



Understanding Breakfast Skipping: Perceptions among Senior High School Students

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Breakfast is essential part of our meal. However, breakfast skipping is prevalent among students. This study explores the perception of breakfast skipping among Senior High School students in Digos City, focusing on the beliefs about breakfast and the perceived benefits of breakfast consumption. Anchored in Nutrition Theory, which links regular breakfast consumption to enhance cognitive performance and academic success, the study aims to assess students' understanding of

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the importance of breakfast and explore potential demographic influence, including sex, academic strand, grade level, and age. A descriptive quantitative research design was employed, utilizing an adapted survey questionnaire distributed to 204 Senior High School students across different academic strands. The survey measured two dimensions: beliefs about breakfast and perceptions of its benefits, using a Likert scale. Statistical analyses, including the Mann-Whitney U and Kruskal-Willis tests, were conducted to identify significant differences in perceptions based on the respondents' demographic profiles. Results revealed that the overall perception of breakfast skipping was high, indicating that students generally recognize the importance of breakfast. However, there were no significant differences in perceptions when analyzed by sex, academic strand, grade level, or age. These findings suggest that while breakfast is valued, interventions to promote regular breakfast consumption should focus on individual preferences rather than targeting specific demographic groups. The study underscores the need for comprehensive strategies and programs to encourage students to have healthy breakfast habits, which could positively impact their cognitive performance and academic achievements. This research contributes to broader understanding of breakfast habits among Senior High School students, providing valuable insights for educators, policymakers, and parents in developing effective nutritional interventions that support students' academic and cognitive development.

Keywords: *Breakfast; breakfast skipping; senior high school; students; academic strand; perceptions; cognitive development.*

1. INTRODUCTION

Breakfast is one of the most important meals of the day [1]. Typically, we eat three meals a day: breakfast, lunch, and dinner. Breakfast plays a crucial role in the proper functioning of the brain by supplying it with essential nutrients [2]. The global prevalence of breakfast skipping is influenced by various socio-economic, cultural, and lifestyle factors, making it a complex issue to address. In children, this tendency is exacerbated by physiological changes during puberty, such as the shift from a morning to an evening chronotype, which complicates the establishment of consistent breakfast habits [3]. Studies suggest that skipping breakfast leads to prolonged fasting and lower morning glucose levels, reducing energy availability for the brain during critical morning hours. This can impair cognitive functions, including memory, attention, and executive function, essential for academic performance and daily activities [4].

Intervention studies have shown that regular breakfast consumption can improve dietary quality and reduce cardiometabolic risks [5]. For instance, children and adolescents who consistently eat breakfast tend to have better overall nutrition, lower intake of unhealthy foods, and reduced incidence of overweight and obesity [6]. Despite these benefits, the cognitive deficits associated with breakfast skipping remain a significant concern. Lower glucose levels in the morning can impair cognitive performance, leading to difficulties in concentration, learning,

and memory retention. Research suggests that regular breakfast consumption correlates with better concentration and memory retention [7].

Pengpid and Peltzer [8] posit that breakfast consumption patterns change during adolescence. Many students choose to skip breakfast due to academic pressures and activities, making this a common practice among students. This pattern or practice causes undesirable outcomes among students. Albashtawy [9] highlights that students who skip breakfast cause many health problems and reduced performance in cognitive and psychosocial functions- hence lessening academic learning and achievement. Breakfast consumption is undeniably essential [10], as it avoids health problems and improves school connectedness and academic performance [11]. Thus, parents and other involved individuals have to establish a healthy model for their children by encouraging them to eat healthy breakfasts [9].

In the Philippines, although a significant percentage of the population regularly consumes breakfast, concerns about the nutritional quality of these meals persist [12]. Skipping breakfast can lead to prolonged fasting periods, resulting in lower glucose levels in the morning and reduced energy availability for the brain. This can impair cognitive functions such as memory, attention, and executive function, vital for academic performance and daily activities [13,14]. Studies

in the Philippines indicate that children and adolescents who skip breakfast have poorer academic performance, reduced attention spans, and lower test scores than their peers who eat breakfast regularly [15]. The issue is further exacerbated by unhealthy eating patterns later in the day, leading to nutritional deficiencies that further impair cognitive abilities [13,14].

This study is grounded in Nutrition Theory. According to this theory, breakfast consumption is generally associated with improved cognitive performance, attention, and memory in children and adolescents. Skipping breakfast reduces concentration and impairs academic performance [16,17]. Breakfast habits are influenced by socio-economic, cultural, and individual factors, all of which affect pupils' academic achievements. Understanding these dynamics highlights the importance of regular breakfast for cognitive health and academic performance, informing public health policies and educational programs to encourage students to eat better breakfasts [18].

The study's findings serve as a crucial reminder for parents about their responsibility to provide and establish healthy breakfast habits for their children. Additionally, these findings underscore the importance of breakfast for students, highlighting the nuances of consuming breakfast regularly. Moreover, the study's result can serve as a valuable reference for academic institutions and public health policymakers in crafting health and educational policies to encourage students to daily breakfast consumption among students.

The study focuses on the perceptions of Senior High School students about breakfast skipping. It explores two dimensions: Beliefs about breakfast, which refers to the belief regarding the value and benefits of eating breakfast, and perceptions of benefits of breakfast, which refers to the perceived benefits of consuming breakfast. This study aims to determine the perception of skipping breakfast among Senior High School (SHS) students. Specifically, it will seek answers for the following: (1) to determine the profile of respondents in terms of sex, strand, grade level and age; (2) to assess the level of understanding of the following in terms of beliefs about breakfast and perceptions of benefits of breakfast; and (3) determine if there is a significant difference on the level of understanding breakfast skipping when respondents are analyzed by profile.

2. METHODOLOGY

2.1 Research Respondents

This study was conducted in a Senior High School in Digos City, Philippines. The school offers the following academic strands: Science, Technology, Engineering, and Mathematics (STEM), Humanities and Social Sciences (HUMSS), Accountancy, Business, and Management (ABM), General Academic Strand (GAS), and Technical Vocational Livelihood (TVL) strand. The respondents of this study were Grade 11 and 12 Senior High School students officially enrolled in the School Year (SY) 2023 – 2024, coming from any academic strands and willing to participate in the study.

A simple random sampling technique was employed in the study. This method was chosen because it ensures inclusive and equitable representation of drawing samples from the general population [19,20]. A total of 204 respondents participated in the study, selected using this sampling frame.

2.2 Research Instrument

This study utilized an adapted survey questionnaire based on the instrument developed by Nanney et al. [21] entitled "Project BreakFAST: Rationale, design, and recruitment and enrollment methods of a randomized controlled trial to evaluate an intervention to improve school breakfast program participation in rural high schools". The instrument includes two key dimensions: Dimension 1: Beliefs about Breakfast, with four questions that explore the respondents' belief regarding the value and benefits of eating breakfast; and Dimension 2: Perceptions of Benefits of Breakfast, with seven questions that aimed at understanding the respondents' perceived benefits of consuming breakfast [21].

The survey was designed to include quantitative items rated on a Likert scale pattern from the study of Bringula et al. [22] as cited by Languita et al. [23] (see Table 1).

2.3 Research Design and Procedure

This study utilizes a quantitative research method, specifically descriptive research. Descriptive research is a method employed to describe and interpret characteristics of a population or phenomenon being studied [24-26].

Table 1. Range of means and interpretation

Range of Means	Numerical Value	Verbal Description	Descriptive Meaning
4.51 – 5.00	5	Very High	This means that the level of perceptions regarding breakfast is very high.
3.51 – 4.50	4	High	This means that the level of perceptions regarding breakfast is high.
2.51 – 3.00	3	Moderate	This means that the level of perceptions regarding breakfast is moderate.
1.51 – 2.50	2	Low	This means that the level of perceptions regarding breakfast is low.
1.00 – 1.50	1	Very Low	This means that the level of perceptions regarding breakfast is very low.

Its focus is on answering the "what" question rather than the "how," "why," or "when" questions [27].

The researchers followed three (3) stages to conduct the study properly. Firstly, the researcher obtained permission from the principal's office for data gathering. Secondly, a survey questionnaire via Google Forms was administered to many senior high school students as respondents during regular school hours. Lastly, data are analyzed using descriptive statistics to evaluate the demographic profile of the respondents and the general breakfast habits of the respondents. Mean, Mann-Whitney U and Kruskal-Willis tests identify significant differences in perceptions based on Sex, Academic Strand, Grade level, and Age. Mann-Whitney U test is a non-parametric test used when the assumptions of the t-test are not met [28]. Kruskal-Wallis test is a non-parametric test used when the assumptions of One-Way ANOVA are unmet [29].

3. RESULTS AND DISCUSSION

3.1 Demographic Profile of Senior High School Students

Table 2 shows the demographic profile of the respondents. In terms of sex, female respondents consist of the majority of the respondents ($f=122$, $\%=59.80$) compared to male respondents ($f =82$, $\%=40.20$). In terms of the strand, majority of the respondents are from STEM ($f =85$, $\%=41.70$), followed by HUMSS ($f =77$, $\%=37.70$), ABM ($f =23$, $\%=11.30$), GAS ($f =10$, $\%=4.90$), and TVL ($f =9$, $\%=4.40$) respectively. In terms of grade level, the majority of the respondents are grade 11 ($f=110$, $\%=53.9$), followed by grade 12 ($f=94$, $\%=46.1$).

While, in terms of age, majority of the respondents were aged 16 to 17 years old ($f =118$, $\%=57.80$), followed by 18 to 19 years old ($f =76$, $\%=37.30$) and 20 to 22 years old ($f =10$, $\%=4.90$) respectively.

3.2 Level of Senior High School Students' Perceptions about Breakfast Skipping

Table 3 presents the level of students' perceptions about breakfast skipping in terms of beliefs about breakfast and perceptions of the benefits of breakfast. The overall perception of skipping breakfast can be interpreted as high ($\bar{x}=3.67$, $SD=0.82$). This means that students give high regard to having breakfast. In terms of beliefs about breakfast, the respondents have a high level of perception in this indicator ($\bar{x}=3.70$, $SD=0.84$). This finding aligns with Zeballos and Todd's [30] assertion that skipping meals lowers daily calorie intake. However, significantly reduced overall diet quality, particularly when breakfast is skipped, can negatively impact health over time.

Missing meals regularly might affect your metabolism and slow down your metabolism to save energy. This may eventually cause metabolic dysfunction and make weight management more difficult. Missing meals can seriously harm general health and well-being, even if it seems easy to save calories. Instead, the key to long-term health and energy levels is to maintain a balanced diet with regular, nourishing meals and snacks throughout the day [31].

Additionally, concerning the indicator perceptions of the benefits of breakfast, respondents demonstrated a high level of perception ($\bar{x}=3.63$, $SD=0.79$). This suggests that respondents generally view breakfast as beneficial.

Table 2. Demographic profile of respondents (n=204)

Profile	f	%
Sex		
Male	82	40.20
Female	122	59.80
Strand		
HUMSS	77	37.70
STEM	85	41.70
ABM	23	11.30
GAS	10	4.90
TVL	9	4.40
Grade Level		
11	110	53.9
12	94	46.1
Age		
16-17 y.o.	118	57.80
18-19 y.o.	76	37.30
20-22 y.o.	10	4.90

Table 3. Level of senior high school students' perceptions about breakfast skipping

Indicators	Mean	SD	Remarks
Beliefs about Breakfast	3.70	0.84	High
Perceptions of Benefits of Breakfast	3.63	0.79	High
Overall Mean	3.67	0.82	High

Table 4. Significant difference in the perception of skipping breakfast among the respondents when grouped according to sex using mann-whitney U test

Indicators	Statistic	p
Beliefs about Breakfast	4550	.272
Perceptions of Benefits of Breakfast	4588	.316

This result is consistent with Fujiwara et al.'s [32] study, which examined how individuals perceive the advantages of breakfast. The study's overall mean score of 3.63 indicates that people's opinions about breakfast are generally positive.

3.3 Significant Difference in the Perception of Skipping Breakfast among the Respondents when grouped according to Sex using Mann-Whitney U Test

Table 4 presents the result of the Mann-Whitney U test, comparing the perceptions of skipping breakfast among the respondents when grouped by sex. It can be observed that all dimensions have *p*-values greater than 0.05, which means that we failed to reject the null hypothesis. This indicates no significant differences in all dimensions when the respondents are grouped by sex. This suggests that interventions or

educational programs aimed to promote healthy breakfast habits may need to consider factors beyond sex, such as individual preference. This implies that a more personalized and inclusive approach to promoting healthy breakfast habits may be more effective than targeting interventions solely based on Sex.

Moreover, Table 4 shows no statistically significant differences in beliefs and perceptions of benefits between male and female senior high school students. All *p*-values are well above the conventional threshold of 0.05, leading to the decision to fail to reject the null hypothesis in each case. This suggests that sex does not significantly influence these specific perceptions among the students studied.

The findings align with the statement of Lindroos et al. [33] and Jacob and Panwar [34,35]. The discovery that opinions about skipping breakfast do not significantly differ based on a person's sex

is consistent with earlier studies showing the minimal impact of sex on eating habits. This is in line with the understanding that a wide range of non-sex-specific factors, such as personal preferences, influence breakfast behaviors [36].

3.4 Significant Difference in the Perception of Skipping Breakfast among the Respondents when grouped according to Academic Strand using Kruskal-Wallis Test

Table 5 presents the Kruskal-Wallis test result, comparing the respondents' perception of skipping breakfast when grouped by academic strand. It can be observed that all dimensions have *p*-values greater than 0.05, indicating that we failed to reject the null hypothesis. This means there are no significant differences in all dimensions when the respondents are grouped by their academic strand. This suggests that perceptions of skipping breakfast among respondents do not significantly vary based on their academic strand.

The result is supported by Halissam et al. (2024), who found that skipping breakfast had no impact on academic performance regardless of academic strand. Students who regularly skipped breakfast still managed to perform well academically. Interventions addressing breakfast-skipping behaviors may need to target all academic strands equally rather than focusing on specific strands. This implies that factors other than academic interests may influence breakfast habits, highlighting the need for

comprehensive approaches considering individual preferences [37].

3.5 Significant Difference in the Perception of Skipping Breakfast among the Respondents when grouped according to Grade Level using Mann-Whitney U Test

Table 6 presents the result of the Mann Whitney U test, comparing the perception of skipping breakfast among the respondents when grouped by grade level. It can be observed that all dimensions have *p*-values greater than 0.05, leading to the decision to fail to reject the null hypothesis. This indicates no significant differences in the beliefs about breakfast, and perceptions of the benefits of breakfast when the respondents are grouped by grade level.

This suggests that the students' attitudes and behaviors about breakfast are consistent across grades. This consistency may stem from factors such as shared school culture or education programs that emphasize the value of breakfast.

The result aligns with the findings of Badrasawi, Anabtawi, and Al-Zain [38] and Ma et al. [39]. These research studies indicate that perceptions and beliefs regarding the importance of breakfast are similar across grade levels. They argue that factors such as parental influence and the desire to improve energy levels and cognitive performance play a significant role in students' breakfast habits [40].

Table 5. Significant difference in the perception of skipping breakfast among the respondents when grouped according to academic strand using kruskal-wallis test

Indicators	X ²	df	p
Beliefs about Breakfast	1.90	4	.755
Perceptions of Benefits of Breakfast	2.08	4	.722

Table 6. Significant difference in the perception of skipping breakfast among the respondents when grouped according to grade level using mann-whitney U test

Indicators	Statistic	p
Beliefs about Breakfast	4550	.272
Perceptions of Benefits of Breakfast	4588	.316

Table 7. Significant difference in the perception of skipping breakfast among the respondents when grouped according to age using kruskal-wallis test

Indicators	X ²	df	p
Beliefs about Breakfast	4.531	2	.104
Perceptions of Benefits of Breakfast	0.596	2	.742

3.6 Significant Difference in the Perception of Skipping Breakfast among the Respondents when grouped according to Age using Kruskal- Wallis Test

Table 7 presents the result of the Kruskal-Wallis test, comparing the perception of skipping breakfast among the respondents when grouped according to Age. It can be observed that all dimensions have p -values greater than 0.05, indicating that we failed to reject the null hypothesis. This suggests that there are no significant differences exist in Dimension 1: Beliefs about Breakfast, and Dimension 2: Perception of benefits breaks when the respondents are grouped by age. This implies that perceptions of skipping breakfast among respondents do not significantly vary based on their age.

The result is consistent with the findings of Dean et al. [41] Jacob and Panwar [34,35] and [42,43]. These studies suggest that age alone does not lead to significant differences in breakfast habits, beliefs, or perceptions of its benefits.

4. CONCLUSION

Breakfast is one of the essential parts of our meals. It provides us with the necessary nutrients and energy to perform our daily tasks and activities effectively. However, some individuals choose to skip breakfast for various reasons. This study explores the perceptions about breakfast among senior high school students. The findings suggest that while skipping breakfast is common among students, students generally acknowledge its importance but have differing opinions about its specific advantages. The results imply that interventions promoting healthy breakfast habits among senior high students should adopt a comprehensive approach that considers individual preferences rather than focusing on specific demographic groups. The lack of significant differences across demographic categories indicates that factors other than sex, academic strand, grade level, and age play a crucial role in shaping breakfast behaviors.

5. RECOMMENDATIONS

Based on the study, to address the effects of skipping breakfast among senior high school students, the institution must promote breakfast awareness programs that will educate students

about the benefits of eating breakfast in terms of their cognitive and health aspects. Parents also play an essential role in this initiative. Thus, workshops or informational sessions should be provided to parents, highlighting the importance of breakfast for their children's overall health and academic performance. These educational programs and interventions should target all students equally and address barriers such as lack of time and appetite to encourage regular breakfast consumption for its health and nutritional benefits.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc have been used during writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology.

Details of the AI usage are given below:

1. The researchers employed ChatGPT-4o in improving grammar, quality of English and organization of ideas.
2. ChatGPT-4o was utilized to gather some literatures in the introductory part. The researchers made it sure that all inputs from ChatGPT were validated and verified.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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