Eating Disorders Behaviour and Body Shape, Self-esteem, Body Mass Index Level Relationship in China

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Abstract
Eating disorders (ED) already become a global health concern for children, adolescents, even adults, including university students and high school students. The factors are affecting eating disorder behaviour from the different dietary habits, food surroundings, nutritional education, body shape (BS), body mass index (BMI), and self-esteem (SE). Therefore, this study is important to explore this relationship in Chinese university students. The purpose of this study is to evaluate the existence of eating disorders behaviour and body shape, self-esteem, body mass index's level relationship among Chinese university students. Using random stratified sampling, the survey was performed with 481 full-time on-campus undergraduate students from five Chinese universities as respondents. The study revealed that there are 49.90 percent (n=240) undergraduate students (females=37.42 percent, N=180; males=12.47 percent, N=60) with eating disorders who are 20 years old (42.9 percent, n=103). The correlation between eating disorders behaviour and BS (r= .280**), BMI (r= .202**) have a significant relationship (p< .01), which is a substantial positive association. And SE (r=- .154**) have a significant reverse relationship (p< .01), which is a substantial negative association. BS and BMI (r= .238**) have a significant relationship (p< .01), BS and SE (r= -.375**) have a significant reverse relationship (p< .01), BMI and SE (r= -.101*) also have a significant reverse relationship (p< .05). According to the findings, SE, BS, BMI have significant relationships with suffering ED. 19-21-years-old, females, the secondary school of family education was easier lead to university students suffer eating disorder behaviours. This study expands the relationship between ED behaviour and BS, SE, BMI and further study is needed and recommended.
Keywords: Eating Disorder Behaviour, Eating Disorder, Body Shape, Self-esteem, Body Mass Index.

Introduction
        A study reported that eating disorders (ED) have increased incidence rates and shown an increasing trend in China, especially in youth and young adults (Wu et al., 2020; Chen et al., 2021). Eating disorders (ED) was defined as one mental disorder, an abnormal

eating behaviour which is negatively affect a person's physical or mental health (American Psychiatric Association, 2013). At the same time, physical or mental well-being will lead to negative affect and abnormal eating behaviours (Quick et al., 2013). Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), Avoidant Restrictive Food Intake Disorder (ARFID), Pica (PI), Rumination Disorder (RD), and Other Specified Feeding and Eating Disorder (OSFED) are the most common eating disorders (American Psychiatric Association, 1980).

The study reported that eating disorders are influenced by beliefs, thoughts, behaviours, feelings, and other factors (Mannat et al., 2016). Dietary habits, food surroundings, nutritional education, physical activity, body shape portrayals of what forms an ideal figure, and anticipation will all influence a college student's body weight perceptions (Lee et al., 2018). Self-reported height and weight were used to calculate the BMI index, which was determined by dividing body weight in kilograms by the square of height in meters. A BMI of 27.50 indicates an increased risk of obesity, a BMI of 23.00-27.50 shows an increased chance of being overweight, a BMI of 18.50-23.00 defines the normal range, and a BMI of less than 18.50 suggests underweight (WHO, 2004). The 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) (World Health Organization, 2017) and the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (Wakefield, 2013) include Compulsive Overeating (Kekic et al., 2020; Saunders, 2004), Drunkorexia (Barry & Piazza-Gardner, 2012), Food maintenance (Giel (Mandera et al., 2019). According to the Diagnostic and Statistical Manual of Mental Disorders-4th Edition and Diagnostic and Statistical Manual of Disorders-5th Edition criteria, BED has a prevalence of 1% to 4% and 1% to 5%. (Marzilli et al., 2018).

The prevalence of AN rate, respectively 13.22 (95%), 38.08 (95%), and 8.38 (95%), and the prevalence of BN rate, respectively 130.05 (95%), 75.21 (95%), and 16.16 (95%) in 15- (Chen J et al., 2021). There has been research into China at various times and in various regions. Sexes among the pervasiveness of ED in the overall population reported lifetime (.91%) and took (.43%) preponderance in eating disorders, but the prevalence of subgroup all types of EDs (any) showed lifetime (1.69%) and 12-month (.72%), respectively. In addition, the lifetime prevalence of AN, BN, and BED was 0.16 percent (95%), 0.63 percent (95%) and (Qian et al., 2021). The rate of ED amongst undergraduate female Chinese students is now AN (1.05%), BN (2.98%), and BED (3.53%). The most frequent ED is BED, which is followed by BN and AN (Tong et al., 2014).

There is a mediated association with eating disorders between low self-esteem and body shape dissatisfaction (Yean et al., 2013), and non-athletic female university students are more unhappy than ordinary female university students at risk for ED (Blair et al., 2017). According to the study, those reasons lead to eating disorders, respectively are common among university students of ages, genders, BMIs, and marital statuses (Kiss-Tóth et al., 2018). On the other hand, as a reason for the COVID-19, the coronavirus also raised the risk of ED and symptoms in people worldwide (Rodgers et al., 2020). The prevalence rate of BED can accurately evaluate their body shape among children and adolescents, causing BS disturbance and binge eating (Lewer et al., 2017). In addition, females with low SE and BS dissatisfaction than males have higher ED morbidity scores (Raykos et al., 2017; Cruz-Sáez et al., 2020). The BS dissatisfaction through SE and negative affect can affect ED (Cruz-Sáez et al., 2020).

The study predicts ED risk among parental protectiveness (β = .09), BMI (β = .18), SE (β = − .14) and BS shame (β = .58) (Cella et al., 2020). At the same time, the ED patients reported their SE low (Ciarma & Mathew, 2017). The cross-sectional studies reported,

childhood BMI was diagnoses as ED is prospectively associated (Yilmaz et al., 2019), university students ED and current weight, obesity was related (Mantzios et al., 2018), but this filed further need for more empirical work. Generally, among 10 per cent to 30 per cent of young people was influenced in healthy, the doctor and public health professional must attend to the problem (Sunitha & Gururaj, 2014). Body shape as an eating disorder is a widespread phenomenon in China (Luo et al., 2021). Young Chinese females also reported body shape dissatisfaction with eating disorders (Luo et al., 2021). Have sample evidence suggesting that Chinese young adults have non-emotional eating (38.90%), emotional over-and under-eating (15.40%), emotional over-eating (14.70%), and emotional under-eating (31.00%), and gender and BMI existence significant predictors (He et al., 2020).

As adolescents have ED prevalence, undergraduate students also have the prevalence of ED symptoms, their shown high-obesity prevalence from BED is one of the causative factors (Lipson & Sonneville, 2017). Furthermore, in undergraduate students, ED and social anxiety disorder (SAD), attention-deficit/hyperactivity disorder (ADHD), perceived burdensomeness (PB), with thwarted belongingness (TB) are significantly comorbid (Christian et al., 2020; Williams & Levinson, 2020; Kwan et al., 2017). There even leads to suicide risk (Kwan et al., 2017). According to one of the studies, the frequency of EDs in Chinese females aged 15 to 24 years ranged from 1.3 percent to 5.21 percent (Fan et al., 2010). Still, the absence of literature available between SE, BS, and BMI to evaluate ED in Chinese undergraduate students. These results, meanwhile, are not representative of the entire population in China due to the lack of a nationwide epidemiological research. Therefore, it is critical to understand ED behaviours among Chinese undergraduate students. The study's purpose is to see if there are any eating disorders among Chinese full-time and on-campus undergraduate students using the theory of planned behaviour.

Methods and Procedure
Sampling Procedure
For the present study, there are 6 universities was selected to survey undergraduate students, it was adoption have purposive samples in the study. Between June and July 2021, undergraduate students from six Chinese institutions in the cities of Lanzhou (2), Hefei (1), Yinchuan (1), Baoji (1), and Maoming (1) participated in the research. We choose undergraduates from 18-24 years old; they were asked that be full-time and on-campus undergraduate students. We adopted to have the purposive to select those universities and undergraduates as samples in China. According to their ages ranging from 18 to 24 years, whether were full-time undergraduates, whether were on-campus undergraduates, who accepted and signed the informed consent.

It was a cross-sectional descriptive study survey in China undergraduate students among conveniently selected samples. Its research standard includes full-time on-campus females and males' undergraduate students. Attended students who don't full-time on-campus undergraduate students and have psychiatric illnesses were excluded from this research. Therefore, the final sample for the participants in this study has 481 full-time on-campus females (N=372) and males(N=109) undergraduate students. Through the investigator to survey undergraduate students on the University campus, students are interested in participating in this study, and they are voluntarily participating in this study.

Definitions

A study reported that eating disorders are influenced by beliefs, thoughts, behaviours, feelings, and other factors (Mannat et al.,2016). Dietary habits, food surroundings, nutritional education, physical activity, body shape portrayals of what forms an ideal figure, and anticipation will all influence a college student's body weight perceptions (Lee et al., 2018). Self-reported height and weight were used to calculate the BMI index, which was determined by dividing body weight in kilograms by the square of height in meters. A BMI of 27.50 indicates an increased risk of obesity, a BMI of 23.00-27.50 shows an increased chance of being overweight, a BMI of 18.50-23.00 defines the normal range, and a BMI of less than 18.50 suggests underweight (WHO, 2004).

Measures
Sociodemographic Questionnaire
There are six items in this part. The questionnaire mainly includes personal information about gender, age, BMI, parents' educational status, income status, and parents' marital status.

Body Shape Questionnaire

Cooper et al. (1987) created the body shape questionnaire, which is a self-report body shape questionnaire. The 8-item short form versions of the body shape questionnaire were used (Cooper et al., 1987). And there are only BSQ forms that the BSQ's copyright holders approve (Dowson & Henderson, 2001). The short forms questionnaire only entirely Chinese adoption version and English version in this research (Liao et al., 2010). The questionnaire does not create, change, and translate other forms. All the questions are answered by the participant. Each question is answered on a six-point Likert scale: 1 (never), 2 (rarely), 3 (sometimes), 4 (frequently), 5 (very often), and 6 (often) (always). A higher number signifies more unhappiness and discomfort with the body experience. The maximum score is 204. (Evans & Dolan, 1993; Cooper et al., 1987). The questionnaire's alpha concentrations ranged from .87 to .92, according to the results (Evans & Dolan, 1993; Dowson & Henderson, 2001).

Rosenberg Self-esteem Scale

Rosenberg (1965) created the Rosenberg Self-Esteem Scale (10-item scale) to assess one's overall self-worth by assessing positive and negative thoughts about oneself. The study adopted Boduszek et al (2013) was developed, Chen F et al (2015) was translated the Chinese version to survey. It is a unidimensional scale (Rosenberg, 1965). The 10 questions will be answered on a four-point Likert scale strongly agree to strongly disagree (Croasmun & Ostrom, 2011). The scale's higher self-esteem scores and eating disorder behaviour have been associated with higher scores (Zamani-Sani et al., 2021).

SCOFF Questionnaire

The SCOFF Questionnaire (Sick, Control, One Stone, Fat, Food Questionnaire) was developed by Morgan et al. (1999). This is a simple screening tool for eating disorders that includes a short questionnaire (Morgan et al., 1999). The tool can be shown a sensitivity of 100 per cent and a specificity of 90 per cent for anorexia nervosa (Fukutomi et al., 2020). This questionnaire contains five items; the questions were designed to determine whether someone might be suffering from an eating disorder (Morgan et al., 1999). Each item has two answers; a positive response (yes) is worth one point, and a score of two or more indicates

the presence of an eating disorder (Luck et al., 2002). It has been demonstrated that this is a high-performing screening test for eating disorders, with a kappa statistic ranging from .73 to .82 indicating outstanding psychometric properties (Hill et al. 2010; Berger et al., 2011). The study used the Chinese version of Leung et al. (2009).

Statistical Analysis

The data was analysed primarily using the SPSSAU project (2021) for statistical purposes, and a p-value of .05 was used to evaluate significance. Frequency, mean, and overall range (minimum and maximum) are examples of descriptive variables (Ding & He, 2004). At the same time, we analysed undergraduate students eating disorders using variance (ANOVA), multiple linear regression analysis, and histogram analysis (Karimy et al., 2015).

Results

There are 481 undergraduate students as the sample in this study. There were 22.66 percent (n=109) males and 77.34 percent (n=372) females, respectively. The participants' average age was 19.94 years (mean=2.938 years), with a range of 18 to 24 years. The majority of the study participants' BMI ranges were normal (n=70.48 percent), while 12.89 percent (n=62) were underweighted, and 16.63 percent (n=80) were overweight and obese, according to WHO's BMI classification for populations. The proportion of the respondents (n=35.34 percent) were mostly from secondary school in their parents' educational status (Table 1).

Table 1

Sociodemographic Information of Undergraduate Students

Variable	Group	Frequency	Percentage (%)
Gender	Male	109	22.66
	Female	372	77.34
Age	18	35	7.28
	19	121	25.16
	20	203	42.20
	21	94	19.52
	22	18	3.74
	23	9	1.87
	24	1	.21
BMI	Underweight (< 18.5 Kg/m²)	62	12.89
	Normal (18.5-24.9 Kg/m²)	339	70.48
	Overweight (25.0-29.9 Kg/m²)	70	14.55
	Obesity (>29.9 Kg/m²)	10	2.08
Parents' Educational Status	Elementary school	91	18.92
	Secondary school	170	35.34
	High school	108	22.45
	Bachelor	110	22.87
	Master	2	.42

Table 2 shows the relationship among SCOFF and BMI grades and social economic characteristics such as gender, age, and parents' educational position among eating disorders, which were 1.773±0.419, 2.938±1.043, and 2.505±1.055, respectively. According to Table 2

illustrates, 12.47% (n=60) of the male's participants have eating disorders status, 37.42% (n=180) of the female's participants have eating disorders status among the undergraduate students in China. While most of the participants perceived themself as average weight, 12.89% (n=62, male and female) of the participants thought that was underweight status. Furthermore, 16.63 percent of the respondents (n=80, males, and females) believed they were overweight or obese. Gender as a moderator with eating disorders (*p*= .003) and BMI (*p*= .004) was found to have a significant relationship. There are 49.90% (n=240) undergraduate students in different age stages who have eating disorders, among the most quantity of eating disorders age has 42.9% (n=103) in 20 ages. However, in all 20s, they distributed among the most significant number of BMI different stages, which is underweight (37.1%, n=23), overweight (44.3%, n=31) and obese (50%, n=5). Practically, we find that the undergraduate students' age group is insignificant among eating disorders (*p*=.721) and BMI (*p*=.490) from 18 to 24 years. Similarly, undergraduate student parents' educational status aspect affects the undergraduate student's eating disorders the most of amount is the secondary school (33.3%, n=80), others individually are high school (25.8%, n=62), elementary school (21.3%, n=51). More and more family education of secondary school (9.4%, n=45) is underweighted, overweight, and obese. However, eating disorders and BMI was not significantly related to parents' educational status (Table 2).

It is showed all items total score in eating disorders, when the score is 2 or above 2, the one's will have an eating disorder in this study. There are 242 undergraduate students suffer eating disorder by table 3. The different ED participants are significant for BS, SE, and BMI (*p*< .05), which means different ED participants have differences for BS, SE, and BMI. ED is significant at .05 level for BS (*F*= 9.051, *p*= .001), ED is significant at .05 level for SE (*F*=2.318, *p*= .043), and ED is significant at .05 level for BMI (*F*= 4.883, *p*= .001), the total score of the groups with the most pronounced disparities are compared. The summary shows that different ED participants show significant differences for BS, SE, and BMI. At a threshold of .01 (*F*= 9.051, *p*= .001), the influence of ED on BS is considerable, and the specific distinctions are obvious. The strong divide around individual different groups are 2.0>0.0; 30>0.0; 4.0>0.0; 5.0>0.0; 2.0>1.0; 3.0>1.0; 4.0>1.0

Table 2

Demographic characteristics of participants in eating disorder (ED) and body mass index (BMI) groups

| Variable | Total | Eating Disorder | | | | BMI | | | | | |
		Yes (n=240)	No (n=241)	F	p	Underweight (n=62)	Normal (n=339)	Overweight (n=70)	Obesity (n=10)	F	p
Gender	481	1.773±0.419		3.640	.003**	1.76±0.43	1.79±0.41	1.77±0.42	1.30±0.41	4.571	.004**
Male	109	60 (12.5)	49 (10.2)			13 (2.7)	76 (15.8)	19 (4.0)	1 (.2)		
Female	372	180 (37.4)	192 (39.9)			49 (10.2)	263 (54.7)	51 (10.6)	9 (1.8)		
Age	481	2.938±1.043		.573	.721	3.05±1.11	2.90±1.04	2.97±0.9	3.30±1.4	0.808	.490
18	35	21 (4.4)	14 (2.9)			3 (.6)	24 (5.0)	7 (1.4)	1 (.2)		
19	121	64 (13.3)	57 (11.9)			14 (2.9)	89 (18.5)	15 (3.1)	3 (.6)		
20	203	103 (21.4)	100 (20.8)			23 (4.8)	144 (29.9)	31 (6.5)	5 (1.1)		
21	94	36 (7.5)	58 (12.1)			16 (3.3)	65 (13.5)	12 (2.5)	1 (.2)		
22	18	10 (2.1)	8 (1.6)			3 (.6)	10 (2.1)	5 (1.1)	0 (.0)		
23	9	5 (1.0)	4 (.8)			3 (.6)	6 (1.3)	0 (.0)	0 (.0)		
24	1	1 (.2)	0 (.0)			0 (.0)	1 (.2)	0 (.0)	0 (.0)		
Parents' Educational Status	481	2.505±1.055		.480	.791	2.45±1.05	2.49±1.03	2.50±1.10	3.40±1.26	2.500	.059
Elementary School	91	51 (10.6)	40 (8.3)			11 (2.3)	62 (12.8)	17 (3.5)	1 (.2)		
Secondary School	170	80 (16.6)	90 (18.7)			19 (4.0)	125 (26.0)	21 (4.4)	5 (1.1)		
High School	108	62 (12.9)	46 (9.6)			12 (2.5)	79 (16.4)	14 (2.9)	3 (.6)		
Bachelor	110	45 (9.4)	65 (13.5)			19 (4.0)	73 (15.2)	17 (3.5)	1 (.2)		
Master	2	2 (.4)	0 (.0)			1 (.2)	0 (.0)	1 (.2)	0 (.0)		
Doctor and above	0	0 (.0)	0 (.0)			0 (.0)	0 (.0)	0 (.0)	0 (.0)		

Note: * $p < 0.05$, ** $p < 0.01$

5.0>1.0. ED had .05 level significance ($F=2.318$, $p= .043$) in the SE results in the display, and the individual differences were visible. The sharp contrast between individual different groups was 1.0>0.0;1.0>2.0;1.0>4.0;1.0>5.0. For BMI results ($F=4.883$, $p= .001$), ED revealed a significant level of .01 as well as differences ($F=4.883$, $p= .001$). The detailed comparison between different groups of differences is 2.0>0.0; 3.0>0.0; 4.0>0.0; 2.0>1.0; 4.0>1.0.

Table 3

The Total Score of Eating Disorder among Body Shape, Self-esteem, and BMI Groups

Variable	ED (Mean ± Std. Deviation)						F	p
	0.0 (n=134)	1.0 (n=105)	2.0 (n=109)	3.0 (n=82)	4.0 (n=30)	5.0 (n=21)		
BS	3.25±1.23	3.21±1.20	3.90±1.15	4.00±1.29	4.17±1.23	4.00±1.58	9.051	.001**
SE	12.22±2.77	13.00±2.21	12.16±2.17	12.50±2.20	11.80±1.75	11.81±3.47	2.318	.043*
BMI	1.92±0.55	1.96±0.55	2.23±0.65	2.11±0.50	2.27±0.78	2.05±0.59	4.883	.001**

Note: * $p< .05$, ** $p< .01$

ED accounted for 49.9% of university students proportion (N=240). 12.5% of males have an ED, and 37.4% of females have an ED. Among them, male university students who are underweight or obese account for 6.9%, which are underweight (2.7%) and overweight (4.0%), obesity (0.2%). Female university students with underweight or obesity accounted for 22.6% of the total, which were underweight (10.2%), overweight (10.6%), and obese (1.8%). Therefore, females are the main participant of ED (37.4) and BMI (underweight = 10.2, overweight = 10.6, obesity = 1.8). Subsequently, 20-year-old university students suffering from ED accounted for 21.4% (N=103). So, the proportion of those over 21 years of age with ED decreases. The main population suffering from ED exists between the ages of 19-21 (42.2%, N=203), and the number of university students over 21 years old gradually decreases. The same is true for BMI.

Table 4

Pearson Correlation of Eating Disorder and Body Shape, Self-esteem, and BMI Groups

		BS	SE	ED	BMI
BS	Pearson Correlation	1	-.375**	.280**	.238**
	Sig. (2-tailed)		.000	.000	.000
SE	Pearson Correlation	-.375**	1	-.154**	-.101*
	Sig. (2-tailed)	.000		0.001	0.027
ED	Pearson Correlation	.280**	-.154**	1	.202**
	Sig. (2-tailed)	.000	0.001		.000
BMI	Pearson Correlation	.238**	-.101*	.202**	1
	Sig. (2-tailed)	.000	0.027	.000	

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

In the Pearson correlation coefficient value, there were substantial relationships between ED and BS, and BMI by Table 4. Specifically, the correlation coefficient value is .280** between ED and BS, and it shows a significant relationship ($p< .01$), which shows that ED has a significant positive correlation with BS. The correlation coefficient is .202** between ED and BMI, and it shows a significant relationship ($p< .01$), which shows the significant positive correlation between ED and BMI. The value of the correlation coefficient is -.154** between ED and SE. It shows a significant reverse relationship ($p< .01$). Between ED and SE, there is a

substantial negative association. BS and BMI (r= .238**) have a significant relationship (p< .01), and SE (r= -.375**) also have a significant reverse relationship (p< .01). BMI and SE (r= -.101*) also have a significant reverse relationship (p< .05).

Discussion
The goal of the study was to use internationally validated self-administered questionnaires to examine and understand eating disorders behaviour and the relationship between body shape, self-esteem, and BMI level among Chinese full-time and on-campus undergraduate students. This is among the few surveys in China that looked at full-time and on-campus college students with eating disorders. It mainly according to eating disorder behaviour and body shape, self-esteem, body mass index's whether have associations to provide actual data. In demographic characteristics analyses, gender, age, and parents' educational status were reported by eating disorder (ED) and body mass index (BMI). Findings suggest that gender (p< .01) has significant related to ED (p= .003) and BMI (p= .004), while age and parents' educational status has insignificant related. We found one similar previous study among college students Indian (Deogade et al., 2017), it reported BMI and BS have high-elevated risk factors associated with ED risk and correlation in college students, with SE and ED was no significant correlation. Fan et al. (2010) also shown BMI can a mediator to the association with ED, and high BMI was significantly associated with body dissatisfaction, and low self-esteem among adolescent in China.

Parents' educational status with low academic qualifications could easily lead to university students' ED. The reason that the parent's education status of 16.6% of university students with ED is secondary school. It accounts for the largest proportion. Therefore, there were university students of parents' education status who belonged to the bachelor's degree or under bachelor's degree in BMI, 12.8% of underweight, 14.3% of overweight, and 2.1% of obese. 40.1% of parent's education status had a bachelor's degree or under bachelor's degree. Notably, there is a significant difference between ED and BS, SE, BMI, which is different BS, SE, BMI has affected ED. The significant difference between BS and BMI for ED is more pronounced, which is higher than the significant difference between ED and SE.

In this fundamental analysis, there are significant differences between ED and BS, SE, BMI, the correlation coefficient of the significant differences is high. On the other words, BS, SE, and BMI effect suffer ED in university students. High BS and high BMI easier cause suffer ED in university students' group. It is originated around of more factors, like family, friends, culture, image, etc (Schafer et al., 2021; Kanbur et al., 2021; Fatt et al., 2021). Obesity is also the leading cause of eating disorders, which mainly originate from high BMI (Call et al., 2021). While many university students are affected by eating disorders, it is more affected by emotions (Reichenberger et al., 2020) and external aesthetics (Whitten & Holt, 2021), predominantly female university students. In sociodemographic information, low self-esteem's body shape judgments can easily cause university students to suffer from eating disorders manifested in dieting or overeating (Colmsee et al., 2021; Linardon et al., 2020; Lin et al., 2020). However, individual differences have a particular impact on this research (Lowe et al., 2020). Whether university students' negative emotions will contribute to ED needs further research (Bottera et al., 2020). We still need to explore further other social factors, such as family income, family marital status, area, rural and city, quality life and so forth (Chan et al., 2020). The difference between different sexes affects eating disorders and BMI changes. This study only provides a specific age range. Whether university students of other ages affect, ED still needs further discussion.

Age and parents' education status do not significantly correlate with ED and BMI. Still, the actual age and parents' education status affect the number of ED and BMI students. This study only explored their relationship level. Future research should further examine university students between ED and BMI relationship by making a new model in China, especially is had ED and BMI females of undergraduate. It is necessary to discuss further whether BMI affects BS and SE and whether there is a significant correlation between them. In addition, we need more sample sizes to evaluate related advanced research further.

Conclusion

According to the findings of the study, half of university students have been at risk for eating disorders on the SCOFF scale. By BMI calculation, about one-third of the people were overweight or obese. Our research also found that 19-21-year-old females, secondary school family educational, overweight, body shape standard, and low self-esteem university students were more sensitive to eating disorder behaviour. SE, BS, BMI, gender have significant relationships with ED, and their different levels have affected eating disorders. This discovery could aid health-care providers and university decision-makers in implementing effective treatments to avoid eating disorders in university students.

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