FACTORS ASSOCIATED WITH EATING DISORDERS AMONG STUDENTS AT HAINAN VOCATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY IN YUNLONG CAMPUS

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The Independents Submitted to Chiang Rai Rajabhat University

for the Degree of Master of Public Health (Public Health)

July 2025

摘要

题目: 海南科技职业大学云龙校区学生饮食失调的相关因素

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学年: 2025

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由于营养误区、心理压力和社会文化因素的影响，大学生饮食失调问题日益受到关注。本研究旨在（1）评估海南科技职业大学云龙校区学生的营养知识水平、态度和饮食失调症状（2）探讨个人因素与饮食失调风险之间的关联。研究采用横断面分析设计，意外抽取了 411 名学生。研究工具包括人口统计学问卷、中国人感知压力量表（CPSS）、营养知识测验、营养态度量表和饮食失调检查问卷（EDE-Q6）。

结果显示，61.56% 的受访者表示没有饮食失调症状或仅有轻微症状（0-1.49 分）。50.85%的受访者营养知识处于中等水平，54.50%的受访者营养态度处于中等水平。饮食失调症状与以下变量之间存在统计学意义上的重大关

联：性别、体重指数、腰臀比、出生地、对瘦身媒体的宣传关注度、运动情况、压力水平、营养知识和对营养的态度（$P < 0.05$）。

虽然该样本中饮食失调的总体风险较低，但研究结果强调了早期筛查和推广健康饮食行为的重要性。这些结果为大学和公共卫生机构提供了重要的证据，以制定有针对性的健康促进政策，解决学生群体饮食失调的多面性问题。

关键词: 饮食失调，营养知识，态度，感知压力，大学生，中国

ABSTRACT

Title: Factors Associated with Eating Disorders among Students at Hainan Vocational University of Science and Technology in Yunlong Campus

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Eating disorders among university students are a growing concern due to the influence of nutritional misconceptions, psychological stress, and sociocultural factors. This study aimed to (1) assess the levels of nutritional knowledge, attitudes, and eating disorders symptoms among students at Hainan Vocational University of Science and Technology, in Yunlong Campus; and (2) examine the associations between personal factors and the risk of eating disorders. A cross-sectional analytical study design was employed, and 411 students were selected for accidental sampling. Instruments included a demographic questionnaire, the Chinese Perceived Stress Scale (CPSS), a nutrition knowledge test, a nutrition attitude scale, and the Eating Disorders Examination Questionnaire (EDE-Q6).

The results showed that 61.56% of participants reported no symptoms or only mild symptoms of eating disorders (0–1.49 points). A moderate level of nutritional

knowledge was observed in 50.85% of respondents, while 54.50% had a moderate attitude toward nutrition. Statistically significant associations were found between eating disorder symptoms and the following variables: gender, BMI, waist-to-hip ratio, birthplace, publicity attention to slimming media, exercise situation, stress level, nutrition knowledge, and attitudes towards nutrition ($p < 0.05$).

Although the overall risk of eating disorders in this sample was low, the findings emphasize the importance of early screening and the promotion of healthy eating behaviors. These results provide essential evidence for universities and public health authorities to develop targeted health promotion policies that address the multidimensional nature of the eating disorders of students group.

Keywords: Eating disorders, Nutritional knowledge, Attitudes, Stress, perception, University students,China

ACKNOWLEDGMENTS

This thesis was successfully completed with the guidance and support of numerous individuals and institutions.

First and foremost, I would like to express my sincere appreciation to my thesis advisor, Asst. Prof. Dr. Nattra Somkamlang, for her invaluable guidance, generous time, steadfast support, and warm encouragement throughout the course of this research.

I am also deeply grateful to my co- advisor, Asst. Prof. Dr. Phatcharin Winyangkul, for her thoughtful review of my work and for her insightful and constructive suggestions.

My heartfelt thanks go to all the faculty members and classmates in the Public Health program for their kind assistance and encouragement during my academic journey.

I would also like to thank all the student participants for their patience and willingness to take part in this study.

Lastly, I extend my deepest gratitude to my family for their unwavering support and encouragement, which have been a constant source of strength throughout my studies.

Wang Shuhua

July 2025

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CHAPTER I

INTRODUCTION

Background and rationale

In recent years, with the rapid development of the national economy, the living standards of people have undergone tremendous changes. These changes include a continuous improvement in material living standards and an increasingly enriched cultural life. Simultaneously, there have been significant changes in lifestyle and dietary habits. Unreasonable dietary behaviors can lead to a series of health problems. However, with tal increase in the number of individuals with eating disorders in our country, more and more researchers have begun to explore the causes of eating disorders. Eating disorders are a type of mental disorders characterized by abnormal Eating disorders and psychological distcityces, posing a serious threat to both physical and mental health. Studies have shown that middle school and university students are high-risk groups for eating disorders, with higher incidence rates in females compared to males, and higher rates in high school students compared to middle school students（Mei & Chen, 2021）. Individuals with such issues may exhibit a range of motivated behaviors, such as avoiding social outings, not wearing tight clothing but rather loose clothing, and avoiding physical intimacy. They may also engage in unhealthy or compulsive behaviors, such as dieting, self-induced vomiting, frequent weighing, and mirror checking. When eating disorders develop to an extreme, diseases such as bulimia nervosa, anorexia nervosa, and binge eating disorders may occur, severely affecting the physical and mental health of individuals.

Globally, the incidence of eating disorders has been on the rise, with significant increases noted particularly in Western countries. For instance, a study in the United States estimated that approximately 20 million women and 10 million men will have an eating disorders at some point in their lives (Hudson et al., 2007). In Europe, the prevalence of eating disorders among adolescents and young adults is also rising, with an estimated 1-4% of the population affected by these disorders (Keski-Rahkonen & Mustelin, 2016). In Australia, research indicates that eating disorders affect over 16% of the population at some point in their lives, highlighting a growing public health issue (Hay et al., 2015). This global trend underscores the need for comprehensive research and effective intervention strategies to address the complex factors contributing to eating disorders. In China, the prevalence of eating disorders has also been increasing, reflecting the global trend. Recent surveys indicate that the incidence rates in China are approaching those observed in Western countries, particularly among young women and city populations (Chen & Jackson, 2008). The age groups most affected by eating disorders in China are adolescents and young adults, with the highest prevalence seen among individuals aged 15-24 years (Qian et al., 2013). This demographic is particularly vulnerable due to the significant physical, emotional, and social changes occurring during these years, which can exacerbate the development of disordersed eating behaviors.

Eating disorders patients are influenced by external factors, family factors, and personal factors, making them prone to anxiety, depression, and other negative emotions and behaviors. Moreover, the prevalence of eating disorders is closely related to socio-cultural background, especially in Western cultures where the notion of "thin is beautiful" has led to the existence of eating disorders. Research has found that the higher the degree of cultural identification with society among women, the greater the likelihood of

developing eating disorders. The factors Influencing the occurrence of eating disorders in adolescents are including 1) Biological Factors such as Genetics: Family history of eating disorders can increase the risk, suggesting a genetic predisposition (Strober et al., 2000). Biochemical imbalances: Abnormal levels of neurotransmitters such as serotonin and dopamine can contribute to the development of eating disorders (Kaye et al., 2009). and hormonal changes: Hormonal fluctuations, particularly during puberty, can trigger disordersed Eating disorders (Klump et al., 2012) 2) Psychological Factors such as personality Traits: Traits such as perfectionism, low self-esteem, and impulsivity are commonly associated with eating disorders (Lilenfeld et al., 2006). Emotional disorders: Conditions such as depression, anxiety, and obsessive-compulsive disorders often co-occur with eating disorders (Godart et al., 2002) and Trauma and Stress: Experiences of trauma, including physical, emotional, or sexual abuse, and high levels of stress can lead to disordersed eating as a coping mechanism (Brewerton, 2007). Socio-Cultural Factors such as Cultural Pressures: Societal ideals of beauty, particularly the emphasis on thinness, can drive individuals to engage in unhealthy Eating disorders to conform to these standards (Levine & Piran, 2001). Media Influence: Exposure to media portrayals of ideal body types and dieting can contribute to body dissatisfaction and eating disorders (Grabe et al., 2008) and Peer Pressure: Peer influence and social comparison, especially among adolescents and young adults, can impact Eating disorders and body image (Keel & Forney, 2013) 4) Environmental Factors such as Family Dynamics: Dysfunctional family relationships, such as high levels of criticism, lack of support, and enmeshment, can contribute to the development of eating disorders (Minuchin et al., 1978) and Dieting and Weight Control Practices: Early exposure to dieting and weight control behaviors can increase the risk of developing eating disorders (Field et al., 2001). Besides,with the proliferation of electronic

products, individuals' dependence on mass media has gradually deepened. The media's portrayal of "thin" culture and "muscular" ideals impacts adolescents' perceptions, causing them to internalize these unattainable media images and attempt to achieve these "ideals" through extreme behaviors such as dieting and fasting, thereby leading to eating disorders tendencies. However, the current attention from society, schools, and parents towards adolescent eating problems is insufficient, and there is a lack of understanding of eating disorders, especially regarding how to prevent their occurrence.

Recent studies have indicated a significant global increase in the prevalence of eating disorders among adolescents, particularly among female students. The rise in such disorders in countries like the United Kingdom and the United States has exceeded expectations following the COVID-19 pandemic. Key contributing factors include social stress, health-related anxieties, and increased use of social media during lockdown periods (Miskovic-Wheatley et al., 2023). In the context of China, Western cultural ideals, such as the notion that "thin is beautiful," have become ingrained in the local culture, leading to increased body dissatisfaction and higher rates of disordered eating behaviors among youth (Qian et al., 2022). University life represents a critical stage in the development of dietary behaviors and mental health. Eating disorders can detrimentally impact students' physical health (manifesting as malnutrition and metabolic imbalances) and may also precipitate psychological conditions such as depression and anxiety. Furthermore, these disorders can contribute to academic underperformance and impaired social functioning. At present, mental health intervention systems in domestic universities often lack sufficient focus on eating disorders, with limited implementation of targeted screening and intervention strategies.

The choice of Hainan Vocational University of Science and Technology in Yunlong Campus as the research object of students' eating disorders is mainly based on the following realistic basis and research value: 1) Regional specificity: Yunlong Campus is located in the urban-rural transition zone of Hainan Island, and most of the student sources are mostly from economically weak areas in the province, and the restricted economic level of the family may lead to the monotonization of the dietary structure, which is overlaid with the consumption preference of high-sugar beverages and salted foods under the tropical climate, which is easily induced by the Nutritional imbalance. 2) Characteristics of vocational education groups: Vocational education students generally face the double pressure of "skills training and theoretical assessment", and psychological anxiety and irregular work and rest may give rise to a tendency to overeat or become anorexic. 3) Campus environment constraints: the catering industry around the campus is mainly cheap fast food, and the cafeteria dishes have a tendency of "high carbon water, low protein" for a long time, and students' health literacy is weak, which exacerbates the risk of eating disorder. 4) In this particular university, no studies have been conducted to investigate the causative factors and prevalence of eating disorders.

Therefore, this gap in the literature prompted the researcher's interest in investigating the level of nutritional knowledge, attitudes, and symptoms of eating disorders among the students of Hainan Vocational University of Science and Technology in Yunlong Campus. Through the questionnaire survey, this study can reveal the multidimensional causative factors of eating disorders among VET students, such as the interaction of economic constraints, cultural habits and psychological pressure, and provide scientific basis for customizing the " dietary management- mental health" linkage intervention strategy for VET colleges and universities, which is of practical significance

for promoting youth health and equity in the context of rural revitalization. This study is of practical significance in promoting youth health in the context of rural revitalization. This study also aims to investigate the association between individual factors and the risk of eating disorders. The results of the study are expected to enrich the theoretical understanding of mental health problems among college students. In addition, the findings will provide empirical support for the development of counseling services and health education activities in a university setting, which will help to mitigate the long-term adverse effects of eating disorders on students' physical and mental health and improve their overall quality of life.

Objective

1. To examine the levels of knowledge, attitudes, and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus.
2. To examine the associations between factors and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus.

Research question

1. What are the levels of knowledge, attitudes, and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus?

2.Personal factoers, level of knowledge, and attitudes statistically significantly associated with eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus?

Hypothesis

1. The levels of knowledge, attitudes, and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus are at good, moderate and low risk levels.

2. There are statistically significant associations between personal factoers, level of knowledge, and attitudes and the presence of eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus.

Operational definition

1. Factors: These refer to the various elements or conditions that have an impact on eating disorders among students. These factors can be biological, psychological, socio-cultural, or environmental.

2. Students: This term refers to individuals who are enrolled in courses or programs at Hainan Vocational University of Science and Technology in Yunlong Campus.

3. Birthplace: refers to the student's residential location, classified as city, town, or rural.

4. BMI (Body Mass Index): BMI is a numerical value calculated from an individual's weight and height, commonly used to assess whether a person has a healthy body weight relative to their height. It is calculated by dividing weight in kilograms by the square of height in meters (kg/m²). According to the World Health Organization's BMI standards for Asian populations. The classification criteria are as follows (WHO, 2000）

- Underweight: < 18.5 kg/m²
- Normal weight: 18.5 – 23.9 kg/m²
- Overweight: 24.0 – 27.9 kg/m²
- Obesity: ≥ 28.0 kg/m²

5. Faculty: Refers exclusively to the fields of Medicine, Nursing, city Construction, Accounting, and Education and Music.

6. Hours of sleep per day: Refers to the total time an individual spends sleeping within a 24-hour period.

7. Exercise1 situation: Refers to a set of physical activities aimed at developing the body, promoting health, strengthening physical fitness, regulating the mind, and enhancing cultural enjoyment.

8. Publicity attention to slimming media: Refers to the public's interest and attention to the process of making the body slimmer, healthier, and more aesthetically pleasing through various methods, as portrayed by media, both online and offline.

9. Waist circumference: Waist circumference refers to the horizontal measurement around the waist at the level of the navel. According to the World Health Organization's Waist Circumference standards. The classification criteria are as

follows: Waist Circumference ≥85 cm for Men and ≥80 cm for Women as the Threshold for Central Obesity (WHO, 2011).

10. Hip circumference: Refers to the horizontal circumference measured at the highest point of the hips.

11. Waist-to-hip ratio: The waist-to-hip ratio refers to the proportion of an individual's waist circumference to their hip circumference and is commonly used to assess body fat distribution and overall health status. WHO uses waist-to-hip ratio as an important indicator for assessing central obesity and cardiovascular disease risk, proposing a high risk threshold of >0.90 for men and >0.85 for women (WHO, 2011).

12. Stress level: The stress level refers to the degree of stress perceived or experienced by an individual. It is assessed using the standardized Chinese Perceived Stress Scale (CPSS), which categorizes scores into four levels ranging from low to very high stress (Yang & Huang, 2003):

- 14–28 points = Low stress
- 29–42 points = Moderate stress
- 43–56 points = Higher stress
- 57–70 points = Very high stress

13. Knowledge of nutrition: Refers to the understanding and awareness that students have regarding nutrition, healthy eating habits, and the consequences of eating disorders. It is usually assessed through questionnaires that measure the level of information the students possess.

14. Attitudes towards nutrition: Refers to the students' feelings, beliefs, and predispositions towards nutrition and eating behaviors. It encompasses their

perceptions of healthy eating, body image, and dietary practices, and is measured through self-report surveys or attitude scales.

15. Eating disorders: The frequency of behavior and psycho-pathology of the behavior by the subscales. The subscales are the global scale and four subscales (restraint, eating concern, weight concern, and shape concern) and subscales are rated like a Likert method on the 0–6 scale, with higher scores results severity. Global scale is defined as elevated ED risks as EDE-Q ≥ 4, as this value is described as a clinically positive cut-off value for EDs screening (Fairburn, C. G., & Beglin, S. J., 2008).

Expected Benefits and applications

Expected Benefits:

1. To provide empirical data on the levels of knowledge, attitudes, and eating disorders behaviors among university students, which can be used as a foundation for health promotion and preventive strategies within educational institutions.

2. To identify key associated factors (such as gender, stress, BMI, knowledge, and attitudes) that correlate with eating disorders, thereby enabling early identification of at-risk student groups.

3. To raise awareness among students, faculty, and university health services about the significance of eating disorders and the personal factors that may contribute to their development.

Applications:

1. Educational Institutions: Results can be used to design targeted health education programs, workshops, or curriculum integrations that promote healthy eating habits and positive attitudes toward body image and nutrition.

2. Student Health Services: Findings may assist campus health centers in developing screening tools or early intervention protocols for students at risk of developing eating disorders.

3. Policy Development: The university can use the findings to formulate or revise student health policies, incorporating mental health and nutritional well-being as part of comprehensive student support services.

4. Further Research: The study's results may serve as a foundation for future in-depth research, including longitudinal studies or intervention trials focused on reducing eating disorders in student populations

CHAPTER II

LITERATURE REVIEW

In the research on Factors associated with eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus, the researcher reviewed various documents, textbooks, books, articles, research papers, reports from different agencies, and related theoretical concepts as the foundation for developing a conceptual framework that guides the key issues in the study. The conclusions based on the following topics are as follows:

1. Concept of Eating disorders
2. Classification of Eating disorders
    2.1 Anorexia Nervosa
    2.2 Bulimia Nervosa
    2.3 Atypical Eating disorders
    2.4 Binge Eating disorders
3. Trends in Eating disorders
    3.1 In Global
    3.2 In China
4. Harms of Eating disorders
5. Factors Influencing Eating disorders
    5.1 Socio-Cultural Factors
    5.2 Individual Factors
6. Measurement of Eating disorders
7. Measures to Improve Eating disorders

8. Related Research

9. Conceptual Framework

Concept of Eating disorders

Eating disorders are a group of diseases characterized by abnormal Eating disorders and excessive concern with food, body weight, and body shape (Machado et al., 2014). These abnormal behaviors are not secondary to any other physical or psychological diseases. The fear and attempts to counteract the fattening effects of food are often the most prominent psychological pathologies in most patients. Research indicates that adolescence is the peak period for the onset of eating disorders, particularly among females. Eating disorders are primarily categorized into four types: bulimia nervosa (BN), anorexia nervosa (AN), atypical nervosa, and binge eating disorders (BED), with anorexia nervosa and bulimia nervosa being the most common. Eating disorders can occur in any country, region, or ethnic group, but it has been found that the prevalence is higher in more developed countries, Western countries, and some developing countries with higher levels of civilization. In recent years, the prevalence has shown a continuous upward trend.

Classification of Eating disorders

Eating disorders are broadly categorized into four main types: anorexia nervosa, bulimia nervosa, binge eating disorders, and atypical eating disorders. Additional subtypes include conditions such as avoidant/restrictive food intake disorders, pica, rumination disorders, and nocturnal eating syndrome. Among these, anorexia nervosa has the highest mortality rate of any psychiatric disorders.

Anorexia Nervosa

Anorexia nervosa is not characterized by a lack of appetite, as the term "anorexia" might suggest, but rather by an intense fear of gaining weight. Individuals with this disorders prioritize weight loss and body image, often seeing these factors as central to their self-esteem. This fixation leads to significant behavioral, psychosomatic, and physiological symptoms.

Behaviorally, individuals with anorexia nervosa intentionally restrict caloric intake and engage in excessive exercise to maintain an extremely low body weight. They may resort to extreme measures such as purging, using laxatives, or vomiting. Initially, they may avoid high-calorie foods, but over time, their dietary restrictions become more severe, leading to malnutrition.

Mentally, those with anorexia nervosa have a distorted perception of their body, often believing they are overweight despite being underweight. They exhibit an obsessive fear of gaining weight, with a heightened focus on specific body parts.

Physiologically, prolonged food restriction leads to extreme weight loss, triggering a variety of malnutrition-related symptoms, including osteoporosis, amenorrhea in women, and loss of libido. Common psychiatric comorbidities include depression, anxiety, and obsessive-compulsive traits.

Bulimia Nervosa

Bulimia nervosa is characterized by recurrent episodes of binge eating, in which individuals consume abnormally large amounts of food in a short time and feel a loss of control during these episodes. Following a binge, individuals often attempt to compensate through purging (vomiting, laxatives), fasting, or excessive exercise.

Unlike anorexia nervosa, individuals with bulimia nervosa are often of normal weight or slightly overweight.

Behaviorally, bulimia nervosa patients engage in compensatory behaviors to counteract binge eating. Emotionally, they experience guilt, shame, and anxiety surrounding their eating habits. This emotional distress, combined with the physical effects of binge eating and purging, can result in electrolyte imbalances, gastrointestinal issues, and tooth decay.

Atypical Eating disorders

Atypical eating disorders share similarities with anorexia nervosa or bulimia nervosa but do not meet all diagnostic criteria. Individuals may exhibit symptoms such as selective eating, binge eating during emotional distress, or other disordersed eating behaviors without fully qualifying as either anorexia or bulimia.

Binge Eating disorders

Binge eating disorders (BED) is characterized by recurrent episodes of overeating without the compensatory behaviors seen in bulimia nervosa. Binge eating occurs at least once a week for three months. Unlike bulimia, BED does not involve purging, and individuals often struggle with obesity and related health issues.

Research shows that individuals with BED often have co- occurring psychiatric disorders, such as depression or anxiety. Approximately 79% of BED patients have a history of at least one psychiatric disorders, with conditions such as specific phobias, social anxiety, and post-traumatic stress disorders (PTSD) being the most common.

In summary, the range of eating disorders encompasses a wide variety of symptoms and behaviors, all of which can severely impair an individual's physical and mental health. The overlap of emotional, behavioral, and physiological factors in these disorders makes early intervention critical to prevent long-term damage.

Trends in Eating disorders

In Global

As the pace of modernization accelerates, mental illnesses, like "invisible killers," threaten human health, severely affecting people's quality of life and physical and mental well- being. Eating disorders are a typical psychosomatic syndrome common among adolescents. Reports on eating disorders first appeared in Western developed countries (Jiang, 2004). Developed countries with good living conditions and abundant material resources objectively provide the basis for the occurrence of eating disorders. Nowadays, people's demands for food go beyond mere satiety. Combined with East Asian culture's emphasis on "thinness as beauty" and the influence of various social media, the likelihood of developing eating disorders increases (M. C. S. et al., 2023).

Eating disorders are on the rise in both Western and Chinese countries, with a prevalence of approximately 0.5-3% in the general population. In a study published in Germany in 2008, ED screening of 1895 general population between 11 and 17 years of age found that 29.4% of women were predisposed to ED (Herpertz-Dahlmann et al., 2008). In Western countries, eating disorders have become a serious social problem and a direct threat to the health of adolescents and young adults, and have attracted

widespread social attention. Although the pathogenesis of eating disorders is not fully understood, in addition to biological factors, environmental and genetic factors are also believed to play an important role in the development of eating disorders. Among the environmental factors, the influence of socio-cultural orientation (taking women's slim figure as a representation of self- confidence, self- discipline and success, and the media's promotion of weight loss and the pursuit of slimness as a fad in this regard) should not be overlooked. For example, as work stress increases, the risk of eating disorders also increases, and high BMI is an important mediating effect of this, with high BMI increasing the risk of eating disorders (Bruno Pena et al., 2017; M. K. E. et al., 2022). Therefore, how to reduce students' psychological stress is important to reduce the risk of eating disorders.

Overseas studies have shown that relatively low levels of available energy may be a central aspect of eating disorders, the triad. If women lose weight by reducing energy intake or increasing energy expenditure to reduce available energy, it may affect the reproductive system and bone health.

In China

Domestic studies have found that the number of people with eating disorders has been on the rise over the past two decades, a trend that reflects the impact of social, economic and cultural changes on people's mental health, and that eating disorders are regarded as a "modern disease". The incidence rate of eating disorders is on the rise among adolescents, and secondary school and college students are at high risk for atypical eating disorders (Zhang & Qian, 2004), a trend that is closely related to today's society's aesthetics of "thinness as beauty," the dieting trend, and the spread of the media. Epidemiological data demonstrates age-specific patterns of eating disorders:

During childhood (<12 years), though showing relatively low prevalence (5%-10% of total cases), the conditions often manifest as severe malnutrition with developmental delays (A et al., 2014). Adolescence (15-19 years) represents the peak onset period, with incidence rates of anorexia nervosa and bulimia nervosa reaching lifetime maxima (Marco et al., 2021). Adult patients frequently develop emotional eating or pathological dieting due to occupational stress, while 15% of postpartum women with binge-eating disorders experience symptom exacerbation associated with societal demands for "immediate post-pregnancy slimming" (Watson et al., 2014). Middle-aged and elderly populations predominantly exhibit atypical symptoms comorbid with chronic conditions like diabetes (Ercolino et al., 2024). Notably, after reaching its incidence zenith during puberty (middle school years), the behavioral patterns often persist through college and subsequent life stages, causing enduring damage to physical and mental health. Fu et al. (2005) showed that 2.8% of female university students in Beijing had or would have eating disorders, and the registration form for eating disorders showed that 58.3% of the subjects had bulimic behaviors, 49.9% had dieting behaviors, 67.5% resented themselves after bulimia, and in order to avoid weight gain, 2.9% of the subjects had vomiting behaviors after eating. Lu Xiaohua et al. (2006) showed that individuals with eating disorders and atypical eating disorders accounted for 4.7% of the surveyed individuals in a survey of some college and middle school students in Nanjing. During the New Crown pandemic (2019-2023), the mental health status of children was documented to show a surge in the number of young individuals with eating disorders. As well as Zhou and Wei (2023) selected 275 college students of Guangxi Medical University as survey respondents to analyze the eating disorders tendency status of college students. The number of ED tendency group and non-ED

tendency group were 22 and 253 respectively, accounting for 8.00% and 92.00% respectively.

It can be seen that the incidence of eating disorders is likely to continue to grow in the future, and it is necessary to conduct in-depth research on the influencing factors that lead to eating disorders. Moreover, in the college student population, the phenomenon of deliberately controlling diets in order to control body mass or to shape a wonderful body shape and figure, etc., is becoming more and more common, and disorders such as dieting, fasting, and vomiting and diarrhea are occurring, and these behaviors not only directly damage people's physical and mental health, but also affect people's daily work and study efficiency.

Many studies have shown that eating control is one of the most common ways that adolescents use to cope with social and cultural pressures to achieve an "ideal" body image (Fan et al., 2021). When adolescents control their eating, they are less likely to consider whether such control is detrimental to their physical and psychological health, and therefore, if not intervened, may develop into eating disordersed behaviors or even eating disorders (Fan et al., 2020; Kim et al., 2018).

Harms of Eating disorders

Eating disorders are severe diseases characterized by disordersed eating behaviors. Although the exact causes and mechanisms of eating disorders are not entirely clear, they likely result from multiple factors. Currently, there is no nationwide data on the prevalence of eating disorders in China, but surveys of disordersed eating among some middle school and university students indicate that the prevalence is not

low, posing a severe threat to adolescents' physical and mental health (Chen & Jackson, 2008; Wolfe, 2006) . Women are more vulnerable to eating disorders due to hormonal variations and earlier pubertal onset, which contribute to increased body fat deposition and heightened body dissatisfaction - established risk factors for pathogenesis. Concurrently, sociocultural glorification of thinness as an aesthetic ideal disproportionately elevates susceptibility in female populations (Nagata et al., 2020; Griffiths et al., 2018).

1. Eating disorders often coexist with psychological problems, forming a reciprocal cause-effect relationship that increases the likelihood of depression, anxiety, suicidal ideation, and other physical and mental health issues (Tong et al., 2014). Other common symptoms include mood instability, irritability, social withdrawal, and personality changes. Studies indicate a marked positive correlation between negative affect/ chronic stress and disordersed eating tendencies. Impaired self- regulation in adolescents amplifies behavioral impulsivity, thereby triggering or exacerbating eating pathology (Li et al., 2016). Furthermore, university students with greater psychological resilience and emotional stability exhibit lower eating disorders prevalence, aligning with established research (Bridget et al., 2022).

2. Eating disorders can affect neuroendocrine changes. Patients who develop eating disorders before puberty may exhibit delayed secondary sexual development, with males experiencing reduced sexual function and slow development, and genitalia remaining in an infantile state. Females may show underdeveloped breasts and primary amenorrhea, with amenorrhea being a common symptom that can appear before, during, or after significant weight loss.

3. Eating disorders also lead to malnutrition and metabolic disorders. Patients with anorexia nervosa who restrict their food intake and experience significant weight loss often exhibit symptoms of malnutrition and metabolic disorders, such as dry, pale skin with loss of elasticity and luster, sparse and falling hair, low blood pressure, and anemia. Vomiting and laxative abuse can cause various electrolyte imbalances, such as water-electrolyte and acid-base balance disorders.

Factors Influencing Eating disorders

The factors influencing eating disorders are multifaceted and multidimensional (Yang & Chen, 2006). They include socio-cultural factors (global thin-ideal trend, social injustice, interpersonal relationships, family, peers, grade, and living environment) and individual factors (biological factors, genetic predispositions, age, individual cognition, body shape and weight, negative emotions, body dissatisfaction, overvaluation of appearance, perfectionism,nutritional knowledge and nutritional attitude). These factors interact with each other, with socio-cultural and individual factors being interrelated. Regardless of gender, the fear of gaining weight and distorted perceptions and expectations of body shape and weight are common psychopathological features among individuals influenced by these factors.

Socio-Cultural Factors

1. Global Thin-Ideal Trend Contemporary society is inundated with cultural messages promoting "thinness as beauty" and "slimness above all" through various social media and cultural outlets (Boone et al., 2010). This cultural ideal profoundly influences the tendency toward eating disorders in the general population. The

excessive pursuit of thinness is closely linked to the mass media's portrayal of a singular aesthetic standard. Current research demonstrates that frequent exposure to weight-loss media featuring "ideal body types" or influencer fitness content intensifies social comparison and promotes internalization of the sociocultural thinness ideal, consequently triggering body dissatisfaction and disordered eating behaviors. Statistical evidence confirms elevated risks of eating disorders among habitual consumers of such media (Perloff, 2014). Thin actors and models frequently appear on television, the internet, and in advertisements, conveying the message that "thin is beautiful." This notion is further reinforced through social media. However, it is often overlooked that these actors and models are themselves at high risk for eating disorders, with many having BMI values well below normal. Numerous experimental studies have shown that societal pressure to be thin is a causal risk factor for body dissatisfaction, dieting, negative emotions, and bulimia.

2. Family factors play a crucial role in the occurrence, development, maintenance, and recovery of eating disorders. The relationships among family members, parental attitudes and disciplinary methods, marital harmony, parental personality traits, family communication styles, and parents' eating habits and attitudes towards weight all impact the formation of eating disorders in children. In families with strict discipline and high expectations, high demands and unrealistic body image expectations can increase the likelihood of children developing eating disorders. For example, family atmosphere and parenting styles are significant. Research by Zhao et al. (2017) found that individuals with eating disorders often come from family environments characterized by self-harm, strictness, and "body rejection." Some researchers suggest that Eating disorders in individuals with eating disorders represent

rebellion against excessive parental control or overprotection, using dieting as a means of counter-control to resolve family conflicts. Families of individuals with anorexia nervosa tend to emphasize perfectionism and emotional restraint, while families of individuals with bulimia nervosa often exhibit variability and contradictory negative emotions.

Socio-economic status also affects the prevalence of eating disorders. Individuals from different economic backgrounds have varying rates of eating disorders. Dieting and weight loss behaviors are more common among higher economic groups. Additionally, family dynamics, such as parental education methods and the health of parent-child relationships, are important factors in the development of eating disorders.

3. Peer Factors Peers refer to individuals with whom one interacts or lives within school, workplaces, or other social environments. Peers are an important external reference and primary source of social information for individuals, especially adolescents, for whom peer relationships are one of the most important social relationships. The social environment created by peers, dominated by norms and expectations, influences and shapes attitudes and behaviors in various areas, including academic performance, substance abuse, smoking, drinking, and eating disorders. Adolescents tend to align their attitudes and behaviors with those of their peers, a similarity known as "homogeneity," which primarily occurs through two processes: selection and influence. Research shows that peers have a significant impact on adolescent eating disorders. Analysis and synthesis reveal that peers indirectly influence adolescent eating disorders through body image (see Figure 1) (Mancilla-Díaz et al., 2012; Gao & Chen, 2019).

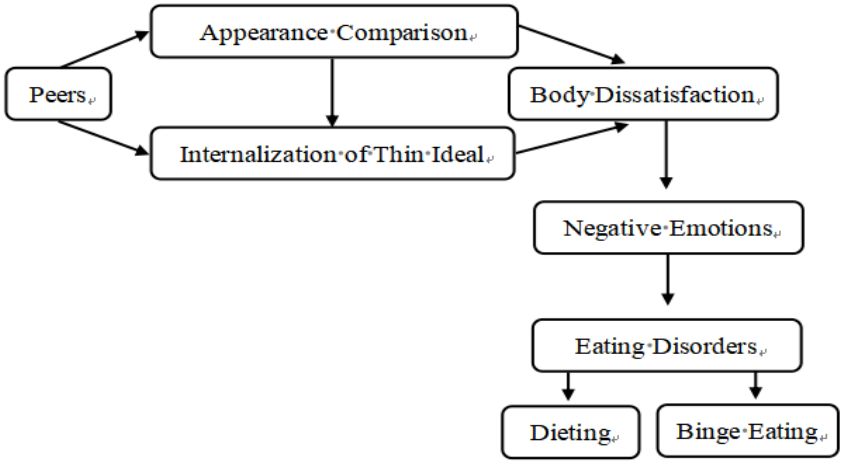

Figure 1 Indirect Influence of Peers on Adolescent Eating disorders

In most female peer groups, there is often a pervasive culture of discussing weight- related topics and emphasizing thinness. Studies have shown that peer comments on appearance and encouragement to lose weight can lead to eating disorders in adolescent girls. Additionally, peers' own eating disorders behaviors significantly impact individuals' body dissatisfaction and the development of eating disorders.

4. Differences in living environment are important factors affecting eating disorders tendencies.Empirical studies reveal significant city-rural disparities in eating disorders distribution. Nationwide epidemiological data demonstrates a clear prevalence gradient for anorexia nervosa: city residents (1.8%) > county towns (1.2%) > rural populations (0.6%) (Preti et al., 2007). These findings align with Ren Zhiying's (2023) research showing city female college students engage more frequently in weight- related discussions, indicating geographical influences on body image perception. Notably, developmental environment differences lead to behavioral divergence: rural adolescents generally exhibit greater autonomy, whereas some city

counterparts develop passive resistance tendencies through overprotective upbringing, often adopting pathological dieting as a means to assert independence (Wang et al., 2018).

Individual Factors

1. Biological Factors Biological factors play an important role in the development of eating disorders. The nervous system, endocrine system, and immune system are all significantly involved in eating disorders. These systems are interconnected, with complex feedback mechanisms that form a complete and orderly eating system. Genetic variations, neurotransmitter abnormalities, and hypothalamic dysfunction are all biological factors that may be associated with the occurrence of eating disorders. For instance, studies have found associations between anorexia nervosa and bulimia nervosa and specific genetic variations. Additionally, biological research focuses on physiological changes in eating disorders, such as metabolic rate, hormone levels, and nervous system functions.

2. Cognitive Factors In the university student population, the "paper-thin" body is widely admired and pursued. Many slim girls still consider themselves "too fat." One faculty reason is that they are at a critical stage facing employment, mate selection, and social interactions. The pressures of employment and mate selection lead them to an even greater blind worship and pursuit of thinness compared to other age groups. They place significant importance on external comments, especially regarding appearance and body shape, as they seek recognition and approval from others. Therefore, becoming thin and beautiful becomes a way to gain external validation. However, due to social instability, many university students adopt rapid weight loss

methods that are popular among them, such as losing 10 pounds in 10 days or 30 pounds in a month. These unscientific weight loss methods are a source of eating disorders.

3. Emotional Factors. Most patients with eating disorders exhibit negative emotional traits. Mood significantly affects appetite; for example, levels of depression, anxiety, and irritability are much higher in these patients than in normal individuals. In anorexia nervosa, emotional instability and low mood are common, leading to loss of appetite and disinterest in food during unhappy times. Conversely, some individuals may binge eat, especially high-fat, high-sugar, and stimulating foods, during periods of low mood. In extreme cases, some may resort to self-induced vomiting or laxative use to relieve the regret of eating, causing irreversible harm to the body over time. Research has shown that negative emotions like depression and anxiety are strongly related to disordersed Eating disorders and promote the formation of eating disorders.

4. Perfectionism High school and university students, who generally have a higher level of cultural literacy, are more susceptible to the social trend of "slimming." Studies have shown that individuals with perfectionist tendencies are more likely to develop eating disorders. Franco-Paredes et al. noted that perfectionism scores were significantly higher in eating disorders patients compared to healthy individuals. Social learning theory suggests that childhood perfectionism develops through parental modeling. Thus, personal perfectionism and family influences link eating disorders to perfectionist parenting styles. Moreover, literature indicates that university students, as representatives of the young population, place greater emphasis on beauty and body weight than the general population, providing a new perspective on their Eating disorders and related body mass.

5. Physical Activity Levels Appropriate physical exercise can reduce stress and alleviate negative emotions such as anxiety and depression, thereby improving psychological health and reducing the risk of eating disorders. Thomas et al. (2011) found that exercise can lead to positive body self-evaluation, and Zhang (2020) research confirmed that psychological self-perception is positively correlated with exercise. Individuals who actively participate in physical activities have more positive self-assessments and evaluations than non-exercisers. This positive evaluation can effectively reduce the occurrence of eating disorders. Therefore, it is essential to emphasize physical exercise in adolescents' daily lives, focusing more on individuals with low exercise levels to help them improve their activity levels and reduce the occurrence of eating disorders.

6. Body Shape and Weight Obesity and weight fluctuations also affect eating disorders (Ren, 1997) . An imbalanced waist-to-hip ratio (WHR), characterized by substantially larger waist circumference than hip measurements, directly indicates abdominal fat accumulation, while sex hormones play a regulatory role in fat distribution patterns. Individuals with eating disorders frequently exhibit cognitive distortions regarding their WHR, typically manifested as overestimated waistline perception - such body image misperception exacerbates clinical conditions (Sasse et al., 2024). Severe childhood obesity can predict the occurrence of bulimia nervosa and binge eating disorders in adulthood, while excess fat and overweight status in adolescence are associated with increased disordered eating behaviors. A prospective cohort study of Snyder and Spreitzer (1990) found that participants who lost weight had a seven-fold increased risk of developing partial or full syndrome bulimia nervosa compared to those who maintained a stable weight. Although the psychological and

physiological mechanisms behind this relationship are unclear, significant weight changes may disrupt the body's balance and lead to hedonistic eating.

7. Evidence demonstrates an inverse correlation between students' nutritional literacy and eating disorders incidence. Those with comprehensive nutritional knowledge (scoring ≥85th percentile) show 33-47% lower risk, whereas nutritionally-deficient groups exhibit 1.7-2.1-fold higher susceptibility (Alkahtani et al., 2020). Mastering scientific dietary principles prevents 39-45% of extreme eating behaviors, though pathological focus on nutritional details may induce 2.1-2.5-fold compulsive eating tendencies (Dunn & Bratman, 2016). Individuals adopting a "nutrition-for-health" perspective (versus "weight-control" orientation) demonstrate 57-63% risk reduction (L. T. T. et al., 2014), enabling better recognition of balanced diet importance and avoidance of selective or emotional binge eating.

8. Research reveals a significant association between nutritional attitudes and eating disorders prevalence: Students with scientific dietary perspectives show 40-60% lower risk, whereas those with weight-control-obsessed attitudes exhibit 1.8-2.5-fold higher susceptibility (Hu, 2015; Alkahtani et al., 2020). Notably, ethically-motivated vegetarians demonstrate a tenfold lower prevalence (0.6%) compared to the general population (6.5%), confirming the predominant role of attitudinal motivation over dietary patterns.

Measurement of Eating disorders

This study employs the sixth edition of the Eating disorders Examination Questionnaire (EDE-Q6.0), developed by Fairburn and Beglin in 1994. EDE-Q6.0 is a self-report version of the semi-structured interview EDE, used for assessing eating disorders and conducting epidemiological surveys. The EDE-Q consists of 28 items, divided into four subscales, evaluating the frequency of specific behaviors and feelings over the past 28 days. Each item is rated on a seven-point scale, with 0 indicating no symptoms and 6 indicating severe symptoms. The scores of the four subscales are summed and averaged to provide a total score representing the severity of eating disorders symptoms. The EDE-Q is widely used internationally for assessing the psychopathological features of eating disorders. Initially designed for diagnostic evaluation of eating disorders, it is now increasingly used in both clinical and research settings in Western and non-Western countries. It demonstrates excellent psychometric properties as both a screening tool and a measure of symptom severity (Grilo et al., 2010).

Measure to Improve Eating disorders

1. Change Self-Perception and Develop Healthy Aesthetics. Adolescents undergo significant changes in physical, psychological, emotional, and social aspects as they move towards independence. Currently, the social environment for contemporary university students has a narrow and singular definition of beauty (Chen & Jackson, 2008) . Most individuals with eating disorders be obsessed with thinness and an excessive perfectionism tendency. Thus, correcting their abnormal self-

perception is crucial. As abnormal cognitive behaviors are corrected, symptoms of eating disorders will gradually improve.

2. Cultivate Healthy Eating Habits. Healthy eating involves a balanced diet and adequate nutrition to provide sufficient energy and nutrients while reducing the burden on the body. It improves metabolism and maintains a balanced state of mind and body, reflecting the principles of scientific, reasonable, comprehensive, balanced, and moderate eating. In daily life, parents can involve children in grocery shopping and cooking, guiding them to understand the nutritional elements of food, energy sources, the relationship between personal needs and dietary intake, monitoring weight and nutritional health levels, and helping children form a correct and positive perception of food. Parents should learn some nutrition knowledge to develop a reasonable and flexible dietary plan for family members that meets their tastes and nutritional needs. They should lead by example, adhering to the principle of "eat slowly and chew well, do not overeat," avoid binge eating, maintain moderate intake, reduce highly processed foods, avoid excessive dieting, and not use extreme weight loss diets (Chen, 2020) .

3. Develop Healthy Parent-Child Relationships. Parents should first manage their emotions to remain stable and avoid over-worrying or overprotecting their children while ensuring their healthy growth. Secondly, they should improve the quality of parent-child interactions, spending ample time communicating, playing games, and dining together with their children to build trust and cultivate positive thinking. Parents should teach children to express and manage emotions correctly, master normal interpersonal communication skills, and avoid relying on competitive Eating disorders to maintain relationships and self-identity.

4. Build Self-Confidence and Divert Attention. For adolescents with eating disorders, diverting attention can help reduce the impulse to binge or restrict eating. Developing hobbies can shift their excessive focus on body shape. Engaging in activities such as calligraphy, painting, listening to music, and communicating with others can help build sufficient confidence and patience to improve eating disorders symptoms over time.

5. Relieve Stress with Appropriate Exercise. Moderate exercise can reduce stress, alleviate negative emotions such as anxiety and depression, improve psychological health, and lower the risk of eating disorders. When the mind relaxes, energy consumption and metabolism increase, preventing excessive fat accumulation and maintaining a healthy body shape.

Related Research

On eating disorders is relatively mature with a solid theoretical foundation. Eating disorders are listed as an independent disease category in the fourth edition of the Diagnostic and Statistical Manual of Mental disorders (DSM-IV). Wang, Chao et al. (2020) included 77 articles covering 35 countries and regions and a total of 140,846 subjects through a search of electronic databases including China Knowledge, China Biomedical Literature Database, Wanfang Database, EMBASE and PubMed. The combined detection rate of eating disorders was 20.47%. The combined detection rate of eating disorders was 21.65% in adolescents and 19.83% in adults. The lower the age, the higher the detection rate. Compared with developed countries, the detection rate of eating disorders was significantly lower in developing countries ($P<0.05$). The results

suggest that eating disorders are prevalent among females in all countries and regions and that adolescents show a higher risk of developing eating disorders, with a higher risk of developing eating disorders in developed countries compared to developing countries. It is important to develop public health strategies and measures to prevent eating disorders and promote health among women, especially adolescents (Wang et al., 2020) .

Zhao (2019) used questionnaire and experimental methods to screen a total of 349 female undergraduate (discipline-specialized) students at Beijing Sport University for eating disorders, and 92 were screened for eating disorders tendencies. The 12-week yoga intervention experiment showed that yoga practice could help female undergraduates to significantly reduce eating disorders symptoms related to slimming tendency, and there were significant differences in actual body weight, BMI, and menstruation, which indicated that yoga exercise promoted physiological health of female undergraduates with eating disorders tendency, and improved the state of body composition and menstrual function. It was further shown that yoga intervention improved eating disorders.

Li et al. (2020) explored the relationship between eating disorders status and self-control in secondary school students by measuring eating disorders tendency with the Eating Attitude Questionnaire (EAT-26) on 1231 secondary school students (11-18 years old) in four secondary schools selected from Rizhao, Shandong Province. The results showed that 16.5% of the subjects reported anorexia nervosa or bulimia nervosa, including 11.2% of boys and 21.3% of girls; 8.6% of the subjects were likely to suffer from eating disorders, with 5.45% of boys and 11.49% of girls likely to suffer from eating disorders, which means that the prevalence of eating disorders among girls was

higher than that among boys, and suggests that girls' attitudes toward eating are more prone to deviation and that eating disorders are more likely to occur. This also suggests that girls' eating attitudes are more prone to deviation and are more likely to develop eating disorders. Moreover, the failure of self-control will lead to a large number of negative psychological and problematic behaviors, therefore, it is urgent to strengthen teachers' and parents' observation of secondary school students' eating attitudes and take preventive interventions at an early stage.

Zhang and Cui (2021) conducted a questionnaire survey among 2,712 college students from three undergraduate colleges and universities in Jinan City, Shandong Province, China, to find out the associations between physical activity and depressive symptoms and eating disorders among college students. Among the surveyed college students, 1750 (64.5%) were in the physical activity substandard group and 962 (35.5%) were in the standard group; 488 (18.0%) had depressive symptoms; and 452 (16.7%) had eating disorders. The differences in detection rates of eating disorders among college students by gender, self-rated academic stress, physical activity, and depressive symptoms were statistically significant. The study clarified that there is a relationship between physical activity and depressive symptoms and eating disorders among college students .

Xue et al. (2022) selected 60 eating disorders patients (observation group) and 60 medical check-up healthy personnel (control group) from the Department of Psychosomatic Medicine of the Sixth Hospital of Peking University from November 2019 to November 2020 as research subjects. The study showed that the SCL-90 scores of the observation group were significantly higher than those of the control group ($P < 0.05$), in which the obsessive-compulsive score was the highest, which showed that

patients with eating disorders mainly showed an obsessive-compulsive mentality of fear of obesity, and at the same time, with fluctuations in the condition, they even had certain social dysfunction, while comparing the total SCL-90 score, patients with eating disorders were significantly higher, representing a more serious condition and severe social functioning Impaired. Eating disorders patients are often accompanied by serious psychological conflicts and psychological suppression, and in the long run, under the torment of conflicts and suppression, patients gradually develop serious anxiety, depression and agitation.

Therefore, based on the psychological characteristics of patients with eating disorders, targeted psychological care should be carried out for them. characteristics, carrying out targeted psychological care for them can effectively enhance their degree of compliance with medical care, improve the quality of life, and promote the condition to recover as soon as possible .

Zhang et al. (2022) investigated 575 college students using the Eating disorders Examination Self-Assessment Questionnaire 6.0 and the 9-item Patient Health Questionnaire in order to understand the categorical characteristics of eating disorders symptoms among college students and their relationship with depression and gender, and analysed the data using latent profiling with predictor variables (depression) and categorical outcome variables (gender). The study revealed that the body image concern group comprised 62.4% of the overall population, possibly due to the mass media's focus on. The study showed that: the body image concern group accounted for 62.4% of the total, probably due to the mass media's excessive coverage of "slim" and "slender" body image characteristics, which influenced college students' body image attitudes, and the erroneous body image concepts further increased the

incidence of eating disorders; the body image concern group accounted for 28.0% of the total, probably due to the fact that college students had not yet formed complete self-knowledge and had not established a healthy self-esteem. self-knowledge, not establishing a healthy concept of body image, and excessively pursuing an ideal body image, thus creating serious problems. Ideal body image, thus creating serious body image concerns; Eating disorders risk group accounted for 9.6% of the total, the problems of this group of college students are no longer only concerns about body image, but also concerns about eating behaviour, these symptoms seriously affect the physical and mental health of individuals during college, which is not conducive to the development of health, and there is a greater risk of developing into an eating disorders.

Wang et al. (2020) conducted a questionnaire survey of 579 female college students from five classes in two teacher training colleges in Chongqing, using the Body Mass Index (BMI) scale to quantify female college students' perceptions of their own body image and expectations and to examine the predictive effect of body image bias on dieting. The study found that 41.62% of female college students' subjective body size perception deviated from their actual body size, and 81.69% of female college students' body size expectation deviated after quantification. It illustrated that the degree of cognitive bias of body shape expectation was negatively correlated with eating behavior and positively correlated with dieting tendency, and that dieting tendency was positively correlated with BMI. Female college students generally have a biased perception of body image, mainly because they expect themselves to be "good-looking" and "good-looking".The main reason for this bias is the expectation of being "thinner", which has a certain impact on female college students' dietary behaviors, such as more negative dietary behaviors and a tendency to diet, etc.

Li et al. (2022) investigated the sleep quality of college students and analyzed the correlation between sleep quality and eating disorders with 3,825 college students enrolled in five traditional Chinese medicine universities in China by class. The findings of the survey study found that poor sleep quality of college students in Chinese medicine universities in China may be significantly associated with their eating disorders, and the results of multifactorial logistic regression analysis showed that dissatisfaction with one's own body shape and inability to concentrate on doing things due to excessive concern about body shape and diet, as well as loss of control of eating during meals can increase the detection rate of sleep disorders, which may be attributed to the lack of self-confidence about one's own body shape, which creates a sense of Social anxiety and low self-esteem, thus focusing excessively on diet, and long-term low-fat, low-volume diet, further exacerbating one's craving for high-fat food, resulting in eating out-of-control behavior at mealtime, constituting a vicious circle, exacerbating one's unhealthy psychology, and leading to sleep disorders.

Zhang et al. (2023) investigated and analyzed the current situation of college students' poor dietary behaviors and their influencing factors in Songjiang District, Shanghai, China. 76.24% of college students in Songjiang District, Shanghai, had poor dietary behaviors, which were mainly manifested in the form of unhealthy weight loss behaviors (48.44%), often skipping breakfast (40.31%), not drinking milk/yogurt /soymilk (15.86%), often drinking sugary drinks (9.31%), often eating sweets (6.38%), and often eating fried food (5.17%). Multifactorial regression analysis showed that female, high BMI, and high monthly cost of living were risk factors for poor dietary behavior among college students [54]. Long-term poor Eating disorders of college students may lead to eating disorders or eating disorders, so it is necessary to pay

attention to the nutrition education of college students and take targeted improvement measures.

Tang et al. (2023) used a combination of random and stratified sampling to select students from five colleges and universities in Chengdu as the study population to investigate whether there were differences in the relationship between BMI and eating disorders among college students of different ethnicities. The results of the study found that ethnicity affects the relationship between BMI and eating disorders, and when BMI increases, ethnic minorities are more likely to develop eating disorders than Han Chinese. Therefore, when we focus on eating disorders in the Chinese obese population, we should consider the differences between different ethnic groups, each ethnic group has different dietary cultures and aesthetics, and we need to intervene in obesity according to local conditions.

Li et al. (2024) used a questionnaire to investigate the weight- and size-related critical remarks from parents and the level of eating disorders symptoms in 630 secondary school students (363 girls and 267 boys), and the results showed that weight- and size-related critical remarks from parents were significantly associated with eating disorders symptoms in both boys and girls. Controlling for subjects' BMI, critical remarks from mothers significantly predicted eating disorders symptoms in both boys and girls, whereas critical remarks from fathers significantly predicted eating disorders symptoms in boys only. Parents' critical remarks about their children's weight and body shape may contribute to the development of self-objectification, which may lead to the internalization of society's demands for an "ideal body," resulting in body dissatisfaction and body image anxiety. In order to alleviate anxiety, children often take action to control

their weight, and the “ideal body” is often unattainable, and further eating disorders are likely to develop.

Fu et al. (2024) conducted a questionnaire survey on 420 college students from April 2021 to April 2024, divided into female and male groups according to gender, compared the clinical characteristics and the occurrence of eating disorders between the two groups, and analyzed the factors related to eating disorders in male and female college students. The study showed that the incidence of eating disorders among female college students was higher than that of male, depression (faculties depression) was an influential factor for the occurrence of eating disorders among male college students, and BMI (overweight/obesity), depression (moderate depression/severe depression), BAS score, and BSS score were influential factors for the occurrence of eating disorders among female college students.

Conceptual Framework

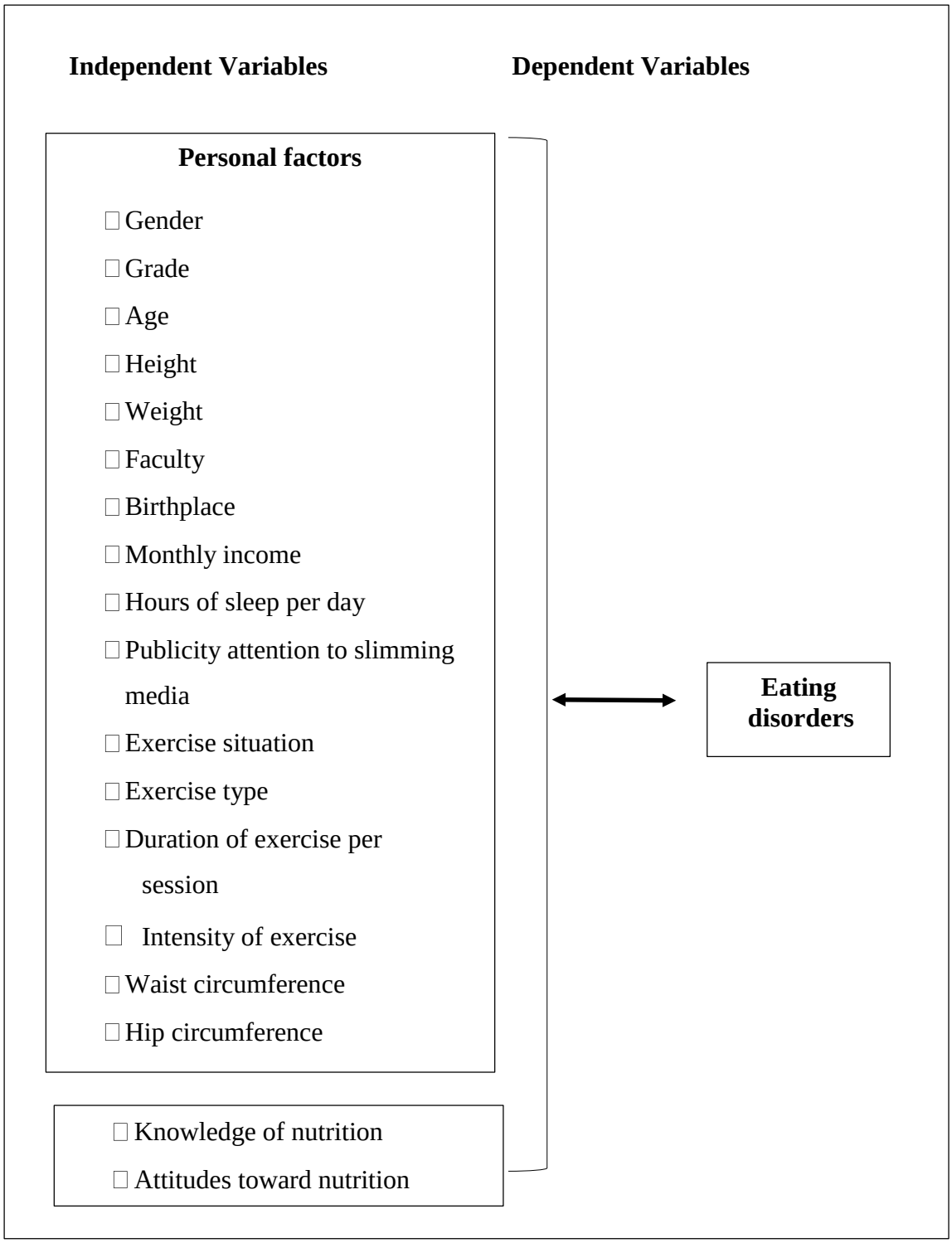

Figure 2 Conceptual Framework

CHAPTER III

RESEARCH METHODOLOGY

This research is a study on Factors Associated with Eating disorders Among Students at Hainan Vocational University of Science and Technology in Yunlong Campus, with the objective to examine the levels of knowledge, attitudes, and eating disorders and to examine the associations between factors and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus. The researcher followed the research process in the following steps:

1. Research Design
2. Population and Sample Size
    2.1 Population
    2.2 Inclusion and Exclusion Criteria
    2.3 Sample size
    2.4 Sampling
3. Study Area
4. Study Period
5. Research Method
    5.1 Literature Review Method
    5.2 Questionnaire Survey Method
    5.3 Mathematical Statistics Method
    5.4 Quality Control
6. Measurement Instruments
7. Data Collection

8. Data Analysis

Research design

This research is a cross-sectional analytical study design conducted among the students at Hainan Vocational University of Science and Technology in Yunlong Campus.

Population and sample size

Population

The population for this study consists of 14,187 students at Hainan Vocational University of Science and Technology in Yunlong Campus. (Data from the official website of Hainan University of Science and Technology).

Inclusion and Exclusion Criteria

To ensure the smooth conduct of this research and to safeguard the physical and mental well-being of the participants, the final research subjects were determined based on inclusion and exclusion criteria as follows:

Inclusion Criteria:

1. Participants were 18 years of age or older and agreed to participate in the questionnaire.
2. Participants are able to complete the questionnaire independently.
3. Participants are mentally alert, free from intellectual disabilities, and possess normal cognitive and behavioral abilities.

Exclusion Criteria:

1. Pregnant students.
2. Students with metabolic disorders.
3. Invalid questionnaires with incomplete answers and regular responses (consecutively repeated options or apparently contradictory answers) were excluded.

Sample size

The following formula for determining the required sample size was developed by the renowned American statistician William Gemmell Cochran, a pioneer in the field of survey sampling methodology (Cochran, W. G., 1953). This formula is widely recognized as the "Finite Population Correction (FPC) Sample Size Calculation Formula," and is applicable when sampling from a population with a known finite size.

$$\mathrm{n} = \frac{N \cdot Z^2 \cdot p \cdot (1-p)}{E^2 \cdot (N-1) + Z^2 \cdot p \cdot (1-p)}$$

Where

- n = sample size
- N = population size (14,187 students)
- Z = Z-score (the number of standard deviations a data point is from the mean, often 1.96 for a 95% confidence level)
- p = estimated proportion of an attribute that is present in the population (if unknown, 0.5 is often used as it provides the maximum sample size)
- E = margin of error (often set at 0.05 for a 5% margin of error)

$$n = \frac{14187 \cdot 1.96^2 \cdot 0.5 \cdot (1 - 0.5)}{0.05^2 \cdot (14187 - 1) + 1.96^2 \cdot 0.5 \cdot (1 - 0.5)}$$

$$n = \frac{14187 \cdot 3.8416 \cdot 0.25}{0.0025 \cdot 141876 + 3.8416 \cdot 0.25}$$

$$n = \frac{14187 \cdot 0.9604}{35.465 + 0.9604}$$

$$n = \frac{13627.3548}{36.4254}$$

$$n \approx 374$$

To calculate the sample size with an additional 10% to account for potential non-responses or other issues, you can use the following method:

First,calculate 10% of the sample size:

10% of 374=0,1×374=37.4

Then,add this 10% to the original sample size；

374+374.4=411.4

The adjusted sample size is approximately 411 students.

To calculate the proportional allocation of students from each college, you need to determine the proportion of the total population each college represents and then apply this proportion to the total sample size. The formula for proportional allocation is:

$$n_i = \frac{N_i}{N} \times \text{n}$$

Where:

- n_i represents the sample size for each educational level.
- n is the total sample size.
- N_i is the population size for each educational level.
- N is the total population size.

Therefore, the probabilities of selecting students in each college are shown in Table 1.

Sampling

Accidental Sampling After Stratification is applied with the following specific steps:

1. Stratification: Students studying at Hainan Vocational University of Science and Technology in Yunlong Campus are divided into five colleges as follows: 1) College of Medicine, 2) College of Nursing, 3) college of urban construction, 4) College of Accounting, 5) College of Education and Music.

2. Accidental Sampling: A accidental sampling method is then used. The link to the questionnaire was forwarded to the college group through the counselors or student leaders of each college, and those who voluntarily filled in the questionnaire were considered as samples., as detailed in Table 1.

Table 1 The table presents the population size of each college and the proportionally allocated sample size for each college.

Faculty	**Number of Students**	
	Total	**Selected**
College of Medicine	3,102	90
College of Nursing	5,955	172
College of Urban Construction	2,365	68
College of Accounting	2,021	59
College of Education and Music	744	22
Total	**14,187**	**411**

Note: Finally, the sample size of this study was determined to be 411 students.

Study area

At Hainan Vocational University of Science and Technology in Yunlong Campus.

Study period

From November 2024 to February 2025, over a duration of three months.

Research method

Literature Review Method

1. Combine the research objectives with a comprehensive review of numerous books, papers, and other literature on eating disorders among university students.

2. Relevant literature was retrieved from databases such as CNKI, Wanfang Thesis Database, and Baidu Scholar using keywords including "university students," "eating disorders," "nutritional knowledge," and "attitudes."

3. Collect and organize relevant literature and questionnaire design resources on eating disorders among university students.

Questionnaire Survey Method

1. Use the Eating disorders Examination Questionnaire (EDE-Q6), a self-report questionnaire consisting of 28 items, to investigate the attitudes and behaviors of adolescents (aged 18 and above) over the past 28 days regarding eating problems (Fairburn, C. G., & Beglin, S. J., 2008). The EDE-Q6 provides data on the frequency of behaviors and their psychopathological characteristics. It includes four scales: Restraint, Eating Concern, Shape Concern, and Weight Concern, assessing core psychopathological features of eating disorders.

2. Review and design questions about personal information, nutritional knowledge, nutritional attitudes, and stress.

2.1 Personal information including gender, age, birthplace, grade, faculty, height, weight, waist, hips, monthly income, publicity attention to slimming media, as well as hours of sleep per day, exercise situation, duration of exercise per session and intensity of exercise.

2.2 The stress questionnaire included concerns about one's size and weight, relationships with parents, teachers, and classmates, and stressful situations in academics.

2.3 The nutritional questionnaire included college students' knowledge and attitudes.

Mathematical Statistics Method

1. Pre-process data according to inclusion and exclusion criteria and check for anomalies to ensure data validity and authenticity.

2. Enter valid data into Excel to establish a database and analyze using SPSS 26.0 software (Chinese version).

3. Conduct descriptive statistical analysis and fisher's exact test A p-value of <0.05 is considered statistically significant.

Quality Control

1. Online survey methods are adopted and quality control measures are strictly implemented to ensure the authenticity and integrity of the data.

2. Confirm the validity and reliability of the Chinese version 6.0 of the EDE-Q6.0 through prior studies.

3. Distribute questionnaires to targeted groups without using suggestive or leading language.

4. Use a double-entry method and strict logical checks to filter and exclude invalid questionnaires.

Measurement instruments

Explain the questionnaire you will use, including its various sections. For example:

Section 1: Personal Information; This section will gather demographic data such as gender, grade, age, height, weight, faculty, waist circumference, hip circumference, birthplace, monthly income, hours of sleep per day, publicity attention to slimming media, exercise situation, exercise type,duration of exercise per session, intensity of exercise and options include filling in information or placing a checkmark.

Section 2: Stress Level; stress is the confusion or threat posed to a person psychologically by various stimulating events and unfavourable factors in life Manifested as psychosomatic tension and discomfort. The scale used this time is Chinese Perceived Stress Scales (CPSS), Perceived Stress Scale (PSS) was compiled by American scholars Cohen et al. and Chineseised by Yang Tingzhong et al. in 2003 (Yang & Huang, 2003). The scale consists of 14 items with 6 positive and 8 negative questions, where the reverse scoring questions are 4, 5, 6, 7, 9, 10, 12, and 13.The scale is divided into two dimensions, i.e., tension and loss of control."0"means never felt the stress; "1"means Occasionally feel the stress;"2"means Feeling stressed sometimes;"3"means often feeling stressed;"4"means always feeling stressed.

1. Calculation of scores: The scale is scored on a 5-point scale, and the total score of the scale is counted at the end, the higher the score, the more obvious the psychological stress of the subjects. The scores were calculated as follows: "Never" 1 point, "Occasionally" 2 points, "Sometimes" 3 points, "Often" 4 points, "Always" 5 points, and the final total score ranges from 14 to 70

2. The resulting scores are categorized into the following four levels.

Table 2 Stress Level Rating Scale

Score	Level	Results Analysis
14-28	Low	Current stress levels are at a low level, and there is enough control and mastery over one's life to not feel upset and panicked by something unanticipated happening.
29-42	Moderate	Perceived stress is moderate, with occasional periods of too much stress, but with the ability to enjoy it and return to a calm state quickly, so the stress you face is not a threat to your health.
43-56	Higher	Perceived higher stress, currently experiencing higher stress, it may have negatively impacted your physical and mental health and require you to take steps to regulate it.
57-70	Very high	Perceived stress is very high, you are overstressed, and your body may be experiencing symptoms that urgently need to be reduced, and professional help can be sought.

Note: According to the Chinese Perceived Stress Scale (CPSS), which was sinicized by Yang Tingzhong et al, stress scores are divided into four levels: 14-28 as low level, 29-42 as medium level, 43-56 as high level, and 57-70 as very high level (Yang & Huang, 2003).

Section 3: Knowledge of Nutrition, Attitudes Toward Nutrition and Eating Disorders).

1. Knowledge of Nutrition; There is a 10 item self-reported questionnaire, with each subscale item scored from 0 (incorrect) to 1 (correct). The results are divided into 3 levels as follows. The categorization of cognitive levels based on Bloom's Taxonomy into percentages and grouping by knowledge levels can be utilized for evaluating student learning outcomes. This method divides the levels into three categories: low-level knowledge (0-60%), intermediate-level knowledge (61-71%), and high-level knowledge (80% and above) (Bloom et al., 1956; Anderson & Krathwohl, 2001).

Table 3 Nutritional Knowledge Rating Level Scale

Score	Level
0-5	improvement
6-7	moderate
8-10	good

2. Attitudes Toward Nutrition; There is a 10 items self-reported questionnaire and subscales are rated like a Likert method on the 1–4 each:

Table 4 Nutritional Attitude Rating Score

Positive Questions	**Score**	**Negative Questions**	**Score**
Strongly agree	4	Strongly agree	1
Agree	3	Agree	2
Disagree	2	Disagree	3
Strongly disagree	1	Strongly disagree	4
Items: 1-5		**Items: 6-10**	

The results are divided into 3 levels as follows:

To divide the score from 10 to 40 three equal ranges, we use the class interval formula (Freedman et al., 2007):

$$\text{Class Interval} = \frac{\text{Maximum Score} - \text{Minimum Score}}{3}$$

$$\text{Class Interval} = \frac{40-10}{3} = 10$$

Table 5 Nutritional Attitude Rating Level Scale

Score	Level
10.00-19.00	improvement
20.00-29.00	moderate
30.00-40.00	good

Note: Freedman et al. (2007) argued that the common method of dividing the range of data into equal intervals is based on the core logic that interval width = (maximum - minimum) / number of groups (Freedman et al., 2007)

3. Eating:disorders; Eating disorders; Use of the Eating disorders Examination Questionnaire (EDE-Q6) is for young people (18+ years). The questionnaire consists of 28 items, of which 21 are used to assess the core psychopathological features of eating disorders and are divided into 4 subscales: eating restriction, eating concerns, body image concerns and weight concerns, and 7 are self- administered items (overeating) to assist in the diagnosis and assessment of the frequency of eating disorders behaviours. Each of the four subscales is scored on a 7-point scale ranging from 0 (not at all or not at all on any day) to 6 (every day or significantly), with a score of ≥ 4 on key items consistent with a DSM-IV diagnosis representing a clinically significant level of severity (Fairburn, C. G., & Beglin, S. J., 2008).

Each subscale score is the average of the scores for the item to which it belongs and represents the severity of symptoms in that area, and the four subscale scores are summed and averaged to obtain a total scale score that represents the severity of eating

disorders symptoms. Higher subscale and total scale scores indicate greater severity of symptoms.

Table 6 EDE-Q Subscale Item no.1: Restraint Scoring

Question	Subscale Item no.1: Restraint	Score
1	Restraint overeating	
2	Avoidance of eating	
3	Food avoidance	
4	Dietary Rules	
5	Empty stomach	
Subscale Item = (total score ÷ 5)		

Table 7 EDE-Q Subscale Item no.2: Eating Concern

Question	Subscale Item no. 2: Eating Concern	Score
7	Preoccupation with food, eating or calories	
9	Fear of losing control overeating	
19	Eating in secret	
21	Social eating	
20	Guilt about eating	
Subscale Item = (total score ÷ 5)		

Table 8 EDE-Q Subscale Item no.3: Shape Concern

Question	Subscale Item no. 3: Shape Concern	Score
6	Flat stomach	
8	Preoccupation with shape or weight	
10	Fear of weight gain	
11	Feelings of fatness	
23	Importance of shape	
26	Dissatisfaction with shape	
27	Discomfort seeing body	
28	Avoidance of exposure	
Subscale Item = (total score ÷ 8)		

Table 9 EDE-Q Subscale Item no.3: Weight Concern

Question	Subscale Item no. 4: Weight Concern	Score
8	Preoccupation with shape or weight	
12	Desire to lose weight	
22	Importance of weight	
24	Reaction to prescribed weighing	
25	Dissatisfaction with weight	
Subscale Item = (total score ÷ 5)		

Table 10 EDEQ Global Scoring

Question	Subscale Description	Score
1	Restraint	
2	Eating Concern	
3	Shape Concern	
4	Weight Concern	
Global total = (subscales total ÷ 4)		

The Global Score is calculated as the average of the four subscale scores from the Eating disorders Examination Questionnaire (EDE-Q 6.0), as follows:

Global Score = (Restraint Average Score + Eating Concern Average Score + Shape Concern Average Score + Weight Concern Average Score) ÷ 4

For example, if a respondent has the following average scores for each subscale:

- Restraint: 3.2
- Eating Concern: 2.5
- Shape Concern: 4.0
- Weight Concern: 3.8

The Global Score would be calculated as:

Global Score = (3.2 + 2.5 + 4.0 + 3.8) ÷ 4 = 13.5 ÷ 4 = 3.375

Therefore, the Global Score for this respondent would be 3.375

The interpretation of the Global Score can be done according to the following general criteria: (Fairburn, C. G., & Beglin, S. J., 2008) and (Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C., 2004) (Fairburn & Beglin, 2008; Mond et al., 2004) .

Table 11 Eating Disorders Rating Scale

Score	Interpretation Criteria
0 - 1.49	A score within this range indicates that the respondent shows few or no symptoms related to eating disorders. It suggests that there is no significant risk of developing an eating disorder.
1.5 - 2.49	A score within this range indicates mild to moderate symptoms related to eating disorders. The respondent may exhibit some behaviors or thoughts related to eating disorders but may not yet require immediate clinical intervention.
2.5 - 3.99	A score within this range indicates moderate to high symptoms related to eating disorders. The respondent is likely at risk of having an eating disorders and should be further evaluated by a clinical professional.
4.0 and above	A score within this range indicates severe symptoms, which may correspond to a significant eating disorder. The respondent should be considered for urgent clinical intervention or treatment.

Note: The interpretation of scores should be done alongside other clinical evaluations, such as clinical interviews and psychological assessments The thresholds for interpretation may vary depending on the population studied and the purpose of the assessment.

Data collection

In this research, the researcher will follow these steps to collect data:

1. Request a letter of certification from I- SEM, Chiang Rai Rajabhat University, to authorize the data collection process.

2. Coordinate with the relevant areas to conduct the data collection using the questionnaire.

3. Collect data using the questionnaire by coordinating with the heads of departments to schedule dates for data collection from the sample groups of each college. Randomly approaching students from various colleges between classes or activities (e.g., going into classrooms in different colleges and surveying the students present or stopping students at the cafeteria entrance at noon and asking them about their college affiliation) to supplement the sample of underrepresented colleges as needed. The link to the questionnaire can also be forwarded to the college groups through the counselors or student leaders of each college.

4. The questionnaire used in the study has been tested for validity by three experts, with an index of item consistency (IOC) ≥ 0.6, and a reliability coefficient of 0.82 was measured through a pre-survey of 30 students from Beibu Gulf University in Guangxi Province, a pre- tested sample that was homogeneous with the target population of the study.

5. Collect data from the target sample group of the research, which consists of 411 individuals.

6. Verify the accuracy and completeness of the data obtained from the questionnaires.

7. Compile the data and conduct statistical analysis.

Data analysis

1. To examine the demographic characteristics, as well as the levels of knowledge, attitudes, and eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus, descriptive statistics were used, including mean, standard deviation, frequency, and percentage.

2. To examine the associations between personal factors and eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus, inferential statistics were applied, including the Fisher's exact test.

CHAPTER IV

RESULTS

This research is a study on factors associated with eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus, with the objective to examine the levels of knowledge, attitudes, and eating disorders and to examine the associations between factors and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus. The researcher followed the research process in the following steps:

1. Sections I: Personal information.

2. Sections II: Analysis of nutrition knowledge, attitude towards nutrition and eating disorders level for students from Hainan Vocational University of Science and Technology in Yunlong Campus.

3. Sections III: An analysis of associations between factors and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus.

Sections I: Personal information.

Table 12 Number and percentage of respondents classified by gender (n=411).

Gender	Numbers	Percentage
Female	304	73.97
Male	107	26.03
Total	**411**	**100.00**

From Table 12, it was found that the majority of respondents, categorized by gender, were female, totaling 304 individuals (73.97%), while male respondents accounted for 107 individuals (26.03%).

Table 13 Number and percentage of respondents classified by grade (n=411).

Grade	Numbers	Percentage
First-year	147	35.77
Second-year	182	44.28
Third-year	37	9.00
Fourth-year	45	10.95
Total	**411**	**100.00**

From Table 13, it was found that the majority of respondents, categorized by grade, were second-years, totaling 182 individuals (44.28%). This was followed by first-year, with 147 individuals (35.77%). The lowest proportion was fourth-year, with only 37 individuals (9.00%).

Table 14 Number and percentage of respondents classified by age (n=411)

Age	Numbers	Percentage
19 years old	156	37.96
20 years old	173	42.09
21 years old	46	11.19
22years old	35	8.52
24years old	1	0.24
Total	**411**	**100.00**

Note: Mean=19.91, S.D.=0.93, Min=19, Max=24

From Table 14, it was found that the majority of respondents, categorized by age level, were 20 years old, totaling 173 individuals (42.09%). This was followed by 19 years old, with 156 individuals (37.96%). The lowest proportion was 24 years old, with only 1 individual (0.24%).

Table 15 Number and percentage of respondents by gender classified by body mass index (BMI) (n=411)

BMI (kg/m²)	**Numbers**	**Percentage**
Underweight (<18.5 kg/m²)	38	9.25
Normal (18.5 – 23.9 kg/m²)	210	51.09
Overweight (24.0 – 27.9 kg/m²)	109	26.52
Obesity (≥ 28.0 kg/m²)	54	13.14
Total	**411**	**100.00**

Note: The assessment criteria based on BMI were referenced from the BMI standards of World Health Organization (WHO, 2000).

From Table 15, it was found that the majority of respondents, categorized by body mass index, were normal, totaling 210 individuals (51.09%). This was followed by overweight, with 109 individuals (26.52%). The lowest proportion was underweight, with only 38 individuals (9.25%).

Table 16 Number and percentage of respondents by gender classified by waist circumference (n=411).

Waist circumference (cm)	Numbers	Percentage
Normal Range	251	61.07
At-Risk Threshold	160	38.93
Total	**411**	**100.00**

Note: Male (Normal≤ 85; At-Risk >85 cm) and Female (Normal≤ 80; At-Risk> 80 cm) (WHO, 2011).

From Table 16, it was found that the majority of respondents, categorized by waist circumference, were normal range, totaling 251 individuals (61.07%), while at-risk threshold respondents accounted for 160 individuals (38.93%).

Table 17 Number and percentage of respondents by gender classified by waist-to-hip ratio (n=411).

Waist-to-hip ratio	Numbers	Percentage
Normal Range	277	67.39
At-Risk Threshold	134	32.61
Total	**411**	**100.00**

Note: Male (Normal≤ 0.90; At-Risk >0.90) and Female (Normal≤ 0.85; At-Risk> 0.85) (WHO, 2011).

From Table 17, it was found that the majority of respondents, categorized by waist-to-hip ratio, were normal range, totaling 277 individuals (67.39%), while at-risk threshold respondents accounted for 134 individuals (36.21%).

Table 18 Number and percentage of respondents classified by faculty (n=411).

Faculty	Numbers	Percentage
College of Medicine	90	21.90
College of Nursing	172	41.85
College of city Construction	68	16.55
College of Accounting	59	14.35
College of Education and Music	22	5.35
Total	**411**	**100.00**

From Table 18, it was found that the majority of respondents, categorized by faculty, were from the college of nursing, totaling 172 individuals (41.85%). This was followed by the college of medicine, with 90 individuals (21.90%). The lowest proportion was from the college of education and music, with only 22 individuals (5.35%).

Table 19 Number and percentage of respondents classified by birthplace (n=411).

Birthplace	Numbers	Percentage
City	176	42.82
suburban	157	38.20
Rural	78	18.98
Total	**411**	**100.00**

From Table 19, it was found that the majority of respondents, categorized by birthplace, were from city areas, totaling 176 individuals (42.82%). This was followed by those from suburban areas, with 157 individuals (38.20%). The lowest proportion was from rural areas, with only 78 individuals (18.98%).

Table 20 Number and percentage of respondents classified by monthly income (n=411).

Monthly income (yuan)	Numbers	Percentage
＜500 yuan	112	27.25
500-800 yuan	156	37.96
800-1000 yuan	86	20.92
≥1000 yuan	57	13.87
Total	**411**	**100.00**

From Table 20, it was found that the majority of respondents, categorized by monthly income, fell within the income range of 500-800 yuan, totaling 156 individuals (37.96%). This was followed by those earning less than 500 yuan, with 112 individuals (27.25%). The lowest proportion was among those with a monthly income of 1,000 yuan or more, totaling 57 individuals (13.87%).

Table 21 Number and percentage of respondents classified by hours of sleep per day (n=411).

Hours of sleep per day	Numbers	Percentage
＜6 hrs.	86	20.92
6-7 hrs.	123	29.93
8-9 hrs.	121	29.44
≥10 hrs.	81	19.71
Total	**411**	**100.00**

From Table 21, it was found that the majority of respondents, categorized by hours of sleep per day, fell within the 6-7 hours range, totaling 123 individuals (29.93%). This was followed by those in the 8-9 hours range, with 121 individuals (29.44%). The lowest proportion was among those who slept 10 hours or more, totaling 81 individuals (19.71%).

Table 22 Number and percentage of respondents classified by publicity attention to slimming media (n=411).

Publicity Attention to Slimming Media	Numbers	Percentage
Deep concern	49	11.92
General concern	144	35.04
Little attention	93	22.63
Never mind	125	30.41
Total	**411**	**100.00**

From Table 22, it was found that the majority of respondents, categorized by publicity attention to Slimming Media, general concern, totaling 144 individuals (35.04%). This was followed by deep concern, with 125 individuals (30.41%). The lowest proportion was deep concern, with only 49 individuals (11.92%).

Table 23 Number and percentage of respondents classified by exercise situation (n=411).

Exercise Situation	Numbers	Percentage
Once in a while	93	22.63
1-2 times a week	114	27.74
3 times a week and more	204	49.63
Total	**411**	**100.00**

From Table 23, it was found that the majority of respondents, categorized by exercise situation, 3 times a week and more, totaling 204 individuals (49.63%). This was followed by 1-2 times a week, with 114 individuals (27.74%). The lowest proportion was once in a while, with only 93 individuals (22.63%).

Table 24 Number and percentage of respondents classified by exercise type (n=411).

Exercise Type	Numbers	Percentage
Running	74	18.01
Yoga	79	19.22
Walking	258	62.77
Total	**411**	**100.00**

From Table 24, it was found that the majority of respondents, categorized by exercise type, walking, totaling 258 individuals (62.77%). This was followed by yoga, with 79 individuals (19.22%). The lowest proportion was running, with only 74 individuals (18.01%).

Table 25 Number and percentage of respondents classified by duration of exercise per session (n=411).

Duration of exercise per session	Numbers	Percentage
<30 minutes	115	27.98
30 minutes -1hrs	135	32.85
1-2 hrs.	90	21.90
＞2 hrs.	71	17.27
Total	**411**	**100.00**

From Table 25, it was found that the majority of respondents, categorized by duration of exercise per session, 30minutes - 1hrs, totaling 135 individuals (32.85%). This was followed by <30 minutes, with 115 individuals (27.98%). The lowest proportion was ＞2 hrs., with only 71 individuals (17.27%).

Table 26 Number and percentage of respondents classified by intensity of exercise (n=411).

Intensity of Exercise	Numbers	Percentage
Not tired at all，normal heart rate	59	14.40
Not tired，slightly increased heart rate	101	24.57
Slightly tired，faster heart rate	80	19.45

Table 26 (Continued)

Intensity of Exercise	Numbers	Percentage
Quite tired，faster heart rate	67	16.30
Very tired but not breathless，sweating	58	14.10
Extremely tired，breathless，sweating	46	11.18
Total	**411**	**100.00**

From Table 26, it was found that the majority of respondents, categorized by intensity of exercise, not tired, slightly increased heart rate, totaling 101 individuals (24.57%). This was followed by slightly tired, faster heart rate, with 80 individuals (19.45%). The lowest proportion was extremely tired, breathless, sweating, with only 46 individuals (11.18%).

Table 27 Number and percentage of respondents classified by stress level (n=411).

Stress level	Numbers	Percentage
Low level (14-28 score)	74	18.00
Medium level (29-42 score)	239	58.15
High level (43-56 score)	82	19.95
Very high level (57-70 score)	16	3.90
Total	**411**	**100.00**

Note: The assessment criteria based on stress level were referenced from the Chinese Perceived Stress Scales (CPSS) (Yang & Huang, 2022).

From Table 27, it was found that the majority of respondents, categorized by stress level, medium level (29-42 score), totaling 239 individuals (58.15%). This was followed by high level (43-56 score), with 82 individuals (19.95%). The lowest proportion was very high level (57-70 score), with only 16 individuals (3.90%).

Sections II: An Analysis the level of knowledge, attitudes, and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus.

Table 28 Number and percentage of respondents classified by nutritional knowledge (n=411).

Nutritional Knowledge	Numbers	Percentage
Improvement (0-5 score)	68	16.55
Moderate (6-7 score)	209	50.85
Good (8-10 score)	134	32.60
Total	**411**	**100.00**

From Table 28, it was found that the majority of respondents, categorized by nutritional knowledge, moderate (6-7 score), totaling 209 individuals (50.85%). This was followed by good (8-10 score), with 134 individuals (32.60%). The lowest proportion was improvement (0-5 score), with only 68 individuals (16.55%).

Table 29 Number and percentage of respondents classified by attitudes towards nutrition (n=411).

Attitudes towards nutrition	Numbers	Percentage
Improvement (10-19 score)	48	11.68
Moderate (20-29 score)	224	54.50
Good (30-40 score)	139	33.82
Total	**411**	**100.00**

From Table 29, it was found that the majority of respondents, categorized by attitudes towards nutrition, low level e (20-29 score) totaling 224 individuals (54.50%). This was followed by good (30-39score)， with 139 individuals (33.82%). The lowest proportion was improvement (10-19 score), with only 48 individuals (11.68%).

Table 30 Number and percentage of respondents classified by eating disorders (n=411).

Eating disorders Level	Numbers	Percentage
Few or no symptoms (0-1.49 score)	253	61.56
Moderate symptoms (1.5-2.49 score)	124	30.17
High symptoms (2.5-3.99 score)	30	7.30
Severe symptoms (≥4 score)	4	0.97
Total	**411**	**100.00**

Note: A score of ≥4 on key items consistent with a DSM-IV diagnosis representing a clinically significant level of severity.

From Table 30, it was found that the majority of respondents, categorized by eating disorders, Few or no symptoms (0-1.49 score), totaling 253 individuals (61.56%). This was followed by Moderate symptoms (1.5-2.49 score), with 124 individuals (30.17%). The lowest proportion was severe symptoms (≥4 score), with only 4 individuals (0.97%).

Sections III: Analysis of nutrition knowledge, attitude towards nutrition and eating disorders level for students at Hainan Vocational University of Science and Technology in Yunlong Campus.

Eating disorder scale scores were categorized into four levels (Fairburn, C. G., & Beglin, S. J., 2008): few or no symptoms (0-1.49 score), moderate symptoms (1.5-2.49 score), high symptoms (2.5-3.99 score), and severe symptoms (≥4 score), and the The four levels were categorized into two groups, normal level (few or no symptoms) and abnormal level (moderate, high, severe symptoms), as detailed in Table 31.

Table 31 Relationship between personal factoers, level of knowledge, attitudes and eating disorders (n=411).

Factors	Groups	Eating disorders Level		Exact Test
		Normal	Abnormal	
Gender	Female	213（70.07%）	91（29.93%）	＜0.001*
	Male	40（37.38%）	67（62.62%）	

Table 31 (Continued)

Factors	Groups	Eating disorders Level		Exact Test
		Normal	Abnormal	
Grade	First-year	95（64.63%）	52（35.37）	0.072
	Second-year	118（64.84%）	64（35.16%）	
	Third-year	18（48.65%）	19（51.35%）	
	Fourth-year	22（48.89%）	23（51.11%）	
Age	19 years old	102（65.38%）	54（34.62%）	0.068
	20 years old	111（64.16%）	62（35.84%）	
	21 years old	22（47.83%）	24（52.17%）	
	22 years old	18（51.43%）	17（48.57%）	
	24 years old	0（0%）	1（100%）	
BMI (kg/m²)	Underweight (<18.5 kg/m²)	17（44.74%）	21（55.26%）	＜0.001*
	Normal (18.5–23.9 kg/m²)	120（57.14%）	90（42.86%）	
	Overweight (24.0–27.9 kg/m²)	68（62.39%）	41（37.61%）	

Table 31 (Continued)

Factors	Groups	Eating disorders Level		Exact Test
		Normal	Abnormal	
	Obesity (≥ 28.0 kg/m²)	48（88.89%）	6（11.11%）	
Waist-to-hip ratio	Normal	152（58.24%）	109（41.76%）	0.043*
	Abnormal	101（67.33%）	49（32.67%）	
Faculty	College of Medicine	62（68.89）	28（31.11）	0.058
	College of Nursing	105（61.05%）	67（38.95%）	
	College of Urban Construction	33（48.53%）	35（51.47%）	
	College of Accounting	36（61.06%）	23（38.98）	
	College of Education and Music	17（77.27%）	5（22.73%）	
Birthplace	City	89（50.57%）	87（49.43%）	＜0.001*

Table 31 (Continued)

Factors	Groups	Eating disorders Level		Exact Test
		Normal	Abnormal	
	suburban	96（61.15%）	61（38.85%）	
	Rural	68（87.18%）	10（12.82%）	
Monthly income	＜500 yuan	72（62.29%）	40（35.71%）	0.508
	500-800 yuan	92（58.97%）	64（41.03%）	
	800-1000 yuan	50（58.14%）	36（41.86%）	
	≥1000 元 yuan	39（68.42%）	18（31.58%）	
Hours of sleep per day	＜6 hrs.	49（56.98%）	37（43.02%）	0.754
	6-7 hrs.	79（64.23%）	44（35.77%）	
	8-9 hrs.	74（61.16%）	47（38.84%）	
	≥10 hrs.	51（62.96%）	30（37.04%）	
Publicity attention to slimming media	Deep concern	44（89.80%）	5（10.20%）	＜0.001*
	General concerns	76（52.78%）	68（47.22%）	
	Little attention	58（62.37%）	35（37.63%）	
	Never mind	75（60.00%）	50（40.00%）	

Table 31 (Continued)

Factors	Groups	Eating disorders Level		Exact Test
		Normal	Abnormal	
Exercise situation	Once in a while	48（51.61%）	45（48.39%）	0.034*
	1-2 times per week	79（69.30%）	35（30.70%）	
	3 times a week	126（61.76%）	78（38.24%）	
Exercise Type	Running	47（63.51%）	27（36.49%）	＜0.734
	Yoga	51（64.56%）	28（35.44%）	
	Walking	155（60.08%）	103（39.92%）	
Duration of exercise per session	<30 minutes	65（56.52%）	50（43.48%）	＜0.379
	30 minutes - 1hrs.	89（65.93%）	46（34.07%）	
	1-2 hrs.	58（64.44%）	32（35.56%）	
	＞2 hrs.	41（57.75%）	30（42.25%）	
Intensity of exercise	Not tired at all，normal heart rate	29（49.15%）	30（50.85%）	＜0.356

Table 31 (Continued)

Factors	Groups	Eating disorders Level		Exact Test
		Normal	Abnormal	
	Not tired, slightly increased heart rate	63（62.38%）	38（37.62%）	
	Slightly tired, faster heart rate	52（65.00%）	28（35%）	
	Quite tired, faster heart rate	41（61.19%）	26（38.81%）	
	Very tired but not breathless, sweating	40（68.97%）	18（31.03%）	
	Extremely tired, breathless, sweating	28（60.87%）	18（39.13%）	
Stress level	Low level (14-28 scores)	40（54.05%）	34（45.95%）	0.006*
	Medium level (29-42 scores)	139（58.16%）	100（41.84%）	

Table 31 (Continued)

Factors	Groups	Eating disorders Level		Exact Test
		Normal	Abnormal	
Nutritional knowledge	High level (43-56 scores)	60（73.17%）	22（26.83%）	0.001*
	Very high level (57-70scores)	14（87.50%）	2（12.50%）	
	Improvement (0-5 scores)	29（42.65%）	39（57.35%）	
	Moderate (6-7 scores)			
	Good (8-10 scores)	82（62.19%）	52（38.81%）	
Attitudes towards nutrition	Improvement (10-19 scores)	3（6.25%）	45（97.35%）	＜0.001*
	Moderate (20-29 scores)	115（51.34%）	109（48.66%）	
	Good (30-39 scores)	135（97.12%）	4（2.88%）	

* indicates statistical significance at the 0.05 level

From Table 31 the analysis using the Fisher's exact test revealed that gender, BMI, waist-to-hip ratio, birthplace, publicity attention to slimming media, exercise situation, stress level, nutrition kowledge and attitudes towards nutrition was significantly associated with the level of eating disorders at the 0. 05 statistical significance level.

CHAPTER V

CONCLUSION AND DISCUSSIONS

The title of the study was factors associated with eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus. This study aims to examine the levels of knowledge, attitudes, and eating disorders and to examine the associations between personal factors, knowledge, attitudes and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus. The study population consists of 411 individuals. The sample size was determined using Taro Yamane's formula, yielding a final sample of 411 individuals, selected through accidental sampling method. The study employed a structured questionnaire as the primary research instrument, comprising the following sections: section 1: personal information; section 2: stress level; section 3: knowledge of nutrition, attitudes toward nutrition and eating disorders.

The collected data were analyzed using statistical software, employing the frequency, percentage, mean, standard deviation, maximum, minimum, Fisher's exact test. The study findings are structured as follows:

1. Conclusion
2. Discussion of Results
3. Research limitations
4. Research Generalizability
5. Recommendation for Further Research

Conclusion

This study took college students at Hainan Vocational University of Science and Technology in Yunlong Campus as the research object, and analysed the factors related to eating disorders through questionnaires, including basic information of the respondents, stress level, nutritional knowledge, attitudes towards nutrition level and their association with eating disorders. A total of 411 valid data were collected in the study and the results are as follows:

Personal information

This study collected data from a total of 411 students at Hainan Vocational University of Science and Technology in Yunlong Campus. The majority of participants were female, accounting for 304 individuals (73.97%). Regarding grade, the largest proportion were second-years, totalling 182 individuals (44.28. In terms of age, most students were 20 years old, representing 173 individuals (42.9%).

With respect to faculty discipline, the College of Nursing had the highest number of students, with 172 individuals (41.85%). The majority of students originated from city areas (176 individuals, 42.82%). In terms of monthly income, 156 individuals (37.96%) reported an income ranging from 500-800 yuan. Regarding body mass index, 210 individuals (51.09%) were within the normal range (18.5–23.9 kg/m²).

Waist circumference were normal range, totaling 251 individuals (61.07%). Waist to Hip ratio were normal range, totaling 277 individuals (67.39%).

Regarding sleep behavior, 123 students (29.93%) reported sleeping 6–7 hours per day, which was the most common duration. In terms of publicity attention to

slimming media, 144 individuals (35.04%) expressed a moderate level of concern, making this the most prevalent level of awareness.

In relation to exercise situation, 204 individuals (49.63%) reported exercising at least three times per week. The most common type of exercise was walking, practiced by 258 individuals (62.77%). The most common exercise duration was 30 minutes to 1 hour per session, reported by 135 students (32.85%). The most frequently reported level of exercise intensity was "not very tired, with a slightly increased heart rate," noted by 101 students (24.57%).

Lastly, stress level analysis revealed that the majority of students experienced a moderate level of stress (29–42 points), comprising 239 individuals (58.15%).

The level of knowledge, attitudes, and eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus

In terms of nutritional knowledge, 209 students (50.85%) demonstrated a moderate level of knowledge (6-7 points). Additionally, 134 students (32.60%) exhibited a good level of nutritional knowledge (8-10 points).

Regarding attitudes towards nutrition, the majority of students, totalling 224 individuals (54.50%), held a moderate level of nutritional attitude (20-29 points), while 139 individuals (33.82%) demonstrated a good level of attitude (30-39 points).

An analysis of eating disorders symptoms revealed that 253 students (61.56%) were asymptomatic or exhibited only few or no symptoms (0-1.49 points) in normal level. Eating disorders were at an abnormal level (moderate, high, severe symptoms) in 158 persons (38.44%).

Factors associated with eating disorders among students at Hainan Vocational University of Science and Technology in Yunlong Campus

The results of the data analysis using the Fisher's exact test analysis at the 0.05 level of statistical significance revealed that several factors were significantly associated with the level of eating disorders among the respondents.

Fisher's exact test analysis showed that the following factors were significantly correlated with the degree of eating disorders: gender, BMI, waist- to- hip ratio, birthplace, publicity attention to slimming media, exercise situation, stress level, nutrition knowledge and attitudes towards nutrition

On the other hand, there were several factors that were not significantly associated with the degree of eating disorders. These factors included age, grade, monthly income, faculty, hours of sleep per day, exercise type, duration of exercise per session and intensity of exercise.

Discussion of results

The final population included in this study was 411, with a sample of college students from the Hainan Vocational University of Science and Technology in Yunlong Campus. According to the results of the survey and the analysis of the data, the nutritional knowledge and attitudes towards nutrition were at a moderate level, and the risk of eating disorders was at a low risk level. The risk of eating disorders among students of Hainan Vocational University of Science and Technology in Yunlong Campus is low, and the overall dietary situation is in a healthy state. This is largely due to the fact that most of the students at this campus study medicine-related subjects, and

through their studies, they have acquired medical knowledge and skills and developed relatively healthy eating behaviour and exercise habits, so they are less likely to suffer from eating-related problems and illnesses.

Relationship between gender and eating disorders

The present study identified a statistically significant association between gender and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus. This finding aligns with existing literature indicating that females are more susceptible to eating disorders compared to males. Biological factors, such as hormonal fluctuations and earlier onset of puberty in females, contribute to increased body fat accumulation and heightened body dissatisfaction, which are risk factors for developing eating disorders. Furthermore, societal pressures emphasizing thinness as an ideal body standard disproportionately affect women, exacerbating the risk (Murray et al., 2016; Nagata et al., 2020).

Conversely, while males are generally less likely to be diagnosed with eating disorders, they are not immune. Men may experience disorders characterized by a drive for muscularity, such as muscle dysmorphia, which involves an obsessive preoccupation with becoming more muscular. This condition often leads to excessive exercise and disordersed eating patterns aimed at increasing muscle mass (Murray et al., 2016; Griffiths et al., 2018). However, due to societal stigma and gender norms, eating disorders in men are frequently underdiagnosed and undertreated (Strother et al., 2012; Sweeting et al., 2015). Recent studies have highlighted the need for increased awareness and tailored interventions to address eating disorders across genders (Nagata et al., 2020; Griffiths et al., 2018).

Relationship between Birthplace and eating disorders

The present study identified a statistically significant association between Birthplace and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus. Differences in resource allocation, cultural attitudes and lifestyles in different regions (rural, suburban and city) have a significant impact on the prevalence and manifestations of eating disorders. Several studies have indicated that the prevalence of eating disorders is significantly higher among city areas than in rural areas. For example, a survey based on a national sample of adolescents showed that the prevalence of anorexia nervosa was 1.8% in city areas and 1.2% in towns and cities, which was significantly higher than that in rural areas (0.6 %) (Preti et al., 2007). And it is consistent with Ren Zhiying's research conclusions (Ren, 2023),There are significant differences in female college students in terms of birthplace, specifically manifested as the frequency of obesity talks about female college students in the city is higher than that of female college students in the rural. It can be seen that the location of the family is an important factor affecting the discussion of obesity among female college students. The economic development level and modernization level of cities and suburban areas are higher than that of rural areas, and the probability of being oriented towards weight loss is higher. It is easier to obtain publicity on weight loss and slimming through TV, magazines, the Internet and other media, and pursue the concept of "slimming is beauty", so that it can form an unhealthy aesthetic view. The differences in family environmental status in city and suburban areas and rural areas have a subtle effect on college students' tendency to develop eating disorders. Adolescents who grow up in rural areas are relatively independent, while some adolescents who grow in cities and suburban lack autonomy during their growth

due to their excessive protection, which makes them use unhealthy eating habits such as diet as a way to resist parents' control and desire independence (Wang et al., 2018).

Relationship between publicity attention to slimming media and eating disorders

The present study identified a statistically significant association between publicity attention to slimming media and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus. Mainstream culture and social media are the main social factors that cause eating disorders. The results of this paper show that people who pay deep attention to slimming media are at a higher risk of eating disorders. This is consistent with the conclusion that frequent focus on slimming media (such as advertisements showing "ideal figure" or Internet celebrity content) found in previous research that will aggravate social comparisons and prompt individuals to internalize the social standards of "thin is beauty", which in turn causes physical dissatisfaction and eating disorders (Perloff, 2014). College students' enthusiasm for weight loss has a great relationship with the role of mass media. Advertisements about weight loss spread the concept that thinness will become promising. The Internet advocates "either thin or die" and "it would rather be thinner than dictionary" and other similar remarks about becoming thinner than dictionary" and strengthening college students' determination to lose weight. It is precisely because of the attention to the weight loss media and the collective awareness of gender roles that the public will regard the appearance attributes of women as an important criterion for evaluating women. When adolescents grow up under such culture, they will unconsciously evaluate their appearance, height, clothing and other appearance attributes with this mainstream social aesthetic. After entering

university, college students will use social media (WeChat, Weibo, Xiaohongshu, etc.) more frequently to understand society and expose themselves to social aesthetic values in many ways. Due to the visual influence brought by celebrities and internet celebrities, college students will pay more attention to their external characteristics and examine themselves as an object (He, 2021). At the same time, among teenagers, the incidence of eating disorders has increased significantly in people who use platforms such as TikTok for more than 2 hours a day (M. C. S. et al., 2023).

Relationship between BMI and eating disorders

The present study identified a statistically significant association between BMI and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus . This study divided the data into four categories using body mass index (BMI) as variables, namely low body recombination (<18.5 kg/ m²) , normal body recombination ($18.5–23.9$ kg/ m²) , hyperrecombination (24.0–27.9 kg/m²) and obese group (≥ 28.0 kg/m²). The results of this study show that the overweight and obese groups have a heavier mental burden and a more significant tendency to eat disorders, while low body weight is not prone to occur, which is basically consistent with the survey conclusions of Ku and others (Ku et al., 2019; Tang et al., 2023). Studies have found that high BMI may increase the risk of bulimia and bulimia nervosa. High BMI, i. e. hyperrecombination, has a higher tendency to be dissatisfied with body shape. The higher the BMI, the greater the body aberration value, and the more dissatisfied with body image. Many people have expressed strong concerns about weight gain. They often exaggerate their weight and have a wrong understanding of body shape. In general, people with overestimating their body shape tend to adopt extreme diet control and other coping methods, which

aggravates the symptoms of eating disorders; secondly, people with underestimating their body shape may be more tolerant of their own appearance and body shape, and are less likely to develop negative emotions such as physical dissatisfaction, anxiety, and depression symptoms (M. K. E. et al., 2022),Therefore, the risk of subclinical status of eating disorders is low.

Therefore, targeted health education should be carried out for college students, and standardized eating behaviors and healthy lifestyles should be developed to eliminate the adverse effects caused by cognitive bias in body shape.

Relationship between waist-to-hip ratio and eating disorders

The present study identified a statistically significant association between waist-to-hip ratio and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus ($\chi^2 = 2.56$ $p = 0.040$).In this study, among the 411 people, 187 women (45.50%) were in the normal range, while 117 people (28.46%) were greater than 0.80; 90 men (21.90%) were in the normal range, and 17 people (4.14%) were greater than 0.85. The overall waist-to-hip ratio is within the normal range, but it should also be taken seriously. The waist circumference is significantly larger than the hip circumference, which reflects abdominal fat accumulation, which may be related to physical dissatisfaction. At the same time, women are more sensitive to the perception of waist-to-hip ratio changes, that is, thin waist and wide hips are often shaped into "ideal figure" by social culture, especially after puberty, this body shape deviates from the "hourglass" body, which may lead to dissatisfaction with the body, which in turn leads to restrictive diet or excessive exercise behavior (Tom & Mark, 2021). The waist-to-hip ratio and fat distribution are regulated by sex hormones, and patients with eating disorders will have

biases in their perception of their own WHR, such as overestimating waist circumference, which will aggravate cognitive distortions in body shape (Sasse et al., 2024).

Relationship between stress level and eating disorders

The present study identified a statistically significant association between stress level and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus (χ^2= 11.810, p = 0.001)

The scale used this time is the Chinese Perceived Pressure Scale, which is divided into two dimensions, namely tension and out of control. Among the respondents, 74 (18.00%) were at low pressure level, 239 (58.15%) were at medium pressure level, 82 (19.95%) were at high pressure level, and 16 (3.90%) were at extremely high pressure level. It shows that the overall stress level of the currently surveyed population is low or moderate, and has a certain control and control over their lives. Occasionally, there are times when there is too much pressure, but they have the ability to enjoy the pressure and quickly return to peace. At the same time, experiencing greater pressure, feeling nervous and losing control of personal life may have had a negative impact on human physical and mental health, and corresponding measures need to be taken to regulate it. Previous studies have shown that eating attitudes are negatively correlated with individual self-control, that is, individuals with high eating attitudes scores also have lower self-control ability. Negative emotions and excessive stress are positively correlated with the tendency to eat disorders. This also shows that the more obvious the impulsiveness after the failure of adolescents' self-control, it will lead to or aggravate the occurrence of eating disorders. There are differences in

attention bias among people with different levels of impulsiveness (Li et al., 2016). The results of this study show that college students with high mental health literacy, low levels of stress and anxiety symptoms have a lower risk of subclinical status of eating disorders, which is consistent with the conclusions of relevant research (Bridget et al., 2022). The reasons may include the following: First, improving mental health literacy is an effective strategy for individuals with subclinical eating disorders to pay attention to their own mental health, reduce the risk of mental health problems, promote early diagnosis of mental health problems, reduce stigma and strengthen help-seeking behaviors (Huang & Li, 2022),play an important role in preventing and treating eating disorders. Second, stress burden and depression symptoms lead to mood swings and negative emotions, and individuals may cope with binge eating or dieting, which triggers or aggravates the subclinical state of eating disorders.

Therefore, we should pay attention to the cultivation and improvement of mental health literacy among college students, reduce the levels of anxiety and stress, and reduce the risk of depression symptoms.

Relationship between nutritional knowledge and eating disorders

The present study identified a statistically significant association between nutritional knowledge and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus.The nutritional knowledge reserved by college students investigated in this article is at a good level, indicating that good nutritional knowledge can reduce the risk of extreme dietary behavior. Mastering balanced dietary principles, such as a reasonable proportion of protein, fat, and carbohydrates, can reduce extreme explanations or excessive control of caloric behavior caused by nutritional cognitive bias. But at the same time, excessive

attention to nutritional details (such as calorie calculations, food "cleanness") may induce compulsive dietary behaviors and even develop into healthy food obsessions (Dunn & Bratman, 2016). Individuals who view nutrition as "supporting health" rather than "weight control" tend to eat more flexible than stereotypical "good/bad food" classifications, thereby reducing the risk of eating disorders (L. T. T. et al., 2014).

Relationship between attitudes towards nutrition and eating disorders

The present study identified a statistically significant association between attitudes towards nutrition and the prevalence of eating disorders among students at Hainan Vocational University of Science and Technology, in Yunlong Campus. This study identified statistical significance between attitudes to nutrition and the prevalence of eating disorders among students at the in Yunlong Campus of Hainan Vocational University of Science and Technology. Nutritional knowledge is particularly important for college students. Only when students understand the knowledge about nutrition can they realize the importance of dietary nutrition in study and life, and then form a good nutritional attitude, and ultimately develop good dietary habits to achieve the purpose of serving study, life and exercise (Hu, 2015).

Discussion of Nutritional Knowledge, Attitude towards Nutrition and Eating disorders among Students at Hainan Vocational University of Science and Technology in Yunlong Campus

1. Mastery of nutrition knowledge situation

Through the survey, 68 individuals (16.55%) of the college students at Hainan Vocational University of Science and Technology in Yunlong Campus were at a low level, reflecting that most students did not experience significant lack of knowledge. 209 individuals (50.85%) were at the medium level, indicating that half of the students

had a basic understanding of nutrition knowledge, but there was still room for improvement. 134 individuals (32.60%) reached a good level, which means that about one-third of students have more comprehensive nutrition knowledge. Among them, gender differences are manifested as higher proportions of men at better levels, while more prominent proportions of women at moderate levels. Targeted educational measures can be carried out in the future, such as conducting basic knowledge intensive courses or lectures for groups with low level of nutrition knowledge; nutrition case analysis and practice can be carried out for groups with medium level to transition to a better level; nutrition knowledge needs to be consolidated regularly to avoid fragmentation of knowledge for groups with good nutrition knowledge. Through corresponding measures, the nutritional knowledge level of all students will be further improved (Alkahtani et al., 2020; Spronk et al., 2014).

2. Nutritional attitudes situation

Through the survey, only 48 individuals (11.68%) of the college students at Hainan Vocational University of Science and Technology in Yunlong Campus were at the level of improvement, reflecting that the vast majority of students did not show obvious negative attitudes. 224 individuals (54.50%) students were at the moderate level, indicating that more than half of the students had a basic positive perception of nutrition, but had not yet developed a deep understanding or willingness to act. 139 individuals (33.82%) reached a good level, indicating that about one-third of students have a high emphasis on nutrition and a positive behavioral tendency. The high proportion of people with a moderate nutrition attitude score may reflect that current nutrition education covers basic knowledge, but lacks in-depth guidance (Pengpid & Peltzer, 2020; Sogari et al., 2018)

3. Eating disoder situation

Through the survey, 253 individuals (61. 56%) at Hainan Vocational University of Science and Technology in Yunlong Campus were in almost no or asymptomatic, indicating that most students had no significant eating disorders problems in normal group. Anormal group have 158 individuals (35. 44%) had moderate, high, severe symptoms, suggesting that some students may face the risk of abnormal dietary behavior, may lack scientific dietary knowledge or self- regulation ability, and prevention education is needed. The proportion of high symptoms to severe symptoms is low. Although the proportion is small, it needs to be paid attention to and psychological or medical intervention.

Discussion and summary

Through a cross- sectional study, this study systematically explored the levels of nutritional knowledge, nutritional attitudes, and eating disorders among the students at Hainan Vocational University of Science and Technology in Yunlong Campus, as well as explored the related factors of eating disorders, and analysed in detail the relationship between the dimensions of gender, BMI, birthplace, level of stress, nutritional knowledge, and nutritional attitudes, and eating disorders, and ultimately came to the following conclusions of the study:

1. The overall risk of eating disorders among students at in Yunlong Campus of Hainan University of Science and Technology is low, and the majority of students' eating behaviours are in a healthy state the nutrition knowledge level and attitude towards nutrition show the overall distribution characteristics of "medium-level, better second, and low-level less".

2. There is a statistically significant correlation between the gender, birthplace, waist-to-hip ratio, publicity attention to slimming media, BMI, exercice situation, stress level, nutritional knowledge level, attitudes towards nutrition and eating disorders of students at Hainan Vocational University of Science and Technology in Yunlong Campus, and the results are all $p<0.05$, which is statistically significant.

To sum up, the risk of eating disorders in this group is relatively low, Consistent with Zhou Shujuan's research conclusions（Zhou & Wei, 2023）. But some potential risk factors still need to be paid attention to. Achieving sustainability of healthy eating in the campus community through integrated interventions.

Research limitations

1. Sample size needs to be expanded: The number of research subjects included in this study is relatively small, and the results obtained may have certain shortcomings and biases. In the future, larger sample size research will still be required to better provide a more reliable foundation for clinical practice.

2. The surveyed schools are relatively single: this study only selects college students from Hainan Vocational University of Science and Technology in Yunlong Campus, and should choose college students from more colleges and universities in Hainan Province to participate in the research to enrich the research content and results.

3. Gender imbalance: There are 304 women in the sample, while there are only 107 men, and there are also eating disorders among men. The sample size of men should be increased to make better comparisons.

4. The number of questionnaire questions is large: Due to the large number of questionnaires, it is difficult to ensure that the respondents are focused and fill in them in them completely carefully, which further leads to deviations in the overall data.

Research generalizability

1. The core reasons for the reduction of eating disorders risk for college students at Hainan Vocational University of Science and Technology are closely related to medical-related professional backgrounds (such as the School of Medicine and Nursing). Students master nutrition knowledge through the course system to form scientific dietary behaviors. Therefore, it has certain promotional value for students in similar medical or vocational colleges.

2. The causes of eating disorders are not a single factor, and their causes are very complex. The results of this paper can provide empirical data on the cognition, attitude and behavioral levels of college students' cognition, attitude and behavioral levels of eating disorders, laying the foundation for health promotion and prevention strategies in educational institutions.

Recommendation for further research

1. The research results can be used as the basis for future in-depth research, including longitudinal studies or intervention trials focusing on reducing eating disorders in the student population.

2. Promote the questionnaire to another campus to obtain more comprehensive evidence.

3. This study on the influencing factors of eating disorders can be applied to students' daily habits, helping students develop healthy eating habits, manage their body image correctly, and maintain a positive nutritional attitude.

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APPENDIX

Appendix A

Interview forms

Factors Associated with Eating disorders Among Students at Hainan Vocational University of Science and Technology in Yunlong

Consent Day Date.....Month.....Year.....

I am Mr./Mrs./Miss……

address.....

Read the details from the information sheet for participants in the research project and I agree to voluntarily participate in the research project.

I have received a copy of the consent form that I signed and dated, along with an information sheet for research participants. This is before signing the consent form to conduct this research. I explained to the researcher the purpose of the study. The duration of the research, research methods, dangers or symptoms that may arise from the research. or from the medicine used Including the benefits that will emerge from the research and guidelines for treatment by other methods in detail, I have had enough time and opportunity to ask questions until I have a good understanding. The researcher answered various questions willingly and without concealment until I was satisfied.

I have the right to terminate my participation in the research project at any time. There is no need to inform the reason. and termination of my involvement in this research It will not affect treatment or other rights that I will continue to receive.

The researcher guarantees that my personal information will be kept secret. and will be disclosed only with my consent. Other persons on behalf of the research sponsoring company Human Research Ethics Committee the Food and Drug Administration may be permitted to inspect and process my information. This must be done to verify the accuracy of the information only. By agreeing to participate in this study, I am giving consent to have my medical history reviewed.

I have read the above and have a complete understanding of it. Willing to participate in research willingly. Therefore, signed this consent document.

.....Sign the person giving consent.

(.....) Name of person giving consent

Date .....Month.....Year.....

I have explained the purpose of the research, the research methods, dangers or adverse reactions or risks that may arise from the research. or from the medicine used Including the benefits that will arise from thorough research. Let the participants in the research project named above know and have a good understanding. Ready to sign the consent document willingly

.....

Signed by the researcher

(.....)

Name of the researcher in detail

Date .....Month……..Year…….

....

Witness signature Witness signature

(.....) (.....)

Name of witness in detail Name of witness in detail

Date .....Month…..Year……. Date .....Month……..Year…….

Appendix B

Questionnaire

Factors Associated with Eating disorders Among Students at Hainan Vocational University of Science and Technology in Yunlong Campus.

Instructions:

This questionnaire consists of 7 pages and aims to investigate Factors Associated with Eating disorders Among Students at Hainan Vocational University of Science and Technology in Yunlong Campus, Haikou City, Hainan Province. The findings can contribute to the prevention and intervention of eating disorders, thereby promoting the physical and mental health of university students.

All information provided will be kept confidential and presented in an aggregated form to ensure no impact on individual respondents. We kindly ask all participants to answer each question as accurately as possible.

The questionnaire is divided into 3 sections:

Section 1: Personal Factors. This section contains 16 questions.

Section 2: Stress level. This section contains 14 questions.

Section 3: Nutrition Knowledge, attitudes towards nutrition and eating disorders. This section contains 48 questions.

Thank you for your participation, support, and for taking the time to complete this questionnaire.

Wang Shuhua

Master of Public Health

Chiang Rai Rajabhat University

Section 1: General Information

Instructions: Please fill in the information or place a checkmark ☐ in the blank space that accurately reflects your situation.

1. Gender

   ☐ 1. Female ☐ 2. Male

2. Grade

   ☐ 1. first-year university student ☐ 2. sophomore

   ☐ 3.Junior ☐ 4. Senior

3. Age：_____years

4. Height：_____cm

5. Weight：_____kg

6. Waist circumference：_____cms

7. Hip circumference：_____cms

8. Faculty

   ☐ 1. College of Medicine ☐ 2. College of Nursing

   ☐ 3. College of urban construction ☐ 4. College of Accounting

   ☐ 5. College of Education and Music

9. Birthplace

   ☐ 1. City ☐ 2. suburban ☐ 3. Rural

10. Monthly income

    ☐ 1.＜500yuan ☐ 2. 500-800yuan

    ☐ 3. 800-1000yuan ☐ 4. ≥1000yuan

11. Hours of sleep per day

☐ 1.＜6 hrs. ☐ 2. 6-7 hrs.

☐ 3. 8-9 hrs. ☐ 4. ≥10 hrs.

12. Publicity attention to slimming media

☐ 1.Deep concern ☐ 2. General concerns

☐ 3.Little attention ☐ 4. Never mind

13. Exercise situation

☐ 1.Once in a while

☐ 2. 1-2 times per week

☐ 3. 3 times a week and more

☐ 4. Never exercised（If you choose this option, you do not have to answer the following no of questions14-16）

14. Exercise type（multiple choice）

☐ 1.Running ☐ 2. Yoga

☐ 3.Walking ☐ 4. Other，for example_____

15. Duration of exercise per session

☐ 1.<30 minutes. ☐ 2. 30 minutes -1hrs.

☐ 3.1-2 hrs. ☐ 4. ＞2 hrs.

16. Intensity of exercise

☐ 1.Not tired at all，normal heart rate

☐ 2. Not tired，slightly increased heart rate

☐ 3. Slightly tired，faster heart rate

☐ 4. Quite tired，faster heart rate

☐ 5. Very tired but not breathless，sweating

☐ 6.Extremely tired，breathless，sweating.

Section 2: Stress level

Instructions: The scale used this time is Chinese Perceived Stress Scales (CPSS), PerceivedStress Scale (PSS) was compiled by American scholars Cohen et al. and Chineseised by Yang Tingzhong et al. in 2003. I hope you will read each item carefully and choose the answer that most closely matches or is close to your actual situation by placing a "○" on the corresponding to the number.

0 means Never felt the stress

1 means Occasionally feel the stress

2 means Feeling stressed sometimes

3 means Often feeling stressed

4 means Always feeling stressed

	Topic	**never**	**occasionally**	**sometimes**	**often**	**always**
1	Distracted by something unanticipated happening	0	1	2	3	4
2	Feeling out of control of the important things in your life	0	1	2	3	4
3	Feeling nervous and stressed	0	1	2	3	4
4	Successfully dealing with annoying life hassles	0	1	2	3	4

	Topic	never	occasionally	sometimes	often	always
5	Feeling that you can deal effectively with the important changes that occur in your life	0	1	2	3	4
6	Feeling confident in their ability to deal with their own personal problems	0	1	2	3	4
7	get one's groove on	0	1	2	3	4
8	Finding yourself unable to handle all the things you have to do on your own	0	1	2	3	4
9	There are ways to control the annoying things in life	0	1	2	3	4
10	Often feel like they're in charge of things	0	1	2	3	4
11	Getting angry a lot, because a lot of things happen that are out of your control	0	1	2	3	4

	Topic	never	occasionally	sometimes	often	always
12	Often think that there are things that you have to accomplish	0	1	2	3	4
13	Often able to master the way time is organized	0	1	2	3	4
14	Often feel that difficult things are piling up and you can't overcome them	0	1	2	3	4

Section 3: nutrition Knowledge, attitudes towards nutrition and eating disorders

3.1 Nutrition Knowledge; This questionnaire aims to assess your understanding of basic nutrition concepts. Please select the most appropriate answer for each question.

1. The best sources of dietary calcium are:

   ☐ 1. Legumes ☐ 2. Green vegetables

   ☐ 3. Dairy (Correct) ☐ 4. Seafood

2. Which food has the highest protein content:

   ☐ 1. Beef (Correct) ☐ 2. Eggs

   ☐ 3. Milk ☐ 4. Potatoes

3. The most effective way to build muscle is to:

   ☐ 1. Eat more beef ☐ 2. Build up one's exercise (Correct)

   ☐ 3. Eat more eggs ☐ 4. Increase intake of carbohydrates

4. Calories from the same weight of carbohydrates, fat, and protein are:

   ☐ 1. The same (Correct) ☐ 2. Protein-rich

   ☐ 3. Higher in fat ☐ 4. Higher in carbohydrates

5. The best way to lose weight is to:

   ☐ 1. Follow a fat-free diet ☐ 2. Follow a high-protein diet

   ☐ 3. Skip meals ☐ 4. Increase physical activity (Correct)

6. Which nutrient is most important for maintaining healthy vision?

   ☐ 1. Vitamin A (Correct) ☐ 2. Vitamin C

   ☐ 3. Vitamin D ☐ 4. Vitamin E

7. Which of the following foods is high in dietary fiber?

☐ 1. White bread ☐ 2. Brown rice (Correct)

☐ 3. Butter ☐ 4. Chicken

8. Which nutrient is essential for red blood cell formation?

☐ 1. Calcium ☐ 2. Vitamin D

☐ 3. Iron (Correct) ☐ 4. Zinc

9. What is the primary source of energy for the body?

☐ 1. Protein ☐ 2. Fats

☐ 3. Carbohydrates (Correct) ☐ 4. Vitamins

10. Which of the following is considered a healthy fat?

☐ 1. Trans fats ☐ 2. Saturated fats

☐ 3. Unsaturated fats (Correct) ☐ 4. Cholesterol

3.2 Attitudes towards nutrition; This questionnaire is designed to assess your attitudes towards nutrition. Please select the most appropriate answer for each question.

1. Do you believe that nutrition is important for overall health?

☐ 1. Strongly agree (Correct) ☐ 2. Agree

☐ 3. Disagree ☐ 4. Strongly disagree

2. Do you agree that a balanced diet can help prevent chronic diseases?

☐ 1. Strongly agree (Correct) ☐ 2. Agree

☐ 3. Disagree ☐ 4. Strongly disagree

3. Do you think understanding food labels is important for making healthy choices?

   ☐ 1. Strongly agree (Correct) ☐ 2. Agree

   ☐ 3. Disagree ☐ 4. Strongly disagree

4. Do you believe that proper nutrition can enhance academic performance?

   ☐ 1. Strongly agree (Correct) ☐ 2. Agree

   ☐ 3. Disagree ☐ 4. Strongly disagree

5. Do you think it is important to eat a variety of foods daily?

   ☐ 1. Strongly agree (Correct) ☐ 2. Agree

   ☐ 3. Disagree ☐ 4. Strongly disagree

6. Considering nutrition when choosing foods is not necessary.

   ☐ 1. Strongly agree ☐ 2. Agree

   ☐ 3. Disagree ☐ 4. Strongly disagree (Correct)

7. It is not important to know the nutritional content of the foods you eat.

   ☐ 1. Strongly agree ☐ 2. Agree

   ☐ 3. Disagree ☐ 4. Strongly disagree (Correct)

8. Skipping meals is a healthy way to control weight.

   ☐ 1. Strongly agree ☐ 2. Agree

   ☐ 3. Disagree ☐ 4. Strongly disagree (Correct)

9. "Flavor is more important than nutrition," do you agree?

   ☐ 1. Strongly agree ☐ 2. Agree

   ☐ 3. Disagree ☐ 4. Strongly disagree (Correct)

10. Consuming a balanced and consistent diet still requires the use of dietary supplements.

☐ 1. Strongly agree ☐ 2. Agree

☐ 3. Disagree ☐ 4. Strongly disagree (Correct)

3.3 Eating behavior; Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions.

Questions 1 -12; Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

	ON HOW MANY OF THE PAST 28 DAYS	**NO DAYS**	**1-5 DAYS**	**6-12 DAYS**	**13-15 DAYS**	**16-22 DAYS**	**23-27 DAYS**	**EVERY DAY**
1	Have you been deliberately **trying** to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6

3	Have you **tried** to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
	Have you **tried** to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5	Have you had a definite desire to have an **empty** stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6	Have you had a definite desire to have a **totally fat** stomach?	0	1	2	3	4	5	6
7	Has thinking about **food, eating or calories** made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6

8	Has thinking about **shape or weight** made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
9	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11	Have you felt fat?	0	1	2	3	4	5	6
12	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13-18; Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days)

13	Over the past 28 days, how many **times** have you eaten what other people would regards as an **unusually large amount of food** (given the circumstances)?	
14	… On how many of these times did you have a sense of having lost control over your eating (at the time you were eating)?	
15	Over the past 28 days, on how many **DAYS** have such episodes of overeating occurred (i.e. you have eaten an unusually large amount of food **and** have had a sense of loss of control at the time)?	
16	Over the past 28 days, how many **times** have you made yourself sick(vomit) as a means of controlling your shape or weight?	
17	Over the past 28 days, how many **times** have you taken laxatives as a means of controlling your shape or weight?	
18	Over the past 28 days, how many **times** have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn of calories?	

Questions 19- 21; Please circle the appropriate number. Please note that for these questions the term " binge eating" means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

	ON HOW MANY OF THE PAST 28 DAYS .	**NO DAYS**	**1-5 DAYS**	**6-12 DAYS**	**13-15 DAYS**	**16-22 DAYS**	**23-27 DAYS**	**EVERY DAY**
19	Over the past 28 days, on how many days have you eaten in secret (ie, furtively)? …… Do not count episodes of binge eating.	0	1	2	3	4	5	6
		NONE OF THE TIMES	**A FEW OF THE TIMES**	**LESS THAN HALF**	**HALF OF THE TIMES**	**MORE THAN**	**MOST OF THE TIME**	**EVERY TIME**
20	On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? …… Do not count episodes of binge eating.	0	1	2	3	4	5	6

		NOT AT ALL	SLIGHTLY		MODERATELY		MARKEDLY	
21	Over the past 28 days, how concerned have you been about other people seeing you eat? ……Do not count episodes of binge eating.	0	1	2	3	4	5	6

Questions 22-28; Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

	ON HOW MANY OF THE PAST 28 DAYS	NOT AT ALL	SLIGHTLY		MODERATELY		MARKEDLY	
22	Has your **weight** influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23	Has your **shape** influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?	0	1	2	3	4	5	6

	ON HOW MANY OF THE PAST 28 DAYS	NOT AT ALL	SLIGHTLY		MODERATELY		MARKEDLY	
25	How dissatisfied have you been with your **weight**?	0	1	2	3	4	5	6
26	How dissatisfied have you been with your **shape**?	0	1	2	3	4	5	6
27	How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window refection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28	How uncomfortable have you felt about **others** seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate.): _____

What is your height? (Please give your best estimate.): _____

<u>If female</u>:

- Over the past three to four months have you missed any menstrual periods?

☐ 1. YES ☐ 2. NO

- If so, how many? _____
- Have you been taking the “pill”?

☐ 1. YES ☐ 2. NO

BIOGRAPHY

Name Surname Wang Shuhua

Date of birth 24th September 2000

Current address

House number:No. 89 Subdistrict Bandu District Mueang

Province Chiang Rai

Educational record

Date: September 2019 - June 2023 (Undergraduate)

Graduated from: Hainan Vocational University of Science and

Technology.

Date September 2016 - June 2019 (High School)

Graduated from: Daan High School, Pingnan County,

Guigang City, Guangxi, China

Date: September 2013 - June 2016 (junior high school)

Graduated from: The Second Middle School of Pingnan County,

Guigang City, Guangxi, China

Date: September 2007 - June 2013 (primary school)

Graduated from:Fangling Primary School, Shangdu Town, Pingnan

County, Guigang City, Guangxi

Work experience

Date: July 2023-January 2024, Workplace: Hainan Vocational University of Science and Technology

Address: No. 118, Yunding Road, Yunlong Town, Qiongshan District, Haikou City, Hainan Province

Date: May 2022-March 2023, Internship Guangxi Norfolk Health Technology

Address: Outpatient Department of People's Hospital of Guigang City, Guibei District, Guigang City, Guangxi Province