.8.

2.3. Breakfast Habit Assessment

To investigate the breakfast habits among undergraduates, the breakfast habit questionnaire was used. The questionnaire was adopted from a previous study. The approval and original question-naire was obtained from the author prior to the onset of the study [12]. There are a total of 7 sub-questions which explore the fre-quency of breakfast consumption, what is meant by breakfast, types of breakfast consumed during weekdays, types of breakfast con-sumed during weekends, reasons for not taking breakfast and opin-ions regarding breakfast intakes and which days the students had breakfast in the previous week. This questionnaire was self-reported by the students. The reliability of the total score for the breakfast habits questionnaire was determined using Cronbach's alpha = 0.7.

2.4. Statistical Analysis

Data were analysed using SPSS version 21. A descriptive test was used on the socio-demographic information of the students, supplement assessment and breakfast habit assessment. The results were presented as frequencies and percentages. As for the age of the students, the results were presented as a mean and standard deviation.

3. Results and Discussions

Table 1 represents the socio-demographic characteristics of the students. 138 total students participated in this study. There were 11.6% male students and 88.4% female students involved in this study. Females were dominant due to the nature of this course which enrolled mostly by women. Majority students lives inside the campus (87.7%) and half of them using loan to support their financial.

Table 1: Socio-demographic of students (n=138)

Characteristics	n (%)	Mean (SD)
Sex		
• Male	16 (11.6)	
• Female	122 (88.4)	
Age		21.8 (1.5)
Living		
• Inside campus	121 (87.7)	
• Outside campus	17 (12.3)	
Financial support		
• Loans	69 (50.0)	
• Scholarship	43 (31.2)	
• Self-Financed	26 (18.8)	

The present study shows that less than half of the students consume supplements (38.4%) in Table 2. This number is quite low compared to several previous studies which claimed higher intakes of dietary supplement among students and adults [8,10].

Table 2: Frequency of students taking supplement (n=138)

Subjects	n (%)
Supplement Intake	53 (38.4)

Fig. 1 shows 24 out of 43 types of supplements being taken by the students. Among the supplements, vitamin C was the most common type of supplement consumed at 79.5%. Among minerals users, iron was the highest at 11.32%. Evening Primrose oil and aloe vera were the most popular non-vitamin non-mineral supplement among students at 16.98%. Among the reasons for consuming supplements are to 'improve energy and vitality' which was the highest choice for students (64.15%) followed by 'promoting skin or hair health' (62.26%), 'to prevent illness (common cold, cancer)' (35.85%) and 'to supplement inadequate diet (32.8%). This result was found to be in line with a previous study where the top three supplements used are multivitamins, vitamin C and, B complex [9,11]. The reason for vitamin C's popularity is perhaps due to a statement by Linus Pauling, a two-time Nobel Laureate, who claimed that vitamin C could increase the life expectancy of cancer patients and prevent cancer [13]. Although Pauling performed a study where the result showed that the patient's life was prolonged by one year, the study was not randomized and, thus, questions arose on the result's validity. However, the effects of Pauling's study still linger in people's minds and media [13].

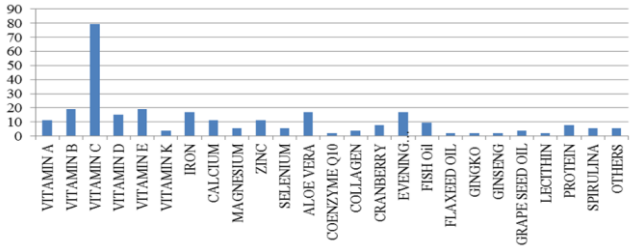

Fig. 1: Types of vitamin consumed by supplement user. (n=53)

Table 3 shows the reasons for taking supplement. Among the reasons for consuming supplements are to 'improve energy and vitality' which was the highest choice for students (64.15%) followed by 'promoting skin or hair health' (62.26%), 'to prevent illness (common cold, cancer)' (35.85%) and 'to supplement inadequate diet (32.8%). The top reason for why the students consume supplements was found to be in accordance with previous studies [8,11]. However, there still remains the question as to whether or not these subjects require the supplements at all. Thus far, dietary supplements are recommended for people who are older, pregnant and those who are insecure with their nutrient intakes and already discussed with and are recommended by doctors to consume it [14]. However, none of these criteria apply to these subjects. According to a review on several meta-analyses, expert panel, authoritative found that minerals and vitamins do not give overall benefit to the user [13]. Besides that, one of the top reasons is to prevent cancer but the authors reported that the use of dietary supplements by the public to avoid cancer are against the opinions of the American Institute for Cancer Research as well as The World Cancer Research Fund. Not only that, the Women's Health Initiative stated that there is neither benefit nor harm for the use of supplements.

Table 3: Reasons for taking supplement among supplement user (n=53)

Subjects	n	%
Improve energy and vitality	34	64.15
Improve sexual function	3	5.66
Enhance athletic performance	2	3.77
Enhance Sleep	3	5.66
Retard Aging	7	13.21
Reduce dangers of cigarette smoking	-	-
Weight management	10	18.87
Improve circulation	13	24.53
Promote skin/hair health	33	62.26
Prevent illness (common cold, cancer)	19	35.85
Build muscle	5	9.43
As advised by healthcare worker (doctors, pharmacist, nurses)	10	18.87
Supplement inadequate diet	17	32.08
Relative or friends' demand	9	16.98
Improve memory	10	18.87
Relieve stress / improve mood	8	15.09

Table 4 shows the frequency of breakfast intake among students. Less than half (45.65%) of the students reported always having breakfast while the other 54.3% of students reported not always having breakfast (of that 54.3%, only 80% eat breakfast between 1 and 4 days while 20% consume breakfast 5 to 6 days in a week).

Table 4: Frequency of breakfast intake among students (n = 138)

Frequency	n	%
Daily breakfast	63	45.7
Irregular breakfast	75	54.3
Never breakfast	-	-

Among the students, more than half have irregular breakfast habits. The results of this study is similar with a previous study where there is a high prevalence of breakfast skipping among students [2,3]. It is important to have daily breakfast since the prevalence of overweight and obesity issues were found to be lower among daily breakfast eaters [15,16].

Table 5 shows the responses on the reason for not taking breakfast among breakfast skippers. More than half of the breakfast skippers do not take breakfast due to not having enough time (65.3%) followed by those who 'prefer to sleep longer' (46.67%) and 'I don't feel like eating first thing' (40%). 'Not enough time' and 'prefer to sleep longer' were quoted as being the most common reasons for not wanting to eat breakfast in the present study similar to the findings of a previous study [2-3] [12]. Students enjoy eating breakfast despite the lack of time and prefer to sleep. Students also choose to manage their weight instead of as a means to lose weight. This study also found that there are more irregular breakfast eaters as compared to daily eaters thus only less than half of students chose 'it's what I always do'.

Table 5: Reason for skipping breakfast (n=75)

Reason	n	%
Not enough time	49	65.33
I am not hungry	27	36.00
I don't feel like eating first thing	30	40.00
Hung over	5	6.67
I want to lose weight	2	2.67
I don't have enough money	3	4.00
I don't have any food in the house/hostel	17	22.67
Prefer to sleep longer	35	46.67
I have cigarette	-	-

Table 6: Reason for taking breakfast (n=138)

Reason	Disagree		Neutral		Agree	
	n	%	n	%	n	%
I want to lose weight	63	(45.7)	40	(29.0)	35	(25.4)
It helps prevent me from getting hungry before lunch time	6	(4.3)	11	(8.0)	121	(87.7)
It helps me wake up	22	(15.9)	41	(29.7)	75	(54.3)
It gives me energy	3	(2.2)	9	(6.5)	126	(91.3)
It's what I always do	20	(14.5)	52	(37.7)	66	(47.8)
Eating breakfast makes it easier to control my weight	8	(5.8)	32	(23.2)	98	(71.0)
I enjoy it	7	(5.1)	11	(8.0)	120	(87.0)

Table 6 presents the responses regarding the reason for taking breakfast. For the reason 'I want to lose weight', 45.7% disagreed with the statement. The next statement is 'it helps prevent me from getting hungry before lunch time' with more than 80% agreeing while only less than 5% disagreeing. More than 70% of the students agreed with the third statement which is 'it helps me wake up' and less than 20% disagreed. More than 90% of the students agreed that breakfast gives them energy while more than 40% agreed with the 'it's what I always do' statement. More than half of the students believe that eating breakfast helps them to manage their weight with 71.0%. More than 80% of the students enjoy having breakfast.

The ratio of males and females in this study is not balanced which becomes a hindrance for the investigator to properly compare the dietary intakes between genders. The findings in this study are limited by the use of a sample from one university and were further narrowed to two courses only. This may not be representative of all university students in Malaysia

4. Conclusion

Less than half of the students consume supplements (38.4%). Vitamin C is the most popular type of supplement consumed (79.5%). Students consume supplement to improve energy and vitality (64.15%). All students eat breakfast but more than half of the students tend to skip breakfast (54.34%) due to a lack of time (65.3%) and prefer to sleep longer (46.67%). Students prefer to have ready-to-eat meals like bread and toast, hot drinks and cereal for breakfast. A majority of the students regard breakfast as the first meal of the day (83.3%). Students also regard breakfast as something that can give them energy and they enjoy having breakfast.

Since the present study is limited by the use of a small sample size, therefore, to provide a more inclusive picture of supplements and

breakfast intakes, it is recommended to select samples from different universities. The present study also suggests a study on the knowledge regarding the health benefits and side effects on the students. In fact, a study on dietary intake and comparison with recommended intakes might be considered to gauge whether students are lacking in nutrients which leads them to taking the supplements in the first place. Nutrition education should be taught among students regardless of educational background to allow university students to have basic knowledge on nutrition and better able to lead a healthy lifestyle choice.

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