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Eating Disorders among University Students: Prevalence and Socioeconomic, Behavioural, and Health Correlates

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Abstract

Background: Eating disorders (EDs) are complex mental health conditions that can significantly impair physical and psychosocial functioning, and University students are considered a high-risk group. Limited studies have explored the prevalence and associated factors of EDs among university students in Malaysia.

Objective: To determine the prevalence of eating disorders and identify associated factors among university students.

Methods: A cross-sectional study was conducted among 382 students from a private university in Malaysia using convenience sampling. Data were collected via an online survey distributed through Microsoft Teams and email. The survey included demographic, socioeconomic, and behavioural variables, as well as access to health services. The Sick, Control, One, Fat, Food (SCOFF) Questionnaire was used for ED screening. Statistical analysis was performed using Pearson Chi-square and correlation tests, with significance set at $p < 0.05$.

Results: The prevalence of eating disorders was 39.3%. Positive screening for EDs was significantly associated with female gender ($p = 0.002$), higher weight status ($p < 0.001$), lower household economic status ($p = 0.028$), and limited access to health services ($p < 0.001$).

Conclusions: The prevalence of eating disorders among university students was high. Early diagnosis and targeted interventions are essential to mitigate risk and improve student well-being.

Keywords: Eating Disorders; University Students; Food Insecurity; Malaysia

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Introduction

Eating disorders represent a growing public health concern worldwide, associated with substantial physical, psychological, and social consequences across the lifespan [1] Eating disorders (EDs), defined by the American Psychological Association as a persistent disturbance of eating or eating-related behaviour that results in the altered consumption or absorption of food and that significantly impairs physical health or psychosocial functioning can indicate individuals' subconscious thoughts and body image and their emotional evaluation of their own and others' bodies [2]. Overeating can temporarily relieve stress by increasing serotonin through carbohydrate intake, but this behavior is linked to higher glycemic index foods, elevating risks for cardiovascular disease, obesity, and chronic inflammation. Industrialization and urbanization have driven global increases in eating disorders, particularly in the Asia-Pacific region [2, 3]. EDs affect up to 5% of the general population, with prevalence among university students varying widely from 13.97% to 40.9%, depending on cultural context [4, 5].

Global eating disorder statistics increased from 3.4% to 7.8% [6]. Eating disorders are an extremely complex set of conditions characterized by an altered perception of body image, eating and/or weight-loss behaviours, and excessive concern for physical fitness. The types of eating disorders include Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, and Avoidant Restrictive Food Intake Disorder (ARFID) [7]. The common psychiatric comorbidities associated with eating disorders include depression, anxiety disorders, substance use disorders, sexual dysfunction, self-harm, and suicidal ideation. In addition, all eating disorders cause significant impairment of physical health, which mainly affects the cardiovascular, gastrointestinal, and genital systems. Eating disorders present significant challenges for university students, impacting their physical health, psychosocial well-being, and academic performance [8]. Therefore, this study

aimed to investigate the prevalence and associated factors of eating disorders among university students.

Materials and Methods

A cross-sectional study design was adopted for this study.

Participants

A total of 382 students from Universiti Tunku Abdul Rahman (UTAR), Malaysia, participated in this survey. The study population consisted of students from UTAR, a leading private university in Malaysia with two campuses in the Kampar district of Perak and Kajang, Selangor. A convenience sampling method was used to recruit participants in this study. A self-administered survey form was sent online to the registered students. Selection criteria comprised students who were officially registered and currently enrolled at UTAR, aged 18–25 years, and with no self-reported or previously diagnosed psychological disorders.

Outcome Measures

Sick, Control, One, Fat, Food (SCOFF) Questionnaire: The Sick, Control, One, Fat, Food (SCOFF) questionnaire was employed as a screening instrument for the risk of eating disorders. It is a brief, self-administered tool consisting of five dichotomous (yes/no) items. Each affirmative response is assigned one point, with total scores ranging from 0 to 5. A score of two or more suggests a possible eating disorder and indicates the need for further clinical assessment. In the present study, internal consistency of the SCOFF questionnaire was evaluated using Cronbach's alpha and demonstrated acceptable reliability ($\alpha = 0.61$) within the study population [9].

Socio-demographic profile

Information on participants' sociodemographic characteristics was obtained, including age, gender, ethnicity, level of education, year of study, height, weight, living arrangements, and household economic status. Body mass index (BMI) was calculated using self-reported height and weight and classified according to World Health Organization criteria as underweight (<18.5 kg/m²), normal weight (18.5–24.9 kg/m²), overweight (25.0–29.9 kg/m²), and obesity (≥30.0 kg/m²).

Regarding behavioural variables, physical activity level was assessed using a single self-reported item asking participants to rate their weekly physical activity. Response options included: *none*; *less than 150 minutes of moderate-intensity aerobic activity per week or 75 minutes of vigorous-intensity activity per week*; and *at least 150 minutes of moderate-intensity aerobic activity per week or 75 minutes of vigorous-intensity activity per week*. Participants who met the minimum physical activity recommendations of the American Heart Association, defined as at least 150 minutes of moderate-intensity aerobic activity per week or 75 minutes of vigorous-intensity activity per week, were classified as having an active lifestyle. Weight-related exercise behaviour was explored using an additional structured item asking, *"Do you engage in physical activity to control weight?"*, with response options of *yes*, *no*, or *maybe*.

Access to health services was evaluated through a multiple-response item asking participants to indicate any barriers they had experienced. The listed options included limited availability of healthcare services, perceived lack of healthcare quality, financial constraints, transportation difficulties, or none of the above.

Procedure

Ethical approval was obtained from the UTAR Scientific and Ethical Review Committee (SERC). The survey was distributed online via a link through the university email. Participants were informed about the study purpose and data protection measures and provided electronic consent before participation. Eligibility was confirmed through screening questions, and the survey required approximately 8 minutes to complete.

Data analysis

Data entry and analysis of variables were done by using the Statistical Package for the Social Sciences (SPSS) version 29 software and Microsoft Excel. Frequencies and percentages were used to describe the qualitative variables, whereas means ± standard deviations were calculated for quantitative variables. Cross-tabulations were made to show a wealth of information about the relationship between the variables. Pearson's correlation test was used to measure the strength of association between prevalence and associated factors of ED among university students. The accepted level of significance was set below 0.05 ($p < 0.05$).

Results

A total of 382 students participated (mean age: 20.58 ± 1.34 years), with females comprising 53.7% of the sample. Most participants were Chinese (97.2%), had a normal BMI (54.9%), were third-year undergraduates (32.2%), and lived with family members (90.3%). The mean BMI was 21.18 ± 3.72 kg/m². Household economic status was low (35.9%) or moderate (35.6%), with 11.8% preferring not to disclose.

Half of the participants reported engaging in physical activity for weight control, 81.7% met criteria for an active lifestyle, and 53.4% reported no change in activity levels. Limited access to health services was reported by 59.4%, with financial constraints being the most common barrier.

Positive eating disorder screening was significantly associated with female gender ($r = 0.195$, $p < 0.001$), higher weight status ($r = 0.354$, $p < 0.001$), lower household economic status ($r = 0.111$, $p = 0.028$), engaging in physical activity for weight control ($r = 0.426$, $p < 0.001$), and limited access to health services ($r = 0.213$, $p < 0.001$). The prevalence of eating disorders and sample characteristics are depicted in Table 1. No significant associations were observed for age group, education level, living status, lifestyle, or changes in physical activity level ($p > 0.05$) (Table 1).

The associations between eating disorders and socioeconomic, behavioral, and health-related factors are presented in Table 2.

In this study, 39.3% of participants (n = 150) screened positive for eating disorder risk (SCOFF score ≥ 2). The overall mean SCOFF score was 1.34 ± 1.25 (range: 1–5). Responses to individual items indicated that each question contributed to the detection of eating disorder symptoms, with endorsement rates ranging from 4.5% to 45.0% (Table 3).

Discussion

This study found that female students ($r = 0.195$, $p < 0.001$) and those with higher weight status ($r = 0.354$, $p < 0.001$) were more susceptible to eating disorders. These findings align with previous research, which highlights gender and body weight as important risk factors [10, 11]. Biological differences, including hormonal influences, may contribute to a heightened and longer-lasting stress response in females, making them more prone to negative emotions

Table 1: Prevalence of eating disorders and sample characteristics.

Variables			Screening for eating disorders		
Demographic characteristics		**N (%)**	**Positive (n=150)**	**Negative (n=232)**	***p*-value**
Age group	18-20	174 (45.5)	58 (33.3)	116 (66.7)	0.263
	21-22	183 (47.9)	80 (43.7)	103 (56.3)	
	23-25	25 (6.5)	12 (48.0)	13 (52.0)	
Gender	Male	177 (46.3)	55 (31.1)	122 (68.9)	0.002
	Female	205 (53.7)	95 (46.3)	110 (53.7)	
Race	Malay	2 (0.5)	0 (0.0)	2 (100.0)	0.525
	Chinese	375 (98.2)	148 (39.5)	227 (60.5)	
	Indian	5 (1.3)	2 (40.0)	3 (60.0)	
Weight status	Underweight	97 (25.4)	35 (36.1)	62 (63.9)	< 0.001
	Normal	206 (53.9)	50 (24.3)	156 (75.7)	
	Overweight	64 (16.8)	52 (81.2)	12 (18.8)	
	Obesity	15 (3.9)	13 (86.7)	2 (13.3)	

Table 2: Association of ED with socio-economic, behavioural, and health factors.

Socio-economic					
Education level	Foundation	35 (9.2)	9 (25.7)	26 (74.3)	0.485
	1st year of Degree	77 (20.2)	31 (40.3)	46 (59.7)	
	2nd year of Degree	104 (27.2)	45 (43.3)	59 (56.7)	
	3rd year of Degree	123 (32.2)	49 (39.8)	74 (60.2)	
	4th year of Degree or above	43 (11.3)	16 (37.2)	27 (62.8)	
Living status	Living with family members	345 (90.3)	133 (38.6)	212 (61.4)	0.635
	Living with housemates	23 (6.0)	12 (52.2)	11 (47.8)	
	Living alone	14 (3.7)	5 (35.7)	9 (64.3)	
Household economic status	Prefer not to say	45 (11.8)	16 (35.6)	29 (64.4)	0.028
	Low	137 (35.9)	67 (48.9)	70 (51.1)	
	Moderate	136 (35.6)	51 (37.5)	85 (62.5)	
	High	64 (16.8)	16 (25.0)	48 (75.0)	
Behavioral and health					
Engage in physical activity to control weight	No	137 (35.9)	24 (17.5)	113 (82.5)	< 0.001
	Maybe	54 (14.1)	20 (37.0)	34 (63.0)	
	Yes	191 (50.0)	106 (55.5)	85 (44.5)	
Lifestyle	Inactive	312 (81.7)	119 (38.1)	193 (61.9)	0.343
	Active	70 (18.3)	31 (44.3)	39 (55.7)	
Changes in physical activity level	Decreased	150 (39.3)	63 (42.0)	87 (58.0)	0.850
	Unchanged	204 (53.4)	72 (35.3)	132 (64.7)	
	Increased	28 (7.3)	15 (53.6)	13 (46.4)	
Limited access to health services	No	223 (58.4)	69 (30.9)	154 (69.1)	< 0.001
	Yes	159 (41.6)	81 (50.9)	78 (49.1)	

Table 3: Response of the participants towards the SCOFF questions.

Questions	Response, N (%)	
	Yes	No
1) Do you make yourself sick because you feel uncomfortably full?	17 (4.5)	365 (95.5)
2) Do you worry that you have lost control over how much you eat?	129 (33.8)	253 (66.2)
3) Have you recently lost more than one stone (14 lb, 6.35kg) in a 3-month period?	35 (9.2)	347 (90.8)
4) Do you believe yourself to be fat when others say you are too thin?	172 (45.0)	210 (55.0)
5) Would you say that food dominates your life?	163 (42.7)	219 (57.3)

and, consequently, disordered eating behaviors. Similarly, higher weight status may increase vulnerability to eating disorders due to societal thin-ideal pressures and body dissatisfaction, motivating behaviors aimed at controlling or reducing body weight [12]. In contrast, individuals with underweight or normal weight status may experience greater psychological satisfaction with their body shape, reducing the likelihood of engaging in intense weight-control behaviors.

Household economic status is often used as an indicator of socioeconomic conditions. Although a systematic review suggests that eating disorders are typically considered more prevalent among individuals with higher socioeconomic status, evidence supporting this association is limited [13]. In contrast, the present study found that students from lower household economic backgrounds were slightly more susceptible to eating disorders ($r = 0.111$, $p = 0.028$). This finding may reflect the unique stressors faced by university students with limited financial resources, including pressure to manage academic expenses, maintain part-time employment, and afford nutritious food, which could contribute to disordered eating patterns as coping strategies.

Previous research reported that younger students, those with higher education levels, or living with housemates or alone, were at higher risk of mental disorders due to academic and financial concerns [14]. However, this study found no significant associations between age, education level, or living status and eating disorders, suggesting a more complex interplay of factors. Social support may be more influential than living arrangements. Lifestyle and changes in physical activity also did not predict eating disorders, although individuals exercising to control body weight were more likely to be affected ($r = 0.426$, $p < 0.001$), consistent with the focus on weight and food control characteristic of disordered eating. Limited access to health services was positively associated with eating disorders ($r = 0.213$, $p < 0.001$), with financial constraints being the most reported barrier. However, little is known about how the association between socioeconomic status and eating disorders varies across age and sex, indicating an important gap for future studies [15].

Early identification of high-risk groups based on sociodemographic factors is crucial for timely intervention, as eating disorders carry high mortality and physical health risks. Addressing nutrition education, financial support, and improved transportation may help mitigate risk. Moreover, online psychosocial interventions and programs aimed at improving mental health, self-esteem, and social connectedness may provide valuable support for affected students.

Conclusion

This study revealed a high prevalence of eating disorder risk (39.3%) among university students, with significant associations observed for female gender, higher weight status, lower household economic status, and limited access to health services. These findings underscore the urgent need for early screening and targeted interventions within university settings. Strategies should prioritize improving access to affordable healthcare, nutrition education, and mental health support, particularly for vulnerable groups. While the cross-sectional design limits causal inference, the results highlight critical areas for future research and policy development to promote student well-being.

Limitations and Recommendations

Limitations

Despite the promising findings, several limitations should be acknowledged:

Cross-sectional design: Limits causal inference; associations do not imply causation.

Self-reported data: Height, weight, and SCOFF responses may introduce reporting bias.

Sampling method: Convenience sampling from a single private university restricts generalizability to other student populations.

Cultural homogeneity: Majority Chinese participants (98.2%) may not reflect diverse ethnic backgrounds in Malaysia.

Recommendations

Recommendations for Future Studies:

Multi-centre research: Include multiple universities across Malaysia to improve generalizability and capture diverse cultural and socioeconomic backgrounds.

Longitudinal design: Track students over time to establish causal relationships between risk factors and eating disorders.

Diverse sampling: Ensure representation of different ethnic groups, genders, and academic disciplines to reflect Malaysia's demographic diversity.

Objective measurements: Use clinically verified height, weight, and diagnostic tools instead of self-reported data to reduce bias.

Explore psychosocial factors: Investigate the role of stress, social media influence, body image perception, and coping strategies in eating disorder development.

Key Findings

Prevalence: 39.3% of university students screened positive for eating disorder risk using the SCOFF questionnaire. Higher risk was linked to female gender, higher weight status, lower household economic status, and limited access to health services. No significant associations were found for age, education level, living status, lifestyle, or changes in physical activity.

Implications

High prevalence indicates an urgent need for early screening and intervention programs in universities. Targeted strategies should focus on high-risk groups (female students, those with higher BMI, and low-income backgrounds). Policy and support measures: Improve access to affordable healthcare, nutrition education, and mental health services. Online psychosocial interventions could be effective for students.

Caution

A cross-sectional design limits causal inference: associations do not imply causation. Self-reported data (height, weight, and SCOFF responses) may introduce bias. Convenience sampling from a single private university restricts generalizability to other student populations.

Ethical Approval

This study obtained Ethical approval from the SERC of the University Tunku Abdul Rahman, Malaysia.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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Data Sharing Statement

Data are available upon reasonable request.

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