

## Understanding perceptions of emotional eating among Thai upper secondary school students: a descriptive qualitative study

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### ABSTRACT

**Introduction:** Emotional eating has been recognized as a contributing factor to both being overweight and developing obesity, which are associated with increased risk of non-communicable diseases (NCDs), particularly among adolescents. Psychological and environmental stressors have exacerbated concerns regarding emotional eating by disrupting daily routines and influencing eating behaviors worldwide. This study sought to investigate the viewpoints and perspectives, underlying motivations, and personal experiences related to emotional eating among upper secondary school students in Thailand.

**Methods:** A descriptive qualitative approach was used to obtain a comprehensive insight into this phenomenon. Twelve Thai upper secondary school students who met the inclusion criteria participated in in-depth interviews. The interviews were recorded, transcribed word for word or verbatim, and examined through content analysis based on the framework proposed by Vears and Gillam.

**Results:** The analysis revealed five main themes and 15 subthemes: (1) perceived meaning of emotional eating, (2) behavioral characteristics of emotional eating, (3) motivational drivers of emotional eating, (4) perceived consequences of emotional eating, and (5) self-management when experiencing emotional eating. The findings highlight that emotional eating in students is shaped by complex interactions between emotional states, internal psychological factors, and social influences.

**Conclusions:** This study describes how Thai upper secondary school students understand and manage emotional eating, underscoring the importance of addressing emotional and behavioral health in nutritional interventions. Further research should focus on developing contextually appropriate strategies to support healthy eating habits and emotional resilience in adolescence. This is a critical period in physical and psychological development.

**Keywords:** emotional eating, experiences, perception, qualitative research, student

### Introduction

Emotional eating has been identified as a significant etiological factor associated with the onset and progression of overweight and obesity (Fox, Conneely and Egan, 2017; Konttinen *et al.*, 2019; Jáuregui-Lobera and Montes-Martínez, 2020; Dakanalís *et al.*, 2023). These weight conditions are, in turn, the primary risk factors for sickness and non-communicable diseases (NCDs), namely diabetes, hypertension, hyperlipidemia,

sleep apnea and dyspnea, coronary artery disease, and osteoarthritis (Pinchaleaw, 2018; Akhter *et al.*, 2021; Zatońska *et al.*, 2021). Emotional eating also affects mental health, leading to mental disorders, especially eating disorders in adolescents (up to 48.1%) after being overweight and obese, as well as stress and depression caused by unusual eating habits (Konttinen *et al.*, 2019; Kokka, Mourikis and Bacopoulou, 2023). Emotional eating was important in this study.



Emotional eating is a health behavioral issue that has received increasing attention since the COVID-19 pandemic. The pandemic has affected the lives and behaviors of people around the world, especially health and eating behaviors, due to social distancing, work-from-home approaches, and changes in societal lifestyles (Ammar *et al.*, 2021; Freitas, de Medeiros and Lopes, 2021; Xiao *et al.*, 2021; Spencer-Laitt *et al.*, 2022; World Health Organization (WHO), 2023). Emotional eating is an eating style in which people show eating behaviors in response to emotions, especially negative emotions such as anger, fear, or anxiety (van Strien *et al.*, 1986), or it is an inappropriate emotional response to feelings of distress or discomfort by eating food (Cebolla *et al.*, 2014). Emotional eating is a response to positive emotions (Jackson and Hawkins, 1980). Emotional eating can cause individuals to use food to cope with their emotions. When people cannot manage their emotions appropriately, it leads to managing those emotions by eating, especially sugary and fatty foods or comfort foods, that can reduce stress and relieve negative symptoms quickly. However, they are also harmful to human health (Elfhag and Erlanson-Albertsson, 2006; Butcher, Mineka and Hooley, 2007; Elfhag and Morey, 2008).

Overweight and obesity have been given importance as public health problems worldwide in the study of emotional eating as a cause of overweight and obesity. Research on this topic often focuses on adolescents, high school students, and tertiary students as the groups most frequently mentioned and studied about emotional eating, and they are most likely to be overweight and obese (Bennett, Greene and Schwartz-Barcott, 2013; Shriver *et al.*, 2021; Webb, Kerin and Zimmer-Gembeck, 2021). Studies from Bangladesh, Hong Kong, and Turkey have reported notable proportions of young people engaging in emotional eating, often in connection with heightened stress, negative emotions, and social anxiety (Roy *et al.*, 2021; Sze *et al.*, 2021; Erdem, Efe and Özbey, 2023). For example, a study of adolescents aged 13-19 years old in the People's Republic of Bangladesh found that 28.2% of the students were overweight and obese, mainly due to eating behavior and stress. A previous study also reported that students who were stressed had 1.13 times higher odds of experiencing obesity (Roy *et al.*, 2021). Meanwhile, a study on the prevalence of emotional eating among university students in Hong Kong found that 9.9% of the students were classified into the negative emotional eating group, and the proportion of female students with negative emotional eating was three times higher than that of male university students (Sze *et al.*, 2021). In addition, a study of adolescent students aged 14-18 years studying in an upper secondary school in the Republic of Turkey also found that students with high social anxiety scores had higher emotional eating. The social anxiety scores were positively correlated with emotional eating (Erdem, Efe and Özbey, 2023). This

study examined emotional eating, its outcomes, and the association between emotions and emotional eating among adolescent students, including the increasing interest in studying emotional eating among students.

Regarding the situation in Thailand, the Department of Health (DoH) Dashboard of the Ministry of Public Health (2022) reported surveillance data for school-age and adolescent groups. Adolescents aged 15-18 who were about to be obese and overweight was 13.29 percent, which is higher than the standard criteria set by the Health Promotion Fund, which is 10 percent. Considering the annual tendency, from 2020, 2021, and 2022, adolescents aged 15-18 who were beginning to be obese and overweight were 15.01, 12.33, and 13.29 percent, respectively, which is higher than the standard criteria set by the Health Promotion Fund for three consecutive years. Furthermore, when considering the data by area, in Bangkok, the surveillance data for the school-age and adolescent groups showed adolescents aged 15-18 who were beginning to be obese and overweight overall, which is higher than the standard criteria set by the Health Promotion Fund. Considering the annual tendency, in 2021 and 2022, adolescents aged 15-18 years who were beginning to be obese and overweight were 16.50 and 17.11 percent, respectively, which is higher than the standard criteria set for two consecutive years (Department of Health, 2022). Emotional eating has been consistently recognized in the literature, and empirical evidence suggests that it is a significant contributor to overweight and obesity among adolescents and secondary school students (Fox, Conneely and Egan, 2017; Kontinen *et al.*, 2019; Jáuregui-Lobera and Montes-Martínez, 2020; Dakanalis *et al.*, 2023).

However, current studies on emotional eating from the literature review are mostly quantitative studies that study the prevalence, description, and various causal factors. Few qualitative studies have been conducted. Qualitative approaches can provide an in-depth understanding of individuals and the truth of human life from the perspective and direct experience of individuals through storytelling or phenomena, along with mutual interpretation by informants and researchers (Wang and Geale, 2015). In the context of emotional eating among students in Bangkok, Thailand, a qualitative design is particularly suitable because this eating behavior is shaped by a range of psychosocial influences, including academic pressure, family expectations, and the urban food environment. However, these contextual influences are not easily captured through quantitative approaches. By allowing high school students to articulate their emotional experiences, psychosocial challenges, and eating practices, qualitative methods offer a deeper understanding of how emotional eating unfolds in daily life. These insights are essential for developing appropriate interventions for students in Bangkok, Thailand. In this study, researchers are interested in

studying the perspectives and experiences of high school students on emotional eating in order to answer the main research question of what the perspectives, motivations, and emotional eating experiences of high school students are.

Therefore, this study aimed to explore the perspectives, motivations, and experiences of emotional eating among upper secondary school students in Thailand. To gain an in-depth understanding and learn about the experiences and perspectives of high school students on emotional eating and to provide guidelines for promoting health and preventing diseases caused by eating behavior, especially emotional eating, based on the social and cultural contexts that affect individuals' eating behaviors and social determinants of health of high school students.

## Materials and Methods

### Design

This qualitative study explored the perspectives, motivations, and experiences of emotional eating among high school students using a qualitative descriptive approach Colorafi and Evans (2016) to collect data on perspectives, motivations, and experiences of emotional eating from high school students' responses within their real-life contexts.

### Participants

Key informants in the in-depth interview included high school students by purposive sampling who met the inclusion criteria and were willing to provide information about emotional eating according to the specified informant qualifications, namely, Grade 10-12 students who were overweight, obese, underweight, or healthy weight, based on BMI and BMI-for-age percentiles according to the Centers for Disease Control and Prevention (CDC) (2024) criteria, or who gained or lost 5-10 percent or more of their weight in the past six months and voluntarily agreed to participate as key informants in the research.

The inclusion criteria were as follows: upper secondary school students (equivalent to Grades 10–12) classified as underweight, healthy weight, overweight, or obese based on the BMI-for-age percentiles according to the CDC guidelines. The CDC classifies the weight status of children and adolescents using BMI-for-age percentiles as follows: underweight (<5th percentile), healthy weight (5th to <85th percentile), overweight (85th to <95th percentile), obesity ( $\geq$ 95th percentile), and severe obesity ( $\geq$ 120% of the 95th percentile or BMI  $\geq$ 35 kg/m<sup>2</sup>, whichever is lower)(Centers for Disease Control and Prevention, 2024).

These criteria were used to capture a range of eating-related experiences and perceptions of students with different body weight statuses. This diversity enabled the study to explore emotional eating behaviors

comprehensively and generate valid and relevant insights consistent with the research objectives. Recruitment was conducted through coordination with school administrators and teachers, and participation was voluntary. A total of 12 students were included, as data saturation, defined as the point at which no new information or themes emerged, was reached after the twelfth interview. In this study, the thematic saturation was assessed through an iterative review of interview data during the data collection. After each in-depth interview, preliminary coding was conducted and emerging codes were compared with the existing codebook to determine whether any new codes, categories, or distinct thematic insights appeared. Saturation was identified when no additional codes or meaningful concepts emerged across the three consecutive interviews, indicating that further data collection was unlikely to generate new thematic information (Guest, Bunce and Johnson, 2006).

### Research instruments

The instruments included a demographic questionnaire, field notes, in-depth interview guide, and audio recording devices. The demographic questionnaire gathered information on participants' grade level, sex, age, height, current weight, and weight history over the preceding six months. Examples of guiding interview questions include: (1) "Can you describe your eating behaviors over the past six months?" (2) "What does the term 'emotional eating' mean to you?"; (3) "What factors trigger your emotional eating or changes in your eating behavior?" (4) "How do you manage situations when you recognize that your eating has been influenced by emotions?"; and (5) "What have been the consequences of emotional eating or changes in your eating behavior in the past?" Field notes were used to document nonverbal cues, such as facial expressions and gestures, providing contextual depth to the verbal data.

The present study explored the perspectives, motivations, and lived experiences associated with emotional eating among Thai upper secondary school students through in-depth interviews. The interview guide was developed collaboratively by a team of experienced researchers and informed through a thorough review of the relevant literature. Trained researchers with experience in qualitative methods conducted all interviews. Prior to data collection, the interview guide was piloted with two students to ensure clarity and appropriateness of the questions. Field notes were used to record nonverbal cues, such as facial expressions and gestures, to enrich the contextual understanding of the participants' verbal responses. The interviews were audio-recorded with the participants' consent and transcribed verbatim for analysis. This approach ensured methodological rigor and aligned with qualitative research rigor and trustworthiness, emphasizing the depth, context, and authenticity of

participants' experiences rather than numerical validation (Guba and Lincoln, 1994; Colorafi and Evans, 2016).

#### Data collection

Regarding the data collection, the data were collected through in-depth interviews. Interviews guided by a predetermined set of questions were conducted between December 6, 2023, and January 9, 2024. The researchers started by asking the main questions, followed by probing questions. The in-depth interviews took approximately 60-70 minutes. All in-depth interviews were conducted in Thai, the participant's native language, to ensure comfort and facilitate rich, authentic responses. To enhance the trustworthiness of the data, a member-checking process was employed, wherein participants were invited to review their interview transcripts and conduct preliminary content analyses. This allowed them to verify the accuracy of the data and contribute to corrections or clarifications, thereby strengthening the credibility of the findings. The interview transcripts were then translated into English by a certified professional translator, and translation quality was confirmed through a systematic comparison of the English version with the original Thai transcripts to ensure conceptual equivalence.

Methodological triangulation was also implemented through the integration of field notes and direct observations, enabling cross-validation of data across multiple sources. Field notes were used to document participants' nonverbal behaviors, such as facial expressions, gestures, and other contextual cues during the interviews, providing depth and richness to the verbal data. Direct observations involved noting participants' interactions and behaviors related to eating in natural settings, offering complementary insights into their experiences (Colorafi and Evans, 2016). Together, these instruments enable a comprehensive understanding of the perspectives, motivations, and lived experiences of emotional eating among high school students. Data collection proceeded until thematic or data saturation was achieved, which was defined as the point at which no new substantive themes or insights emerged from subsequent interviews. This concurrent process ensured that the data collection and analysis informed each other, consistent with the qualitative research methodology.

#### Data analysis

Following the completion of the interviews, the researchers conducted verbatim transcriptions of all audio recordings, capturing all spoken words, pauses, and relevant nonverbal expressions. The transcripts were cross-checked against audio recordings to ensure accuracy and completeness. Field notes and direct observations were reviewed and integrated to complement the verbal data. Descriptive data from the demographic questionnaire were summarized using

simple frequencies and percentages to provide context for participants. The data analysis using the inductive content analysis method according to the guidelines of Vears and Gillam (2022) in the analysis of the findings consists of five steps: (i) reading and familiarizing the findings; (ii) coding the data for the first time, identifying the overall meaning; (iii) coding the data the second time, developing sub-issues and details of the data in each issue; (iv) refining the details of the sub-issues; and (v) synthesizing and interpreting the findings. This process allowed researchers to systematically identify themes and patterns from participants' experiences, while integrating descriptive contextual information.

#### Rigour and trustworthiness

The rigor and trustworthiness of this descriptive qualitative study were assessed based on Guba and Lincoln (1994) the following criteria: credibility, transferability, dependability, and confirmability. To ensure (i) credibility, the research was conducted in steps and processes. In this study, the researcher chose informants who met the specified qualifications. To minimize bias, researchers introduced themselves and explained the study objectives to the participants, such as who the researcher is, what they do, and what is the reason for conducting this research. Providing such information confirms that the researcher is not biased in conducting the research in every process. When analyzing the data, the researcher checked the accuracy with three experts or peer debriefing, checked with related concepts and the data with the informants or member checking, and triangulation. (ii) Transferability: This study aimed to present detailed, correct, and comprehensive data, not to transfer the study data to other populations, but only to refer to phenomena similar to this research. (iii) Dependability: Various methods were employed to collect data, including in-depth interviews, observation, and field recordings, and the collected data were linked to truly understand the phenomenon of emotional eating. (iv) Conformability: data collection and recording in this research were conducted systematically and audited with traces leading to a decision trail by systematically recording data from interviews, audio recording, and transcribing the interviews verbatim, and the data were checked for complete accuracy by experts and informants.

#### Ethical approval declaration

This descriptive qualitative study was approved by the Ethics Committee for Research Involving Human Subjects at Mahasarakham University, Thailand (Approval No. 345-370/2023). Ethical considerations included protection of confidentiality, voluntary participation, and the right to withdraw at any time without consequences. All participants were provided

Table 1. Characteristics of key informants (n = 12)

No.	Grade	Student	Age	Weight	Height	Six-month weight differences	BMI	BMI-for-age percentiles	BMI Category
P1	G-10	Boy	15	52	168	+ 5 kg.	18.4	27th	Healthy Weight
P2	G-10	Boy	15	85	170	+ 5 kg.	29.4	96.6th	Obesity
P3	G-10	Boy	15	50	166	+ 2 kg.	18.1	23rd	Healthy Weight
P4	G-10	Boy	16	56	170	+ 5 kg.	19.4	32nd	Healthy Weight
P5	G-10	Boy	16	52.4	184	+ 0.2kg.	15.5	<1st	Underweight
P6	G-10	Boy	16	101	178	+ 15 kg.	31.9	97.5th	Obesity
P7	G-11	Girl	16	105	175	+ 3 kg.	34.3	97.9th	Obesity
P8	G-11	Girl	16	43.5	163	Stable	16.4	3rd	Underweight
P9	G-11	Girl	16	55	166	± 1 kg.	20.0	43rd	Healthy Weight
P10	G-11	Girl	17	46	155	+ 2 kg.	19.1	26th	Healthy Weight
P11	G-11	Girl	17	56	158	± 1 kg.	22.4	67th	Healthy Weight
P12	G-11	Girl	17	83	175	± 3-4 kg.	27.1	91st	Overweight

with clear information about the study’s purpose, procedures, potential risks, and benefits. For participants younger than 18 years, written parental or guardian consent was obtained alongside verbal assent from the participants to ensure their understanding and willingness to participate in this study.

**Results**

In this descriptive qualitative study, 12 upper secondary school students (equivalent to Grades 10–12) who met the inclusion criteria were interviewed in depth. The 12 key informants were divided into 6 male and 6 female students. They were aged 15-17 years old, studying in Grade 10-11. They weighed between 43.5 - 105 kg, with an average weight of 65.41 kilograms. Their heights were 155–184 cm, with an average height of 169 cm. Their body mass index was between 15.5-34.3, with an average of 22.67. Their BMI-for-age percentiles ranged from <1st to 97.9th percentiles or categories from Underweight to Obesity. In the past six months, most students were aware of an average increase in their weight (3.51 kilograms). The participants’ characteristics are listed in [Table 1](#).

The data analysis revealed five main themes and 15 subthemes reflecting the perspectives, motivations, and experiences of Thai upper secondary school students regarding emotional eating. These themes were derived through inductive content analysis following the systematic coding, categorization, and synthesis processes described earlier. Each theme represents a distinct yet interrelated dimension of the participants’

emotional eating perspectives, motivations, and experiences. The students described their perceptions of emotional eating, behavioral characteristics, and the influences that motivated them. They also discussed the perceived physical and psychological consequences associated with emotional eating as well as the strategies used to manage these experiences.

The five main themes and their corresponding subthemes are summarized in [Table 2](#), which presents a concise overview of the findings.

Theme 1: Perceived meaning of emotional eating

The perceived meaning of emotional eating by high school students can be divided into two sub-themes: meaning in terms of eating response to needs and feelings and eating to relieve and manage emotions. The details of each sub-theme are as follows:

*Subtheme 1.1 Eating response to needs and feelings*

The meaning of emotional eating among high school students was defined through the perspectives, motivations, and experiences of key informants: when they need to eat, they usually eat even though they do not feel hungry. It is just the need to eat, leading to emotional eating according to feelings at that time, which may arise from both positive and negative feelings, and respond by eating according to their feelings.

*“I eat as I feel pleased. For me if I want to eat, I eat whether I feel hungry or not. If I’m not hungry, I don’t eat. If I’m hungry, I eat. But if I’m not very hungry, I eat.” (P8)*

Table 2. The main themes and subthemes of research findings

Main themes	Subthemes
1. Perceived meaning of emotional eating	1.1 Eating response to needs and feelings 1.2 Eating to relieve and manage emotions
2. Behavioral characteristics of emotional eating	2.1 Eating to alleviate feelings of stress or boredom 2.2 Eating more than usual 2.3 Eating that causes a desire to eat more 2.4 Eating that causes difficulty in eating control
3. Motivational drivers of emotional eating	3.1 Eating based on parents and friends 3.2 Eating due to daily stress, boredom, and being quiet 3.3 Eating due to school activities, work, and homework
4. Perceived consequences of emotional eating	4.1 Physical consequences: Non-stop eating with weight gain 4.2 Psychological consequences: Mood swings
5. Self-management when experiencing emotional eating	5.1 Ordering food through the application for self-satisfaction 5.2 Cooking food or asking their parents or guardians to buy food 5.3 Forcing not to eat or eat in small quantities 5.4 Managing finances to buy food

### *Subtheme 1.2 Eating to relieve and manage emotions*

When high school students face problems from their studies or school activities and their daily lives that cause them to feel sad, depressed, bored, or neutral, they relieve their feelings by eating food to make themselves feel better or to deal with their emotions. Additionally, when they feel happy, joyful, or happy, they often respond by eating food to make themselves even happier. Therefore, emotional eating is defined as eating to relieve and manage emotions among high school students.

*“I think I eat based on my mood. When I’m feeling down or upset, I usually eat something sweet to make myself feel better. Or when I’m in a good mood, I like to eat something spicy. I don’t know why. If I’m in a good mood, I’ll eat a spicy salad or papaya salad. For dessert, I’ll have milk tea. I’ll order Bingsu (Korean shaved-ice dessert) to eat. If I want roti, I’ll eat it. If I want to eat something strange. There’ll be types of food. If I would like to eat fried food, I’ll eat fried food. If I would like to eat hot food, I’ll look for something hot to eat.” (P9)*

### Theme 2: Behavioral characteristics of emotional eating

The characteristics of emotional eating among high school students can be classified into four sub-characteristics: eating to relieve stress or boredom, eating more than usual, eating that causes a desire to eat more, and eating that causes difficulties in eating control. The details of each sub-theme are as follows:

#### *Subtheme 2.1 Eating to alleviate feelings of stress or boredom*

High school students experience emotional eating to alleviate feelings of stress or boredom. Students face stress in various forms, especially while studying. Most students manage stress by eating to make themselves feel relaxed or happy from eating and forgetting about stress. Some students eat to manage boredom, whether it is boredom from doing reports, exercises, reading books, or from having no desire to do activities, even though they do not feel hungry.

*“I usually eat as I feel pleased as I don’t often eat the same food repeatedly. If I don’t know what to eat, I’ll eat snacks more. I don’t eat rice very often like I’m in a neutral mood or something like that. Even if I’m not hungry, I’ll eat to relieve the boredom.” (P8)*

#### *Subtheme 2.2 Eating more than usual*

High school students also experience emotional eating by eating more than usual. With emotional eating, most of them feel or realize that they eat more than the usual amount they have eaten before, both in terms of quantity and quality, including the amount of food intake in greater quantities than normal, frequency of eating, and eating fast food and food that is not beneficial or nutritious.

*“Once I eat it, I will eat more than I ever have before. I just keep eating.” (P5)*

#### *Subtheme 2.3 Eating that causes a desire to eat more*

Another characteristic of emotional eating among high school students is eating, which causes more hunger and makes students feel happy. Eating makes them feel delicious, fun, and happy, and they feel hungry. When students eat more, the feeling of deliciousness and desire to eat tends to increase, until it becomes a repetitive cycle of emotional eating.

*“If I feel a little unstable, I want to eat. I eat and eat again. The more delicious it is, the more I eat.” (P10)*

#### *Subtheme 2.4 Eating that causes difficulty in eating control*

Emotional eating is characterized by making them feel that eating makes them unable to control their eating, both in terms of stopping eating and their preference for food to eat. Emotional eating makes students eat various foods continuously and feel good, relaxed, and stress-free, making them unable to stop eating or control their eating, leading to repeated emotional eating.

*“It’s hard to control. Once I eat, I will eat more as it’s delicious. When I am happy, I eat more. It’s hard to control it.” (P4)*

### Theme 3: Motivational drivers of emotional eating

The emotional eating of High school students’ emotional eating can be classified into three sub-themes: eating based on parents and friends, eating due to daily stress, boredom, being quiet, and eating due to school activities, work, and homework. The details of each sub-theme are as follows:

#### *Subtheme 3.1 Eating based on parents and friends*

Eating based on parents, guardians, and friends is one of the causes and motivations for emotional eating among high school students. Students are motivated to eat food that their parents or guardians prepare or cook for them, including asking about and providing menus and types of food that students want to eat when their parents or guardians go to the market. Students also eat food that their friends suggest or buy for them. Students tend to eat food that their friends eat even though they do not feel hungry.

*“I eat like my friends. When I see my friends eating something, sometimes I would like to eat it too. When I eat, I eat all sorts of things, whatever I can think of. I follow my friends.” (P6)*

*“For me, it would probably be my mom. My mom likes to send me food clips, and she likes to cook, and I like to eat it. When I want my mom to cook, I’ll send it to her. If I want to*

*eat something, she'll find it for me. Most of the time, it's my mom and dad. They ask, 'What should you eat now?' Then 5-10 minutes later, 'What should you eat today?' It's like this all the time. My dad keeps asking me what I want 'Do you want it at this restaurant?' and I'll say yes." (P7)*

#### *Subtheme 3.2 Eating due to daily stress, boredom, and being quiet*

One of the motivations for emotional eating among high school students is their daily feelings of stress, boredom, or being quiet in response to their emotional states and situations. When faced with sadness, depression, boredom, or quietness, students often relieve their feelings by eating to make themselves feel better or to deal with their emotions.

*"When I'm bored, stressed, or fed up, I want to find something to eat so I don't get bored or depressed." (P2)*

#### *Subtheme 3.3 Eating due to school activities, work, and homework*

Doing school activities, work, and assigned homework is another cause of emotional eating among high school students because they make students feel tired, bored, and stressed from preparing for various school activities, such as sports days, festivals, or various traditions that students have to lead in organizing school activities. Therefore, students experience emotional eating to manage their emotions and prepare for activities or continue engaging in various activities, even though they do not feel hungry. In addition, when students report or assign homework, they often experience emotional eating by eating various foods to manage their emotions, and continue to report or assign homework, even though they do not feel hungry.

*"When I do schoolwork or homework, I get stressed and bored, so I have to find something to eat to continue working." (P1)*

#### Theme 4: Perceived consequences of emotional eating

The consequences of emotional eating can be classified into two sub-themes: physical and psychological. The details of each sub-theme are as follows:

##### *Subtheme 4.1 Physical consequences: Non-stop eating with weight gain*

The emotional eating of high school students leads to physical consequences such as weight gain from uncontrollable eating behavior. High school students observed and were aware of changes in body weight and shape due to weight gain and discomfort when wearing clothes. They also observed and were aware of the students decreased ability to control their eating when emotional eating occurred over a while.

*"Emotional eating affects my body and weight, which is also related to my emotions. If I gain weight, I feel uncomfortable and my body feels tight. If I don't want to eat, my weight will decrease." (P4)*

##### *Subtheme 4.2 Psychological consequences: Mood swings*

This psychological consequence is another result of emotional eating among students in upper secondary school. The students observed and recognized emotional changes during the period in which they had emotional eating. The emotional changes were characterized by fluctuations; whether it was a good mood from eating food that made the students feel happy, relaxed, and relieved stress while eating, or a sad mood, depression from feeling guilty about themselves for eating emotionally, and being unable to control their food intake.

*"I felt happy at first. When we ordered rice and food, when it was served, there was too much. I ate it all. But while eating, I felt guilty and asked myself if I had run out of money or if my weight go up again. After a while, I ate it all and it popped into my head again that the money I ate could buy many more meals. So, I felt guilty and then it was all gone." (P12)*

#### Theme 5: Self-management when experiencing emotional eating

When high school students experienced emotional eating and recognized their changing eating behavior, they tried to manage their emotional eating in various ways, including ordering food through applications for satisfaction, cooking food, or asking their parents or guardians to buy food, forcing them not to experience emotional eating or eating in small quantities, and managing finances to buy food when facing emotional eating. The details of each sub-theme are as follows:

##### *Subtheme 5.1 Ordering food through the application for self-satisfaction*

Ordering food through applications for self-satisfaction is a self-regulation method when high school students experience emotional eating. Most key informants ordered food through various applications when they wanted to eat, even though they did not feel hungry. Ordering food through applications was intended to satisfy their emotional needs by considering food selection from promotions, images of delicious menus, opinions or reviews from customers who had previously purchased the menus they were interested in, and recommendations from their friends and people on various social media. Meanwhile, some students ordered food through various applications to control or limit their food intake when experiencing emotional eating. They selected menus from various restaurants until they felt no need or wanted to eat from considering the same menus from various restaurants repeatedly, calculated the expensive cost of ordering food through applications, and

felt sorry to spend their money when facing emotional eating.

*“For me, if it's around the afternoon or 10:00-11:00 p.m. as when I scroll through IG, TikTok, food comes up. It's better to go to Grab Food. I'll scroll through and click. This looks delicious and I check the delivery fee, and the price, rest my eyes, delete those things, then continue scrolling. I do it over and over again.”* (P12)

#### *Subtheme 5.2 Cooking food or asking their parents or guardians to buy food*

Either cooking food themselves or depending on parents or guardians to obtain meals is another way of managing when high school students experience emotional eating. Most of the key informants asked their parents to buy food when their parents went out or went to the market or other places where they could stop buying the food they wanted. Meanwhile, some students who could cook for themselves chose to cook for themselves to manage emotional eating, as they could organize and select the menu or ingredients by themselves. While cooking, they felt relaxed, fun, and less hungry than before cooking.

*“When I would like to eat something, I immediately go buy it. But I don't run to buy things. I look in the refrigerator first. Sometimes I want to eat something that I would like to eat, but it turns out that I have to go buy ingredients first. It's far because my house isn't near a supermarket. So, I look in the refrigerator. If there's something in the refrigerator, I'll create a menu myself. It's okay and delicious, but it might not be the way I want to eat it, something like that.”* (P11)

#### *Subtheme 5.3 Forcing not to eat or eat in small quantities*

Another way for high school students to manage themselves when facing emotional eating is to restrain themselves from emotional eating or to eat small quantities to prevent themselves from feeling guilty about eating a lot of food, being unable to control their food intake, and to prevent the impact on their gained weight or body shape.

*“...After 8:00 pm, there's nothing to eat in the house. My mom clears out everything and throws out food. It is like coming back from school. It's tiring, and I want to eat. I buy food and eat during this period. I try not to order later than 8:00 pm like my friends. I can't order late at night. The house is all locked. I can't go out and buy anything. There's nothing in the house. Most of the time, we drink milk. I force myself to eat a little and think it's almost tomorrow.”* (P8)

#### *Subtheme 5.4 Managing finances to buy food*

Managing finances to buy food when faced with emotional eating is another way for high school students. Students choose to calculate the cost of food they have to spend on a weekly or monthly basis, receive money for

food from their parents or guardians, and manage various expenses by themselves. When they experience emotional eating and consider the cost list or amount of money that they have to spend on buying food to satisfy their emotions, it often makes students feel regretful and does not want to spend money to buy food for satisfaction, causing them to have less emotional eating. They can also manage their emotions so that they do not feel guilty, depressed, or sad about buying food for their emotional eating.

*“If I would like to eat, I eat. When I feel the urge to eat, I simply eat. Even when I don't feel like eating, I still eat. It depends on my mood and what I want to eat. If I desire something savory or sweet, I typically go to 7-11 to purchase it. But if I don't want to eat something in 7-Eleven, I have to order it. I look at my budget first to see if I have money or not and consider if the food is expensive. If it's not too expensive and I have enough money to buy it, I'll buy it.”* (P7)

## **Discussions**

This section discusses key findings related to the perspectives, motivations, and experiences of emotional eating among high school students in terms of meaning, characteristics, motivations, consequences, and self-regulation. The results are discussed below.

The meaning of emotional eating among high school students can be divided into two main issues: eating based on needs and feelings, and eating to relieve and manage emotions, consistent with the basic concepts and theories in behavioral sciences and mental health related to eating behavior and emotion management. It can reflect the response to internal stimuli that are not caused by physiological hunger, but rather the feeling of a desire to eat caused by emotions or mental needs that can be explained through Psychosomatic Theory, Kaplan and Kaplan (1957) which states that some people tend to respond to stress or anxiety through eating, even in the absence of real hunger, especially in high school students who are undergoing significant emotional and mental changes. Eating behavior is a key mechanism for dealing with various emotions (Macht, 2008; Ha and Lim, 2023). In addition, when individuals feel low self-control or basic emotional needs are not met, it may lead to behavioral expressions that focus on immediate satisfaction, such as eating to replace those needs according to self-determination theory. (Deci and Ryan, 1985) Students' eating behavior as a strategy to reduce negative emotions such as stress, sadness, or boredom is also consistent with the affect regulation theory, (Heatherton and Baumeister, 1991) which states that people use eating as a tool to control emotions, especially in situations where they are faced with stress or emotional problems that cannot be effectively handled. Moreover, the meaning of emotional eating among high school students can be explained through Erikson's

developmental theory (Erikson, 1968), which suggests that adolescents or upper secondary school students are in an important stage of identity versus Role Confusion, which is a time when individuals have to search for their own identity and face pressure from both themselves and the surrounding society. This emotional instability and attempts to understand oneself may lead to eating behaviors that reflect disorganized emotion management, such as eating in response to stress, loneliness, or even boredom, as a mechanism to cope with the uncertainty of one's role in society (Blakemore and Mills, 2014; Paulus *et al.*, 2021; Ha and Lim, 2023). Emotions have a significant influence on food selection behavior, especially when individuals feel uncomfortable or face problems; they tend to choose foods that provide immediate pleasure, such as sweet foods or high-energy foods, which stimulate the release of brain chemicals such as dopamine, making them feel good shortly (Wallis and Hetherington, 2009).

High school students exhibited four main emotional eating characteristics: eating to relieve stress or boredom, eating more than usual, eating with a persistent urge to eat more, and eating with difficulties in self-control. This is consistent with Macht (2008), who stated that emotional eating is a mechanism to cope with stress or negative emotions, using food as a tool to create a sense of relaxation and relieve discomfort (Macht, 2008; Konttinen *et al.*, 2010). Eating to relieve stress or boredom found in the sample is consistent with empirical studies showing that academic stress and boredom are key factors that motivate emotional eating behavior in upper secondary school students (Nguyen-Rodriguez *et al.*, 2008; O'Connor *et al.*, 2008). As students are still in emotional development with immature stress management skills, eating becomes an easy and accessible mechanism (Michels *et al.*, 2015; Mama Chabi *et al.*, 2022; Uhlmann *et al.*, 2023). Moreover, eating more than usual and consuming fast food or food with low nutrition reflect behaviors that increase the risk of obesity and long-term health problems. (Adam and Epel, 2007; Lemmens *et al.*, 2011) This is related to the idea that emotional eating often leads to consuming foods that provide immediate pleasure but are nutritionally unbalanced (Nguyen-Rodriguez *et al.*, 2008). Meanwhile, students' difficulty in controlling their eating habits may reflect self-regulation problems. This is a key factor that the health behavior theory emphasizes as having an impact on sustainable behavior change (Bandura, 1991; Tangney, Baumeister and Boone, 2004), especially in students whose self-control skills are not yet fully developed. Ongoing emotional eating behavior may increase the risk of obesity and mental health problems (Spoor *et al.*, 2007; Dakanalis *et al.*, 2023).

The causes and motivations for emotional eating among high school students include eating based on parents and friends, eating due to daily stress,

boredom, quietness, and eating due to school activities, work, and assigned homework. This is consistent with the concept of behavioral psychology, which shows that eating behavior is often influenced by external and internal factors that affect emotions and feelings (Macht and Mueller, 2007; Macht, 2008). Eating based on parents and friends reflects the role of society and family in promoting and shaping eating behavior (Birch and Fisher, 1998; Ragelienė and Grønhoj, 2020). Students tend to eat based on the models provided by their parents or guardians, and are motivated by being invited or interacting with friends. This is consistent with the Social Learning Theory, which indicates that human behavior occurs from imitation and response to social stimuli (Bandura, 1977). Previous research has also discovered that social support and eating with others affect eating behavior and food consumption quality (Story, Neumark-Sztainer and French, 2002). Emotional eating due to stress, boredom, or quietness may be an emotional coping mechanism individuals use to relieve stress or negative emotions by eating to feel relaxed and comfortable (Ouwens, van Strien and van Leeuwe, 2009). This is consistent with the study results, which found that emotional eating is a coping mechanism among adolescents and adults during stressful or negative moods (Adam and Epel, 2007; Macht, 2008). Emotional eating caused by school activities, work, and homework assignments left students feeling stressed and exhausted, leading them to use eating as a way to cope with emotions and provide energy to continue activities, even when they were not feeling hungry. This may explain how stress can trigger eating behaviors that are not related to hunger (Greeno and Wing, 1994), particularly among adolescents who are still in the developmental stages of emotional and stress management (Nguyen-Michel, Unger and Spruijt-Metz, 2007).

Participants reported the physical and psychological impacts associated with emotional eating. Students experienced weight gain due to a lack of control over their eating behaviors, and they also reported physical discomfort and difficulty controlling their food intake (Spoor *et al.*, 2007; Macht, 2008). This is consistent with the finding Konttinen *et al.* (2010) that emotional eating was related to a reduced ability to control food intake and an increased risk of obesity in upper secondary school students. In terms of psychological consequences, such behavior caused students to experience mood swings, both temporary positive emotions from happiness and relaxation while eating and negative emotions such as guilt and sadness due to the inability to control their eating behavior or Fairburn (Jankowska, 2025). Moreover, Macht (2008) emotional eating can create a cycle of stress and guilt that affects mental health and eating behavior in the long term. In addition, mood swings may contribute to the development of eating

disorders in adolescents (Stice, Becker and Yokum, 2013; Silvers, 2022).

High school students employ various strategies to control emotional eating. This is consistent with Bandura's self-regulation theory (1991), which emphasizes that individuals can control their behavior through consciousness and behavior management planning, as well as by evaluating and adjusting strategies according to dynamic situations. Ordering food via an application was a strategy most students chose to respond to emotions, even if they were not hungry. Macht and Mueller (2007) pointed out that emotional eating is often a response to mental feelings rather than real hunger. Additionally, choosing a menu from promotions, images, and reviews is consistent with the concept of eating behavior, in which external factors, such as visual stimuli and recommendations from social media, can stimulate appetite (Spence *et al.*, 2016). However, using repeated menu clicking to reduce cravings and control emotional eating behavior may reflect a decision-making mechanism to delay or prevent actions that may harm health in the long term (Baumeister and Heatherton, 1996). In addition to reducing emotional eating behavior, the strategy of cooking or asking parents to buy food was related to enhancing self-regulation skills and promoting eating quality food, which may make students feel relaxed and enjoy the activity. This reduces negative emotions and emotional eating (Macht, 2008). Furthermore, self-control to abstain from eating or eating small quantities may be a self-control mechanism to reduce negative consequences such as guilt or concerns about body shape and health, which play a significant role in preventing problematic eating behaviors, especially in adolescents whose emotional and behavioral regulation has not yet been fully developed (Heatherton and Wagner, 2011). Finally, financial management to control emotional food purchasing may reflect the efficient use of personal resources and help students set boundaries on how to respond to emotions through eating behaviors. This is consistent with the behavioral economics concept, which describes personal financial management as a method of reducing overspending behavior and promoting healthy decision making (Thaler and Sunstein, 2008).

This study has several strengths. It provides an in-depth understanding of emotional eating among high school students through qualitative methods that capture the complexity of their emotional, social, and behavioral contexts in Bangkok, Thailand. The application of an inductive content analysis approach, member checking, and verified translation procedures enhanced the credibility and trustworthiness of the findings. However, this study had several limitations. This study was conducted in a single educational setting, which may limit the generalizability of the results to other adolescent populations. In addition, because the

data were self-reflective and self-reported, student accounts may have been influenced by recall bias or social desirability. Despite these limitations, the findings offer valuable insights into the multifaceted nature of emotional eating and provide a foundation for designing culturally appropriate health-promotion interventions for adolescents.

## Conclusion

The emotional eating of high school students in this study reflects that eating characteristics are linked to emotions, internal motivations, and the social and psychological contexts of adolescents. These behaviors reflect upper secondary school students' attempts to cope with stress, boredom, and emotional challenges, highlighting the complex interplay between individual and environmental factors. This conclusion is drawn from the thematic analysis of participants' experiences and aligns with previous literature on adolescent emotional eating. Based on these findings, interventions should be developed to promote healthy eating behaviors and emotional regulation strategies among high school students. Schools and families can provide guidance on coping mechanisms, mindful eating, and stress management. Further research is recommended to explore culturally tailored approaches and examine the long-term effects of emotional eating patterns on adolescent students. Moreover, it emphasizes the need to develop health promotion programs that focus on enhancing emotion management skills and self-regulation in high school students and promoting nutritious food alternatives to prevent long-term health problems and promote sustainable health behaviors. As emotional eating is caused by multiple factors, including social, emotional, and everyday life contexts, understanding these causes and motivations is crucial for developing health promotion programs and interventions to prevent inappropriate eating behaviors and their possible physical and psychological impacts in the future. Furthermore, constant monitoring and evaluation should be conducted to support sustainable behavioral changes in upper secondary school students, promote self-regulation skills at the school and in a family, reduce the negative impacts of emotional eating, and sustainably promote the overall well-being of students.

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## Availability of data and materials

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

## Authors' contributions

Study conception and design: C.S. and S.G.; literature review and analysis; methodology; data collection; investigation; formal analysis; writing—review and editing: C.S.; study supervision; critical revisions for important intellectual content: S.G., C.B., and I.S.

## Declaration of Interest

The authors declare no conflicts of interest in this study.

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