


The relationship between body image, eating disorders risk, and the professional help-seeking attitudes of college students in Vietnam



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ABSTRACT

Article History

Received: 29 January 2024

Revised: 18 April 2024

Accepted: 10 May 2024

Published: 24 July 2024

Keywords

Body image

College students

Eating disorder risk

Major

Professional help-seeking attitudes.

This study investigates the relationship between body image, eating disorder risk, and the professional help-seeking attitudes of college students in Vietnam. We conducted a study with 232 college students (166 females and 66 males). The Attitudes Towards Professional Help-Seeking (ATSPPH), the Eating Attitudes Test (EAT-26), and the Body Shape Questionnaire (BSQ) served as the foundation for the questionnaire. In order to evaluate this research, the PLS-SEM approach was utilized. The results demonstrate that (i) body image, in particular, has a strong and positive link with eating disorder risk; (ii) professional help-seeking attitudes are strongly correlated with body image; (iii) there is a positive correlation between eating disorder risk and professional help-seeking attitudes; and (iv) eating disorder risk will mediate the relationship between body image and professional help-seeking attitudes. This article highlights a relationship between body image preoccupation and professional help-seeking attitudes through mediated eating disorder risk. It is necessary to identify individuals at risk of eating disorders and then consider and devise appropriate strategies to overcome or minimize binge eating or frequent or planned skipping meals; early intervention will reduce the risk of developing an eating disorder. The paper's rationale helps raise awareness about the negative effects of body image concerns, the risk of eating disorders, and more. The paper also highlights the professional help-seeking attitudes of Vietnamese youth.

Contribution/ Originality: The study provides valuable insights into the mental health challenges faced by Vietnamese youth, emphasizing the importance of addressing body image concerns and eating disorders and the need for proactive interventions to promote well-being and academic success, thereby enhancing knowledge in this area.

1. INTRODUCTION

Mental health issues have become more prevalent, particularly among young people. Eating disorders are a serious public health concern because they could have life-threatening physical and psychological repercussions [1]. Vietnamese young women worry about losing control of their eating habits, being underweight, and developing eating disorder symptoms such as the desire to be thin and body dissatisfaction [2]. Eating disorder diagnoses were linked to depressive symptoms and a bad quality of life in terms of mental health [3]. According to Frank, et al.

[4], individuals who were 18 years of age or older said half of them would seek assistance from a friend; a minority of people sought assistance from a psychologist, counsellor, psychiatrist, or academic adviser; and less than a fifth of individuals stated they would not seek assistance from anybody. From the aforementioned information, it can be seen that when most young people have mental problems, they will choose to look for a deep conversation with their close friends, while a few people choose to seek specialized psychological support. This has the potential to exacerbate the consequences of mental health problems. Therefore, when students experience psychological issues, qualified assistance can help them develop an optimal solution.

1.1. Body Image and Eating Disorder

Eating disorders represent serious and often fatal illnesses characterized by substantial abnormalities in an individual's eating behavior, accompanied by associated thoughts and feelings [5]. Given their potential to have enduring effects on overall health, eating disorders pose a significant threat to life and contribute substantially to public health burdens [6]. Those affected by eating disorders frequently grapple with a distorted body image and an intense fear of weight gain, leading them to engage in harmful behaviors such as restricting food intake, binge eating, or purging. Disordered eating, depression, and obesity are prevalent health issues affecting individuals, with negative body image (body dissatisfaction) playing a significant role in contributing to these challenges [7].

Despite the absence of body image-related eating disorder criteria, academics contend that the overvaluation of weight and shape gives crucial information regarding the severity of binge eating disorder and has diagnostic value [8]. Weight worries, body dissatisfaction, weight significance, and unhealthy weight control behaviors are important risk factors for persistent disordered eating. Furthermore, research has shown that individuals who experience body dissatisfaction are more likely to engage in unhealthy weight control behaviors such as fasting, purging, and excessive exercise [9]. This can lead to a vicious cycle of disordered eating behaviors and negative body image. Overall, recognizing the importance of weight and shape concerns in the diagnosis and treatment of binge eating disorder can lead to more effective interventions and improved outcomes for individuals struggling with disordered eating.

1.2. Eating Disorder and Professional Help-Seeking Attitudes

Farina, et al. [10] conducted research identifying factors influencing attitudes towards seeking professional help. Various aspects, including personality traits, interpersonal relationships, and social influences, play a role in an individual's decision to accept or pursue professional counseling for psychological issues. These factors encompass opinions and beliefs regarding psychiatric treatment, especially attitudes towards psychiatrists, support from family and friends, and the societal stigma associated with seeking mental health treatment. Additionally, factors such as one's emotional awareness and ability to perceive, evaluate, express, and interpret personal emotions and experiences are considered influential [10]. Other studies support the notion that fear of stigma can act as a barrier, hindering individuals from seeking professional psychiatric help [11]. Over the years, several studies have investigated the barriers to seeking help among people with unhealthy eating attitudes and habits. Cache and Striegel-Moore came to the conclusion that individuals with eating disorder symptoms harbor negative attitudes towards seeking help due to their fear of labeling [12]. Further to that, the shame of seeking advice may play a role in influencing attitudes towards seeking help among several people with eating disorders.

1.3. Body Image and Professional Help-Seeking Attitudes

Self-image is a fairly important issue; no matter what age, gender, or territory, people pay a certain amount of attention to their self-image. According to the journal APA Psychology, "body image and self-esteem have long been known to be linked and prominent problems for young people, especially during adolescence and teenagers; these problems affect people throughout life, from childhood to old age". People tend to care about and be

susceptible to the influence of their externally expressed self-image, which is subject to scrutiny and potential judgment. Murray, et al. [13] found that considering a slim body as the ideal performance had a greater impact on body and diet dissatisfaction than being overweight. One study indicated that stress accounted for a large proportion of differences in body image among adolescents [14]. Stressors have a significant impact on mood, well-being, behavior, and health [15]. Individuals will require psychological help, specifically psychological therapy services, to deal with the impacts of endurance. However, research on the association between young people's self-image and their need for psychological treatment is still fairly restricted. Body image concerns and unhappiness with the present body form can contribute to eating disorders and depression [16, 17]. Concerns regarding variations in self-image have an impact on teenagers' psychological states, influencing their life views and need for care.

Eating disorders can have an adverse influence on body image. Both the two types of eating disorders— anorexia nervosa and bulimia—associated with signs of aberrant eating behavior, obsession with food, etc.—make a contribution to weight and body image issues. Psychological issues associated with eating disorders, as well as negative body image, have a substantial impact on professional help-seeking attitudes towards eating disorders. However, there has not been much research in Vietnam to clarify the association between three factors: eating disorders, body image, and professional help-seeking attitudes among the target group of university students. Our study will investigate the correlation between self-image, fear of eating, and professional help-seeking by many undergraduate students in Vietnam. Consequently, we included the following clarification questions in our study:

What is the correlation between body image, eating disorder risk, and professional help-seeking?

2. MATERIALS AND METHODS

2.1. Research Hypothesis

This study utilized a cross-sectional approach to evaluate the effect of body image and eating disorders on undergraduate students' professional help-seeking attitudes.

Hypothesis 1: The higher the weight, the more concerns they have about body image.

Hypothesis 2: Major that would have contributed to increased concern about body image.

Hypothesis 3: Body image would have a positive correlation with eating disorder risk.

Hypothesis 4: Body image would positively correlate with professional help-seeking attitudes.

Hypothesis 5: Eating disorder risk would positively correlate with professional help-seeking attitudes.

Hypothesis 6: The more concerned they are about their body image, the greater their risk of developing an eating disorder.

Hypothesis 7: Body image would positively affect professional help-seeking attitudes.

Hypothesis 8: Eating disorder risk would positively affect professional help-seeking attitudes.

Hypothesis 9: Eating disorder risk would mediate the relationship between body image and professional help-seeking attitudes.

2.2. Participants

We gave college students at various universities in Ho Chi Minh City the opportunity to anonymously respond to a questionnaire. We collected the data between May 19, 2022, and September 3, 2023.

On the first page of the questionnaire, we asked the subjects, "Do you want to participate in the survey?" This allowed the researchers to obtain the subject's informed, voluntary consent to participate in the study. After screening the data, the research team determined that the response results were appropriate and comprehensive. We distributed 232 questionnaires and collected 232 responses, resulting in a 100% recovery rate.

Among the surveyed participants, the majority were female, accounting for 166 individuals, which represents 71.6% of the total. In contrast, the number of male participants was 66, making up 28.4% of the respondents. The participants' school year distribution indicates a varied representation. The highest proportion was among junior

students, with 88 respondents, accounting for 37.9% of the total. Sophomores followed with 60 individuals, representing 25.9% of the surveyed population. Senior students constituted 68 respondents, comprising 29.3%. Freshman students had the smallest representation, with 16 participants, making up 6.9%. The participants' majors were classified into two categories: Natural Sciences and Social Sciences. Among the respondents, the majority, 131 individuals, were pursuing majors in Social Sciences, making up 56.5% of the sample. Natural Sciences accounted for 101 participants, representing 43.5%. In terms of meal consumption, the data revealed interesting patterns. The majority of participants, 135 individuals (58.2%), reported consuming three meals a day. A considerable number of participants 76 (32.8%), indicated consuming less than three meals. A smaller proportion, 21 respondents (9.1%), reported consuming over three meals per day. When it comes to breakfast consumption, the participants exhibited varying habits. Among the respondents, 97 individuals (41.8%) reported frequently having breakfast. 94 participants (40.7%) mentioned sometimes having breakfast, while 41 respondents (17.7%) reported hardly having breakfast. Regarding lunch consumption, the data showed that a significant portion of participants, 185 individuals (79.7%), reported frequently having lunch. 37 respondents (15.9%) mentioned sometimes having lunch, while only 10 participants (4.3%) reported hardly having lunch. The majority of participants, 192 individuals (82.8%), reported frequently having dinner. 37 respondents (15.9%) mentioned sometimes having dinner, while a mere 3 participants (1.3%) reported hardly having dinner. The survey participants' inclination towards help-seeking was explored across five categories, ranging from "Not probable" to "Very probable". The responses indicated a diverse range of attitudes. 69 participants (29.7%) reported being somewhat probable to seek help, while 67 individuals (28.9%) mentioned being somewhat improbable. 57 respondents (24.6%) reported a neutral stance, while 30 participants (12.9%) reported not being probable to seek help. A smaller proportion of 9 individuals (3.9%) expressed a very probable inclination to seek help.

The following data [Table 1](#) will also summarize the descriptive statistics of the target group, along with the influence of demographic components on BSQ, EAT-26, and ATSPPH. You can find this information further down in the article

Table 1. Sample descriptive characteristics.

Characteristics of participants	N (%)	
Gender	Male	66 (28.4)
	Female	166 (71.6)
School year	Freshman	16 (6.9)
	Sophomore	60 (25.9)
	Junior	88 (37.9)
	Senior	68 (29.3)
Major	Natural sciences	101 (43.5)
	Social sciences	131 (56.5)
Meal	Less than three	76 (32.8)
	Three meals	135 (58.2)
	Over three meals	21 (9.1)
Breakfast F	Hardly	41 (17.7)
	Sometimes	94 (58.2)
	Frequently	97 (41.8)
Lunch F	Hardly	10 (4.3)
	Sometimes	37 (15.9)
	Frequently	185 (79.7)
Dinner F	Hardly	3 (1.3)
	Sometimes	37 (15.9)
	Frequently	192 (82.8)
Help seeking	Not probable	30 (12.9)
	Somewhat improbable	67 (28.9)
	Neutral	57 (24.6)
	Somewhat probable	69 (29.7)
	Very probable	9 (3.9)

2.3. Measurement

2.3.1. Body Shape Questionnaire

Cooper, et al. [16] developed the Body Shape Questionnaire Scale (BSQ) with the aim of examining individuals' psychological reactions to their physical appearance. The scale measures 34 items on a 6-point Likert scale, with numbers ranging from 1 (indicating "never") to 6 (indicating "always"). All inquiries pertain to the state of the subject matter during the preceding four-week period. The Body Shape Questionnaire (BSQ) is a comprehensive assessment tool that can be utilized to identify individuals who are at a heightened risk of developing eating disorders.

The current investigation employed the item development technique, which was subsequently followed by a Confirmatory Factor Analysis (CFA). The Confirmatory Factor Analysis (CFA) revealed a robust 1-factor answer, leading to a satisfactory model fit. The CMIN/df value is 2.900 ($p < 0.001$), the Goodness-of-Fit Index (GFI) is 0.730, the Comparative Fit Index (CFI) is 0.865, the Tucker-Lewis Index (TLI) is 0.851, the Root Mean Square Error of Approximation (RMSEA) is 0.091, and the Probability of CLOSE fit means 0.000 [18].

2.3.2. Eating Attitude Test – Short Form (EAT-26)

Garner, et al. [19] present a reduced 26-item variant of the Eating Attitudes Test (EAT-26) based on a factor analysis of the original scale (EAT-40). EAT has been utilized as a screening instrument in populations with a heightened susceptibility to developing anorexia nervosa, with the aim of detecting previously unidentified instances of the disorder [20]. A forced-choice Likert scale, ranging from 1 to 6, presents the items. The scale ranges from 1 (indicating "never") to 6 (indicating "always"). Garner et al.'s (19) investigation yielded a Cronbach's alpha coefficient of 0.90 for the entire scale.

The overall scale in this study exhibited a Cronbach's Alpha coefficient of 0.94. The current investigation found that the measurement was sufficient, with a CMIN/df value of 2.707 ($p < 0.001$), GFI value of 0.805, CFI value of 0.887, TLI value of 0.864, RMSEA value of 0.086, and PCLOSE value of 0.000 [18].

2.3.3. Attitude towards Seeking Professional Psychological Help – Short Form

The abbreviated version developed by Fischer and Farina [21] is based on Fischer and Turner's 29-item Attitude Towards Seeking Professional Psychological Help. The Attitude Towards Seeking Professional Psychological Help – Short Form (ATSPPH-SF) was created with the purpose of assessing individuals' attitudes towards seeking professional psychological aid. This assessment comprises a total of 10 items. The scale instructs participants to rate the items from 1 to 5, with 1 denoting "strongly disagree," 2 "disagree," 3 "neutral," 4 "agree," and 5 "strongly agree." The scale has been shown to exhibit a strong degree of internal consistency, as seen by its Cronbach's Alpha coefficient of 0.84 and its test-retest coefficient of 0.80 over a period of four weeks [22].

The overall scale utilized in this study exhibited a Cronbach's Alpha coefficient of 0.887. The accuracy of the measurement was demonstrated by the CFA, which yielded the following results: CMIN/df = 4.362 ($p < 0.001$); GFI = 0.874; CFI = 0.894; TLI = 0.863; RMSEA = 0.121; and a 90% confidence interval [18].

2.4. Procedures

The study used a Google Form-facilitated survey methodology to collect data on university campuses. We conducted online surveys via platforms such as Facebook, Zalo, and email, providing participants with the survey link and guiding them through the process.

We conducted the survey from September 14, 2022, to January 9, 2023, adhering to anonymity and confidentiality principles. The research staff encouraged participants to contact them for any inquiries or concerns, and participation was voluntary and uncompensated. The survey was voluntary and uncompensated.

To ensure ethical compliance, the current study adhered to the ethical requirements outlined in the Helsinki

Declaration for research involving human subjects. Furthermore, the study followed the ethical norms established by the American Psychological Association (APA) for participatory human research.

Within this investigation, three specific scales were utilized. The Body Shape Questionnaire (BSQ) developed by Cooper, et al. [16] the Eating Attitudes Test (EAT-26) developed by Garner, et al. [19] and the Attitude Toward Seeking Professional Psychological Help (ATSPPH) scale developed by Fischer and Farina [21] were employed as assessment tools.

2.5. Ethical Aspects

The Declaration of Helsinki, which governs research on human participants, reviewed and approved the present study. This research is funded by the Ho Chi Minh City University of Education Foundation for Science and Technology under grant number CS.2023.19.10ĐH. The Ethical Committee of the Ho Chi Minh City University of Education, Vietnam, has granted approval for this study on October 19th, 2023.

2.6. Data Analysis

We used descriptive statistics to analyze the characteristics of the participants. The present study employed SPSS version 26 to perform validity and reliability analysis. Additionally, we employed one-way analysis of variance (ANOVA) and non-parametric tests (Mann-Whitney and Kruskal-Wallis) to examine potential statistically significant associations between body image, eating disorder, and attitudes towards seeking professional help.

The data was analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) because of its ability to capture measurement models, identify multiple independent-dependent correlations, predict relationships for moderation and mediation, and handle non-normal data [23].

The assessment of the measurement model and structural model is an essential component in the methodical implementation of the Partial Least Squares Structural Equation Modelling (PLS-SEM) technique. The measurement model was assessed using various measures, including convergent validity (average variance extracted), construct reliability (Cronbach's Alpha), composite reliability (CR), reflection indicator reliability (outer loading), and discriminant validity (HTMT criterion). The structural model was analysed, collinearity statistics were examined, variance inflation factor (VIF) was determined, the coefficient (R^2) was calculated, the effect size (f^2) was calculated, and the importance and applicability of the path coefficients were determined. We conducted a comprehensive analysis of 1000 bootstrap samples using a rigorous PLS-SEM approach to determine path coefficients, their corresponding P-values, and specific indirect, specific direct, and total effects.

Due to the small sample size ($n = 232$), our study only used 1000 sample approaches, despite the frequent use of 5000 sample bootstrapping. Figure 1 conducted a multiple-mediated PLS path model with ATSPPH as the output variable, BSQ as the input variable, and EAT-26 as the mediating variable.

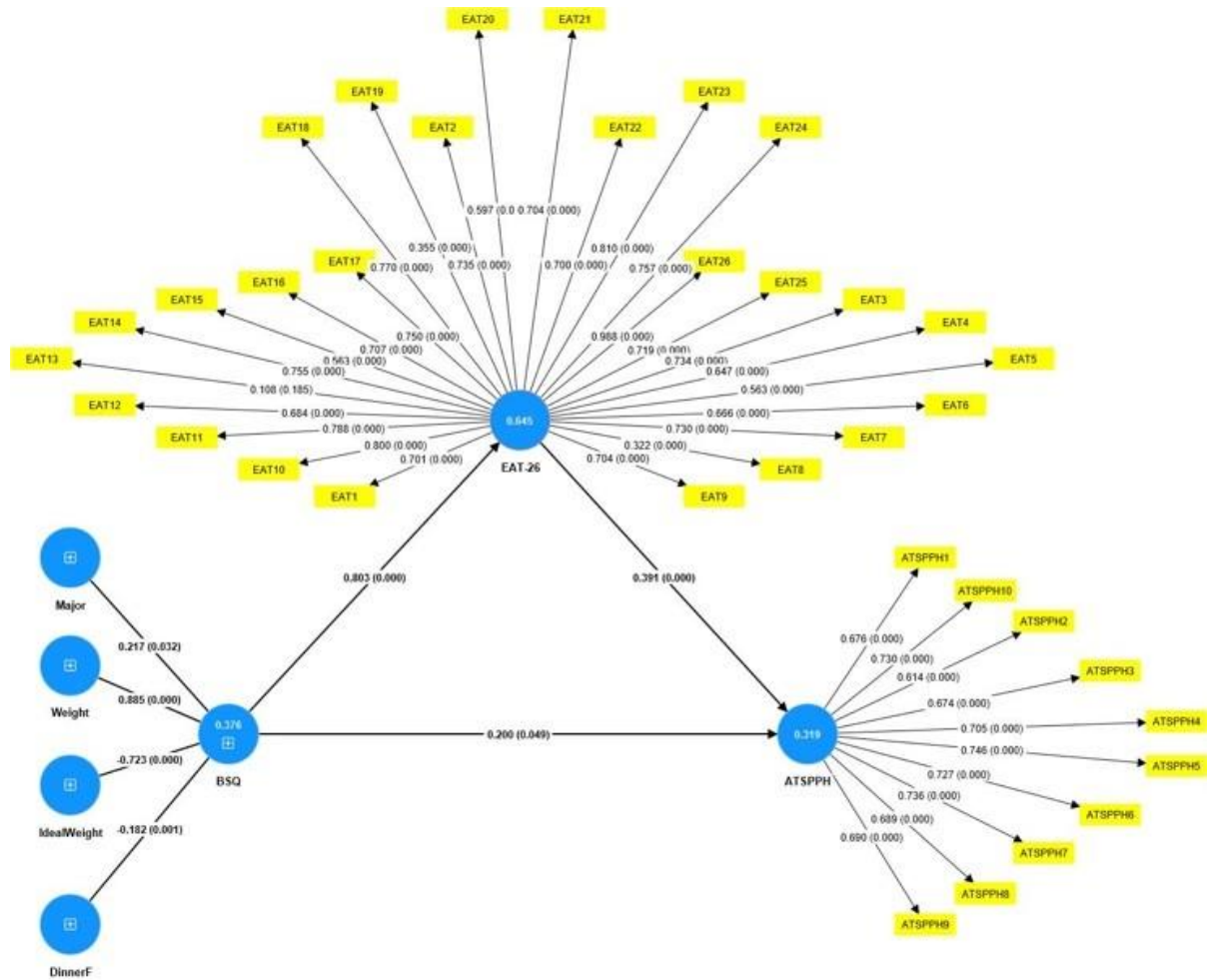


Figure 1. Model.

Note: BSQ, Body shape questionnaire; EAT-26, Eating attitudes test; ATSPPH, Attitudes toward seeking professional psychological help.

3. RESULTS

3.1. Inferential Analysis

According to the non-parametric Kruskal-Wallis’s test results, there was a significant difference in BSQ between students who ate dinner regularly and those who ate occasionally ($\chi^2(2) = 18.355, p < 0.001$). Post-hoc pairwise comparisons using the Dunn test indicated that BSQ was higher in frequently eaten dinner than sometimes eaten dinner ($p < 0.001, Z = 3.926, r = 0.258$). However, there were no differences between hardly and frequently eaten dinner ($p = 0.169, Z = 1.908, r = 0.125$) and sometimes eaten dinner ($p = 1.00, Z = 0.675, r = 0.044$). Furthermore, the frequency of eating dinner had a significant influence on ED ($\chi^2(2) = 17.769, p < 0.001$). ED was higher in frequently eaten dinner than sometimes eaten dinner ($p < 0.001, Z = 3.897, r = 0.256$). However, there were no significant differences between rarely and frequently eaten dinner ($p = 0.216, Z = 1.799, r = 0.118$) and occasionally eaten dinner ($p = 1.00, Z = 0.578, r = 0.038$).

The Kruskal-Wallis tests also indicated a significant difference was found in ATSPPH for likely help-seeking ($\chi^2(4) = 16.787, p < 0.01$). There was a statistically significant difference between not probable and very probable seeking help ($p < 0.01, Z = -3.339, r = -0.220$) and between somewhat improbable and somewhat probable seeking help ($p < 0.01, Z = -3.468, r = -0.228$). However, there were no differences between not probable and somewhat improbable help-seeking ($p = 1.000, Z = -0.616, r = -0.040$), neutral ($p = 1.000, Z = -1.505, r = -0.220$), and very probable ($p = 1.000, Z = -1.125, r = -0.074$). There were no statistical differences between somewhat improbable and neutral ($p = 1.000, Z = -1.133, r = -0.074$) and very probable seeking help ($p = 1.000, Z = -0.823, r = -0.054$). There were no differences between individuals who were neutral and very probable in seeking help ($p = 1.000, Z = -0.245, r = -0.016$) and those who were somewhat probable ($p = 0.291, Z = -2.183, r = -0.143$). There were no

differences between individuals who were very probable to seek help and somewhat probable ($p = 1.000$, $Z = 0.854$, $r = 0.056$).

According to the t-test results, there was a substantial variation in the mean between the two groups, indicating that eating disorder risk differed between the two major groups. Eating disorder risk was more prevalent among social science students ($M = 2.35$, $SD = 0.87$) than among natural science students ($M = 2.07$, $SD = 0.74$).

Table 2 comprehensively summarizes the findings regarding one's BSQ, EAT-26, and ATSPPH. The Pearson correlation analysis was performed in SPSS. There was a strong linear association between two quantitative variables, BSQ and EAT-26 ($r = 0.769$, $p < 0.01$). BSQ also had a positive correlation with ATSPPH ($r = 0.486$, $p < 0.01$). There was a significant, strong linear association between EAT-26 and ATSPPH ($r = 0.557$, $p < 0.01$).

Based on the research conducted by Field [24] the assessment of the strength of a linear relationship between two variables relies on the Pearson correlation coefficient. To determine if the correlation coefficient is statistically significant, the associated hypothesis must be tested by comparing the study findings to the null hypothesis. Once it has been established that there is a significant linear correlation ($p < 0.05$) between the two variables, the next step involves evaluating the magnitude of the correlation using the absolute value of the correlation coefficient ($|r|$). Field [24] provided guidelines for interpreting the strength of the correlation: $|r| < 0.1$ indicates a very weak correlation, $|r| < 0.3$ indicates a weak correlation, $|r| < 0.5$ indicates a moderate correlation, and $|r| \geq 0.5$ indicates a strong correlation.

Furthermore, Nettleton [25] revealed that the correlation coefficient, ranging from -1 to +1, determines the nature of the relationship between variables. A value of 0 signifies no correlation, a positive value of +1 indicates a positive correlation, and a negative value of -1 indicates a negative correlation. This implies that a rise in variable A leads to an increase in variable B for positive correlations, while negative correlations demonstrate an inverse relationship.

The Pearson correlation analysis results indicate a relationship between BSQ and both EAT-26 and ATSPPH. Therefore, we deem hypotheses 3, 4, and 5 eligible for acceptance.

Table 2. Correlation between body shape questionnaire, eating attitudes test and attitudes toward seeking professional psychological help.

Variables	BSQ	EAT-26	ATSPPH
BSQ	-		
EAT-26	0.769**	-	
ATSPPH	0.486**	0.557**	-

Note: **Correlation is significant at the 0.01 level (2-tailed)
BSQ, Body shape questionnaire; EAT-26, Eating attitudes test; ATSPPH, Attitudes toward seeking professional psychological help.

3.2. Measurement Model

The study's measurement model was evaluated through a Confirmatory Factor Analysis (CFA) employing the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The assessment of the common factor model encompassed various aspects, including indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. These evaluations were conducted based on parameters such as outer loading values, Cronbach's Alpha (CA), composite reliability (CR), Average Variance Extracted (AVE), and the Heterotrait-Monotrait (HTMT) criterion.

3.2.1. Indicator Reliability

Indicator reliability is defined as the degree to which an indicator accurately represents an endogenous construct within a model, indicating its commonality [26]. We can assess this by examining outer loading, which is the bivariate correlation between an indicator and its corresponding construct [27]. By squaring the outer loading, we can determine the proportion of indicator variances explained by the associated construct.

To establish indicator reliability, it is crucial for the indicator loading to be statistically significant as a primary condition [27]. Furthermore, Hair, et al. [27] recommend that indicator loadings exceeding 0.708 demonstrate acceptable indicator reliability. This threshold implies that the construct explains more than half of the variance in the respective indicator, as indicated by the square root of the loading. However, under certain conditions, such as ensuring the preservation or improvement of Average Variance Extracted (AVE) and Composite Reliability (CR) values after item removal, indicators with outer loadings ranging from 0.4 to 0.7 can still be considered acceptable [27]. Except for EAT 8, EAT 13, EAT19, and EAT26 were less than 0.40, all external load measurements were at or above 0.4. We provisionally accepted these indicators for the corresponding constructs, given that their removal did not improve CR and AVE. It is worth noting that all indicator loadings demonstrated statistical significance at the 2.5% level, as confirmed by performing 1000 bootstrapping resampling procedures.

3.2.2. Construct Reliability

The most commonly used measure for assessing internal consistency and reliability is CA, which focuses on the consistency among items within a construct. However, a notable limitation of CA is its assumption of tau-equivalence, treating all indicator loadings as equal in the population [27]. In contrast, CR considers the variations in indicator loadings and can provide a more reliable estimate of internal consistency [23]. It is important to acknowledge that CA tends to yield conservative reliability values (i.e., relatively lower estimates), while CR may overestimate internal consistency reliability (i.e., relatively higher estimates). As a result, the construct's true reliability is typically considered to lie within the range of these two extreme values.

Both Cronbach's alpha and Composite Reliability share the same threshold for evaluation. Reliability values between 0.60 and 0.70 are deemed "acceptable in exploratory research," while values ranging from 0.70 to 0.90 are considered "satisfactory to good". Reliability estimates exceeding 0.90 (and certainly above 0.95) can raise concerns because they indicate potential redundancy among indicators, thereby compromising construct validity.

Table 3. Results of the reflective measurement model.

Construct and items	CR	α	AVE
BSQ	0.978	0.976	0.566
EAT-26	0.956	0.944	0.440
ATSPPH	0.889	0.885	0.490

Note: CR, Composite reliability; AVE, Average variance extracted; BSQ, Body shape questionnaire; EAT-26, Eating attitudes test; ATSPPH, Attitudes toward seeking professional psychological help.

3.2.3. Convergent Validity

In the study, AVE was utilized to assess the convergent validity of the measurements. The minimum acceptable AVE value is 0.50; values of 0.50 or greater suggest that the structure explains 50 percent or more of the variance or variation of the structure's indicators [23].

The value of CR should be greater than 0.70 [23]. The values are legitimate if the AVE is more than 0.50 [28, 29]. However, the study by Fornell and Larcker [30] indicates that if the CR exceeds 0.6, it is considered acceptable even if the AVE is less than 0.5. According to the findings presented in Table 3, only AVE of the BSQ construct exceeds the minimum threshold. However, all of the constructs demonstrate CR values that surpass the threshold. In this case, the limitation of AVE not meeting the threshold is considered acceptable, given that the CR values are above the threshold.

3.2.4. Discriminant Validity

Apart from the commonly used methods like Fornell and Larcker [30] criterion and cross-factor loading, the HTMT (Heterotrait-Monotrait) criterion has become a sophisticated and extensively embraced technique. According to Hair, et al. [27] the HTMT criterion validates the discriminability of a reflective model when the

HTMT value for each pair of constructs does not exceed the threshold of 0.9. We perform a bootstrapping procedure to further validate discriminant validity by testing whether the HTMT statistic significantly deviates from 1. If the confidence interval range does not include the value of one, it indicates that the two constructs are distinct [27]. Therefore, the HTMT criterion offers a robust method for assessing discriminant validity in scale evaluation.

Table 4 displays the HTMT values, with parentheses indicating the corresponding HTMT confidence intervals. Notably, all of these values were below the maximum level of acceptance. It is important to emphasize that none of the confidence intervals included the value of 0. This indicates that the model successfully demonstrated discriminant validity.

Table 4. Heterotrait-Monotrait (HTMT) criterion of lower order constructs.

Variables	BSQ	EAT-26	ATSPPH
BSQ	-	-	-
EAT-26	0.810 (0.750; 0.861)	-	-
ATSPPH	0.529 (0.425; 0.622)	0.604 (0.498; 0.688)	-

Note: -, no value.

BSQ, Body shape questionnaire; EAT-26, Eating attitudes test; ATSPPH, Attitudes toward seeking professional psychological help.

3.3. Assessment of Structural Model

3.3.1. Collinearity Statistics (VIF)

The Variance Inflation Factor (VIF) is utilized to assess the extent of collinearity in the structural model. Collinearity occurs when there is a high correlation between two indicators. Table 5 displays all VIF values below 10. These findings indicated the absence of collinearity issues within the collected data.

Table 5. Variance inflation factor (VIF) values.

Variables	BSQ	EAT-26	ATSPPH
BSQ	-	1.000	2.838
EAT-26	-	-	2.838
ATSPPH	-	-	-

Note: -, No value.

BSQ, Body shape questionnaire; EAT-26, Eating attitudes test; ATSPPH, Attitudes toward seeking professional psychological help.

3.3.2. Determination of Coefficient (R^2)

R^2 serves as an indicator of the predictive accuracy of the model and reflects the proportion of variances in the endogenous constructs that are accounted for by the structural model. In order for the R^2 value to be deemed significant, it should exceed 0.1, as established by Chin [31] and recognized as substantial by Falk and Miller [32]. According to this study, BSQ and EAT-26 explained 31.6% of the variance in professional help-seeking attitudes.

3.3.3. The Effect Size (f^2)

The assessment of effect size enables researchers to examine the impact of each exogenous construct on the endogenous construct. In this study, the f^2 values align with the recommended thresholds outlined by Cohen [33]. Specifically, the effects of Weight on BSQ and BSQ on EAT-26 are considered large, with effect sizes of 0.451 and 1.838, respectively. Exceptionally, the effects of Ideal Weight on BSQ are considered medium, with a value of 0.302.

3.3.4. Mediation Analysis

The study's findings revealed a positive and statistically significant direct effect from BSQ to ATSPPH ($\beta =$

0.209, $p < 0.05$) and a positive and statistically significant direct effect from EAT-26 to ATSPPH ($\beta = 0.391$, $p < 0.001$). These results indicate that both BSQ and EAT-26 have a positive influence on ATSPPH. Additionally, the study demonstrated partial mediation, as both the direct and indirect effects were found to be significant [34].

Table 6. Results of PLS-SEM analysis.

Path	B coefficient	T	95% confident intervals	95% BC confident intervals	P
Direct effect					
BSQ → EAT-26	0.805	33.190	(0.755; 0.854)	(0.739; 0.842)	<0.001
BSQ → ATSPPH	0.189	1.845	(-0.019; 0.386)	(-0.019; 0.385)	0.065
EAT-26 → ATSPPH	0.404	3.987	(0.213; 0.608)	(0.193; 0.592)	<0.001
Major → BSQ	0.217	2.146	(0.027; 0.417)	(0.025; 0.411)	<0.05
Weight → BSQ	0.885	10.241	(0.711; 1.055)	(0.715; 1.057)	<0.001
Indirect effect					
DinnerF → BSQ → EAT-26	-0.146	3.365	(-0.233; -0.059)	(0.235; -0.063)	<0.01
Weight → BSQ → EAT-26 → ATSPPH	0.287	3.501	(0.145; 0.463)	(.0135; 0.451)	<0.001
BSQ → EAT-26 → ATSPPH	0.325	3.825	(0.169; 0.500)	(0.149; 0.483)	<0.001

Note: BSQ, Body shape questionnaire; EAT-26, Eating attitudes test; ATSPPH, Attitudes toward seeking professional psychological help.

3.4. Results of PLS-SEM Analysis

Figure 1 presents the finalized version of the PLS model utilized in this investigation. The research model comprises three constructs: ED (consisting of components from the eating attitudes test scale), BSQ (consisting of components from the body shape questionnaire scale), and ATSPPH (consisting of components from the attitude towards seeking professional psychological help scale). Within the mediation framework, EAT-26 was the mediator of ATSPPH and BSQ' latent vector.

We examined the correlations and hypotheses using the 1000 bootstrapped samples to determine the significance of the path coefficients [35]. Table 6 displays the route coefficient results.

The results in Table 6 supported Hypothesis 6 because they showed that BSQ had a significant positive effect on EAT-26 [$\beta = 0.805$, $p < 0.001$, 95% CI = (0.755; 0.854)]. On the other hand, BSQ [$\beta = 0.189$, $p = 0.065$, 95% CI = (-0.019; 0.386)] did not affect ATSPPH, which led to the rejection of Hypothesis 7. Major [$\beta = 0.217$, $p < 0.05$, 95% CI = (0.027; 0.417)] and Weight [$\beta = 0.885$, $p < 0.001$, 95% CI = (0.711; 1.055)] both had a positive effect on BSQ. The impact of EAT-26 [$\beta = 0.404$, $p < 0.001$, 95% CI = (0.213; 0.608)] on ATSPPH was significantly positive. This establishes the validity of Hypothesis 8.

We propose to include all meditators in a single model and review it simultaneously. Consequently, we utilized a multi-step, multiple-mediated PLS path model, with BQS as input variables and ATSPPH as output variables. In contrast, EAT-26 mediated the input's effects on the output variables. The approach of Nitzl, et al. [34] followed this approach to assess the variables' mediation role. Table 6 provides an outline of the indirect effects that the structural model will have.

The indirect effect of BSQ and ATSPPH through EAT-26 was significant and positive [$\beta = 0.325$, $p < 0.001$, 95% CI = (0.169; 0.500)]. Therefore, we established the validity of Hypothesis 9. The indirect effect of Dinner Frequency and EAT-26 was significant and negative [$\beta = -0.146$, $p < 0.01$, 95% CI = (-0.233; -0.059)] through BSQ. There was a significant and positive indirect effect of Weight and ATSPPH [$\beta = 0.287$, $p < 0.001$, 95% CI = (0.145; 0.463)] through BSQ and EAT-26. At the 2.5% level, all direct effects were statistically significant, and we excluded the value 0 from the 95% confidence intervals.

4. DISCUSSION

This study aimed to (i) explore the association between body image, eating disorder risk, and undergraduate students' professional help-seeking attitudes; and (ii) examine whether eating disorder risk mediates the impact of body image on professional help-seeking attitudes.

The study's findings fall into several major categories, including the following:

Firstly, the risk of developing an eating disorder varies significantly among young individuals majoring in the sciences and social studies. Secondly, dinner issues significantly differ in terms of body image and eating disorder risk. Thirdly, a statistically significant difference exists between the ability to seek professional aid and professional help-seeking attitudes. Fourth, body image has a strong and positive association with eating disorder risk. Fifthly, there is a strong correlation between professional help-seeking attitudes and body image. Sixth, there is a positive correlation between eating disorder risk and professional help-seeking attitudes. Seventh, body image preoccupation mediates the association between young people's supper frequency and eating disorder risk. Eighthly, preoccupation with body image-aspiring disorder risk mediates the association between teenagers' current weight and professional help-seeking attitudes. Ultimately, eating disorder risk will mediate the relationship between body image and professional help-seeking attitudes.

According to our first findings, there is a significant difference in eating disorder risk between natural sciences students and social sciences students, with students in the social sciences having a higher risk than the other. According to [Muñoz-Rodríguez, et al. \[36\]](#), biomedical (natural sciences) students were more concerned about diet, food selection, and habit formation when consuming healthy foods. We also judged students majoring in nutrition (the category of natural sciences) to have healthy eating habits, as they demonstrated a greater emphasis on menu selection and cultivating healthy lifestyle practices [\[37\]](#). In general, students in the natural sciences were more concerned with maintaining a healthy diet than those in the social sciences.

Secondly, dinner issues significantly differ in terms of body image and eating disorder risk. College students who hardly eat dinner are more concerned about their body image and eating disorder risk. In contrast to previous studies, [Gillihan \[38\]](#) suggests that during late hours, individuals often resort to late-night snacks to alleviate negative emotions such as stress, loneliness, or boredom. According to [Long \[39\]](#) if a person engages in emotional eating, he or she will enter a state of uncontrolled binge eating (eating disorder risk) and may overeat customarily. The likelihood of an individual developing an eating disorder increases when they have a negative body image [\[40\]](#).

Our third finding is that a statistically significant difference exists between the ability to seek professional aid and professional help-seeking attitudes. [Seyfi, et al. \[41\]](#) indicated that students' professional help-seeking attitudes were positively correlated with their intention towards professional help-seeking attitudes; therefore, students have a positive attitude towards it. Students with professional help-seeking attitudes will seek help more frequently. [Forrest, et al. \[42\]](#) found that individuals who exhibit atypical eating disorders are less inclined to seek treatment. However, raising awareness about these disorders can potentially encourage more individuals to seek appropriate treatment. According to [Tavolacci, et al. \[43\]](#) individuals with eating disorder-related problems will be more stressed than others, and they will seek help from friends and family first.

The fourth main finding of this study states that there is a robust and substantial connection between body image and eating disorder risk in young individuals. Evidence suggests a link between unhappiness with body image and several mental health conditions, with eating disorders being the most prominent [\[44\]](#). In a study conducted by [Forman and Davis \[45\]](#) it was determined that possessing a negative self-image and experiencing concurrent body dissatisfaction can be considered potential risk factors for depression, anxiety, and even eating disorders. Neumark-Sztainer and colleagues yielded comparable findings, supporting the idea that unhappiness with one's body image is associated with an increased likelihood of developing an eating disorder [\[8\]](#). However, our findings present a potential avenue for further exploration, contributing to the growing body of knowledge in this area.

The fifth main finding was that eating disorder risk and professional help-seeking attitudes exist in correlation with each other. Common barriers to seeking professional help for individuals with eating disorders include fear of discrimination, negative attitudes towards help-seeking, and other psychological barriers [46]. Reducing psychological obstacles will minimize negative thoughts and attitudes towards seeking help. Additionally, several studies have highlighted that "eating disorders are one of the serious mental illnesses that affect the mental and the physical". As a result, an effective treatment ought to be available [47, 48]. Our findings challenge the results of previous research that suggested a low rate of professional treatment-seeking for eating disorders due to numerous obstacles, including discrimination [11, 49]. As a result, our research has opened a more practical approach to recognizing and intervening early to assist in alleviating psychological difficulties and enhance openness in the professional help-seeking attitudes of young people to eating disorder risk.

Our sixth finding indicates a significant and favorable relationship exists between body image and professional help-seeking attitudes. Young people concerned about their muscle image are more inclined to seek professional assistance, and vice versa. Mitchison and Mond [50] found that "male individuals who have concerns about their muscles often seek professional help later than women" due to preoccupation with body image or dieting, overdoing exercise, binge eating, and other women's problems. Body image issues are also a risk factor for various mental health issues, notably depression and anxiety [51]. However, it often goes unnoticed and unaddressed. As a result, practitioners in the field of mental health should receive training on how to identify worries and poor body images in patients of both genders so that they can receive the necessary treatment.

Our seventh finding demonstrates that body image worked as a mediator in the association between students' dinner meal frequency and eating disorder risk. However, the relationship between these triads is currently under-researched. In her conclusion, Jones [52] acknowledged that a concern with body image, usually in a negative way, could be a risk factor for the development of eating disorders. Eating too much and too frequently at supper leads to weight gain [53] and weight is one of the variables that people with body image issues are acutely aware of Montgomery Sklar [54] and Vujović, et al. [53]. This study demonstrates that an unhealthy diet, particularly the frequency of dinner consumption, may be a risk factor for eating disorders due to body image.

The eighth finding is that body image problems and eating disorders risk mediating the association between current weight and professional help-seeking attitudes. Individuals who have either a high or low weight but do not have body image concerns and are not at risk for eating disorders exhibit a positive attitude towards seeking professional help. On the other hand, individuals who have either a high or low weight, along with body image concerns and an increased risk of eating disorders, demonstrate negative attitudes towards professional help-seeking. One of the study's notable findings is the association between overcoming negative body image and reducing the risk of eating disorders. This finding suggests that improving body image can potentially decrease psychological barriers and foster positive attitudes towards seeking professional help for eating disorders.

Further evidence supporting the connection between body image and attitudes towards seeking professional help has emerged, particularly concerning the risk of eating disorders. The findings indicate that individuals grappling with body image concerns may exhibit a positive inclination towards seeking professional assistance, especially when influenced indirectly by the risk of developing eating disorders. Dissatisfaction with one's appearance serves as a risk factor for both eating disorders and depression, conditions that often coexist [55]. Experiencing the symptoms of an eating disorder proves to be a reliable predictor of elevated stress levels, with stress largely stemming from the presence of eating disorder symptoms [56]. Recent systematic reviews on perceived barriers to help-seeking for eating disorders [57] and a scoping review on "eating disorders mental health literacy" by Bullivant, et al. [58] have identified various obstacles. These include stigma and shame, denial of and failure to recognize the severity of the illness, low motivation to change, negative attitudes towards seeking help, and lack of encouragement from others to seek help, and limited knowledge about available help-seeking resources.

4.1. Implications

Concerns about body image, such as a slender body or an ideal body weight, are prevalent among youth. The prevailing stigma surrounding eating disorders often hinders seeking professional assistance. Determining the relationship between these three factors is critical for future problem solving. Our study aims to explore and provide insights into the relationship between body image, eating disorder risk, and professional help-seeking attitudes among college students, despite the limited research on the topic. By delving into this area, we hope to contribute to understanding and potential solutions for this issue.

According to our findings, body image, eating disorder risk, and professional help-seeking attitudes are interrelated.

Our findings suggest that body image may be a risk factor for eating disorders, and eating disorders risk mediates the effect of body image on professional help-seeking attitudes. Factors such as perception, the ability to recognize warning signs, and the effectiveness of educational measures play a significant role in influencing an individual's inclination towards professional help-seeking attitudes. Stigma attitudes and fear of being stigmatized (shame, fear of rejection, or lack of awareness of the severity of the illness, cost, and time) prevent individuals from adopting professional help-seeking attitudes. Therefore, developing a more optimistic outlook and a willingness to encourage and assist one another will facilitate providing support services to those in need. Family meals can be viewed as a positive factor because they enhance cohesion, provide the opportunity to learn healthy eating behaviors, and discourage binge eating and dieting. In particular, there is a disparity in eating disorder risk between natural sciences categories. The choice of supper and the frequency of dinner affect body image and eating disorder risk; ultimately, weight is a factor in body image. Future research should endeavor to identify methods for reducing modifiable barriers such as stigma, shame, rejection, ignorance regarding eating disorder risk, and attitudes contrary to treatment.

4.2. Limitations

Aside from the major implications for practical applications, our study undoubtedly includes limitations the team intends to address in future research. Because of the limited number of participants in our survey, the sample size is small. Additionally, there was a discrepancy in the number of subjects across genders, making it challenging to utilize the gender variable for comparison purposes. Current research has not considered various barriers influencing attitudes towards obtaining professional psychological help (such as stigma, low self-esteem, fear of being branded as an illness, lack of trust in support, etc.). However, these aspects will be subject to investigation in future studies. Despite the limitations of this research, it is evident that the findings hold practical value and significance.

5. CONCLUSION

This article sheds light on the presence of body image preoccupation, eating disorder risk, and professional help-seeking attitudes among young individuals in Vietnam. Research data also demonstrated a relationship between body image preoccupation and professional help-seeking attitudes through mediated eating disorder risk. Therefore, it is necessary to have an in-depth understanding of this impact to encourage positive professional help-seeking attitudes and minimize psychological barriers. To minimize the negative impact of body image concerns and the eating disorders risk on professional help-seeking attitudes, it is first necessary to overcome negative perceptions of body image and practice healthy eating habits, self-acceptance, and love. Furthermore, it is crucial to identify individuals who are at risk of developing eating disorder and to devise suitable strategies that address and mitigate behaviors such as binge eating or frequent and planned meal skip. Early intervention is essential in reducing the risk of eating disorder development.

Above all, it is vital to ensure that the support networks, including parents, friends, teachers, and

physical/mental health care workers, are well-informed about the issue at hand. Equipping them with knowledge about body image concerns and eating disorders is essential to preventing stigma, avoidance, disinterest, and other negative attitudes or behaviors that may hinder effective support. This article's research results show that current weight impacts professional help-seeking attitudes through preoccupation with body image and eating disorder risk. The findings of this study shed light on a dangerous phenomenon in a sample of young adults. The study is of practical importance because it addresses the risk of developing an eating disorder. The rationale behind this paper contributes to a significant research area by increasing awareness of the adverse consequences of body image concerns, eating disorder risk, and professional help-seeking attitudes among Vietnamese youth. This paper serves as a steppingstone for future research endeavors, providing valuable insights for the advancement of knowledge in this area.

Funding: This research is supported by Ho Chi Minh City University of Education (Grant number: AKY-CS.2023.19.10ĐH).

Institutional Review Board Statement: The Ethical Committee of the Ho Chi Minh City University of Education, Vietnam has granted approval for this study on 19 October 2023 (Ref. No. CS.2023.19.10ĐH).

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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