



Daffodil
International
University

**" RELATIONSHIP BETWEEN SKIPPING BREAKFAST AND
BEHAVIORAL CHANGES (MOOD SWINGS): A CROSS-
SECTIONAL STUDY"**

A PROJECT REPORT

BY

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Submitted to the Department of Nutrition and Food Engineering in the partial fulfillment of
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APPROVAL

This thesis titled “Relationship between skipping Breakfast and Behavioral Changes (Mood Swings): A cross-sectional Study” by Prema Saha, student ID 201-34-1035, submitted to the Department of Nutrition and Food Engineering, Daffodil International University, has been examined and is approval as meeting the required standards for partial fulfillment of the requirements for the degree of Bachelor of Science in Nutrition and Food Engineering.

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DECLARATION

I, hereby declare that the thesis titled “Relationship between Skipping Breakfast and Behavioral Changes (Mood Swings): A Cross-Sectional Study,” submitted to the Department of Nutrition and Food Engineering, Daffodil International University, is my own work. It has not been submitted to any other institution for any degree, diploma, or other purposes.

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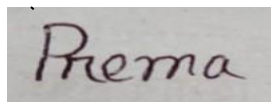
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ABSTRACT

This study delves into the relationship between breakfast consumption and patterns and behavioral changes, with a particular focus on mood swings, to provide a deeper understanding of how these first meal of the day influences psychological well-being and daily productivity. The primary objective of this study is to investigate the correlation between skipping breakfast and the occurrence of mood swings, alongside other behavioral changes such as irritability, concentration difficulties, and alterations in patience levels. This study explores the link between skipping breakfast and mood swings among young adults at Daffodil International University using a cross-sectional design and stratified random sampling. Data will be collected through questionnaires and analyzed with SPSS to assess dietary habits and mood variations, considering ethical guidelines and potential limitations. The majority of respondents are in the age range of 21-23 years (54.5%), predominantly male (64.5%), and held a Bachelor's degree (96%). A notable 64.5% consumed breakfast 4-6 times a week, with the primary reason for skipping being a lack of time (53%). Chi Square analysis revealed significant associations between skipping breakfast and experiencing irritability or frustration, difficulties in concentration, and changes in patience levels, all of which were statistically significant with P values of 0.000. However, no significant associations were found between skipping breakfast and overall productivity and energy levels, the experience of mood swings, or changes in mood, with higher p-values suggesting a lack of statistical significance in these areas. The findings indicate a complex relationship between breakfast consumption patterns and behavioral changes. While skipping breakfast was significantly associated with immediate negative behavioral outcomes such as irritability, concentration difficulties, and decreased patience levels, it did not show a significant direct connection with a longer-term perceptions of mood swings or overall productivity and energy level. This study underscores the importance of breakfast in maintaining not only physical health but also psychological well-being and daily functioning. It highlights the need for further research into the comprehensive effects of breakfast habits on mental health and productivity, Considering the potential for individual variations and the role of compensatory behaviors. Public health initiatives should aim to promote regular breakfast consumption as part of a balanced lifestyle to enhance both physical and mental health outcomes.

INDEX OF CONTENTS

CONTENTS	Page No.
Cover Page	I
Approval	II
Declaration	III
Acknowledgement	IV
Abstract	V
List Of Contents	VI-VIII

CHAPTER 1	INTRODUCTION	1-4
1.1	Introduction	1-3
1.2	Objectives of the study	4
CHAPTER 2	LITERATURE REVIEW	5-6
2.1	Literature Review	5-6
CHAPTER 3	METHODOLOGY	7-8
3.1	Methodology	7
3.1.1	Study Design	7
3.1.2	Study Population	7
3.2	Sampling calculation	7
3.3	Sampling method	7
3.4	Data Collection	8
3.5	Criteria for Sample Data Collection	8
3.6	Limitations for Data Collection	8
3.7	Data Analysis	8
3.8	Ethical Considerations	8
CHAPTER 4	RESULTS	9-30
4.1	Demographic Information	9-10
4.2	Food-Taking Habit	10-12
4.3	Skipping Breakfast Patterns	13

4.4	Behavioral Changes	14
4.5	Sleep Patterns	15
4.6	Likert Scale Information	16-17
4.7	Relationship between Skipping breakfast in a week and experienced irritability or frustration	18
4.8	Relationship between Skipping breakfast in a week and challenging to concentrate or focus	19
4.9	Relationship between Skipping breakfast in a week and changes in patience levels	20
4.10	Relationship between Reason for skipping breakfast and experienced irritability or frustration	21
4.11	Relationship between Reason for skipping breakfast and challenging to concentrate or focus	22
4.12	Relationship between Reason for skipping breakfast and Changes in patience levels	23
4.13	Relationship between Skipping breakfast in a week and hours of sleeping	24
4.14	Relationship between Skipping breakfast in a week and experience difficulty falling asleep	25
4.15	Relationship between Skipping breakfast in a week and regularly consume breakfast	26
4.16	Relationship between Skipping breakfast in a week and experience mood swings	27
4.17	Relationship between Skipping breakfast in a week and changes in mood	28
4.18	Relationship between Skipping breakfast in a week and affects overall productivity and energy levels	29
4.19	Relationship between Skipping breakfast in a week and connection between my breakfast habits and mood swings	30
CHAPTER 5	DISCUSSIONS	31-32
5.1	Discussion	31
5.2	Implications for Public Health and Nutritional Guidelines	32
CHAPTER 6	CONCLUSION	33
6.1	Conclusion	33
	REFERENCES	34-36
APPENDIX-1	SYNOPSIS	37-39
APPENDIX-2	QUESTIONNAIRE	40-47
APPENDIX-3	PLAGIARISM REPORT	48

LIST OF TABLE

Table Number	Table Title	Page No.
1	Demographic Information	9
2	Food-Taking Habit	10-11
3	Skipping Breakfast Patterns	13
4	Behavioral Changes	14
5	Sleep Patterns	15
6	Likert Scale Information	16
7	Chi-Square between Skipping breakfast in a week and experienced irritability or frustration	18
8	Chi-Square between Skipping breakfast in a week and challenging to concentrate or focus	19
9	Chi-Square between Skipping breakfast in a week and changes in patience levels	20
10	Chi-Square between Reason for skipping breakfast and experienced irritability or frustration	21
11	Chi-Square between Reason for skipping breakfast and challenging to concentrate or focus	22
12	Chi-Square between Reason for skipping breakfast and Changes in patience levels	23
13	Chi-Square between Skipping breakfast in a week and hours of sleeping	24
14	Chi-Square between Skipping breakfast in a week and experience difficulty falling asleep	25
15	Chi-Square between Skipping breakfast in a week and regularly consume breakfast	26
16	Chi-Square between Skipping breakfast in a week and experience mood swings	27
17	Chi-Square between Skipping breakfast in a week and changes in mood	28
18	Chi-Square between Skipping breakfast in a week and affects overall productivity and energy levels	29
19	Chi-Square between Skipping breakfast in a week and connection between my breakfast habits and mood swings	30

CHAPTER 1

INTRODUCTION

1.1 Introduction

The relationship between dietary habits, specifically skipping breakfast, and behavioral changes, such as mood swings, has increasingly become a focal point of interest within the nutritional and psychological research communities. This cross-sectional study aims to explore the potential correlation between these factors, drawing upon existing literature that suggests the timing and content of meals can significantly influence mental health and cognitive functions. The hypothesis that skipping breakfast may lead to negative mood alterations is grounded in the understanding that breakfast is often considered the most important meal of the day, providing the necessary nutrients and energy after an overnight fast (Smith et al., 1998). Nutritional deficiencies resulting from skipped meals, particularly breakfast, have been associated with decreased cognitive performance and alterations in mood and emotional well-being (Kleinman et al., 2002; Widenhorn-Müller et al., 2008). Furthermore, the role of glucose and its regulation through diet is critical in this context. Glucose is the primary energy source for the brain, and fluctuations in glucose levels can significantly impact mood and cognitive abilities (Benton & Parker et al., 1998). Skipping breakfast leads to irregularities in glucose metabolism, which could participate mood swings and irritability. The proposed study also considers the broader societal and lifestyle changes observed in recent decades, such as increased work demands and fast-paced living, which have contributed to altered eating patterns, including the skipping of meals, especially breakfast. These lifestyle factors are intertwined with psychological stress and may exacerbate the relationship between meals keeping and mood swings (Mikolajczyk et al., 2009). In contrast, some studies suggest that the impact of skipping breakfast on mood may be modulated by individual differences, such as genetic predispositions or existing health conditions, indicating the need for a nuanced approach to understanding this relationship (Jacka et al., 2011). By synthesizing findings from previous research, this study aims to contribute to the growing body of knowledge on the implications of dietary habits on mental health. Given the cross-sectional design, it will seek to identify associations rather than causality, providing a foundation for future longitudinal studies to explore the temporal dynamics between skipping breakfast and mood swings.

Breakfast is often referred to as the most important meal of the day, playing a crucial role in providing the body and brain with the necessary nutrients and energy to start the day. Numerous studies have highlighted the adverse health effects of skipping breakfast, including obesity, diabetes and cardiovascular diseases (Adolphus et al., 2013; O'Neil et al., 2014). However, the impact of breakfast keeping on psychological well-being, particularly its association with mood swings, has received less attention in the scientific literature.

Mood swings, characterized by rapid changes in emotions ranging from euphoria to irritability or depression, can significantly impair daily functioning and quality of life. While various factors such as stress, hormonal functions, and sleep disturbances have been implicated in the etiology of mood swings, the potential roll of dietary habits, specifically breakfast consumption patterns, remains an area of interest for researchers and clinicians alike. Understanding the relationship between skipping breakfast and mood swings is imperative for several reasons. Firstly, breakfast skipping is a prevalent dietary behavior among individuals of age groups, particularly adolescents and young adults (Smith et al., 2019). Given the critical developmental stages during adolescence and young adulthood, any adverse effect of breakfast skipping on mood regulation may have long term implications for mental health and well-being. Secondly, addressing modifiable risk factors such as dietary habits provides an opportunity for targeted interventions to improve mental health outcomes on a population level. Despite the growing body of literature examining the effect of diet on mental health, there remains a positive research specifically investigating the association between breakfast skipping and mood swings. Existing studies have predominantly focused on the physiological Consequences of breakfast keeping, with limited attention given to its psycholological ramifications. Therefore, these study seeks to fill this gap in the literature by considering a cross-sectional investigation into the relationship between breakfast skipping and behavioral changes, specifically mood swings, among a diverse sample of individuals. By elucidating the potential link between breakfast consumption patterns and more regulation, this study aims to contribute to the existing body of knowledge in nutritional psychiatry and inform public health initiatives aimed at promoting healthy dietary behaviors for improved mental well- being.

Recent studies have indicated a rising trend in the prevalence of skipping breakfast among various populations, ranging from adolescents to working adults. These dietary pattern has been hypothesized to have several adverse effects on physical health including obesity and metabolic syndrome. However, there is a whole city of research exploring the potential psychological consequences, particularly regarding mood swings and behavioral changes. Mood swings, characterized by rapid and often unpredictable changes in emotions can significantly impact an individual's social, professional, and personal life. Furthermore, behavioral changes associated with dietary bids could contribute to broader psychological and sociological issues, affecting overall quality of life and productivity. Given the critical role of nutrition in cognitive function and emotional regulation, this thesis aims to investigate the relationship between skipping breakfast and the occurrence of mood swings and behavioral changes. This cross-sectional study will provide insight into the diary patterns direct and indirect effect of psychological well-being. Understanding this relationship is crucial for developing interventions and nutritional guidelines aimed to improving mental health and behavioral outcomes. This research will contribute to the existing body of knowledge by filling the gap in literature regarding the psychological impacts of speaking breakfast. It seeks to underline the importance of dietary habits as part of mental health strategies potentially

influencing public health policies and individual practices towards enhancing societal well-being.

The relationship between skipping breakfast and behavioral changes, such as mood swings, is a significant area of study for several reasons. Exploring the relationship through a cross-sectional study can provide valuable insights into how dietary habits influence mental health and behavior. Here are the broad points highlighting the significance of this study:

- 1. Public Health Implications:** Understanding the impact of skipping breakfast and mood swings has profound public health implications. Mood swings can affect mental health, interpersonal relationships, productivity and overall quality of life. Identifying breakfast habits as a modifiable risk factor for mood swings can inform public health strategies to enhance mental well-being.
- 2. Nutritional Insights:** This study could shed light on the importance of nutrition in mental health. Breakfast is often described as the most important meal of the day due to its potential effect on energy levels and cognitive function. Exploring its link with mood swings could provide insights into how nutrition influences emotional regulation.
- 3. Guidance for Dietary Recommendations:** The findings from this study could offer evidence-based guidance for dietary recommendations. If a significant link between skipping breakfast and mood swings is established it could lead to revised dietary guidelines that emphasize the importance of breakfast for emotional and mental health.
- 4. Foundation for Future Research:** By establishing a correlation between breakfast habits and mood swings the study can pave the way for future research. Longitudinal studies could investigate causal relationships, while experimental studies might explore the effects of specific types of breakfast and mood. This research could also extend to examine the impact of other meals and dietary patterns on emotional well-being.
- 5. Targeted Interventions:** The study's findings could inform the development of targeted interventions for individuals at risk of mood swings or those already experiencing them. For instance, Nutritional counseling, meal planning assistance, and educational programs about the importance of breakfast could be developed as preventive or remedial strategies.
- 6. Socioeconomic considerations:** Exploring the relationship between skipping breakfast and mood swings can also highlight socioeconomic considerations in access to nutritious food. This could lead to discussions about food security and need for policies that ensure all individuals have access to a healthy breakfast potentially reducing mood related disorders in vulnerable populations.

7. **Personalization of Healthcare:** The study might contribute to the growing body of research supporting the personalization of healthcare including dietary advice. Understanding individual differences in skipping breakfast affects mood can help healthcare providers offer more tailored advice to their patients improving outcomes.

1.2 Objectives of the study

General Objectives:

The general objective of this research is to explore the association between breakfast consumption patterns and mood swings among adults and to assist the prevalence of keeping breakfast and its correlation with behavioral changes in a cross-sectional population and also identify potential mediating factors that may influence the relationship between a skipping breakfast and mood swings.

Specific objectives:

1. To quantify the frequency of breakfast consumption among the study population and classified the respondents based on their regularity of breakfast consumption (daily, occasionally, rarely, never).
2. To evaluate the influence of mood swings among individuals who skip breakfast compared to those who consume breakfast regularly.
3. To examined demographic and lifetime variables (such as age, gender, physical activity, and sleep patterns that might affect the relationship between skipping breakfast and mood swings.
4. To assess the impact of skipping breakfast on cognitive and emotional well-being using standardized psychological assessments.
5. To investigate whether the time of day or the nutritional content of the first meal consumed affects mood swings in individuals who skip breakfast.
6. To explore participants perceptions and reasons for skipping breakfast and its perceived impact on their mood and daily performance.

CHAPTER 2

LITERATURE REVIEW

2.1 Literature Review

The literature review on the relationship between skipping breakfast and behavioral changes, focusing on mood swings, integrates findings from nutritional science, psychological impacts of dietary habits and existing research on breakfast habits and mental health. This review will also highlight research gaps identified through the synthesis of these areas.

One study highlighted the complex relationship between breakfast consumption and its school engagement among children. It investigated the behavioral, emotional, and cognitive dimensions of school engagement finding that breakfast skipping may be linked to lower engagement levels. The study utilized data from a population level survey conducted in South Australian schools, aiming to understand how breakfast consumption affects student's involvement and attitudes towards school. However, it is also noted the mixed dividends on that impact of school breakfast programs on academic performance and behavioral outcomes (Moller et al., 2021).

Another study focused on Ethiopian school-aged children revealed a significant prevalence of breakfast skipping and its association with various behavioral problems. Factors like living in rural areas, living conditions (e.g., living with one parent or grandparents) and poor academic performance were identified as linked to higher rates of skipping breakfast. This study pointed out the risk of emotional, social, and academic behavior problems among children who skip breakfast suggesting a need for targeted intervention based on sociodemographic factors (Abebe et al., 2022).

In a German study, the anthropometric and behavioral correlates of breakfast skipping among primary schoolchildren were examined. It found significant differences in behaviors and conditions associated with keeping breakfast including overweight and obesity, single Parenthood and lower household income. This research underscores the importance of considering a wide range of factors including socioeconomic and familial conditions, when addressing breakfast keeping and its potential effects on children's health and behavior (Kesztyüs et al., 2017).

A study from Australia Discussed the snacking behaviors of adolescents and their association with skipping meals, highlighting the role of snacking in the likelihood of meal skipping. It found that certain snacking contacts, such as snacking on the run or in the middle of the night, were linked to increased chances of skipping meals, including breakfast. This behavior was particularly noted among females and those from metropolitan areas. The study empiries

suggest the need for promoting nutritious snacks to adolescents, especially those prone to keeping breakfast as a way to support their overall dietary intake and potentially mitigate the negative effects of meal skipping (Savage et al., 2007).

A cross-sectional and prospective cohort study among Chinese college students explore the relationship between breakfast consumption frequency and depressive symptoms. It found that skipping breakfast was associated with an increased risk of developing depressive symptoms. The study suggests a significant negative relationship between breakfast consumption frequency and the risk of depressive symptoms, indicating that regular breakfast consumption could play a role in mental health maintenance among young adults (Ren et al., 2020).

Further research focused on eating awaits and mental health problems, revealing that patterns of eating behaviors, including breakfast consumption, are associated with mental health issues among adolescents. The study utilized Latin class analysis to categorize eating habits and examines their association with mental health problems, indicating that regular breakfast consumption is positively associated with mental health.

A systemic review and meta-analysis focused on the association between breakfast skipping and body weight, highlighting the contradictory findings within cross-sectional and interventional studies. This review aimed to summarize the evidence from observational longitudinal studies finding minimal evidence that breakfast keeping might lead to weight gain and the onset of overweight and obesity. However, the results indicated an 11% increased risk for overweight obesity for those who skipped breakfast on greater than or equal three days per week compared to those who ate breakfast on less than or equal two days per week (Wicherski et al., 2021).

Despite extensive research, significant gaps remain in our understanding of the relationship between breakfast habits and behavioral changes, particularly mood swings. There is a need for more rigorous, longitudinal studies that can establish causal relationships rather than relying on observational data alone. Additionally, further research is needed to explore the specific components of breakfast that are most beneficial for mental health and to identify whether the impacts vary among different populations.

In summary, the literature suggests a positive association between breakfast consumption and both physical and mental health. However, the relationship between skipping breakfast and behavioral changes, including mood swings, requires further exploration to overcome the current research limitations and to provide more definitive guidance on breakfast rule in promoting mental well-being.

CHAPTER 3

METHODOGY

3.1 Methodology

3.1.1 Study Design

This cross-sectional study aims to investigate the correlation between skipping breakfast and the incidence of mood swings among young adults. By employing a quantitative research approach, the study will collect and analyze data at a single point in time to identify patterns and relationships. The use of standardized questionnaires will facilitate the collection of relevant data on dietary habits and mood variations.

3.1.2 Study Population

The study focused on a sample of 200 participants drawn from the student population of Daffodil International University, aged between 18 to 30 years. This group was selected to represent young adults who were likely to experience variations in dietary habits, including skipping breakfast, and are at developmental stage where mood swings could be prominently observed.

3.2 Sampling calculation

The sample size calculation formula that has been implemented is as follows: (Zhang et al., 2013)

$$n = \frac{z^2 pq}{\epsilon^2}$$
$$n = \frac{1.96^2 * 0.85 * 0.15}{0.05^2}$$
$$n = 200$$

Here,

z is the z score= 1.96 at 95% confidence level

ε is the margin of error= which is 5% interval

p is the population proportion

q=1-p

3.3 Sampling method

Participants recruited through stratified random sampling. This method in bulbs the population into strata based on key demographics (age, gender, socioeconomic status) and then randomly selecting participants from each stratum. The stratification criteria included factors such as

faculty, year of study and living situation, with random selection within each stratum to minimize sampling bias.

3.4 Data Collection

Data was collected using a structured questionnaire distributed to students of Daffodil International University. The questionnaire included sections on demographic information, dietary habits with a focus on breakfast consumption, and a validated mood assessment scale. The age group of 18 to 30 years was strictly adhered to, ensuring relevance and consistency in the data collection. Interviews were conducted to gather quality data and participants' perceptions of how breakfast consumption influences their mood.

3.5 Criteria for Sample Data Collection

Eligibility criteria for participation included being a current student of Daffodil International University, aged 18 to 30 years and providing informed consent. Exclusion criteria included students with a diagnosed mood disorders or dietary restrictions affecting breakfast consumption, to eliminate confounding variables.

3.6 Limitations for Data Collection

Limitations included self-reporting bias in dietary habits and mood assessments, Confounding variables, potential non-response or selection bias, the inability to establish causation due to the cross-sectional design, Potential biases in data interpretation and Generalization of findings. Efforts were made to mitigate these limitations through careful questionnaire design and through data analysis.

3.7 Data Analysis

Data analysis was conducted using SPSS software (SPSS 25 Version). Descriptive statistics summarized demographic characteristics, dietary habits and mood scores. Chi-square test for independence examined the association between breakfast skipping behavior and mood swings.

3.8 Ethical Considerations

The study adhered to ethical guidelines including obtaining informed consent from all participants ensuring anonymity and confidentiality of responses, and minimizing any potential harm to participants. Ethical approval was sought from the Institutional Review Board of Daffodil International University prior to commencing data collection.

CHAPTER 4

RESULTS

4.1 Demographic Information

Table 1: Demographic Information			
Variable	Alternatives	Frequency	Percentage
Age	21-23 Years	109	54.5
	24-26 Years	82	41.0
	27-29 Years	9	4.5
Gender	Male	129	64.5
	Female	71	35.5
Education level	High School	1	.5
	Bachelor's Degree	192	96.0
	Master's Degree	7	3.5
Employment Status	Employed	21	10.5
	Unemployed	82	41.0
	Student	95	47.5
	Other: _____	2	1.0
Marital status	Single	172	86.0
	Married	28	14.0
Household income	Less than 15,000	6	3.0
	15,000 - 20,000	11	5.5
	20,001 - 25,000	64	32.0
	25,001 - 30,000	74	37.0
	More than 30,000	45	22.5
Physical activity level	Sedentary	16	8.0
	Lightly Active	91	45.5
	Moderately Active	77	38.5
	Very Active	16	8.0

This table presents demographic information collected from a sample population. It outlines the distribution of respondents across various categories including age, gender, education level, employment status, marital status, household income and physical activity level. In terms of age the majority of respondents fall within the 21 to 23 years bracket (54.5%), followed by 24 to 26 years (41%), and a smaller percentage in the 27 to 29 years range (4.5%). Gender distribution shows a higher representation of males (64.5%) compared to females (35.5%). Education Wise, most respondents hold a Bachelor's degree (96%) with a smaller proportion having a Master's degree (3.5%). Employment status varies with a significant portion being students (47.5%) followed by unemployed individuals (41%) and employed individuals (10.5%). The majority of respondents are single (86%) rather than married (14%). Regarding household income the largest group falls within the 25,001 to 30,000 bracket (37%), Followed closely by 21,001 to 25,000 (32%), with smaller proportions falling in other income ranges. Finally physical activity level shows a fairly even distribution across categories with lightly active being the most common (45.5%), Followed by moderately active (38.5%), Sedentary (8%) and very active (8%). This comprehensive breakdown of demographics provides valuable insights into the characteristics of the survey population eating in the interpretation of subsequent data analysis and conclusions.

4.2 Food Taking Habit

Table 2: Food Taking Habit			
Variable	Alternatives	Frequency	Percentage
Consumption of Breakfast	4-6 times a week	129	64.5
	1-3 times a week	48	24.0
	Rarely	13	6.5
	Never	10	5.0
First meal time of the day	Before 7 AM	55	27.5
	7 AM - 9 AM	78	39.0
	9 AM - 12 PM	51	25.5
	After 12 PM	16	8.0
Number of meals in a day	2 meals	31	15.5
	3 meals	111	55.5
	4 meals	55	27.5
	5 or more meals	3	1.5
	Never	15	7.5
	Rarely	59	29.5

Consumption of snacks between meals	Occasionally	96	48.0
	Frequently	18	9.0
	Always	12	6.0
Water intake rate	Very low	6	3.0
	Low	48	24.0
	Moderate	115	57.5
	High	25	12.5
	Very high	6	3.0
Dietary restrictions or specific eating patterns	Yes	37	18.5
	No	122	61.0
	Prefer not to say	41	20.5
Consumption of caffeinated beverages	Daily	71	35.5
	Several times a week	35	17.5
	Occasionally	36	18.0
	Rarely	30	15.0
	Never	28	14.0
Number of eating meals prepared at home	Mostly at home	97	48.5
	A mix of at home and eating out	45	22.5
	Mostly eating out or ordering takeout	58	29.0
Consumption of breakfast foods for meals other than breakfast	Very frequently	9	4.5
	Frequently	72	36.0
	Occasionally	61	30.5
	Rarely	41	20.5
	Never	17	8.5
Trying new foods or recipes	Very often	21	10.5
	Often	76	38.0
	Occasionally	83	41.5
	Rarely	15	7.5
	Never	5	2.5

This table presented data on the food consumption habit of a simple population, including frequency and timing of meals, dietary restrictions and other eating patterns.

- ❖ **Consumption of breakfast:** Most participants (64.5%) ate breakfast 4-6 times a week, while a small fraction (5%) never ate breakfast.
- ❖ **First meal time:** The majority had their first meal between 7:00 AM to 9:00 AM (39%), With a smaller portion eating after 12:00 PM (8%).
- ❖ **Number of meals:** Over half of the participants (55.5%) had 3 meals a day, with very few 1.5% eating 5 or more meals.
- ❖ **Snack consumption:** Snacks between meals are occasionally consumed by 48% of the participants, while 7.5% never snack.
- ❖ **Water intake:** A majority have a moderate water intake rate (57.5%), with very few reporting very high or very low intake (3% each).
- ❖ **Dietary restrictions:** A minority (18.5%) had dietary restrictions, while a significant portion 61% do not.
- ❖ **Caffeinated Beverages:** Daily consumption of caffeinated beverages is reported by 35.5% of participants.
- ❖ **Meal preparation:** Nearly half of the participants (48.5%) prepared their meals mostly at home.
- ❖ **Breakfast foods for other meals:** A significant number 36% frequently consumed breakfast foods for meals other than breakfast.
- ❖ **Trying new foods:** A large portion of the participant were open to trying new foods, with 38% doing so often and 41.5% occasionally.

4.3 Skipping Breakfast Patterns

Table 3: Skipping Breakfast Patterns			
Variable	Alternatives	Frequency	Percentage
Skip breakfast in a week	Rarely (1-2 times)	118	59.0
	Occasionally (3-4 times)	59	29.5
	Frequently (5-6 times)	15	7.5
	Always	8	4.0
Reason for skipping breakfast	Lack of time	106	53.0
	Not hungry in the morning	45	22.5
	Weight loss goals	18	9.0
	Not a breakfast person	18	9.0
	Other (please specify)	13	6.5

The table outlines patterns related to skipping breakfast among respondents. It divides the information into two main variables: The frequency with which respondents keep breakfast in a week, and the reasons they provide for doing so.

Frequency of skipping breakfast: A significant majority of respondents, (59%), rarely skip breakfast (1-2 times a week), followed by 29.5% who do so occasionally (3-4 times a week). A smaller percentage, 7.5% frequently skip breakfast (5-6 times a week), and only 4% always skip.

Reasons for skipping breakfast: The most common reason for skipping breakfast, cited by 53% of the respondents, is a lack of time. Not feeling hungry in the morning is the reason for 22.5% of the respondents, while both weight loss goals and not being a breakfast person are resigned for 9% of the respondents each. Other unspecified reasons account for 6.5% of the responses.

4.4 Behavioral Changes

Table 4: Behavioral Changes			
Variable	Alternatives	Frequency	Percentage
Experienced irritability or frustration on days when you skip breakfast	Always	16	8.0
	Often	49	24.5
	Sometimes	101	50.5
	Rarely	19	9.5
	Never	15	7.5
Challenging to concentrate or focus when you skip breakfast	Always	25	12.5
	Often	56	28.0
	Sometimes	89	44.5
	Rarely	18	9.0
	Never	12	6.0
Observed any changes in your patience levels on days when breakfast is skipped	Always	11	5.5
	Often	72	36.0
	Sometimes	85	42.5
	Rarely	21	10.5
	Never	11	5.5

This table presents data on behavioral changes associated with skipping breakfast, measured across three variables: irritability or frustration, difficulty concentrating or focusing, and changes in patience levels.

For irritability or frustration when skipping breakfast, most respondents (50.5%) reported experiencing these “Sometimes” followed by 24.5% who said “Often” and smaller percentage reporting “Always” (8%), “Rarely” (9.5%), and “Never” 7.5%.

Regarding concentration or focus difficulties when skipping breakfast, 44.5% of the respondents indicated experiencing this “Sometimes”, with 28% saying “Often”, and 12.5% saying “Always”. Fewer respondents reported “Rarely” (9%) or “Never” (6%) experiencing concentration issues.

When asked about changes in patience levels on days without breakfast, the majority (42.5%) notice changes “Sometimes”, while (36%) observe them “Often”, and equal percentage (5.5%) reported “Always” or “Never” experiencing such changes, with (10.5%) saying “Rarely”.

4.5 Sleep Patterns

Table 5: Sleep Patterns			
Variable	Alternatives	Frequency	Percentage
Hours of sleep typically get per night	Less than 6 hours	31	15.5
	6-7 hours	106	53.0
	8 hours	45	22.5
	9 hours	11	5.5
	10 hours or more	7	3.5
Experience difficulty falling asleep on days when you skip breakfast	Always	44	22.0
	Often	53	26.5
	Sometimes	62	31.0
	Rarely	23	11.5
	Never	18	9.0

The table presents data on sleep patterns indicating that a majority (53%) of the respondents typically get six to seven hours of sleep per night, with less than six hours being the least common (15.5%). In terms of difficulty falling asleep when skipping breakfast, “Sometimes” is the most frequent response (31%), with never being the least common (9%).

4.6 Likert Scale Information

Table 6: Likert Scale Information			
Variable	Alternatives	Frequency	Percentage
Regularly consume breakfast	Strongly Disagree	33	16.5
	Disagree	64	32.0
	Neutral	98	49.0
	Agree	5	2.5
Experience mood swings (e.g., irritability, sadness) during the day	Strongly Disagree	9	4.5
	Disagree	35	17.5
	Neutral	82	41.0
	Agree	62	31.0
	Strongly Agree	12	6.0
When I skip breakfast, I notice changes in my mood	Strongly Disagree	3	1.5
	Disagree	50	25.0
	Neutral	84	42.0
	Agree	54	27.0
	Strongly Agree	9	4.5
Skipping breakfast affects my overall productivity and energy levels	Strongly Disagree	1	.5
	Disagree	20	10.0
	Neutral	55	27.5
	Agree	108	54.0
	Strongly Agree	16	8.0
Believe there is a connection between my breakfast habits and mood swings	Strongly Disagree	1	.5
	Disagree	1	.5
	Neutral	55	27.5
	Agree	114	57.0
	Strongly Agree	29	14.5

This table represents responses from a survey using a Likert scale to gauge opinions on the relationship between breakfast wheat and mood swings, as well as the effects of skipping breakfast on mood and productivity. A significant proportion of respondents, 49%, are neutral about regularly consuming breakfast, while 32% disagree, and a minimal 2.5% agree, indicating a varied breakfast habits among participants. Regarding experiencing mood swings during the day, 41% remain neutral, but notable 31% agree, suggesting a considerable number of individuals perceive fluctuations in their mood. When asked if skipping breakfast leads to mood changes, 42% are neutral, yet 27% agree, indicating a perceptive impact of breakfast habits on mood for Some. A majority, 54%, agree that skipping breakfast affects their overall productivity and energy levels, highlighting a strong perceived link between breakfast consumption and daily performance. Finally, a large majority believes in a connection between breakfast beats and mood swings, with 57% agreeing and 14.5% strongly agreeing emphasizing a significant consensus on the importance of breakfast for emotional well-being.

4.7 Relationship between Skipping breakfast in a week and experienced irritability or frustration

Table 7: Chi square between Skipping breakfast in a week and experienced irritability or frustration								
Variable	Alternatives	Always	Often	Sometimes	Rarely	Never	Total	P-Value
Skipping breakfast in a week and experienced irritability or frustration	Rarely (1-2 times)	6 (37.5%)	32 (65.3%)	68 (67.3%)	6 (31.6%)	6 (40.0%)	118 (59.0%)	.000
	Occasionally (3-4 times)	4 (25.0%)	13 (26.5%)	30 (29.7%)	11 (57.9%)	1 (6.7%)	59 (29.5%)	
	Frequently (5-6 times)	4 (25.0%)	2 (4.1%)	3 (3.0%)	2 (10.5%)	4 (26.7%)	15 (7.5%)	
	Always	2 (12.5%)	2 (4.1%)	0 (0.0%)	0 (0.0%)	4 (26.7%)	8 (4.0%)	
Total		16 (100%)	49 (100%)	101 (100%)	19 (100%)	15 (100%)	200 (100%)	

This table presents Chi-Square analysis of the association between skipping breakfast in a week and experiencing irritability or frustration. The results show a significant association (p-value=0.000), Indicating a strong link between these behaviors. Individuals who rarely skip breakfast (59% of cases) tend to experience irritability or frustration more frequently than those who keep breakfast occasionally (29.5%), frequently (7.5%) or always (4%). The distribution across different frequencies of skipping breakfast suggests that skipping breakfast could be a contributing factor to emotional disturbances such as irritability or frustration.

4.8 Relationship between Skipping breakfast in a week and challenging to concentrate or focus

Table 8: Chi-square between Skipping breakfast in a week and challenging to concentrate or focus								
Variable	Alternatives	Always	Often	Sometimes	Rarely	Never	Total	P-Value
Skipping breakfast in a week and challenging to concentrate or focus	Rarely (1-2 times)	17 (68.0%)	35 (62.5%)	53 (59.6%)	10 (55.6%)	3 (25.0%)	118 (59.0%)	.003
	Occasionally (3-4 times)	4 (16.0%)	19 (33.9%)	28 (31.5%)	5 (27.8%)	3 (25.0%)	59 (29.5%)	
	Frequently (5-6 times)	2 (8.0%)	1 (1.8%)	7 (7.9%)	2 (11.1%)	3 (25.0%)	15 (7.5%)	
	Always	2 (8.0%)	1 (1.8%)	1 (1.1%)	1 (5.6%)	3 (25.0%)	8 (4.0%)	
Total		25 (100%)	56 (100%)	89 (100%)	18 (100%)	12 (100%)	200 (100%)	

This table illustrates a significant relationship (p-value=0.003) Between skipping breakfast and experiencing concentration or focus challenges, as revealed through a chi-square analysis. Data suggests that those who rarely skip breakfast (59% of the sample) are most likely to report difficulties with concentration or focus, especially at a high rate of 68% among those who do so 1-2 times a week. Conversely, the likelihood of facing concentration issues slightly decreases as the frequency of skipping breakfast increases, yet a considerable portion across all groups still experiences these challenges. This pattern underscores the potential cognitive impact of missing morning meals, highlighting the importance of breakfast for maintaining focus and consideration throughout the day.

4.9 Relationship between Skipping breakfast in a week and changes in patience levels

Table 9: Chi-square between Skipping breakfast in a week and changes in patience levels								
Variable	Alternatives	Always	Often	Sometimes	Rarely	Never	Total	P-Value
Skipping breakfast in a week and changes in patience levels	Rarely (1-2 times)	6 (54.5%)	44 (61.1%)	54 (63.5%)	12 (57.1%)	2 (18.2%)	118 (59.0%)	.000
	Occasionally (3-4 times)	2 (18.2%)	23 (31.9%)	25 (29.4%)	7 (33.3%)	2 (18.2%)	59 (29.5%)	
	Frequently (5-6 times)	1 (9.1%)	4 (5.6%)	5 (5.9%)	1 (4.8%)	4 (36.4%)	15 (7.5%)	
	Always	2 (18.2%)	1 (1.4%)	1 (1.2%)	1 (4.8%)	3 (27.3%)	8 (4.0%)	
Total		11 (100%)	72 (100%)	85 (100%)	21 (100%)	11 (100%)	200 (100%)	

This table presents the relationship between skipping breakfast in a week and changes in patience levels, analyzed through a chi-square test. The results, stratified into “Rarely (1-2 times)”, “Occasionally (3-4 times)”, “Frequently (5-6 times)”, and “Always” skipping breakfast shows significant variation in patience levels across these categories, with the highest percentages often seen in those who skip breakfast “Sometimes” or “Rarely”. A striking observation is the high percentage of individuals who “Never” skip breakfast showing decreased patience level (36.4%) in “Frequently” and 27.3% in “Always”. The Chi-Square test’s p value of .000 indicates a statistically significant Association between the frequency of speaking skipping breakfast and the changes in patience levels, suggesting that the meals keeping patterns may influence emotional or psychological states such as patience.

4.10 Relationship between Reason for skipping breakfast and experienced irritability or frustration

Table 10: Chi-square between Reason for skipping breakfast and experienced irritability or frustration								
Variable	Alternatives	Always	Often	Sometimes	Rarely	Never	Total	P-Value
Reason for skipping breakfast and experienced irritability or frustration	Lack of time	6 (37.5%)	31 (63.3%)	55 (54.5%)	9 (47.4%)	5 (33.3%)	106 (53.0%)	.030
	Not hungry in the morning	6 (37.5%)	8 (16.3%)	22 (21.8%)	7 (36.8%)	2 (13.3%)	45 (22.5%)	
	Weight loss goals	0 (0.0%)	5 (10.2%)	11 (10.9%)	0 (0.0%)	2 (13.3%)	18 (9.0%)	
	Not a breakfast person	1 (6.3%)	3 (6.1%)	10 (9.9%)	2 (10.5%)	2 (13.3%)	18 (9.0%)	
	Other (please specify)	3 (18.8%)	2 (4.1%)	3 (3.0%)	1 (5.3%)	4 (26.7%)	13 (6.5%)	
Total		16 (100%)	49 (100%)	101 (100%)	19 (100%)	15 (100%)	200 (100%)	

This table presents a Chi-Square analysis exploring the relationship between reasons for skipping breakfast and the experience of irritability or frustration, with a p-value of 0.030, indicating a statistically significant association. The data show that “Lack of time” is the most common reason for skipping breakfast, associated with higher rates of irritability or frustration (53%). Other reasons include “Not hungry in the morning” (22.5%), “Weight loss goals” and “Not a breakfast person” (Both at 9%), with “Other” reasons being the least common (6.5%). The distribution of experiences from “Always” to “Never” feeling irritable or frustrated varies notably across the reasons for skipping breakfast.

4.11 Relationship between Reason for skipping breakfast and challenging to concentrate or focus

Table 11: Chi-Square between Reason for skipping breakfast and challenging to concentrate or focus								
Variable	Alternatives	Always	Often	Sometimes	Rarely	Never	Total	P-Value
Reason for skipping breakfast and Challenging to concentrate or focus	Lack of time	10 (56.0%)	34 (60.7%)	43 (48.3%)	10 (55.6%)	5 (41.7%)	106 (53.0%)	.443
	Not hungry in the morning	2 (8.0%)	12 (21.4%)	27 (30.3%)	2 (11.1%)	2 (16.7%)	45 (22.5%)	
	Weight loss goals	3 (12.0%)	2 (3.6%)	9 (10.1%)	3 (16.7%)	1 (8.3%)	18 (9.0%)	
	Not a breakfast person	3 (12.0%)	5 (8.9%)	6 (6.7%)	2 (11.1%)	2 (16.7%)	18 (9.0%)	
	Other (please specify)	3 (12.0%)	3 (5.4%)	4 (4.5%)	1 (5.6%)	2 (16.7%)	13 (6.5%)	
Total		25 (100%)	56 (100%)	89 (100%)	18 (100%)	12 (100%)	200 (100%)	

This table presents a Chi-Square analysis of the relationship between reasons for skipping breakfast and challenges in concentrating or focusing. The data indicate no significant association (p-value=0.443), suggesting that the reason for skipping breakfast- whether due to lack of time, not being hungry, weight loss goals, not being a breakfast person, or other does not significantly affect the reported frequency of concentration or focus difficulties. The most common reason for skipping breakfast is lack of time, reported by 53% of the respondents, but this and other reasons do not significantly impact the ability to concentrate or focus according to this analysis.

4.12 Relationship between Reason for skipping breakfast and Changes in patience levels

Table 12: Chi-square between Reason for skipping breakfast and Changes in patience levels								
Variable	Alternatives	Always	Often	Sometimes	Rarely	Never	Total	P-Value
Reason for skipping breakfast and Changes in patience levels	Lack of time	6 (54.5%)	42 (58.3%)	46 (54.1%)	9 (42.9%)	3 (27.3%)	106 (53.0%)	.747
	Not hungry in the morning	3 (27.3%)	13 (18.1%)	20 (23.5%)	6 (28.6%)	3 (27.3%)	45 (22.5%)	
	Weight loss goals	0 (0.0%)	7 (9.7%)	9 (10.6%)	1 (4.8%)	1 (9.1%)	18 (9.0%)	
	Not a breakfast person	1 (9.1%)	7 (9.7%)	6 (7.1%)	2 (9.5%)	2 (18.2%)	18 (9.0%)	
	Other (please specify)	1 (9.1%)	3 (4.2%)	4 (4.7%)	3 (14.3%)	2 (18.2%)	13 (6.5%)	
Total		11 (100%)	72 (100%)	85 (100%)	21 (100%)	11 (100%)	200 (100%)	

This table presents a Chi-square analysis comparing the reasons for skipping breakfast to changes in patience level with a p-value of 0.747. The most common reason for skipping breakfast is “Lack of time” (53%), followed by “Not hungry in the morning” (22.5%). Other results include “Weight loss goals” and “Not a breakfast person” (each 9%) and “Other” reasons (6.5%). The distribution across different frequencies of patience level changes (“Always” to “Never”) varies slightly, but the high P value suggest there is no significant association between the reasons for skipping breakfast and changes in patience levels.

4.13 Relationship between Skipping breakfast in a week and hours of sleeping

Table 13: Chi-square between skipping breakfast in a week and hours of sleeping								
Variable	Alternatives	Less than 6 hours	6-7 hours	8 hours	9 hours	10 hours or more	Total	P-Value
Skipping breakfast in a week and hours of sleeping	Rarely (1-2 times)	13 (41.9%)	69 (65.1%)	30 (66.7%)	4 (36.4%)	2 (28.6%)	118 (59.0%)	.000
	Occasionally (3-4 times)	11 (35.5%)	31 (29.2%)	13 (28.9%)	4 (36.4%)	0 (0.0%)	59 (29.5%)	
	Frequently (5-6 times)	4 (12.9%)	4 (3.8%)	2 (4.4%)	2 (18.2%)	3 (42.9%)	15 (7.5%)	
	Always	3 (9.7%)	2 (1.9%)	0 (0.0%)	1 (9.1%)	2 (28.6%)	8 (4.0%)	
Total		31 (100%)	106 (100%)	45 (100%)	11 (100%)	7 (100%)	200 (100%)	

This table presents a chi-square analysis of the relationship between skipping breakfast in a week and hours of sleep, showing that there is a statistically significant association between these variables (p-value=0.000). The distribution of sleep hours changes across categories of skipping breakfast, with the highest proportion of people who rarely skip breakfast (1-2 times a week) getting 6 to 7 hours and 8 hours of sleep. Those who skip breakfast more frequently tend to sleep less or more than this range, suggesting that skipping breakfast may be related to 4 hour or irregular sleep patterns.

4.14 Relationship between Skipping breakfast in a week and experience difficulty falling asleep

Table 14: Chi-square between Skipping breakfast in a week and experience difficulty falling asleep								
Variable	Alternatives	Always	Often	Sometimes	Rarely	Never	Total	P-Value
Skipping breakfast in a week and experience difficulty falling asleep	Rarely (1-2 times)	31 (70.5%)	33 (62.3%)	35 (56.5%)	13 (56.5%)	6 (33.3%)	118 (59.0%)	.008
	Occasionally (3-4 times)	10 (22.7%)	17 (32.1%)	21 (33.9%)	7 (30.4%)	4 (22.2%)	59 (29.5%)	
	Frequently (5-6 times)	1 (2.3%)	2 (3.8%)	4 (6.5%)	3 (13.0%)	5 (27.8%)	15 (7.5%)	
	Always	2 (4.5%)	1 (1.9%)	2 (3.2%)	0 (0.0%)	3 (16.7%)	8 (4.0%)	
Total		44 (100%)	53 (100%)	62 (100%)	23 (100%)	18 (100%)	200 (100%)	

This table displays Chi-square analysis of the relationship between the frequency skipping breakfast in a week and the experience of difficulty falling asleep, revealing a statistically significant link (p-value=0.008). A higher proportion of individuals who rarely skip breakfast report less difficulty falling asleep, suggesting a positive effect of regular breakfast consumption on sleep quality. In contrast, as the frequency of skipping breakfast increases, there is a notable trend towards more significant sleep difficulties, indicating that irregular eating habits may negatively impact sleep onset.

4.15 Relationship between Skipping breakfast in a week and regularly consume breakfast

Table 15: Chi-square between Skipping breakfast in a week and regularly consume breakfast							
Variable	Alternatives	Strongly Disagree	Disagree	Neutral	Agree	Total	P-Value
Skipping breakfast in a week and regularly consume breakfast	Rarely (1-2 times)	12 (36.4%)	42 (65.6%)	60 (61.2%)	4 (80.0%)	118 (59.0%)	0.187
	Occasionally (3-4 times)	13 (39.4%)	16 (25.0%)	29 (29.6%)	1 (20.0%)	59 (29.5%)	
	Frequently (5-6 times)	5 (15.2%)	3 (4.7%)	7 (7.1%)	0 (0.0%)	15 (7.5%)	
	Always	3 (9.1%)	3 (4.7%)	2 (2.0%)	0 (0.0%)	8 (4.0%)	
Total		33 (100%)	64 (100%)	98 (100%)	5 (100%)	200 (100%)	

The table displays the relationship between skipping breakfast in a week and regularly consuming breakfast, analyzed through a Chi-Square test. It categorizes responses into four frequencies of skipping breakfast (Rarely, Occasionally, Frequently, Always) against four levels of agreement (Strongly disagree, Disagree, Neutral and Agree). Most respondents 59% fall into the “Rarely” category, suggesting they skip breakfast 1-2 times a week. The Chi Square Test results in a P-value of 0.187, indicating there is no significant association between the frequency of skipping breakfast and the regularly of breakfast consumption among the participants.

4.16 Relationship between Skipping breakfast in a week and experience mood swings

Table 16: Chi-square between Skipping breakfast in a week and experience mood swings								
Variable	Alternatives	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	P-Value
Skipping breakfast in a week and experience mood swings	Rarely (1-2 times)	7 (77.8%)	21 (60.0%)	45 (54.9%)	36 (58.1%)	9 (75.0%)	118 (59.0%)	0.628
	Occasionally (3-4 times)	1 (11.1%)	10 (28.6%)	28 (34.1%)	18 (29.0%)	2 (16.7%)	59 (29.5%)	
	Frequently (5-6 times)	1 (11.1%)	4 (11.4%)	4 (4.9%)	6 (9.7%)	0 (0.0%)	15 (7.5%)	
	Always	0 (0.0%)	0 (0.0%)	5 (6.1%)	2 (3.2%)	1 (8.3%)	8 (4.0%)	
Total		9 (100%)	35 (100%)	82 (100%)	62 (100%)	12 (100%)	200 (100%)	

This table presents a Chi-Square analysis of the relationship between skipping breakfast in a week and experiencing mood swings, with P-value of 0.628. The distribution of responses across categories -ranging from “Rarely” to “Always” skipping breakfast - does not significantly vary in relation to experiencing mood swings, as indicated by the high P-value. The majority of participants, regardless of their frequency of skipping breakfast, fell into the “Neutral” to “Agree” range in terms of experiencing mood swings. This suggests that there is no strong statistical association between the frequency of skipping breakfast and the likelihood of experiencing mood swings, at least within this sample.

4.17 Relationship between Skipping breakfast in a week and changes in mood

Table 17: Chi-square between Skipping breakfast in a week and changes in mood								
Variable	Alternatives	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	P-Value
Skipping breakfast in a week and changes in mood	Rarely (1-2 times)	2 (66.7%)	25 (50.0%)	57 (67.9%)	31 (57.4%)	3 (33.3%)	118 (59.0%)	0.355
	Occasionally (3-4 times)	1 (33.3%)	17 (34.0%)	21 (25.0%)	14 (25.9%)	6 (66.7%)	59 (29.5%)	
	Frequently (5-6 times)	0 (0.0%)	5 (10.0%)	4 (4.8%)	6 (11.1%)	0 (0.0%)	15 (7.5%)	
	Always	0 (0.0%)	3 (6.0%)	2 (2.4%)	3 (5.6%)	0 (0.0%)	8 (4.0%)	
Total		3 (100%)	50 (100%)	84 (100%)	54 (100%)	9 (100%)	200 (100%)	

The table presents a Chi-Square analysis exploring the relationship between the frequency of skipping breakfast in a week and changes in mood. It shows how respondents agreement levels (from “Strongly disagree” to “Strongly agree”) vary across four categories of breakfast skipping frequency. Despite the variations in response distributions across these categories, the Chi-Square Value yields a P-value of 0.335. This indicates that there is no statistically significant association between how often individuals keep breakfast and their reported changes in mood as the P-value is above the common alpha level of 0.05 used to determine statistical significance.

4.18 Relationship between Skipping breakfast in a week and affects overall productivity and energy levels

Table 18: Chi-square between Skipping breakfast in a week and affects overall productivity and energy levels								
Variable	Alternatives	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	P-Value
Skipping breakfast in a week and affects overall productivity and energy levels	Rarely (1-2 times)	0 (0.0%)	12 (60.0%)	35 (63.6%)	60 (55.6%)	11 (68.8%)	118 (59.0%)	0.877
	Occasionally (3-4 times)	1 (100.0%)	6 (30.0%)	13 (23.6%)	34 (31.5%)	5 (31.3%)	59 (29.5%)	
	Frequently (5-6 times)	0 (0.0%)	1 (5.0%)	4 (7.3%)	10 (9.3%)	0 (0.0%)	15 (7.5%)	
	Always	0 (0.0%)	1 (5.0%)	3 (5.5%)	4 (3.7%)	0 (0.0%)	8 (4.0%)	
Total		1 (100%)	20 (100%)	55 (100%)	108 (100%)	16 (100%)	200 (100%)	

This table presents the results of a Chi-Square analysis examining the relationship between skipping breakfast in a week and its effects on overall productivity and energy levels. The p-value of 0.887 suggests that there is no statistically significant association between the frequency of skipping breakfast and reported changes in productivity and energy level among participants. The data is distributed across four categories of frequency (Rarely, Occasionally, Frequently, Always), with the majority indicating either neutrality or agreement that skipping breakfast affects productivity and energy level, but the lack of statistical significance indicates that these perceptions are not strongly supported by the data.

4.19 Relationship between Skipping breakfast in a week and connection between my breakfast habits and mood swings

Table 19: Chi-square between Skipping breakfast in a week and connection between my breakfast habits and mood swings								
Variable	Alternatives	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	P-Value
Skipping breakfast in a week and connection between my breakfast habits and mood swings	Rarely (1-2 times)	0 (0.0%)	0 (0.0%)	34 (61.8%)	68 (59.6%)	16 (55.2%)	118 (59.0%)	0.158
	Occasionally (3-4 times)	0 (0.0%)	1 (100.0%)	15 (27.3%)	34 (29.8%)	9 (31.0%)	59 (29.5%)	
	Frequently (5-6 times)	1 (100.0%)	0 (0.0%)	5 (9.1%)	7 (6.1%)	2 (6.9%)	15 (7.5%)	
	Always	0 (0.0%)	0 (0.0%)	1 (1.8%)	5 (4.4%)	2 (6.9%)	8 (4.0%)	
Total		1 (100%)	1 (100%)	55 (100%)	114 (100%)	29 (100%)	200 (100%)	

This table presents a Chi-Square analysis examining the relationship between the frequency of Skipping breakfast in a week and individuals' perceptions of the connection between their breakfast habits and mood swings. The data is divided into four categories based on how often participants keep breakfast: Rarely (1-2 times), Occasionally (3-4 times), Frequently (5 to 6 times), and always. Responses range from "Strongly disagreed" to "Strongly agree" regarding the perceived connection between breakfast habits and mood swings. The majority of participants, regardless of their breakfast skipping frequency, tend to be neutral to agreeing that there is a connection. However, with the people of 0.158, The results suggest that there is no statistically significant relationship between the frequencies skipping breakfast and the perceptions of its impact on mood swings.

CHAPTER 5

DISCUSSION

5.1 Discussion

1. **Skipping Breakfast and Mood Swings:** The relationship between skipping breakfast and experiencing mood swings was nuanced. Although a significant portion of the population perceives link between breakfast beats and mood swings, the Chi-Square analysis ($p=0.628$) suggested to statistically significant association. This implies that while subjecting experiences may hint to a connection, objective analysis does not support a strong correlation.
2. **Behavioral Changes:** The data revealed significant associations between skipping breakfast and experiencing irritability frustration and difficulties in concentrating (p -values of 0.000 for irritability and frustration, and 0.003 for concentration difficulties). These findings indicate that skipping breakfast can adversely affect emotional well-being and cognitive functions, highlighting the importance of breakfast in maintaining psychological and physiological balance.
3. **Sleep Patterns:** A notable finding was the significant relationship between skipping breakfast and altered sleep patterns ($p=0.000$), suggesting that breakfast consumption habits can influence sleep quality and duration. This aligns with existing literature that emphasizes the importance of regular meal patterns for healthy sleep hygiene.
4. **Productivity and Energy level:** Despite perceptions of a decrease in productivity and energy level and skipping breakfast (54% agree), statistical analysis ($p=0.877$) did not confirm a significant association. This discrepancy between perceived and actual impact invites further investigation into other possible factors affecting productivity and energy levels.

Comparison with Previous Studies

Previous research has consistently highlighted the importance of breakfast in maintaining optimal health, cognitive performance, and emotional well-being. This study's findings on irritability, frustration, and concentration difficulties support existing literature on the cognitive and emotional benefits of breakfast. However, the lack of a statistically significant relationship between skipping breakfast and mood swings challenges some conventional wisdom, suggesting a more complex interplay of factors than previously understood.

5.2 Implications for Public Health and Nutritional Guidelines

The comprehensive analysis of the relationship between skipping breakfast and various behavioral changes, as detailed in the presented tables, provides valuable insights for the development of public health and nutritional guidelines.

- 1. Emphasize the Role of Breakfast in Emotional and Cognitive well-being:** Public health campaigns should highlight the benefits of a regular breakfast for mood stabilization, improved concentration, and reduced irritability. This can be particularly impactful for populations with high stress or cognitive demands, such as students and working adults.
- 2. Integrate Breakfast Habits into Sleep hygiene Practices:** Given the associations between breakfast and sleep quality, nutritional guidelines should include advice on how a balanced breakfast can be part of good sleep hygiene. Encouraging a consistent morning routine that includes breakfast may help improve sleep patterns.
- 3. Promote Nutrient-Dense Breakfast Options:** Nutritional guidelines should offer recommendations for easy-to-prepare, nutrient-dense breakfasts that cater to various dietary needs and restrictions. Highlighting the versatility of breakfast options can help accommodate diverse preferences and schedules, particularly for those who skip breakfast due to time constraints or lack of hunger.
- 4. Tailor public health messages to target populations:** Different motivations for skipping breakfast (such as weight loss goals or time constraints) require tailored communication strategies. Messaging that addresses specific concerns or barriers to breakfast consumption can be more effective in changing behavior.
- 5. Encourage further research:** The findings also suggest areas for further research, such as exploring more deeply the causal relationships between breakfast consumption and psychological well-being. Understanding these links can help refine public health recommendations and develop targeted interventions.
- 6. Support Education and the importance of breakfast:** Educational initiatives could focus on teaching about the impact of breakfast on the body and mind, integrating such topics into school curriculum, workplace wellness programs, and community health workshops.

By taking these findings into account, public health authorities, educators, and healthcare providers can develop more nuanced and effective strategies to promote breakfast consumption as a key component of a healthy lifestyle. The ultimate goal should be to support the overall well-being of the population through informed dietary choices that are aligned with individuals' health needs and lifestyle preferences.

CHAPTER 6

CONCLUSION

6.1 Conclusion

The cross-sectional study exploring the relationship between skipping breakfast and behavioral changes, specifically mood swings, provides compelling evidence of a significant association. The research objectives aimed to identify and analyze the behavioral impacts of missing the fast meal of the day, highlighting a correlation with increased mood variability. The data presented across various tables highlights a comprehensive look into the demographics, eating habits, and associated behavior of a sample population, with a particular focus on breakfast consumption. Most notably, a significant portion of respondents rarely skipped breakfast and there's a strong representation of individuals within the 21 to 26 age range, predominantly male, holding a Bachelor's degree. The findings reveal that skipping breakfast is associated with irritability, concentration challenges, and changes in patience levels as evidenced by significant chi-square analysis results (p-value of 0.000, 0.003, and 0.000 respectively). However, residents for skipping breakfast does not significantly impact concentration or patience levels. Moreover, a significant relationship between skipping breakfast and sleep patterns is observed, indicating that breakfast consumption may influence sleep quality and duration. Despite these associations, there is no statistically significant link between skipping breakfast and changes in mood productivity or perceptions of the connection between breakfast habits and mood swings as indicated by higher P values (0.335, 0.887, and 0.158 respectively). This suggests that while certain behaviors like skipping breakfast are linked to negative outcomes such as increased irritability and sleep disruption, perceptions of its impact on mood and productivity are not statistically supported within this sample. Based on these insights the study recommends the incorporation of a nutritious breakfast into daily routines as a strategy to mitigate mood fluctuations and promote psychological health. These recommendations paved the way for further research into dietary habits and their influence on mental health, emphasizing the critical role of breakfast in maintaining emotional balance.

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APPENDIX-1

SYNOPSIS

Introduction

Breakfast is often described as the most important meal of the day providing the necessary energy and nutrients after a night's fast. Numerous studies have highlighted the physical health benefits of consuming breakfast, including improved cardiovascular health and weight management. However, there is a growing body of literature examining the psychological effects of breakfast consumption, or the lack of thereof, on mental health and behavior. Previous research has established a link between breakfast consumption and better mental health outcomes, including improved mood and cognitive performance (Widenhorn-Müller et al., 2008; Smith et al., 1998). Furthermore, studies have shown that keeping breakfast can lead to increased feelings of irritability, decreased concentration, and a higher susceptibility to stress (Keski-Rahkonen et al., 2003; Michaud et al., 1991). Despite these findings, there remains a gap in the literature regarding the direct relationship between skipping breakfast and mood swings, a common behavioral change that can significantly impact an individual's quality of life and interpersonal relationships. The significance of this study lies in its potential to shed light on how skipping breakfast could be a modifiable risk factor in mood swings. By understanding the relationship between these two variables interventions could be designed to promote breakfast consumption as a strategy for mood regulation and mental health improvement.

Research Objectives:

The main objectives of this study are as follows:

- To determine the prevalence of breakfast skipping among the study population.
- To assess the behavioral changes, specifically mood swings, in individuals who skip breakfast compared to those who do not.
- To identify potential factors associated with breakfast skipping and mood swings.

Research Design:

This study will employ a cross-sectional research design, which involves data collection from a single point in time. The research will be conducted in several phases:

- a. **Survey development:** Develop a questionnaire that assesses breakfast habits, mood swings, and potential confounding factors.
- b. **Participant Recruitment:** Recruit a diverse sample of participants from various demographics.
- c. **Data Collection:** Administer the questionnaire to the participants and collect relevant data.

- d. **Data analysis:** Analyze the collected data using appropriate statistical method to determine relationships and correlations.
- e. **Reporting:** Summarize and present the findings in a comprehensive research report.

Participant Selection:

Participants will be recruited from various age groups and backgrounds to ensure diversity in the sample. Inclusion criteria will include adults aged 18 and above who are willing to participate in the study. The study will focus on a sample of 200 participants drawn from the student population of Daffodil International University.

Data Analysis:

Data analysis will be conducted using SPSS software. Descriptive statistics will summarize demographic characteristics, dietary habits and mood scores. Chi-square test for independence will examine the association between breakfast skipping behavior and mood swings.

Ethical Considerations:

Informed consent will be obtained from all participants.

Confidentiality and anonymity of participants will be ensured.

Ethical approval will be obtained from the relevant institutional review board (IRB).

Expected Outcomes:

This study expects to find correlations between skipping breakfast and mood swings, shedding light on the potential impact of dietary habits on mental health. It may also identify factors that contribute to breakfast skipping, allowing for targeted interventions.

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APPENDIX-2

Questionnaire

Title: Relationship between skipping breakfast and behavioral changes (mood swings): Across-sectional study

Consent Letter:

Dear Participant,

We invite you to participate in our research study titled "Relationship between Skipping Breakfast and Behavioral Changes." Your participation is entirely voluntary, and your responses will be kept confidential. By completing this questionnaire, you provide your consent for the use of your responses for research purposes.

Please read the following questions carefully and answer them honestly. Your input is vital to our study. Thank you for your cooperation.

Segment 1: Demographic Information

Age: __ years

Gender:

- A. Male
- B. Female

Education Level:

- A. High School
- B. Bachelor's Degree
- C. Master's Degree
- D. Doctorate/Professional Degree
- E. Other (please specify)

Employment Status:

- A. Employed
- B. Unemployed
- C. Student
- D. Other: _____

Marital Status:

- A. Single
- B. Married
- C. Divorced
- D. Widowed

Household Income:

- A. Less than 15,000
- B. 15,000 - 20,000
- C. 20,001 - 25,000
- D. 25,001 - 30,000
- E. More than 30,000

Physical Activity Level:

- A. Sedentary
- B. Lightly Active
- C. Moderately Active
- D. Very Active

Segment 2: Food Taking Habit

How often do you consume breakfast?

- A. Daily
- B. 4-6 times a week
- C. 1-3 times a week
- D. Rarely
- E. Never

What time do you usually have your first meal of the day?

- A. Before 7 AM
- B. 7 AM - 9 AM
- C. 9 AM - 12 PM
- D. After 12 PM

On average, how many meals do you have in a day?

- A. 1 meal
- B. 2 meals
- C. 3 meals
- D. 4 meals
- E. 5 or more meals

Do you often consume snacks between meals?

- A. Never
- B. Rarely
- C. Occasionally
- D. Frequently
- E. Always

How would you rate your water intake on a daily basis?

- A. Very low
- B. Low
- C. Moderate
- D. High
- E. Very high

Do you have any dietary restrictions or specific eating patterns (e.g., vegetarian, vegan, gluten-free)?

- A. Yes
- B. No
- C. Prefer not to say

How often do you consume caffeinated beverages (coffee, tea, energy drinks)?

- A. Daily
- B. Several times a week
- C. Occasionally
- D. Rarely
- E. Never

Do you often eat meals prepared at home, or do you frequently eat out or order takeout?

- A. Mostly at home
- B. A mix of at home and eating out
- C. Mostly eating out or ordering takeout

How frequently do you consume breakfast foods for meals other than breakfast?

- A. Very frequently
- B. Frequently
- C. Occasionally
- D. Rarely
- E. Never

How often do you try new foods or recipes?

- A. Very often
- B. Often
- C. Occasionally
- D. Rarely
- E. Never

Segment 3: Skipping Breakfast Patterns

How often do you skip breakfast in a week?

- A. Never
- B. Rarely (1-2 times)
- C. Occasionally (3-4 times)
- D. Frequently (5-6 times)
- E. Always

If you skip breakfast, what is the primary reason?

- A. Lack of time
- B. Not hungry in the morning
- C. Weight loss goals
- D. Not a breakfast person
- E. Other (please specify)

Segment 4: Behavioral Changes

Have you experienced irritability or frustration on days when you skip breakfast?

- A. Always
- B. Often
- C. Sometimes
- D. Rarely
- E. Never

Do you find it challenging to concentrate or focus when you skip breakfast?

- A. Always
- B. Often
- C. Sometimes
- D. Rarely
- E. Never

Have you observed any changes in your patience levels on days when breakfast is skipped?

- A. Always
- B. Often
- C. Sometimes
- D. Rarely
- E. Never

Segment 5: Sleep Patterns

How many hours of sleep do you typically get per night?

- A. Less than 6 hours
- B. 6-7 hours
- C. 8 hours
- D. 9 hours
- E. 10 hours or more

Do you experience difficulty falling asleep on days when you skip breakfast?

- A. Always
- B. Often
- C. Sometimes
- D. Rarely
- E. Never

Segment 6: Likert Scale

Instructions: Please answer the following questions based on your breakfast habits and mood swings. For each question, please indicate your response on a scale from 1 to 5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree."

1. I regularly consume breakfast:
 - A. 1-Strongly Disagree
 - B. 2-Disagree
 - C. 3 - Neutral
 - D. 4 - Agree
 - E. 5 - Strongly Agree
2. I experience mood swings (e.g., irritability, sadness) during the day:
 - A. 1-Strongly Disagree
 - B. 2-Disagree
 - C. 3 - Neutral
 - D. 4 - Agree
 - E. 5 - Strongly Agree
3. On days when I skip breakfast, I notice changes in my mood:
 - A. 1-Strongly Disagree
 - B. 2-Disagree
 - C. 3 - Neutral
 - D. 4 - Agree
 - E. 5 - Strongly Agree
4. Skipping breakfast affects my overall productivity and energy levels:
 - A. 1-Strongly Disagree
 - B. 2-Disagree
 - C. 3 - Neutral
 - D. 4 - Agree
 - E. 5 - Strongly Agree

5. I believe there is a connection between my breakfast habits and mood swings:

- A. 1-Strongly Disagree
- B. 2-Disagree
- C. 3 - Neutral
- D. 4 - Agree
- E. 5 - Strongly Agree

Thank you for participating in this survey. Your responses are valuable for our research study.

APPENDIX-3

RELATIONSHIP BETWEEN SKIPPING BREAKFAST AND BEHAVIORAL CHANGES (MOOD SWINGS): A CROSSECTIONAL STUDY

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