

INFORMASI ARTIKEL

Received: May, 13, 2026

Revised: June, 01, 2026

Available online: June, 02, 2026

at: <https://e-jurnal.iphorr.com/index.php/mhc>

## Association of stress and emotional eating on the nutritional status of college students in Indonesia: A narrative review

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### Abstract

**Background:** Emotional eating is the tendency to overeat in response to negative emotions. Students with high academic demands experience changes in eating patterns, low physical activity, and emotional eating behaviors that can affect nutritional status.

**Purpose:** To analyze the relationship between stress and emotional eating on the nutritional status of students in Indonesia.

**Method:** This study analyzed 10 articles based on original research in cross-sectional studies published between 2020 and 2025, obtained from several electronic databases such as Google Scholar and GARUDA. The selected studies included variables related to stress, emotional eating habits, and the relationship between these factors was tested and statistically proven.

**Results:** Emotional eating patterns and stress do not directly affect nutritional status but can act as risk factors when interacting with insufficient physical activity and excessive energy intake, particularly carbohydrates and fats. Stress is correlated with disrupted eating behavior and influenced by emotion-dependent eating patterns, but its impact on nutritional status may be masked by other factors such as physical activity and genetics.

**Conclusion:** Strong evidence from several studies indicates a relationship between stress, emotional eating, and nutritional status among college students in Indonesia.

**Keywords:** College Students; Emotional Eating; Nutritional Status; Stress.

### INTRODUCTION

Students are a group of people who are prone to stress. Stress and emotional eating are two interrelated factors that often affect students' nutritional status. In Indonesia, students face various academic, social, and financial pressures that can trigger stress, which can lead to emotional eating. Emotional eating is defined as behavior that involves consuming food in response to negative emotions rather than physical hunger. This behavior often involves foods high in calories, sugar, and fat, which can potentially lead to further nutritional problems, such as overweight or obesity (Al Mustaqim, 2023). Academic stress is a common challenge faced by students during their higher education. Various pressures such as mounting assignments, tight deadlines, and high

expectations for academic achievement often trigger stress levels (Alexatou, Papadopoulou, Mentzelou, Deligiannidou, Dakanalis, & Giaginis, 2025). Academic stress can also arise from excessive academic demands, such as dense course material and complex assignments. The effects of this stress not only impact mental health but also disrupt concentration, reduce academic performance, and hinder problem-solving abilities. In addition to academic pressure, other factors such as difficulties in time management, adapting to a new environment, and distance from family also contribute to increased stress (Dewi, Savira, Satwik, Khoirunnisa, 2022). The process of writing a thesis or final project is also one of the main sources of stress, such as

difficulties in determining the research topic, finding relevant references and collecting and analyzing data (Lotulung, 2024). If not managed properly, the accumulation of stress can have a negative impact on students' psychological and physical well-being (Ilmi, Yanuar, Fahriati, & Andriati, 2023).

An individual's ability to cope with stress greatly influences the coping mechanisms they use. Coping mechanisms are methods used to deal with pressure. Coping mechanisms are divided into two main types: problem-focused coping and emotional-focused coping (Khaerunnisa, 2025). Problem-focused coping is an approach where individuals strive to directly resolve the problems they face. This strategy is typically chosen when individuals feel that the situation or problem at hand is still manageable. On the other hand, emotional-focused coping involves individuals focusing more on regulating or modifying their emotions rather than directly resolving the problem. Emotional eating is defined as excessive eating behavior that is triggered not by physical hunger, but rather to improve emotional well-being (Pertiwi & Ulandari, 2023).

This phenomenon is often found in college students who use it as a coping mechanism for stress. Emotional eating is one form of coping that individuals use to deal with stress, anxiety, sadness, and loneliness. Someone who engages in emotional eating eats even when not hungry, with the aim of improving their mood and reducing the discomfort associated with stress (Macht, 2019). A key characteristic of emotional eating is an increase in excessive food consumption, not to meet nutritional needs or alleviate hunger, but to seek psychological comfort (Ramadhani & Mahmudiono, 2021). According to the Mindful Eating study by the Health Collaborative Center in 2024, which involved 1.158 respondents from 20 provinces in Indonesia, 47% of Indonesians are emotional eaters. Interestingly, 49% of those who experience emotional eating are under the age of 40 (Puspita & Rakhma, 2024).

## RESEARCH METHOD

This study employed a literature review design using a narrative review approach to explore the relationship between stress, emotional eating, and nutritional status among students in Indonesia. The narrative review approach was chosen because it allows researchers to comprehensively describe, compare, and interpret findings from previous studies related to the research topic. Through this approach, the researcher was able to

identify patterns, similarities, differences, and gaps in the existing literature regarding stress and emotional eating behaviours and their impact on students' nutritional status. The data used in this study were secondary data obtained from scientific journal articles published in national and international journals. The literature search process was conducted through several electronic databases, including GARUDA, Elsevier, and Google Scholar. The search for articles was carried out systematically using several keywords and combinations of keywords such as "stress," "emotional eating," "nutritional status," "students," "adolescents," and "Indonesia." Boolean operators such as AND and OR were also used to broaden and refine the search results.

The inclusion criteria in this study included: (1) articles discussing stress, emotional eating, and nutritional status among students or adolescents; (2) articles conducted in Indonesia; (3) articles available in full text; (4) articles published in Indonesian or English; and (5) articles published within the last 5–10 years to ensure the relevance and novelty of the data. Meanwhile, the exclusion criteria included duplicate articles, incomplete articles, review articles, and studies not relevant to the objectives of this research. After the article search process was completed, the researcher conducted article screening by reviewing the titles, abstracts, and full texts of the identified studies. Articles that met the inclusion criteria were then selected for further analysis. A total of 10 articles were ultimately included in this literature review. The selected articles were analysed narratively by comparing the study characteristics, research methods, sample characteristics, and main findings related to stress, emotional eating, and nutritional status among students. The data analysis process was conducted descriptively and narratively. The researcher synthesized the findings from each article to identify the relationship between stress levels and emotional eating behaviour, as well as their influence on students' nutritional status. The results of the analysis were then presented systematically in the form of a narrative explanation to provide a comprehensive understanding of the topic under study.

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Doi: 10.56922/mhc.v5i2.3271

## RESEARCH RESULTS

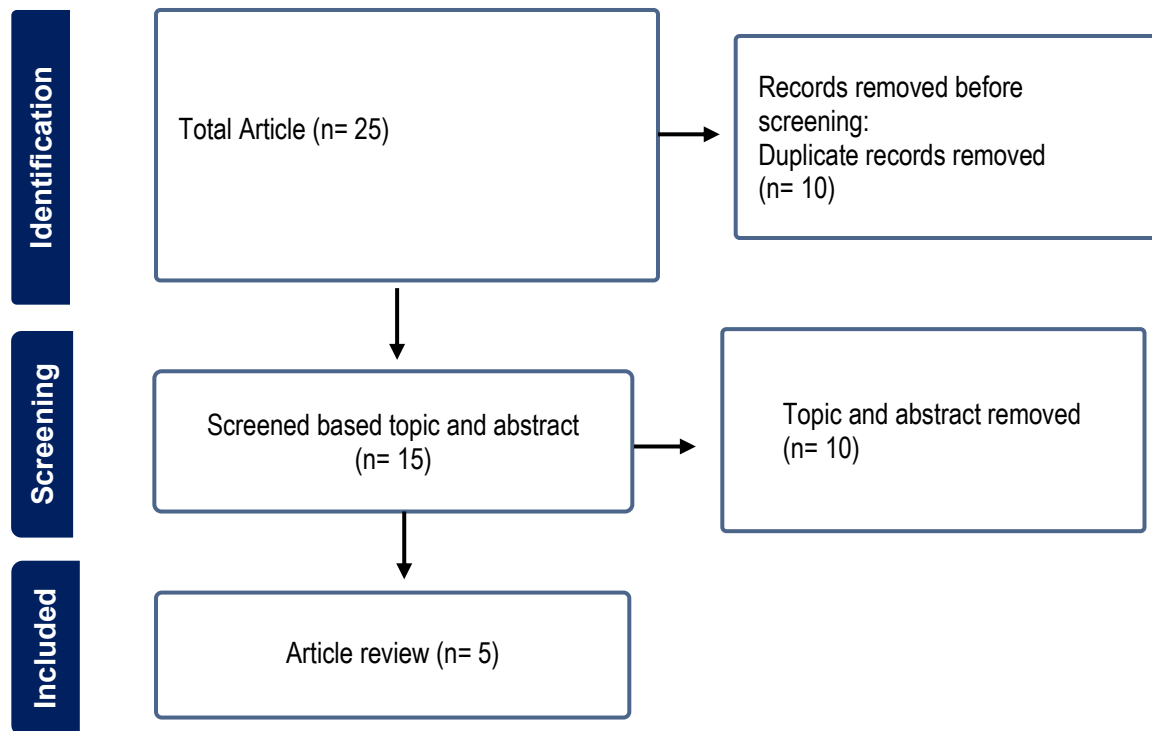


Figure 1. Diagram Prisma Flow

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**Table 1. Results of Article Review**

| <b>(Author, Year)<br/>(Country)</b>      | <b>Purpose</b>                                                                                                            | <b>Method</b>                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Result</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Zulkarnail et al., 2024)<br>(Indonesia) | To analyze the relationship between stress levels and emotional eating with nutritional status among final-year students. | This cross-sectional study was conducted at the Faculty of Public Health, Airlangga University. A sample of 53 participants was selected using proportional random sampling. Data were collected using a Google form that included respondent characteristics, stress level questionnaires, and emotional eating questionnaires. Data analysis was performed using Pearson's correlation test in SPSS version 25. | The study found that the majority of respondents experienced moderate stress levels (54.3%) accompanied by emotional eating (67.4%), and 43.4% had poor nutritional status. There was a significant relationship between stress levels ( $p=0.040$ ) and emotional eating ( $p=0.010$ ) with nutritional status. Final-year students with poor nutritional status tend to experience higher stress levels and engage in emotional eating compared to those with normal nutritional status. |
| (Rachmawati et al., 2023)<br>(Indonesia) | To determine the relationship between emotional eating and obesity among students.                                        | This study was conducted at UPN Veteran Jakarta Campus II using a cross-sectional method with stratified random sampling technique with a sample of 108 respondents. Anthropometric data collection involved measuring body                                                                                                                                                                                       | This study found that students with high emotional eating scores and obesity were more numerous than those with high emotional eating scores and no obesity. The results of the bivariate analysis using the chi-square test showed a p-value of 0.004 with $p<0.05$ , indicating that there is a relationship between emotional eating and obesity                                                                                                                                        |

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|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             |                                                                                                                          | weight and height to calculate the Body Mass Index (BMI). Dietary intake data was collected using the SQ-FFQ (Semi-Quantitative Food Frequency Questionnaire). Stress was measured using the DASS-14 and DEBQ questionnaires to describe emotional eating behavior.                                                                                                 | among students at the Faculty of Health Sciences, UPN "Veteran" Jakarta.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (Zulkarnain & Muniroh, 2023)<br>(Indonesia) | To examine the relationship between academic stress, emotional eating, and nutritional status among final-year students. | This study is an analytical observational cross-sectional study. The population consists of 46 final-year undergraduate students from the Faculty of Public Health at Airlangga University. Sampling was conducted using proportional random sampling. Data were obtained through a Google Form questionnaire and anthropometric measurements using self-reporting. | The results show that most students experiencing high levels of stress have a higher nutritional status (69.3%), with 23.1% being overweight and 46.2% obese. There is a significant association between stress levels and nutritional status, with a p-value of 0.040 ( $p < 0.05$ ). The higher the stress level, the greater the tendency to have a higher nutritional status. Additionally, there is a significant association between emotional eating behavior and nutritional status, with a p-value of 0.010 ( $p < 0.05$ ), indicating that emotional eating behavior can lead to a higher nutritional status. |
| (Roziqil & Puteri, 2024)<br>(Indonesia)     | To analyze the relationship between stress, emotional eating, and nutritional                                            | This research is quantitative analytical with a cross-sectional research design. The research was conducted on November 22-24,                                                                                                                                                                                                                                      | The results indicate a significant association between emotional eating and nutritional status among nutrition students at Universitas Pahlawan Tuanku Tambusai in 2023. Additionally, with a POR value of 2.62, it can be                                                                                                                                                                                                                                                                                                                                                                                              |

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|---------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | status among nutrition students.                                                                      | 2023, with a sample of 109 respondents obtained using stratified random sampling techniques. Data collection used microtoise, digital scales, and questionnaires.                                                                                                                                          | concluded that respondents who engage in emotional eating are 26 times more likely to have abnormal nutritional status compared to those who do not engage in emotional eating.                                                                                                      |
| (Miliandani & Meilita, 2021)<br>(Indonesia) | To determine the relationship between stress levels and nutritional status among final-year students. | This research method uses descriptive correlations with a population of 103 students. The sample was taken using proportional sampling technique of 79 students. However, in this study, only 57 respondents were included because the other 22 respondents did not meet the specified inclusion criteria. | This is evidenced by the high stress levels and nutritional status, which showed an increase in BMI of 3.5%. Thus, this study concludes that there is a relationship between stress levels and the nutritional status of final-year students at the Faculty of Health Sciences, UIA. |

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## DISCUSSION

Based on the results of the literature review, a consistent relationship was found between stress levels, emotional eating behavior, and nutritional status among university students in Indonesia. A study by Nurul Fadilah et al. (2024) at the Faculty of Public Health, Airlangga University, revealed that the majority of final-year students experienced moderate stress levels (54.3%) and emotional eating behavior (67.4%), with 43.4% of them having poor nutritional status. Statistical analysis in the study showed a significant relationship between stress levels ( $p=0.040$ ) and emotional eating ( $p=0.010$ ) with nutritional status, where students with poor nutritional status tended to have higher stress levels and engage in emotional eating more often than students with normal nutritional status (Fadilah et al., 2024). Students with high emotional eating scores were more commonly found in the obese group. The results of the bivariate analysis using the chi-square test showed a p-value of 0.004 ( $p<0.05$ ), indicating a significant association between emotional eating and the occurrence of obesity among students (Rachmawati, Sofianita, Arini, & Maryusman, 2023).

Most students with high stress levels were overweight or obese, with 69.3% of them experiencing overweight status (Zulkarnain & Muniroh, 2023). There was a significant relationship between stress levels ( $p=0.040$ ) and emotional eating behavior ( $p=0.010$ ) with nutritional status, indicating that the higher the stress levels and emotional eating, the higher the tendency to have overweight status. Students who experience emotional eating are 2.62 times more likely to have abnormal nutritional status compared to those who do not experience emotional eating, making emotional eating an important risk factor for abnormal nutritional status among students (Roziqil & Puteri, 2024). High stress levels are associated with an increase in Body Mass Index (BMI) among final-year students, with 3.5% of students with high stress levels experiencing an increase in BMI (Miliandani & Meilita, 2021).

These results are consistent with international research showing that stress and emotional eating can affect the eating patterns and nutritional status of adolescents and young adults (Kontinen, 2020; Van Strien, 2018). These studies confirm that psychological stress can trigger overeating or emotional eating, which ultimately increases the risk of obesity and other nutritional disorders (Syarofi & Muniroh, 2020). The limitations of this literature review are mainly related to

the methodological characteristics and scope of the studies analyzed. Most of the articles reviewed used a cross-sectional study design, which only allowed them to show the relationship or association between stress levels, emotional eating behavior, and nutritional status in students, without being able to prove a direct causal relationship. Additionally, data collection in most studies was conducted online via self-report questionnaires, which are susceptible to information bias such as underreporting or overreporting due to respondents' subjective perceptions and limitations in honesty when answering (Setyoadi, Efendi, Haryanto, Rosyidawati, Kristianingrum, Srihayati, & Lestari Ismail, 2023).

Variations in the instruments used to measure stress and emotional eating, such as the DASS-14, DEBQ, and other questionnaires, may also affect the consistency of results across studies. The research sample is generally limited to students in one or two specific faculties/universities with a relatively small number of respondents, so the research results may not be generalizable to the entire student population in Indonesia. Furthermore, most studies have not considered other factors that may also influence nutritional status, such as physical activity, sleep patterns, economic conditions, and social support, so there is a possibility that these factors may act as confounding variables that affect the validity of the results (Sukianto, Marjan, & Fauziyah, 2020).

Selection bias may also occur because the research was conducted online, meaning that only students with internet access and interest participated. Therefore, these limitations must be considered when interpreting the results of the literature review and serve as a basis for improvements in future research, such as using a longitudinal design, expanding the sample size, and controlling for other relevant factors (Syafiqah, 2024).

## CONCLUSION

There is a consistent and significant relationship between stress levels and emotional eating behavior with nutritional status among university students in Indonesia. Students with high stress levels and emotional eating behavior tend to have abnormal nutritional status, whether it be undernutrition or overnutrition (overweight and obesity). Emotional eating has been proven to be an important risk factor for abnormal nutritional status, where students who experience emotional eating have a higher risk of developing nutritional issues. Additionally, high

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stress levels are also associated with an increase in Body Mass Index (BMI) among senior-year students.

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