



## Original Article

## Emotional eating in adolescent students: A concept analysis

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## ABSTRACT

**Background & Aim:** Emotional eating is discussed in nursing, including psychiatric and public health nursing, particularly for its behavioral and psychosocial implications at the population level. However, its interpretation and usage can differ significantly across these areas. To enhance the validity of measurements and inform effective interventions in nursing and public health, it is crucial to achieve a clearer understanding of emotional eating. This study aimed to define and clarify the attributes of emotional eating among adolescent students.**Methods & Materials:** This study employed Walker and Avant's eight-step method for concept analysis. A comprehensive literature review was conducted using Thai and international databases, including ThaiLIS, ThaiJo, CINAHL, PubMed, Web of Science, and Scopus. The search was guided by keywords such as emotional eating, binge eating, and overeating. Based on predefined criteria, 45 studies published between 2014 and 2023 were selected for analysis.**Results:** Emotional eating is defined as the excessive intake of food in response to emotional states, both positive and negative, instead of being driven by physical hunger or social circumstances. The attributes of emotional eating in adolescent students encompass emotional responses, excessive eating, unhealthy food selection, and coping with stress and responding mood management. Antecedents included social-emotional problems, perceived stress, perceived self-efficacy, and eating styles and patterns. Consequences involve changes in physical health and well-being, along with unhealthy eating behaviors and compulsive eating.**Conclusion:** The insights gained from this study enhance conceptual understanding for nursing assessments and tailored interventions designed to promote healthier eating practices among adolescent students.

## Introduction

Emotional eating refers to the tendency to eat more than the normal quantity of food even without hunger. Emotional eating is responsive to both positive and negative emotions (1,2). It is also one of the causes of overweight and obesity (3,4,5), especially among high school and university students, who have been mentioned and studied the most about emotional eating and are the most overweight and obese (4,5). Additionally, the outbreak of COVID-19 affected the lives and behaviors of people worldwide, particularly in relation to health and eating habits. Lifestyle changes, such as increased remote work or working from home and the implementation of social distancing measures (6,7), contributed to the emergence of emotional eating across all age groups, with adolescents, including high school and university students, being especially

affected. These changes disrupted established routines, reduced social interaction, increased screen time, and limited the physical activity of high school and university students. The lack of structure and increased exposure to stress, loneliness, and boredom contributed to unhealthy coping mechanisms such as emotional eating.

Accordingly, emotional eating is a widely employed concept in research studies and is key for research studies in health behavior, nursing, and public health to understand individual eating behaviors, causal factors, and effects of emotional eating (8,9). However, based on the literature review, the term "emotional eating" has been employed constantly with variations depending on the research studies in each discipline. The meaning of emotional eating is ambiguous and similar to



multiple terms, such as emotional overeating or stress eating. Various studies across disciplines have used this term inconsistently, often interchangeably with related concepts such as emotional overeating, stress eating, or affective eating, despite subtle but important conceptual distinctions. For example, while some researchers define emotional eating as the tendency to eat in response to negative emotions, others emphasize the behavioral pattern of eating without physiological hunger, or link it primarily to coping mechanisms under stress (10,11,12,13). The components of emotional eating are ambiguous and vague in defining the variable components from 2 to 4 components based on different concepts in different disciplines or research studies (10,11,12,13). If the definition, meaning, and characteristics of emotional eating are still ambiguous and unclear, it may confuse research studies, assessment, health promotion, and nursing practices. Clarifying the concept of emotional eating not only benefits nursing practice but also contributes to a clearer understanding across multiple health-related disciplines, including psychology, nutrition, and public health. It provides a shared foundation for interdisciplinary collaboration and supports the development of evidence-based interventions targeting emotional eating among adolescent students.

Regarding the role of nurses, including public health nurses as well as mental health and psychiatric nurses, along with other health professionals, is essential in promoting health and supporting behavior modification (14). These professionals are well-positioned to encourage healthy eating behaviors among adolescent students and to address emotional eating through both health promotion and preventive strategies. The concept development is therefore necessary for studying and understanding the definition and attributes of emotional eating, with the aim of applying this knowledge to research studies, health promotion practices, and health behavior modification. Concept development can be accomplished in the same way as developing other components of a theory, namely, derivation, synthesis, and analysis (15). Concept analysis is suitable for

concept development related to the phenomenon of interest. However, if the concept remains opaque, outdated, or cannot be employed beneficially, the concept analysis should be considered to clarify, update, and make it practical (15,16).

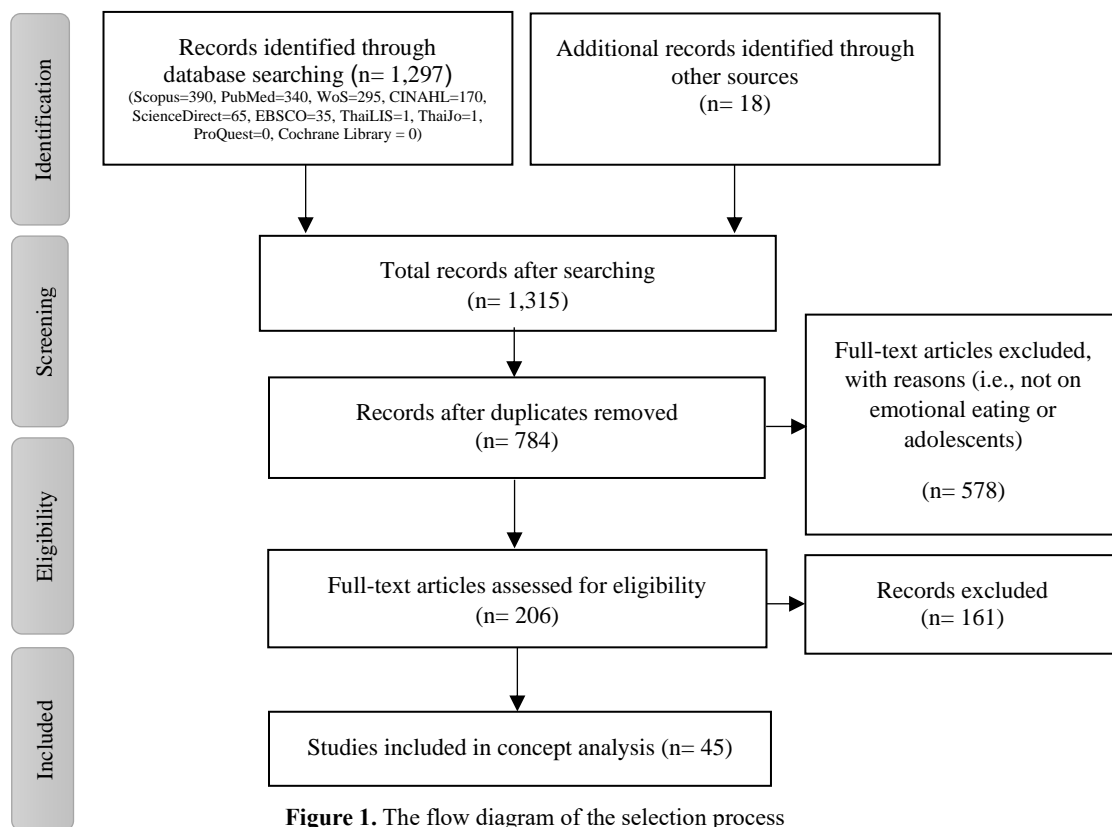
Concept analysis is a method to clarify the concept and identify similarities and differences, sub-components, and the internal structure of the concept by analyzing words or texts in the concept description and the concept application, as well as comparing the similarities and differences of the text with other texts for clarity in the ambiguous and widely used concept that is key in developing research instruments since the outcomes of concept analysis can increase the construct validity of the concept or variable by providing a precise and consistent conceptual framework, which helps ensure that measurement tools accurately capture the intended concept (16). The most prevalent method of concept analysis is the method developed by Walker and Avant (17). In this study, the concept of interest is emotional eating. Based on the literature review, it was found that ambiguity was found in its use and lack of clarity in the details of the various components of the emotional eating concept, including the difficulty and complexity of measurement and assessment since it is related to the emotions and behaviors of individuals if the concept is still unclear. Therefore, the concept analysis of emotional eating of adolescent students is crucial for clarifying the concept, identifying its components, and enhancing the construct validity of the concept in developing instruments to measure and evaluate emotional eating in nursing and public health practice.

## Methods

This study investigated the concept and characteristics of emotional eating based on Walker & Avant's method (17), which consists of eight steps as follows: (I) concept selection; (II) determination of analysis objectives; (III) the whole usage of concept identification; (IV) attribute definition; (V) model case construction; (VI) additional cases; (VII) antecedents and consequences; and (VIII)

empirical referents which were measurable ways to identify the existence of a concept. This approach provides a clear, systematic framework for concept analysis, particularly suitable for clarifying the defining attributes of relatively stable concepts. Although alternative methods, such as Rodgers’ evolutionary approach, account for conceptual dynamism, Walker and Avant’s method offers a structured process that aligns well with our aim to establish foundational clarity before exploring conceptual evolution. Initially, documents and research related to the emotional eating of adolescent students were studied with keywords in Thai and English, namely “Emotional Eating”, “Emotional Eating Behavior”, “Binge Eating”, “Hedonic Eating”, “Comfort Eating”, “Overeating” and “Stress Eating” with the Boolean operators, “AND”, “OR”, and “NOT”, along with quotation marks and parentheses, and the data sources consist of ten electronic databases, ThaiLIS, ThaiJo, CINAHL, ProQuest, Cochrane Library, PubMed, ScienceDirect, EBSCO, Web of Sciences, and Scopus. Moreover, academic documents, peer-reviewed journal articles,

scientific research reports, and graduate theses from the library and back-tracked from the reference or bibliography of the literature searched were also studied. After searching and selecting research studies according to the criteria set, 45 studies were selected for conceptual analysis. The inclusion criteria were: (i) empirical research studies, academic articles, graduate theses, or scientific research reports focused on emotional eating; (ii) studies involving adolescent students; (iii) articles published in either Thai or English; and (iv) publications from the years 2014 to 2023. Exclusion criteria included: (i) studies focusing solely on biological or clinical eating disorders (e.g., anorexia nervosa, bulimia); (ii) studies unrelated to emotional eating or adolescent populations; and (iii) duplicate publications, such as both a thesis and a journal article reporting the same findings. Research articles, academic articles, related documents, research reports, and theses on emotional eating, both in Thai and English, were read and studied to define the concept of emotional eating of adolescent students as a diagram shown in Figure 1.



**Figure 1.** The flow diagram of the selection process

## Results

### *Definition and the usage of the concept*

Emotional eating in adolescent students has been explored in various studies and research fields. The definition or meaning of emotional eating is clearly defined, and it is presented and classified according to five fields of study and research, namely, public health and medicine; nursing science; pediatrics, children, adolescents and youth; nutrition and food science; and psychology and behavioral sciences, as follows:

In public health and medicine, emotional eating is defined as an individual's response to negative emotions by using food to alleviate or mitigate them (18), as well as in response to positive emotions (19). Eating is the act of eating in the absence of hunger or physical need (20), overeating or eating excessively (21), or eating unhealthy foods (22), and consuming sugary beverages, junk foods, and fast foods (23), as well as excessive alcohol consumption with reduced physical activity, leading to overweight and obesity (24), in both adults and adolescents (18).

In nursing science, emotional eating is described as the consumption or eating among adolescents in response to positive or negative emotional impacts, without the individual's hunger (25), or food or social needs, but rather as an emotional response (26). This psychological response to negative emotional states, with more food than normal (27), makes it difficult for individuals to handle negative emotions, leading to overconsumption, overweight, and obesity (28).

In pediatrics, emotional eating is defined as a pattern of observable changes in eating habits related to emotional states (29) and is characterized by eating in the absence of physiological hunger (30). Emotional eating involves eating in response to negative emotions, such as anxiety, sadness, loneliness, anger, and grief, and is often related to the consumption of hyper-palatable foods and foods high in sugar and fat (31). It also involves eating regardless of hunger, meal times, or social needs (32) and includes consuming

excessive amounts of processed foods or foods low in vital nutrients (33).

In nutrition and food science, emotional eating is defined as the possibility of eating in response to negative emotions, such as stress, anxiety, and sadness. It is characterized by eating more or less than usual (34), eating foods or products that are high in energy, sugar, and fat (35), and engaging in obsessive eating, particularly in palatable foods (36), to respond to negative emotions by eating more and/or faster than usual (37). It is also a way for individuals to escape from negative emotional states, often caused by the urge to consume certain foods (38), by eating snacks, high-calorie and sugary foods, such as cake, ice cream, chocolate, and soda, more frequently or with increased desires when faced with negative emotions (39), losing control over eating due to hunger, and the inability to resist or manage their emotions (40). This may be an inappropriate emotional response to eating in an attempt to manage negative emotional states (8).

In psychology and the behavioral sciences, emotional eating is defined as excessive eating in response to both positive and negative emotional changes that are not driven by physiological needs (41). It is a way of coping with emotional states (42) that may arise from a variety of emotional states (43) or emotional arousal, such as anger, fear, and anxiety (44). It is a temporary distraction from an emotional state in response to the emotion (45) by using food to relieve distress or ignore internal satiation cues (46). This can be in the form of increased, decreased, or constant eating (47). This includes the ability to control excessive eating to gain satiety (48). It is also considered the consumption of food in response to both negative and positive emotions, such as sadness, anger, anxiety, excitement, and happiness (49,50). In particular, stress is a common cause of food desires and excessive eating (51), and positive emotional states can also trigger increased eating (10).

The definition of emotional eating among adolescent students from the concept

analysis above can be summarized as the use of the concept of emotional eating according to the definition of each field of study and research. For the purposes of this study, adolescents are defined as individuals aged 10 to 19 years, in accordance with the World Health Organization's definition. It can be summarized that the meaning of emotional eating among adolescent students refers to eating more than usual during both positive and negative emotional changes, in response to the emotional state of excessive eating, such as eating unhealthy food without feeling physiologically hungry, time for a meal, or a social necessity to eat. Instead, food is used to relieve the emotions that occur with a reduced ability to control food intake.

**Attributes**

The definition of the conceptual attributes of emotional eating among adolescent students can be identified as four major conceptual attributes: emotional responses, excessive eating, unhealthy food selection, and coping with stress and responding to mood management, as determined from the keyword clusters shown in Table 1.

The model, borderline, related, and contrary cases developed during the model case construction, along with additional cases in this concept analysis, were created by the authors based on a synthesis of findings from the reviewed literature and the defining attributes of emotional eating among adolescent students. These illustrative, hypothetical cases are intended to clarify the concept's defining characteristics in practical terms.

**Table 1.** Attributes of emotional eating among adolescent students

Attributes	Keyword clusters	Sources
<b>Emotional responses</b>	- Response to emotional states (positive and negative)	(8, 10, 18, 20, 21, 23, 25,
	- Emotional reactivity (psychological and behavioral)	26, 27, 28, 29, 30, 31,
	- Eating in response to emotions without hunger	32, 34, 35, 37, 38, 39,
	- Eating in response to negative emotions	41, 42, 43, 44, 45, 46,
	- Reaction to negative emotions	47, 48, 49, 50, 51)
<b>Excessive eating</b>	- Eating more and/or faster than usual	
	- Excessive eating	
	- Eating indiscriminately	(10, 21, 22, 24, 27, 28,
	- Eating large quantities of food	30, 34, 36, 37, 40, 41,
	- Tendency to eat large quantities of food	44, 46, 48)
	- Eating more than usual or sometimes less than usual	
<b>Unhealthy food selection</b>	- Excessive eating behaviors	
	- Large quantities of alcohol consumption	
	- Consumption of sweetened beverages, junk food, and fast food	
	- Consumption of unhealthy foods, sweets, snacks, and sweetened beverages	
	- Consumption of hyper-palatable foods and foods high in sugar and fat	
	- Eating large quantities of processed foods	(18, 22, 23, 24, 31, 33,
	- Eating foods high in fat, sugar, and energy	34, 35, 36, 38, 39)
	- Eating foods high in fat and/or sugar	
	- Eating foods high in energy	
- Eating foods low in essential nutrients		
- Eating behavior, especially palatable foods		
<b>Coping with stress and responding to mood management</b>	- The process of managing negative and positive emotional states or stress	
	- Lack or insufficient flexibility to effectively manage emotional states	
	- Handling undesirable emotional and psychological conditions	
	- Having strategies to adapt and cope with problematic situations	(8, 18, 19, 24, 28, 29, 35,
	- Inability to inhibit emotional stressors	36, 40)
	- Handling emotional problems such as anxiety and sadness	
	- Inability to resist or manage emotions	
	- Difficulty in coping with negative emotions	
- Consequences of inability to effectively control emotions		

**Model case**

The model case is to present a case study to foster an understanding of the definition and attributes of the emotional eating concept among adolescent students according to Walker

& Avant's method (17). Therefore, the case study examples that demonstrate emotional eating according to the attributes of emotional eating concept among adolescent students defined in all four key attributes: emotional responses, excessive eating, unhealthy food

selection, and coping with stress and responding to mood management are shown below:

*“Student A, 16 years old, a male student, currently in Grade 10, felt very sad after being dumped by his girlfriend after dating for 4 years. They planned to get into the same university together and build a future together. He felt very sad about what had happened and was stressed since the final exam of the second semester was only one week away, but he had not prepared to study for it. He coped with the stress by eating, especially eating sweet foods to help him relax and relieve the stress. He began to notice that he had been eating more than usual. Sometimes he eats food or snacks even though he is not hungry. He used to avoid eating sweet foods often, but he has chosen to eat sweet foods most of the time recently since eating sweet foods made him feel more comfortable and relieved the sadness from his current situation.”*

The analysis of the case study of Student A, a model case of the emotional eating concept among high school students above, reflects that he has the attributes of emotional eating of adolescent students completely in all four primary attributes, namely, responding to emotions that he is facing, sadness from being dumped by his girlfriend and stress from the second semester exams. Still, he has not prepared, and coping with stress and managing emotions by eating, especially when he starts to notice that he is eating more than usual even though he is not hungry, and consumes sweet foods to eat more than normal in response to the emotions that occur.

### ***Additional cases***

Additional cases are a presentation of case studies of the attributes of emotional eating concepts among adolescent students in the form of a borderline case, a related case, and a contrary case as follows:

#### ***Borderline case***

A borderline case is similar to the definition of emotional eating of adolescent students, but not entirely. In other words, it is

an example case that lacks many of the key attributes of the concept as follows:

*“Student B, 17 years old, a female student, is currently in Grade 11 and prepared for the Grade 12 equivalency exam by taking the General Educational Development (GED) test to submit her application for admission to higher education before the deadline. During the exam period, she had to study hard and took extra classes. This made her feel stressed and pressured that she was not ready for the exam. She was afraid that she would not receive a good score on the GED test and would not be able to submit her scores to gain admission to the university alongside her classmates. Therefore, she spent more time studying and eating less. The more stressed and pressured she felt, the less she ate or she did not eat at all so that she would have more time to study and take extra classes, allowing her to cope with the stress and pressure.”*

The analysis of Student B as a borderline case of the emotional eating concept among high school students above reflects that she portrayed only some attributes of the emotional eating concept among adolescent students of all four attributes, namely, responding to emotions that she is facing with stress and pressure from the Grade 12 equivalency exam with the GED exam and still not being sufficiently prepared for the exam, so she coped with the stress and managed emotions by reading books and taking extra classes hard so that she had more time to read books and took extra classes. This is to help her feel capable of managing stress and pressure, which is an essential attribute for responding to emotions and coping with stress. However, the borderline case still lacks key attributes of excessive eating and food selection.

#### ***Related case***

A related case is similar to the definition of the attributes of the emotional eating of adolescent students, but is not the definition of the attributes of the emotional eating of adolescent students, as follows:

*“Student C, 18 years old, a male student, is currently in Grade 12 and ran for the student council president of the school. On the*

*day of the election announcement, he received the highest number of votes among the candidates and won the election. He was pleased and delighted. Therefore, he went to celebrate with his friends at the party that he ran to congratulate and thank all the party members for winning the election. He held a celebration party at a buffet restaurant in the evening after he missed lunch at school due to the excitement of waiting for the election results and studying science in the laboratory, where he had to complete the experiments assigned by the teacher.”*

The analysis of Student C as a related case to the concept of emotional eating among high school students above reflects that he shares similarities with the definition of attributes of the emotional eating concept of adolescent students, but does not match the definition of attributes of the emotional eating concept among adolescent students. In other words, he exhibited a behavior of excessive eating from the buffet food. However, there is a necessity to eat food for socializing on the occasion of winning the election as the president. In addition, he did not eat lunch at school, which led to excessive eating. Moreover, winning the election as the school president made him content. The happiness that arose seemed to be in response to the emotions, making it similar to the definition of attributes of the emotional eating concept of adolescent students. However, it is only a related case and is not the definition of the attributes of the emotional eating concept of adolescent students.

#### ***Contrary case***

A contrary case clearly shows the difference in the attributes of the defined concept. It is an example case that does not include any part of the definition of the attributes of the emotional eating of adolescent students. Therefore, it does not reflect the emotional eating of adolescent students as follows:

*“Student D, 16 years old, a male student, is currently in Grade 10. He is an amateur boxer from the province. Therefore, he eats five meals to strengthen his muscles and*

*body preparing him for the competition. He chooses to eat primarily high-protein foods in normal amounts when only he feels hungry.”*

The analysis of the case study of Student D as a contrary case of the emotional eating concept of high school students or adolescents above reflects that he delivers apparent differences in the attributes of the emotional eating concept of adolescent students as specified, including eating in normal amounts, eating when hungry, eating mainly protein-based foods, and eating to build muscle and body strength to be ready for competition. A contrary case of Student D does not have any part of the definition of the attributes of the emotional eating concept of adolescent students, and does not reflect the emotional eating concept of adolescent students.

#### ***Antecedents and consequences***

The antecedents of the concept refer to events or phenomena that occurred before the concept emerged. It is necessary to understand the context and various conditions of the concept construction before using the concept to ensure the accuracy and clarity of the use of the emotional eating concept of adolescent students. Based on the concept analysis according to the guidelines of Walker & Avant (17) in step VII from research articles, related documents, research reports, and theses on the emotional eating of adolescent students, the antecedents of the concept of emotional eating consisted of four issues:

Emotional and social problems included perceived stress with emotional problems (25) from emotional disturbances (53) and emotional regulation (18,24,54), including factors from the impact of adverse life events (25). Social problems include social support (53), parenting factors and emotional eating behaviors of family members (25), parental restriction (19), social anxiety (27,28), including the use of smartphones (48), and social media addiction (55). In addition, the perceived self and society, the perceived changes in body mass and body mass index (35,40,44), grade point average (GPA), and

academic worries (8). This includes the lockdown measures during COVID-19 (24).

Perceived stress, which is psychological and mental in nature, includes stress responsiveness (22), perceived stress, depression, and anxiety, coping strategies and skills (21,29), perfectionism, cognitive fusion, and sleep quality. These components interact complexly to influence emotional eating behaviors.

Perceived self-efficacy includes knowledge, attitudes related to eating, and self-control (25) as well as self-esteem in various dimensions (54), such as academic self-esteem (8), weight-loss self-efficacy (41), body esteem, and body image (55). Self-concept clarity and self-control are also included.

Eating styles and patterns include individual eating styles, mindful eating (54), disordered eating behaviors (31), food-cue processing (30), sensitivity of external food cues, as well as eating patterns including complex dietary patterns, energy-rich dietary patterns, and craving for sweet or salty foods.

The consequences of the concept identify what happens as a result of applying that concept. This case is the emotional eating concept of adolescent students used to predict the results or evaluate the results of using the emotional eating concept of adolescent students. Based on the concept analysis according to the guidelines of Walker & Avant (17) in step VII from research articles,

academic articles, related documents, research reports, and theses on the emotional eating of adolescent students, the consequences of emotional eating consisted of two issues:

Changes in physical health and well-being include increased body weight and body mass index (24,39,45), overweight (24,25), obesity (24,27,43), increased blood levels of total and LDL cholesterol and HbA1C (31), and lead to the development of non-communicable diseases (NCDs) (25) and low well-being (26).

Unhealthy eating behaviors and compulsive eating include uncontrolled eating (40), binge eating (30,44,54), unhealthy food consumption (34), sweet, high-energy-dense food consumption, and snacking behaviors.

In summary, emotional eating in adolescent students can be interpreted as a temporary, situational response to emotional distress. This eating behavior often diminishes when adolescent students develop effective emotional regulation skills and regain control over their eating patterns. However, without successful emotional regulation, emotional eating may persist and lead to long-term health consequences, such as weight gain, disordered eating patterns, or psychological distress. The identification of antecedents and consequences of the emotional eating concept of adolescent students is presented as a diagram shown in Figure 2.

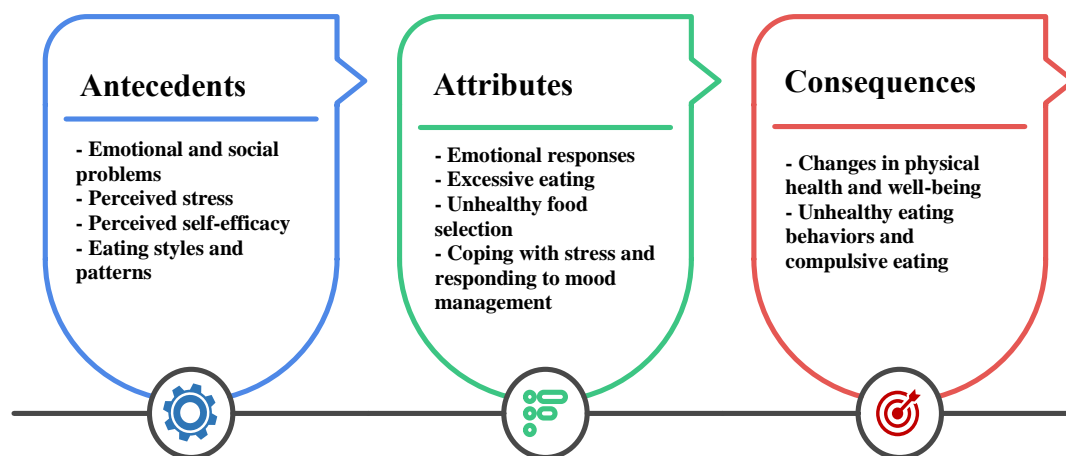


Figure 2. Antecedents and consequences



***Empirical referents of the concept***

The definition of empirical referents is helpful in developing the emotional eating concept of adolescent students as an assessment form. The results of the concept analysis according to the guidelines of Walker & Avant (17) in step vii and viii lead to the definition of empirical referents of the emotional eating concept of adolescent students, which consists of four key attributes, namely (I) emotional responses, such as emotional responses, emotional states, positive and negative emotions, psychological responses, and the food response in response to emotions in the absence of physiological hunger; (II) excessive eating, such as eating too much, eating more than usual, faster than normal, in larger quantities than usual, obsessive eating, a tendency to eat large quantities of food, and excessive eating behavior; (III) unhealthy food selection, such as food-seeking behavior, especially palatable foods or hyper-palatable foods, foods high in sugar and fat, foods that are not beneficial to health, sweets, snacks and sweet drinks, junk food, and fast food, highly processed foods, foods high in fat, sugar and energy, and foods that contain small quantities of necessary nutrients for the body; and (IV) coping with stress and responding to mood management, such as the process of coping with negative and positive emotional states or stress, undesirable emotional and psychological states, emotional problems including anxiety, sadness, lack or insufficient flexibility to effectively deal with emotional states, inappropriate strategies to adapt and cope with various situations, inability to inhibit emotional stressors, inability to resist or manage emotions, difficulty in coping with negative emotions, and the inability of effective emotional control. In the case of emotional eating in this study, several validated tools have been developed to assess the construct. The Emotional Eating Scale (EES) developed by Arnou et al. (56) is a widely used self-report measure designed to assess eating in response to specific emotional states such as anxiety, anger, and depression.

Another instrument, the Dutch Eating Behavior Questionnaire (DEBQ) by van Strien et al. (57), includes a subscale for emotional eating and has been used extensively in cross-cultural studies. These tools serve as empirical referents that allow for the observation and measurement of emotional eating behaviors in both research and clinical practice.

**Discussion**

The results of the concept analysis on emotional eating of adolescent students based on the method of Walker & Avant (17) in all eight steps mentioned above revealed that emotional eating is one of the central concepts in nursing and public health, especially in high school students or adolescents whose eating behavior significantly affected health and growth (24,25,26,27,39,43,45). Emotional eating is excessive eating during positive and negative mood changes (18,20,21.). Eating is a response to an emotional state characterized by excessive eating, such as consuming unhealthy foods and sweet drinks, as well as junk food and fast food (22,24,34,36). It is not caused by physiological hunger, meal time, or a social occasion to eat. Instead, food is consumed to relieve emotions due to a reduced ability to control eating (8, 18, 19, 36). Such behavior has a significant impact on health, including an increased risk of overweight and obesity (24,25,27,43). The role of nurses or public health specialists is to conduct assessments in 4 attributes: emotional responses, excessive eating, unhealthy food selection, and coping with stress and responding to mood management to identify the health status, circumstances, and attributes of emotional eating among high school students or adolescents to plan and design health promotion activities and behavior modification based on the causal factors or antecedents of emotional eating, including emotional and social problems, stress perception, self-efficacy perception, and eating patterns and attributes of high school students or adolescents (8,18,22,40). Based on the findings of this concept analysis, it is recommended that school health nurses

develop a comprehensive approach to identify and address the attributes and antecedents of emotional eating among students. Nurses should be trained to recognize key emotional and social indicators, such as emotional dysregulation, social anxiety, and perceived stress levels, which can serve as early warning signs. Screening tools and regular mental health assessments can facilitate timely identification of students at risk. It is essential to consider the social and cultural contexts and economic and social living conditions of each area with comprehensive assessments of the consequences of emotional eating in the main issues: changes in physical health and well-being, unhealthy eating behaviors, and uncontrollable eating (14,24,34,40).

Furthermore, school health nurses should implement multifaceted intervention strategies that target both individual psychological factors, such as stress management, coping skills enhancement, and emotional regulation, and social factors, including strengthening social support networks and educating families on healthy eating behaviors. Collaboration with teachers, counselors, and parents is vital to create a supportive school environment that mitigates academic and social stressors contributing to emotional eating. The comprehensive assessment of emotional eating attributes, antecedents, and consequences, and other aspects related to emotional eating requires concept analysis to create a deep understanding of the definition, attributes, antecedents, or causal factors, and consequences of emotional eating among high school students or adolescents (15,16). This can be used to develop tools to measure and assess emotional eating and plan and design interventions to promote health and alter emotional eating behaviors appropriately (15,16). The concept analysis of emotional eating was limited to literature published in Thai and English, excluding literature in other languages. Therefore, for the application of the study results that are related to eating behaviors associated with the social and cultural contexts of each area, it is essential to examine and consider the social context, the

era of society, and the target population that changes their eating behaviors.

## Conclusion

Nurse practitioners, public health nurses, and public health specialists who apply the emotional eating concept in nursing and public health among adolescents, as well as other related service recipients with health issues caused by eating behavior, need to consider the definition of emotional eating as eating more than usual during emotional change that is not caused by physiological hunger, but rather to relieve the emotions by eating with the reduced ability to control eating. It is necessary to comprehensively assess all four attributes: emotional responses, excessive eating, unhealthy food selection, and coping with stress and responding to mood management and consider the antecedents and consequences of emotional eating. Understanding the concept and attributes will be practical in assisting nurses in nursing diagnosis, determining and planning interventions to solve health problems, and evaluating nursing and public health outcomes. The emotional eating concept is therefore helpful for nursing and public health practices and can be used as a framework for evaluating and planning health services to prevent improper health behaviors and non-communicable diseases and promote a good quality of life. However, a primary limitation of this concept analysis is its reliance on existing literature, which may not encompass all cultural or contextual variations. Additionally, the interpretation of defining attributes may involve a degree of subjectivity. Future empirical studies are recommended to validate and refine the concept in diverse populations and settings.

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### **Ethical approval**

This study was certified by the Ethics Committee for Research Involving Human Subjects, Mahasarakham University, Thailand (Approval number: 345-370/2023).

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### **Conflict of interest**

The authors declare no conflicts of interest in this study.

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