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Prevalence and Determinants of Breakfast Omission: A Study of Undergraduates in Sri Lanka

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ABSTRACT

Breakfast is an important constituent of any person's daily food concerto. It contributes to provide the base of nourishment for the entire day. Skipping the breakfast directly affects to health, performance, satisfaction and too many physical and psychological matters of a person. The university arenas represent the final opportunity of health and nutritional education for a large number of young undergraduates in Sri Lanka. Thus, this study was conducted with the purpose of investigating the prevalence & determinants of breakfast omission of undergraduates in Sri Lanka. The study was conducted as a cross sectional field study among a sample of 502 undergraduates in Sri Lanka. Convenience sampling was applied to select the sample and investigation was carried out in all the faculties of four public universities in Colombo, Sri Lanka. Self administered, pre - tested questionnaire which met the accepted standards of validity and reliability was used to collect data.

It is found that prevalence of breakfast omission is high among Sri Lankan undergraduates though it is understood that omission of breakfast affects to undergraduates' health status and ultimately to the academic performance. Findings revealed that accommodation, frequency of skipping the dinner, fast food habits, academic year, daily academic time table, smoking and financial difficulties are significantly affect to omit the breakfast. Undergraduates stay in own houses are less likely to omit the breakfast in comparison to those who stay in hostels and bodings. Third years and final years are more prone to omit the breakfast while smokers are less likely to omit. No significant relationship is found between gender, consumption of nutritional supplements, time taken for traveling and ethnic group with prevalence of breakfast omission. Health awareness programs or education of healthy eating guidelines must be initiated for both undergraduates and food caters in Sri Lankan universities. The quality and price of supplied foods in state universities must also be frequently reviewed.

Key Words: Breakfast omission, Sri Lankan undergraduates, Food habits

INTRODUCTION

The perception that breakfast is the most important meal of the day is very popular across the globe. However, the validity of this statement is still debatable. Though the majority of available research studies validate the fact that eating breakfast has positive impact on

health, behavior, commitment and performance of a person, some researchers argued it differently. Lopez (1993) argued that there are no significant negative effects of breakfast omission on performance, behavior and cognitive capacity of a person.

Many nations in the world evolved around structured three meals per day concept, used to consider breakfast as the foundation meal of the day which gave it a significant importance. According to Kafka (1995) breakfast is the most important meal of the day. As far as the history spreads on the concept of breakfast, the relative studies on the importance of breakfast to the functionality of humans was also has being discussed constantly. The importance of studying the breakfast and its value contribution towards a healthy day has become a critical factor.

Before the industrial revolution the lifestyles were quite simple and the routines of people were considered to be healthy and bound with natural impulses and resources. However, after the industrial revolution and the concept of mass production came in to practice from 1784 onwards, the lives of people have dramatically changed. People were moved into an impressive race between time available and work to be completed. With less and less amount of time available to complete the increasing number of tasks and duties of life, people started to adopt different lifestyles and habits. In the process of changing habits, it was noted that many people has found the breakfast to be not so important or critical in their daily routines. Therefore, they have either adapted to having late breakfasts or completely omit it.

Young adults in the age group of 18 - 25 years are often the neglected group in many health & nutrition education in comparison to children and adults. University undergraduates also belong to this young adults group. As mentioned by Harris et al. (2006) when undergraduates leave home for their higher studies and adjust to independent living, good dietary habits obtained from the home tend to decline. Many previous studies reported that majority of university students have the habits of skipping meals; especially the breakfast, snacking, consumption of nutritional supplements and consumption of fast foods. Keski - Rahkonen et al. (2003) revealed that increased snacking, lunch skipping, and an indolent lifestyle and chubbiness have been found to be more common among undergraduates those are breakfast skippers than breakfast eaters. According to Wyatt et al. (2002) Breakfast taking is a contributing factor in maintaining weight loss for young adult undergraduates.

University undergraduates are in a transitional period of young adulthood. Within this transitional period establishment of a sound & healthy lifestyle can have long lasting influences on undergraduates' future lives. As Moy (2009) mentioned these young adults must be educated and reinforced in healthy eating behaviors.

By considering the above facts it is evident that studying factors which effect to skip the breakfast among young undergraduates in Sri Lankan state universities is significant. It will fill the existing research gap in the selected domain in Sri Lanka up to a certain extent.

PROBLEM OF THE STUDY

Breakfast is an important element of any person's daily food habits. It contributes to provide the base of sustenance for the entire day. Skipping the breakfast directly affects to health, performance, satisfaction and too many physical and psychological matters of a person. The university arenas represent the final opportunity of health and nutritional education for a large number of young adults; undergraduates from the educators' perspective (Sakamakai et al., 2005).

There is a research gap in Sri Lankan context in this regard; especially to investigate the associated factors of breakfast skipping of Sri Lankan undergraduates. Thus, this study was initiated in four state universities in Colombo district with the intention to recognize the dietary habits of Sri Lankan undergraduates and associated factors contributing to breakfast skipping among undergraduates. Thus, the research problem of this study was to identify; "What is the prevalence of breakfast omission, and what are the determinants of breakfast omission among undergraduates in Sri Lankan public universities?"

OBJECTIVE/S OF THE STUDY

The main objective of this study was to identify the determinants which effect to omit the breakfast among Sri Lankan undergraduates studying in state universities.

Further, following specific objectives were established in order to realize the main objective of the study.

- To recognize the prevalence and the pattern of breakfast omission (skipping) among undergraduates in Sri Lankan state universities.
- To recognize the impact of undergraduates' food habits on breakfast omission.
- To identify the association between socio - demographic factors and the prevalence of breakfast omission among undergraduates.

HYPOTHESES OF THE STUDY

The following hypotheses were formulated in order to realize the above mentioned research objectives and to draw conclusions of the study.

H₁: Gender significantly affects to omit the breakfast

H₂: Consumption of nutritional supplements significantly correlated with breakfast Omission

H₃: Consumption of fast foods significantly contributes to omit the breakfast

H₄: Frequency of skipping the dinner significantly effect to omit the breakfast

H₅: Time taken to travel to the university significantly affects to omit the breakfast

H₆: Accommodation has a significant impact on breakfast omission

H₇: Daily academic time table of undergraduates' significantly correlated with breakfast omission

H₈: Smoking has a significant impact on breakfast omission

H₉: Financial difficulties significantly affect to omit the breakfast

H₁₀: Academic year of the undergraduate is a significant factor affect on breakfast omission

H₁₁: Ethnic group has a significant impact on breakfast omission

LITERATURE REVIEW

The healthiest breakfast is a nutritious meal rich in complex carbohydrate including fiber, moderate in protein and low in fat, salt and sugar. Robins (2003) suggested that a healthy breakfast which includes fresh fruits with whole grain and breed or serial and low fat or skimmed milk, cheese or yogurt is an ideal breakfast.

What is this important meal; breakfast? Breakfast is defined by Giovannini *et al.* (2008) as the first meal of the day, eaten before or at the start of daily activities, typically no later than 10.00 a.m. Omission means consuming breakfast fewer than seven days per week (Moy, 2009). In other words omission of the breakfast means avoid, neglect or postpone the breakfast by mistake, unintentionally or purposefully. According to the research

findings of Shaw & Mary (1998) basic two reasons found for omission of the breakfast were almost exclusively lack of time and not being hungry in the morning. Even though the many factors have an impact on breakfast & breakfast skipping, Shaw & Mary (1998) argued, basically it is a matter of personal choice.

Research done by Shaw and Mary (1998) cited evidence from Belloc & Breslow (1972) and stated that breakfast has also been linked to long-term health of undergraduates. Eating breakfast was one of the "seven healthy habits" identified by Belloc and Breslow (1972) in their Alameda County Study. Nearly 15% of their sample rarely or never ate breakfast, and those who ate breakfast almost every day reported significantly better physical health than skippers. Berkman and Breslow (1983) also found that regular breakfast eaters have lower death rates. Many previous studies show that the pervasiveness of breakfast skipping is common among young adults in universities. As found by Williams (2005) students who did not take breakfast were much more likely to have inadequate nutrient intakes. Breakfast skippers tend to eat more for the rest of the day. As found by Moy *et al.* (2009) undergraduates who skipped breakfast consume fast foods at least once a week. Students who consume less vegetables and fruits daily were also found to be more likely to skip the breakfast. Moy *et al.* (2009) found that smoking was marginally significant with undergraduates' breakfast skipping habit.

Moy *et al.* (2009) argued that breakfast omission among young undergraduates is a matter of personal choice such as, no time to eat, do not like to eat early in the morning and overslept. Chitra & Reddy (2007) mentioned that the younger undergraduates are more likely to skip breakfast due to ignorance or inability to adapt to university life. This is backed by the culture. For an instance, Chinese culture considers food as an important component of their life (Chang, 1977). Thus, Chinese undergraduates are educated from their younger hood about the importance of foods, and they have a very lower tendency to skip breakfast compared to their non - Chinese peers. Chung and Hoerr (2005) found that breakfast skippers have lower consumption of vegetables and fruits. But Glanz and Holscher (2004) argued that, changing the environment, policy and prices could create only a moderate progress in breakfast eating of university and college undergraduates. Mullie (2006) reported reasons for breakfast skipping as stress, lack of time, lack of parental control or as a part of the individualization process. Studies made on different age groups such as school children, Khan (2000) got the main reasons for skipping breakfast as not being hungry early in the morning, getting up late and not like to eat in the morning. These findings were also supported by Bidgood (1992).

The consumption of breakfast has also been widely researched with regard to its effect on cognition, academic performance of undergraduates, and their concentration ability. Theoretically, two biological mechanisms by which breakfast may affect brain function and cognitive performance have been discovered. The first involves metabolic changes associated with an overnight fast to maintain the availability of energy and nutrients to the central nervous system (Pollitt, 1998). The second involves the long-term beneficial effects that breakfast may have on overall nutrient intake and nutritional status, which could consequently affect cognition (Pollitt, 1998). Research suggests that the effects of breakfast on cognition are translated into long-term scholastic benefits (Pollitt, 1998). Cueto *et al.* (1998) suggested that consuming breakfast has a short term positive effect on basic cognitive processes; and thus, there is the potential for profound long-term effects.

METHODOLOGY

The research could be regarded as a correlation study and at the same time it was a non-causal study. In this study researcher interference was minimal and this can be regarded as a cross sectional study. The unit of analysis was an individual undergraduate. The population for the study comprised all the undergraduates who were studying in state universities located in Colombo district. Convenience sampling was applied to select the sample. Researchers surveyed 502 undergraduates from the University of Sri Jayewardenepura, University of Kelaniya, University of Moratuwa and University of Colombo. In the sample 30.67% was represented by the University of Sri Jayewardenepura. The selected sample included 50.59% of female undergraduates, and 96.4% of respondents were unmarried in the sample. 40.84% of respondents stayed at boding places while 39.04% of them stayed at hostels. Table I shows the sample of the study.

Table I: Sample of the study

Name of the University	Sample
University of Sri Jayewardenepura	154
University of Colombo	129
University of Moratuwa	105
University of Kelaniya	114
Total	502

Source: Survey Data

Data collection was done one and half months after the commencement of the academic semester of each faculty in all selected state universities. This period was selected to avoid the stressful examination periods & too relax vacation periods in all the faculties which could remove measurement biasness. Thus, it was reasoned that the identified perception represented the natural and fair opinion about breakfast omission among undergraduates. The questionnaire was distributed to undergraduates during the lecture time in the lecture hall, according to the year of study separately. Researchers got 100% response rate as respondents were requested to return the filled questionnaire at the same time.

This study was mainly based on primary data, collected through a survey. A self administered questionnaire was used to collect data. Based on extensive review of the literature, the survey questionnaire was developed. It was based on prior research findings of Moy (2009), Shaw&Mary (1998) and Khan (2000) identified in research literature.

Table II exhibits the indicators used to measure the behavior of target variable; omission of the breakfast as recognized by Moy *et al.* (2009), Shaw & Mary (1998) and Khan (2000).

Table II - Indicators of the target variable; breakfast omission

Target variable	Indicators
breakfast omission	Food habits
	Time constrain
	Perception about the breakfast
	Financial factors
	Medical factors
	Socio Demographic influence on the preference

Source: Adopted by the Author (2014)

The used questionnaire comprised two sections; (i) eleven questions relating to socio-demographic factors, and (ii) questions designed to extract information about breakfast

omission. The second section contained total of 25 likert scale questions relating to the prevalence of breakfast omission, and the level of agreement for each statement was given the value of 05, 04, 03, 02, and 01 for strongly agree, agree, average, disagree and strongly disagree respectively, where responses could only be scored from five to one. One open ended question was given at the end of the questionnaire to disclosure the additional opinion/s of the respondent regarding his / her breakfast eating habit/s.

In order to ensure the reliability and validity of instruments, questionnaire was pre tested through a pilot survey. Questionnaire was piloted to 40 undergraduates in above mentioned state universities. To measure the reliability of the questionnaire Cronbach's Alpha technique was functioned. The content validity of the questionnaire was assured by preparing it based on the validated literature. The construct validity of the measurements of this research was guaranteed by doing a factor analysis which reached more than 0.70 level of factor loading for all the measurements and the total variance explained in extraction sums of squared loadings was 79.85%. The coefficient of Cronbach's Alpha test of the questionnaire covered all the measurements more than 0.7 levels; where Cronbach's Alpha was 0.824. The pilot test showed that the questionnaire was valid and could reliably measure the prevalence of breakfast omission, and could identify determinants of breakfast omission among undergraduates in Sri Lankan state universities. Table III shows the reliability statistics of the questionnaire.

Table III: Reliability statistics

Cronbach's Alpha	No of Items
.824	25

Source: Statistical Data

Collected data were analyzed using the software package; Statistical Package for Social Sciences (SPSS, 16.0). All the returned questionnaires were given a serial number. Data were entered, checked for data entry errors, explored and cleaned. Descriptive statistics were used to present the socio - demographic information of the sample. Formulated hypotheses were tested based on the collected data by performing the independent sample t - test and the analysis of variance (ANOVA).

RESULTS AND DISCUSSION

Total of 254 out of 502 undergraduates responded, were female students. Hence, in the sample, male and female proportion was approximately equal. Students from all the academic years were taken; 130 students from first years, 124 from second years, 145 from third years and 103 from fourth & fifth years. Several ethnic groups were represented in the sample; 366 were Sinhalese, 57 were Tamils, 65 were Muslims and 14 were from other ethnic groups. With regard to the accommodation; 196 were coming from hostels, 205 were coming from boding places and another 63 were from their own home. Majority of them (63%) didn't have financial difficulties in completing their degree in the university, while 93 of respondents were smokers.

Table IV: Distribution of the sample according to socio - demographic information

Socio - demographic factor/s	Groups	Frequency	Valid percentage
University	University of Sri Jayewardenepura	154	30.6%
	University of Colombo	129	25.6%
	University of Moratuwa	105	20.9%
	University of Kelaniya	114	22.9%
Gender	Male	248	49.41%
	Female	254	50.59%
Academic Year	1 st Year	130	25.89%
	2 nd year	124	24.70%
	3 rd Year	145	28.88%
	4 th Year & 5 th Year	103	20.51%
Civil Status	Married	18	3.6%
	Unmarried	484	96.4%
Accommodation	Hostel	196	39.04%
	Boding House	205	40.84%
	Own Home	63	12.55%
	Relative's Place	21	4.19%
	Friend's place	17	3.38%
Ethnic Group	Sinhala	366	72.90%
	Tamil	57	11.35%
	Muslim	65	12.94%
	Other	14	2.78%
Smoking	Yes	93	18.52%
	No	409	81.48%
Financial Reasons / Difficulties	Yes	185	37%
	No	317	63%

Source: Survey Data

In order to measure the prevalence of breakfast omission, the calculated mean value and the standard deviation are given in the table V. All together 502 respondents in the sample indicated a **3.251** of mean value with a **0.524** standard deviation.

Table V: Prevalence of breakfast omission

	N	Mean	Std. Deviation
Prevalence of breakfast omission	502	3.251	0.524

Source: Statistical Data

The mean value falls between 2 and 3, and can conclude that majority of respondents have showed a **high** level or prevalence of breakfast omission.

To identify the association between genders, consumption of fast foods, consumption of nutritional supplements, smoking and financial difficulties with breakfast omission; independent sample t - test was done. Moreover, the analysis is of variance (ANOVA) test was applied to identify whether ethnic group, accommodation, time taken to travel, academic year, daily academic time table and frequency of skipping dinner significantly correlated with prevalence of breakfast omission of undergraduates. Desired level of significance was at 0.05 for hypotheses testing and two - tailed test was applied as alternative hypotheses were non - directional. According to the independent sample t - test results as shown in Table VI, gender is not a significant factor affect to omit the breakfast. Sig (2 - tailed) value / P - value for equal

variance not assumed (0.435) is greater than the significance level; 0.05. Thus, it could be statistically claimed that there is no significant relationship between gender of the undergraduate and prevalence of breakfast omission. But Fujiwara (2003) mentioned that females were at higher risk of breakfast omission.

Table VI: Independent sample t – test (Gender)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Prevalence of breakfast omission	Equal variances assumed	.228	.634	-.777	166	.439	-.06369	.08202	-.22563	.09825
	Equal variances not assumed			-.782	163.719	.435	-.06369	.08144	-.22450	.09712

Source: Statistical Data

Table VII below shows the independent sample t- test results about the association among fast foods consumption and breakfast omission pattern of undergraduates. As sig (2 – tailed) value for equal variance not assumed (0.014) is less than the significance level (0.05) it could be statistically concluded that fast food consumption habit is significantly correlated with breakfast omission habit of undergraduates. As same Rahkonen *et al.* (2003) found that those who omit the breakfast consume more fast foods and snaked than peer non skippers. Moreover, who omit the breakfast tends to eat more for the rest of the day (Ma *et al.*, 2003).

The below Table VIII demonstrates the association between time taken to travel to the university and the breakfast omission. As sig value of ANOVA test (0.284) is greater than the desired level of significance (0.05) it could be stated that time taken to travel to the university is not a significant factor which affect the breakfast omission habit of undergraduates. This is backed by Shaw (1998) who discovered that the distance from residence place to the university is not a matter for college and university students in many western countries. But in Sri Lanka this is due to, many undergraduates stay at hostels or boding places very near to the university and so that travelling may not a major issue for them.

Table VII: Independent sample t – test (Consumption of fast foods)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Prevalence of breakfast omission	Equal variances assumed	.780	.379	2.51	166	.013	.20387	.08098	.04399	.36375
	Equal variances not assumed			2.47	144.110	.014	.20387	.08234	.04111	.36663

Source: Statistical Data

Table VIII: ANOVA (Time taken to travel to the university)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.065	3	.355	1.277	.284
Within Groups	45.584	499	.287		
Total	46.649	502			

Source: Statistical Data

Independent sample t - test results shown in Table IX below indicates consumption of nutritional supplements is not significantly correlated with breakfast omission. P - Value for equal variance not assumed (**0.599**) is greater than the significance level; 0.05. Hence, it could be concluded that there is no significant impact from consumption of nutritional supplements on prevalence of breakfast omission of undergraduates. This is backed by Moy *et al.* (2003) who found that consumption of nutritional supplements was not significantly correlated with breakfast omission habit of undergraduates in Kuala Lumpur.

Table IX: Independent sample t - test (Consumption of nutritional supplements)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Prevalence of breakfast omission	Equal variances assumed	.100	.753	.528	164	.599	.04349	.08244	-.11929	.20627
	Equal variances not assumed			.526	160.898	.599	.04349	.08261	-.11964	.20663

Source: Statistical Data

Similarly, the results of independent sample t- test performed to check the association between financial difficulties and breakfast omission of undergraduates revealed that, financial difficulties are significantly correlated with breakfast omission habit of undergraduates. The conclusion was drawn because sig (2 - tailed) value for equal variance not assumed (**0.014**) was less than the significance level (0.05).

Table X: ANOVA (Ethnic Group)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.085	2	.361	1.301	.276
Within Groups	45.564	500	.278		
Total	46.649	502			

Source: Statistical Data

According to the Table X, ethnic group of the undergraduate is not statistically a significant factor affect to omit the breakfast. Sig value of ANOVA test (**0.276**) is greater than 0.05, and the conclusion could be drawn as there is no significant relationship among the ethnic group of the undergraduate and prevalence of breakfast omission. This is a challenging result to Chang

(1977) where he mentioned ethnicity is a critical factor affects to omit the breakfast. Chang (1997) argued that the ethnicity is deeply bounded with the culture of a country, and if culture considers foods as an important compartment of life, undergraduates also less likely to omit their breakfast. Chang (1997) emphasized that Chinese undergraduates have lesser tendency of omitting their breakfast in comparison to their non Chinese peers.

Table XI: ANOVA (Accommodation)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.150	4	.230	.0619	.022
Within Groups	45.498	498	.287		
Total	46.649	502			

Source: Statistical Data

ANOVA test results shown in Table XI above indicate accommodation of the undergraduate is significantly correlated with breakfast omission as P - Value (**0.022**) is less than the significance level; 0.05. Hence, it could be concluded that there is a significant relationship between accommodation and prevalence of breakfast omission of Sri Lankan undergraduates. Similar results were found by Moy *et al.* (2003) as accommodation is a significant factor of breakfast omission, and also mentioned that those who stay out of their houses are at a higher risk of breakfast omission.

Table XII: ANOVA (Academic year)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.045	3	.023	.196	.018
Within Groups	46.604	499	.282		
Total	46.649	502			

Source: Statistical Data

In relation to the above Table XII, it could be statistically claimed that academic year of the undergraduate is statistically a significant factor affect to omit the breakfast as Sig value for ANOVA test is (**0.018**) less than 0.05. This is in opposition with Chang's (1977) findings which revealed that year of study is not a matter to omit the breakfast for undergraduates. Moreover, it was found that third years and final years are more likely to omit the breakfast than their juniors in the current study. According to the below Table XIII, statistically significant relationship was found between daily academic time table of the undergraduate and their breakfast omitting habit. This is in line with previous similar studies done by Ma *et al.* (2003) and Songet *al.* (2005) respectively, who found that daily academic time table of undergraduates and the nature of the first subject of the day as significant determinants of breakfast omission.

Table XIII: ANOVA (Daily academic time table)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.047	2	.034	.075	.009
Within Groups	45.602	500	.364		
Total	46.649	502			

Source: Statistical Data

Similarly, ANOVA test was performed to test the hypothesis formulated to elaborate the relationship with frequency of skipping dinner, and independent sample t - test was performed to test the relationship with smoking. Results revealed that both frequency of skipping dinner and smoking are found to be significantly correlated with breakfast omission of university undergraduates. But Moy *et al.* (2003) found that smoking is marginally significant with breakfast skipping of undergraduates. Moreover, these findings are supported by findings of Rahkonen *et al.* (2003) where they found that those who omit the breakfast are more prone to skip their dinner also.

As a summary it could be mentioned that, according to analyzed data accommodation, frequency of skipping dinner, fast food consumption, academic year, daily academic time table, smoking and financial difficulties are significant factors which affect to omit the breakfast in the tested domain. No significant connection was found between gender, consumption of nutritional supplements, time taken to travel to the university and the ethnic group with the prevalence of breakfast omission of undergraduates in Sri Lankan state universities.

CONCLUSION AND RECOMMENDATIONS

The objective of this research was to study the prevalence & determinants of breakfast omission among undergraduates in Sri Lankan state universities. This was carried out as a cross sectional field study among a sample of 502 undergraduates in four state universities located in Colombo district, Sri Lanka. Convenience sampling was applied to select the sample and investigation was carried out in all the faculties of four state universities in Colombo. A self-administered, pre-tested questionnaire which met the accepted standards of validity and reliability, was used to collect data.

Findings revealed that prevalence of breakfast omission is high among undergraduates thought breakfast affects to their health status and ultimately to the academic performance. It was found that accommodation, frequency of skipping the dinner, fast food consumption, academic year, daily academic time table, smoking and financial difficulties were significantly associated with breakfast skipping. Undergraduates stay in own houses are less likely to skip the breakfast in comparison to those who stay in hostels and boding places. Third years and final years are more open to skip the breakfast and smokers are less likely to skip. There is no significant correlation was found between gender, consumption of nutritional supplements, time taken to travel to the university and the ethnic group with their prevalence of breakfast omission.

It is observed that many associated factors of breakfast skipping are related to knowledge, awareness and information available to undergraduates in state universities. This could be alleviated through awareness campaigns or introduction of related courses (Credit or Non - Credit) in all faculties of state universities. Moreover first years should be given more attention by the administration of universities & the academic staff where they should get awareness about the university life and possibly how to adapt it. Hence, it is recommended that the health awareness programs or education of healthy eating guidelines must be initiated for both undergraduates and food suppliers in state universities. The quality and prices of supplied foods in universities also be frequently reviewed. Findings of the study were mainly based on survey data gathered only in four state universities in Colombo district. So that results may not be valid for private universities and state universities in other areas. Some other intervening and moderating variables which affect to breakfast skipping of undergraduates were not considered to avoid unnecessary complexities. Sample size which may not significant can also be considered as a limitation of the research. However

within its limitations the study has achieved the pre set objectives and opened avenues and directions for future studies. Hence, as a concluding remark it can be declared that, conducting more studies relating to this contemporary issue in other universities or/and considering more factors will help to insert additional information to this research work.

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