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## PSYCHOLOGICAL VARIABLES AND HEALTHY MEAL CONSUMPTION AMONG FIRST CYCLE STUDENTS IN CALABAR METROPOLIS, NIGERIA

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### ABSTRACT

**INTRODUCTION:** Many higher education students indulge in risky eating behaviours which tend to affect their physical, psychological and academic health. Previous studies have tried to understand the trend in students' eating patterns without paying adequate attention to contributing factors.

**PURPOSE:** This study evaluated the influence of selected psychological variables on the consumption of balanced diets among students in two public universities in Calabar Metropolis, Nigeria.

**METHODOLOGY:** A research question was posed, and a formulated hypothesis to guide the study. The study adopted the descriptive survey research design. A total of 12,530 faculty of education students spread across two public universities in Calabar Metropolis constituted the population of this study. A sample of 125 students was randomly selected through the stratified technique. A four-point questionnaire was used for data collection after validation by experts. Descriptive statistical measures such as mean, standard deviation, and percentages answered the research question. The null hypothesis was tested at the .05 level of significance using the one-sample t-test analysis.

**RESULTS:** Findings revealed that the influence of psychological variables (such as stress, emotions, and mental state) on students' consumption of balanced diets is not significantly low.

**RECOMMENDATIONS/CLASSROOM IMPLICATIONS:** Based on the findings of this study, it was recommended that students cultivate the habit of always eating quality meals rich in nutrients, irrespective of their psychological state, to maintain a healthy life.

**Keywords:** balanced diet, consumption, food, emotions, mental state, stress.



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## **PUBLIC INTEREST STATEMENT**

This study contributes to the health education literature by analysing university students' eating habits, and showing the impact of three psychological factors. The study will be helpful to teachers, parents, higher education students and the public. Through this study, teachers may become aware of the eating patterns of students and how they possibly can contribute to their classroom behaviour. This study made recommendations that could inform parents to watch children's eating patterns at home. Through this study, students may promote a healthy eating culture for safety and wellbeing. The study could also be helpful to the public interested in eating balanced meals for health and wealth.

## **INTRODUCTION**

It is widely known that food is a necessity for man's survival. It is a significant pointer of human growth and development, health or sickness, and even life or death. The importance of food to man cannot be overemphasised. Food is any material that provides essential nutrients such as carbohydrates, fats, protein, and other nutrients to the body for sustenance, growth, repair and energy. Food is subdivided into classes, that when appropriated, concisely make up a healthy meal. A healthy meal is one that contains all the essential nutrients and calories for daily activities (Okon et al., 2021). These nutrients are extracted from various foodstuffs grouped under proteins, fats and oil, carbohydrates, vitamins, mineral salts, water and roughages. Thus, a nutrient-rich diet will assist humans in maintaining a healthy body, preventing it from nutritional-related deficiencies and diseases.

Food choice is a strong determinant in the intake of a healthy meal. Studies have shown that humans are faced with several food choices each day and decide what food to eat based on several factors. Food choices are individualistic; hence they vary from person to person. Students' food preferences are established during the transition to independent living, such as university living, by students (Deshpande et al., 2009; Vabo & Hansen, 2014). Furthermore, it has been reported that there is a complex interplay of physiological, psychological, social and genetic factors concerning eating behaviour, and these factors influence meal timing, the quantity of food intake, and food preference (Grimm & Steinle,

2012). Similarly, researchers have outlined many factors that contribute to eating behaviour, cutting across biological, economic, social and other areas of life (Caldwell & Sayer, 2019; Campagnaro et al., 2020; Caperon et al., 2019; Freitas et al., 2018; Kabir et al., 2018; Rodgers & Collins, 2020).

According to Oti (2018), environmental factors, beliefs and norms, food appearance, texture, and taste contributes immensely to students' food choice and consumption. The cited author further indicated that these factors led to poor eating habits, diet-related disease and obesity. The study of Ngwu and Njoku (2007) outlined factors that influence food choice, including food habit, price, taste, quality and freshness, cultural and religious background and nutritional facts. More specifically, Nmor et al. (2014) revealed that poor eating habits of university students in southern Nigeria, such as unhealthy snacking between meals, were greatly influenced by stress, depression, anxiety, obsession/addiction, and mental health.

Many psychological variables, though understudied, could contribute to food choice and consumption among higher education students. This study examined the role psychological variables (stress, emotions and mental state) play students' consumption of healthy meals. Scholars have pointed out that academic stress influences university students' food intake to varying degrees (Chacón-Cuberos et al., 2019; Jiang et al., 2019; López-Cepero et al., 2021; Pendry et al., 2021; Whatnall et al., 2019). Mood and guilt have also been revealed as psychological determinants of food choice among adolescents (Mahmoud & Grigoriou, 2022; Michels et al., 2018; Schwartz et al., 2018), but the specific

extent to which the influence is felt on their food consumption was barely highlighted. Nevertheless, extensive research has proven that stress in its adverse forms causes irregularities in sleep patterns and food intake, thus, leading to weight gain and abdominal obesity (Geiker et al., 2018). Therefore, it is worthy of note that improving one's nutritional status and sleep patterns may reduce stress severity and other mental disorders.

Yau and Potenza (2013) found stress to be a determinant in the development of addiction to hyper-palatable foods (e.g., high-fat, high sugar) and this, in turn, increases the risk of obesity in the consumer. They stated that when stress is not controlled, changes occur in food preference and eating patterns, triggering the consumption of hyper-palatable foods. Over time, this results in compulsive behaviour and various health defects. On the contrary, a cross-sectional study by Cheng and Kamil (2020) showed that the stressed group consumed lower energy, fat and calcium foods than the non-stressed group. The authors submitted that stress makes students eat less, negatively impacting their health. The view on the influence of stress on the consumption of hyper-palatable foods by scholars has been minimal, whereas its impact has been more evident in the overall decrease in healthy food intake and eating rates. Research has further supported that infrequent healthy food intake and perceived stress increased unhealthy dietary behaviours in the students (Badger et al., 2019; Hill et al., 2021; Lentz & Brown, 2019; Michels et al., 2020). It has also been found that decreased eating was related to students' stress levels (Ansari & Berg-Beckhoff, 2015; Choi, 2020). Although these studies were not keen on examining the specific influence on the consumption of healthy meals, other scholars have compared eating rates and unhealthy dietary patterns and have found somewhat of a balance, showing that the rate of eating could be increased or decreased resulting from the activity of a stressor (Tahir, 2016; Wallis & Hetherington, 2009).

Another psychological factor that may influence food choice among students is emotion. This is because human eating behaviours are influenced by moods and emotions (Canetti et al., 2002; Mahmoud & Grigoriou, 2022; Michels et al., 2018; Schwartz et al., 2018). Positive emotions that frequently occur like joy and negative emotions like anger increase food consumption (Gökmen & Yılmaz, 2021; Kirmani, 2022; Li et al., 2021; Simone et al., 2021). It is well documented that an individual's mood can alter his food choice (Jaeger et al., 2021; Marty et al., 2021; Shen et al., 2020). For instance, it has been established that the relationship between mood, food choice, and food intake depends on the neuro-hormonal and psychological dispositions of the individual (Gibson, 2006; Okon et al., 2021). The cited studies did not identify the nature of food consumed in relation to healthy meals.

Similarly, Echeverri-Alvarado et al. (2020) submitted that when an individual is not physically hungry, the food he craves is greatly influenced by his mood. Emotional eating refers to feeding an emotion (or feelings) instead of physical hunger. Emotions like anxiety, anger, loneliness, and lots more can trigger food cravings. Emotional eating can contribute to overeating, increasing the risk of obesity. The study of Wallis and Hetherington (2009) showed that emotional eaters were more likely to report overeating than non-emotional eaters. Conversely, non-emotional eaters were more likely to report under-eating than emotional eaters. Positive emotions do trigger or influence food intake because they evoke caloric intake in a high quantity and have the same extent of intake of caloric foods as negative emotions. Snacking in daily life has been reported to result from positive emotions more frequently than negative ones (Evers et al., 2013). The cited authors highlighted that unhealthy food intake or lack of consumption of healthy meals is triggered by negative and positive emotions.

Mental state is the least investigated by scholars of the three aforementioned psychological variables

that influence the consumption of healthy meals among university students. A person's mental state would comprise all aspects of his sanity, which could also influence his food choice and intake. With this, Ansari et al. (2014), in a multivariable regression analysis, showed that unhealthy food consumption (e.g., sweets, snacks, fast foods) was significantly but positively associated with perceived stress and depressive symptoms. On the other hand, consuming healthy foods (e.g., fruits and vegetables) was significantly but negatively associated with perceived stress and depressive symptoms. Therefore, food preference and healthy food intake are greatly influenced by the mental state.

A limited number of scholars have analysed the role of depressive symptoms, sanity conditions, and overall mental health status in healthy meal consumption. Nevertheless, Owen and Corfe (2017) noted that psychopathologies like depression are elevated risk comorbidities of other health hazards such as obesity. They submitted that nutrition has a crucial role in mental health and well-being and is implicated in behaviour and mood. Thus, nutrition and mental health status do correlate. Similarly, Khan et al. (2018) submitted that poor eating habits such as insufficient food consumption or high food consumption affect how people feel, look, think, and act. A bad diet lowers core strength, causes slower problem-solving activity and muscle response time, less alertness, and lower body functional capacity.

Many disparities in eating behaviours occur among university students in the consumption of healthy meals regularly. Most students are frequently seen resolving to alternatives such as canned and processed meals, sweetened carbonated drinks high in sugar, and the like. In other situations, some students either skip their breakfast, lunch, dinner, or two of the three mentioned. These poor eating habits give rise to nutrition-related health challenges and diseases such as poor cognition, growth problems, poor concentration levels, undue fatigue, and poor academic

performance (Okon et al., 2021). The review of existing literature has exposed that despite the broad focus by previous research on food choice and consumption of a healthy meal, the psychological influence on food consumption is under-investigated. Furthermore, the area appears to be forgotten as there is a handful of related literature on the subject matter in the last decade. Therefore, this study attempts to cover such a gap and broaden the scope of previous research by investigating psychological variables (such as stress, emotions, and mental state) on the consumption of healthy meals among university students.

### **Theoretical framework**

This study is based on the Theory of Planned Behavior (TPB) (Ajzen, 1991). According to this theory, intentions are influenced by three factors: (a) Whether the person is in favour of doing the specific behaviour (attitude towards the behaviour), (b) how much the person feels social pressure to do it, and (c) whether the person feels in control of the action in question, or self-efficacy in relation to the behaviour (perceived behavioural control - PBC). The PBC incorporates internal control factors (information, skills and abilities) and external control factors (dependence on others/situational factors). The theory of planned behaviour can be outlined that individual food behaviours are products of their food choices. These food behaviours are influenced by attitudes towards available and surrounding options and factors affecting their consumption of healthy meals. Thus, people's intention, attitude and attention placed on these (psychological) factors will, in turn, provoke or predict their behaviour towards consuming a healthy meal.

### **STATEMENT OF THE PROBLEM**

There is a consensus that the quantity and quality of food consumed plays a significant role in students' concentration, learning, studying, and school performance. However, within the Calabar Metropolis, it has been noticed that many students do not tend to be

consuming healthy meals. Most students are used to snacking and eating unbalanced meals such as junk foods from grocery stores, eateries, or fast-food restaurants. The implication of this unhealthy behaviour is evident in their physical, social, and psychological dispositions. Furthermore, the consumption of unhealthy meals can lead to constipation, stress, tiredness, poor capacity to work, and over time, put students at risk of severe health concerns such as obesity or overweight, tooth decay, high blood pressure, heart disease, stroke, type-2 diabetes, osteoporosis, and cancer, among other eating disorders. Undereating or overeating, eating less nutritious meals daily, or consuming several kinds of food and drink that are low in nutrients or heavy in cholesterol, salt or sugar are all examples of poor eating habits. Several factors contribute to students' poor eating behaviour. Although previous research has attempted to discover the degree to which students consume unhealthy meals, little has been done to estimate how various factors contribute to students' eating behaviours. Based on these issues, the current study was undertaken to quantify the degree to which three psychological variables influence students' consumption of healthy meals in Calabar Metropolis of Cross River State, Nigeria.

#### **PURPOSE OF THE STUDY**

The primary purpose of this study was to determine the influence of psychological factors on students' consumption of healthy meals in Calabar Metropolis. Specifically, this study aims to:

1. investigate the extent to which psychological variables generally influence students' consumption of healthy meals;
2. determine the influence of stress on students' consumption of healthy meals;
3. quantify the influence of emotions on students' consumption of healthy meals;
4. estimate the influence of the mental state on students' consumption of healthy meals.

#### **RESEARCH QUESTIONS**

The following research questions were posed to guide the study:

1. How much do psychological variables generally influence students' consumption of healthy meals?
2. To what extent does stress influence students' consumption of healthy meals?
3. How much influence has emotions on students' consumption of healthy meals?
4. To what extent does mental state influence students' consumption of healthy meals?

#### **HYPOTHESIS**

**Hypothesis 1:** The extent to which psychological variables generally and in terms of stress, emotions and mental state influence students' consumption of healthy meals is not significantly high.

#### **METHODOLOGY**

##### **Research Designs**

The study employed a descriptive survey design. This design investigates the distribution of human characteristics across specific sections of a population to establish facts or explain a phenomenon. This design made it feasible for the researchers to utilise a questionnaire in collecting data for this investigation.

##### **Population and Sample**

The study's population comprised 12,530 faculty of education students in the two public universities in Calabar Metropolis. The total number of students from the first university is 8500, whereas 4030 from the second university. A stratified random sampling technique was used to select 10% of the population in each university. The researchers were only interested in 10% of the population due to limited availability of resources for the research. This sampling technique was used to promote fairness in the selection process. The sample size for this study was 125 students (85 students from the University of Calabar and 40 students from the University of Cross River State).

The respondents' demographic information revealed that the participants were 51.2% males and 48.8% females. For age, 8.8% of the respondents were 16-19 years; 68% were between 20 and 23 years; 18.4% were between 24 and 27 years; while 4.8% were 28 years and above. In terms of religion, it was showcased that 96.8% of the study's participants were Christians while 3.2% were Muslims. Per institution, 68% of the participants were students of the first university, while 32% were students of the second university. For students' academic level, the analysis showed that 9.6% of the respondents were 100 level students; 26.4% were 200 level students; while 37.6%, 24% and 2.4% of the students were 300, 400 and 500 level students, respectively.

#### **Instrument for Data Collection**

A modified four-point Likert scale questionnaire with options such as Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) was used for data collection. Three health education experts validated the instrument. The instrument contained a total of nine items, with three items measuring each of stress, emotions and mental state. These experts ensured that items developed for the questionnaire reflected the intended construct under measurement. The instrument's internal consistency was determined using the Cronbach Alpha approach after trial testing on 30 students. The 30 students were not respondents earmarked for the main study, but were drawn from the two participating universities. A coefficient of .85 indicated that the instrument is reliable for data collection. One hundred and twenty-five copies of the questionnaire were administered to the targeted respondents on separate occasions. Eighty-five questionnaires were administered at the first university, while forty questionnaires were administered at the second university

and retrieved accordingly without any loss.

#### **Procedure for Data Collection**

One hundred and twenty-five copies of the questionnaire were administered to the targeted respondents on separate occasions. Eighty-five questionnaires were administered at the first university, while forty questionnaires were administered at the second university and retrieved accordingly without any loss.

#### **Method for Data Analysis**

Descriptive and inferential statistical procedures were utilised for the data analysis. Descriptive statistical measures answered the research question, whereas the inferential statistical technique (one-sample t-test) was used to test the null hypothesis at the .05 alpha level. The results of the analysis are presented in the next section.

### **RESULTS**

**Research question 1:** How much do psychological variables generally influence students' consumption of healthy meals?

This research question was answered using the descriptive statistics such as mean and standard deviation. The result of the analysis revealed that the overall mean value for psychological variables ( $M = 22.01$ ) is less than the criterion mean value ( $\mu = 22.50$ ). This suggests that psychological variables generally influence students' consumption of healthy meals to a low extent. The criterion mean of 22.50 was determined by finding the average of the Four-points Likert-type scale across the nine items measuring the three psychological factors.

**Research question 2:** To what extent does stress influence students' consumption of healthy meals?

**Table 1: Mean rating with the standard deviation of the influence of stress, on students' consumption of healthy meals in universities**

SN	Items	SA [%]	A [%]	D [%]	SD [%]	M	SD	
<b>Stress</b>							6.62	2.24
1	School workload does not give me enough time to go for balanced meals	54 [43.2]	36 [28.8]	17 [13.6]	18 [14.4]	1.99	1.07	
2	When I am stressed, I rather take snacks than prepare a balanced meal	18 [14.4]	39 [31.2]	33 [26.4]	35 [28.0]	2.08	0.96	
3	Stress does not influence my consumption of balanced meals	31 [24.8]	30 [24.0]	41 [32.8]	23 [18.4]	2.55	1.06	

Criterion mean: Scale = 7.50; Item = 2.50; *M* = Mean; *SD* = Standard deviation

Table 1 reveals that the mean value for stress ( $M = 6.62$ ) is less than the criterion mean value ( $\mu = 7.50$ ). This implies a low extent of the influence of stress on students' consumption of healthy meals. The criterion mean of 7.50 was calculated by averaging the Likert-type scale with four points across

the three items evaluating stress. The test for the significance of the influence was performed in the next section.

**Research question 3:** How much influence has emotions on students' consumption of healthy meals?

**Table 2: Mean rating with the standard deviation of the influence of emotions on students' consumption of healthy meals in universities**

SN	Psychological variables	SA [%]	A [%]	D [%]	SD [%]	M	SD	
<b>Emotions</b>							8.19	1.87
4	I often eat healthy foods when I am relaxed, happy or excited	52 [41.6]	36 [28.8]	22 [17.6]	15 [12.0]	3.00	1.04	
5	When I am moody, angry or sad, I simply take snacks rather than balanced meals	23 [18.4]	43 [34.4]	33 [26.4]	26 [20.8]	2.50	1.02	
6	My emotions do not influence what I eat	36 [28.8]	32 [25.6]	40 [32.0]	17 [13.6]	2.70	1.03	

Criterion mean: Scale = 7.50; Item = 2.50; *M* = Mean; *SD* = Standard deviation

Table 2 revealed that the mean value for emotions ( $M = 8.19$ ) is greater than the criterion mean value ( $\mu = 7.50$ ). This implies that students' emotions influenced their consumption of healthy meals. The test for the significance of the

influence was performed in the next section.

**Research question 4:** To what extent does mental state influence students' consumption of healthy meals?

**Table 3: Mean rating with the standard deviation of the influence of mental state on students' consumption of healthy meals in universities**

SN	Psychological variables	SA [%]	A [%]	D [%]	SD [%]	M	SD
	<b>Mental State</b>					7.19	2.05
7	I just eat anything I see when I am depressed	39 [31.2]	30 [24.0]	35 [28.0]	21 [16.8]	2.30	1.09
8	My addiction to a particular food item affects my food choice	29 [23.2]	42 [33.6]	41 [32.8]	13 [10.4]	2.30	0.94
9	My mental state does not affect my consumption of balanced meals	31 [24.8]	33 [26.4]	39 [31.2]	22 [17.6]	2.58	1.05

Criterion mean: Scale = 7.50; Item = 2.50; *M* = Mean; *SD* = Standard deviation

influence was performed in the next section.

Table 3 presents the descriptive statistics result that was used to address this research question. The result in Table 3 revealed that the mean value for mental state ( $M = 7.19$ ) is greater than the criterion mean value ( $\mu = 7.50$ ). This implies that students' mental state influenced their consumption of healthy meals. The test for the significance of the

**Hypothesis 1:** The extent to which psychological variables generally and in terms of stress, emotions and mental state influence students' consumption of healthy meals is not significantly high.

**Table 2: Repeated measures of one-sample (population) t-test analysis of the influence of psychological variables on students' consumption of healthy meals.**

Variables	<i>M</i>	<i>SD</i>	<i>SE</i>	<i>MD</i>	$\mu$	<i>t</i>	<i>p</i>
Psychological variables	22.0	4.19	0.38	0.49	22.50	1.31	.19
Stress	6.6	2.24	0.20	0.88	7.50	4.38***	.00
Emotions	8.2	1.87	0.17	0.69	7.50	4.14***	.00
Mental state	7.2	2.05	0.18	0.31	7.50	1.68	.10

Note: \*\*\*  $p < .001$ ;  
 $df = 124$

This hypothesis was tested at the .05 alpha level using the one-sample t-test. The one-sample t-test was performed to compare the observed sample mean ( $M$ ) to the criterion or hypothesised mean ( $\mu$ ). The result of the analysis presented in Table 4 shows no significant difference between the observed sample mean value obtained for psychological variables generally ( $M = 22.01$ ) and the hypothesised mean value ( $\mu = 22.50$ ), with a mean difference of 0.49 not being statistically significant,  $t(124) = 1.31, p = .190$ . This indicates that the influence of psychological variables generally on students'

consumption of healthy meals is not significantly low.

In specific terms, Table 2 indicates for stress that the observed mean value ( $M = 6.62$ ) is less than the hypothesised mean value ( $\mu = 7.50$ ), with the mean difference of 0.88 being statistically significant,  $t(124) = 4.38, p < .001$ . This implies that the influence of stress on students' consumption of healthy meals is significantly low. Also, Table 2 shows that the reported mean for emotions ( $M = 8.19$ ) is significantly higher than the prevailing mean value ( $\mu = 7.50$ ), with a mean difference of 0.69,  $t(124) = 4.14, p < .001$ . This implies that the influence of students' emotions on their consumption of healthy meals is

significantly high. Furthermore, the mean value for the mental state ( $M = 7.19$ ) is lower than the hypothesized mean value ( $\mu = 7.50$ ), with a non-significant mean difference of 0.31,  $t(124) = 1.68$ ,  $p = .100$ . This suggests that the influence of students' mental state on their consumption of healthy meals is not significantly low. Following the mixed results in this aspect of the study, the null hypothesis was retained generally and specifically for stress and mental state. The null hypothesis was not supported for emotions.

## **DISCUSSIONS**

This study was motivated to investigate the extent to which some psychological variables influence the decision of students to consume balanced meals or otherwise. The quantitative research method was followed in the study. Data collection and analysis first discovered that the influence of psychological variables generally on students' consumption of healthy meals is not significantly low. The researchers admit that the psychological state of an individual may affect his food choice or eating behaviour, but it is not proven in this study that the choice of food in such a situation will be balanced or unbalanced meals. The result suggests that there is a low chance that a healthy meal will be eaten based on the psychology of individuals. This finding seems justified because psychologically displaced people may not have time to prepare food with high nutritional contents but may switch to snacks, although not always but to a low extent. This means that emotionally displaced people may still eat good food some of the time if they have already prepared meals; they can have relatives or friends step in to cook in such times; they can buy well-prepared meals elsewhere by sending a sibling, or may decide not to eat at all. Even though a low extent in the variance of students' consumption of balanced meals was uncovered in this study, the unaccounted variance may be due to other extraneous factors.

Specifically, this study established that the influence of stress on students' consumption of healthy meals is

significantly low. The result of this study does not corroborate the assertion of Yau and Potenza (2013) that stress is a key influencer of the development of addiction to hyper-palatable foods. The contrast between this study and the cited work is not farfetched; the authors made subjective assertions not founded on any empirical investigation. This implies that the view is not objective and cannot be treated as established or well-accepted knowledge. Furthermore, the current study agrees with the view of Tahir (2016) that the activity of a stressor will determine the general rate of eating, which could be decreased or increased, as also outlined by Ansari and Berg-Beckhoff (2015). Empirically, the result of Cheng and Kamil (2020) revealed from an experimental study that the stressed group consumed lower energy, fat and calcium food than the non-stressed group. The current study's finding supports the cited work due to the significantly low contribution of stress to students' consumption choices. A stressed person will not always eat unbalanced meals; the odds are significantly low. This, however, disagrees with the finding of Choi (2020) that perceived stress levels influenced increased unhealthy dietary behaviour exhibited by less intake of healthy foods in the students. It is understood that the study of Choi was conducted in Korea, while the present study is conducted in the Calabar Metropolis of Nigeria. These differences may perhaps be accountable for the variation in the results.

In terms of emotions, a significantly high influence on students' consumption of healthy meals was recorded in this study. This finding may be attributed to the fact that positive emotions like joy and negative emotions like anger have increased food consumption (Echeverri-Alvarado et al., 2020). For instance, Gibson (2006) noted that for a variety of reasons, an individual's mood can alter his food choice and vice versa. An empirical evaluation found that emotional eaters were more likely to report overeating than non-emotional eaters; conversely, non-emotional eaters were more likely to report under-eating than emotional

eaters (Wallis & Hetherington, 2009). Furthermore, Evers et al. (2013) reported that snacking in daily life results from more positive emotions than negative ones.

The findings of this study revealed that the influence of students' mental state on their consumption of healthy meals is not significantly low; that is, there is influence, but the extent is not of a significantly low value, nor is it high. The conglomerate of all psychological dispositions and the likes make up the mental health state. This study supports the view of Ansari et al. (2014) that there exists an influence of mental health state (such as depressive symptoms and addictions) on students' consumption of healthy meals. Similarly, Owen and Corfe (2017) claim that psychopathologies like depression are elevated risk comorbidities of health hazards such as obesity, submitting that nutrition plays a crucial role in mental health and well-being. Thus, nutrition and mental health status do correlate. Finally, the lack of extensive literature related to this study and the disparities in socioeconomic and geopolitical areas of previous studies could be related to the scope of this research, as this study centres on public university students in Calabar Metropolis, Nigeria.

## **CONCLUSION**

Based on the findings of this study, it was concluded that the psychological sub-variables of stress, emotions, and mental state do have varying influences on students' consumption of healthy meals. The contribution of the aforementioned psychological variables to students' consumption of healthy meals is not significantly low, yet it is not high. In specific terms, stress was seen to have a significantly low influence on the dependent variable. On the other hand, emotions have a significantly high influence on students' eating behaviour, while the influence of the mental state on students' consumption of healthy meals is not significantly low; but somewhat moderately average. This study is of great importance to the global body of nutrition and health education-related

literature and can be helpful for other researchers carrying out related research and investigations.

## **RECOMMENDATIONS**

Based on the conclusion of this study, the following recommendations were made:

1. Students can overlook the psychological stress factor when making dietary decisions to promote healthy nutrition;
2. regardless of the psychological situation, emotion or mental state, students should cultivate the habit of always eating quality meals rich in nutrients to maintain a healthy life.
3. Students should monitor their food intake to become more aware of what causes them to eat and how much they consume per time.
4. Students seeking to maintain good consumption patterns should seek out an eating style that is both healthy and pleasant for particular needs and circumstances.

**Conflicts of Interest:** The authors declare no conflict of interest.

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#### Authorship and Level of Contribution

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Draft, Data analysis, Software, Project administration; **GA Uduigwomen:** Conceptualisation, Writing Original Draft, Investigation. **SU Akpa:** Data Collection, Editing.

#### Disclaimer Statement

The authors declare that this is an original work they carried out and not material from a previously published work. The results are based on the views of the respondents.

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