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ASSOCIATION BETWEEN PERCEIVED STRESS AND DISORDERED EATING PATTERNS IN UNDERGRADUATE STUDENTS: A CROSS-SECTIONAL STUDY

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Abstract

Disordered eating behaviours and elevated stress levels are increasingly prevalent among undergraduate students, potentially affecting both physical and mental health. While stress has been recognized as a contributing factor to maladaptive eating patterns, limited research explores this association within Indian college populations. This study aims to examine the association between perceived stress and disordered eating patterns among undergraduate students and assess the prevalence of eating concerns in relation to body mass index (BMI). A cross-sectional survey was conducted among 80 undergraduate students aged 19–25 years using the Eating Attitudes Test-26 (EAT-26) and the Perceived Stress Scale-10 (PSS-10). Descriptive statistics and multinomial logistic regression were performed using SPSS 26.0 to evaluate the relationship between stress levels, eating attitudes, and BMI. A positive association was found between higher levels of perceived stress and increased disordered eating attitudes. Students with high perceived stress were more likely to report concerns related to body weight, shape, and eating behaviours, and had a greater likelihood of being overweight compared to those with low stress. Moderate stress levels were also associated with elevated concern about eating and body image. The findings indicate a significant association between perceived stress and disordered eating patterns in undergraduate students. These results underscore the need for early screening and integrated mental health support to address stress-related eating behaviours in college populations.

Keywords: Perceived Stress, Disordered Eating, Undergraduate Students, Cross-Sectional Study and Mental Health

INTRODUCTION

Eating disorders represent a significant public health concern and are characterized by abnormal eating habits and distressing body image perceptions that impair daily functioning (Hudson et al., 2007). These include anorexia nervosa, bulimia nervosa, and binge eating disorder—each associated with serious physical, emotional, and psychosocial consequences (Crone et al., 2023). Although traditionally considered clinical disorders, disordered eating patterns—which do not always meet diagnostic thresholds—are increasingly prevalent, particularly among young adults in academic settings (Swanson et al., 2011).

Undergraduate students are especially vulnerable to the onset of disordered eating due to the transitional nature of college life. Factors such as academic pressure, changing social environments, and emotional instability contribute to elevated stress levels, often triggering maladaptive coping strategies like emotional or restrictive eating (Stallman, 2010; Abdulghani et al., 2011). Stress, defined as the perceived imbalance between demands and coping abilities, has been associated with disrupted eating behaviours in several studies (Cohen et al., 1994; Kandiah et al., 2006). It can lead to either hyperphagia or hypophagia, depending on an individual's coping style and psychological profile (Zellner et al., 2006; Greeno & Wing, 1994).

Research indicates that individuals under stress often prefer high-calorie, palatable foods as a form of emotional comfort (Oliver & Wardle, 1999). These changes in food choice are believed to result from hormonal responses to stress, such as elevated cortisol, which can increase appetite and alter food preferences (Yau & Potenza, 2013). Over time, such stress-induced eating behaviors can lead to weight fluctuations, body dissatisfaction, and the emergence of disordered eating patterns (Serlachius et al., 2007).

Furthermore, the interaction between perceived stress, body image dissatisfaction, and body mass index (BMI) has been noted in multiple studies. Students with higher BMI often report greater concern about weight and appearance, which, in conjunction with high stress, increases vulnerability to eating disturbances (Scott & Johnstone, 2012; Al-Asadi, 2014). While international evidence supports the stress-eating relationship, context-specific research within Indian undergraduate populations remains limited.

Given the increasing academic and social pressures faced by university students, especially in developing countries, understanding the link between perceived

stress and eating behaviours is crucial. Early identification of disordered eating patterns can lead to timely intervention and prevent progression into full-blown eating disorders (Gan et al., 2011). Therefore, this study seeks to investigate the association between perceived stress and disordered eating patterns among undergraduate students, while also examining related factors such as BMI.

RATIONALE OF THE STUDY

Undergraduate students often face a transitional period marked by academic, social, and personal challenges. These stressors can significantly impact mental health and influence daily habits, including eating behaviors. High levels of perceived stress have been linked to unhealthy coping mechanisms, such as emotional eating, restrictive dieting, or binge eating—behaviors commonly associated with disordered eating patterns.

Disordered eating, although not always meeting the clinical criteria for an eating disorder, poses substantial risks to physical and psychological well-being. With the rising awareness of mental health issues in academic settings, it is crucial to understand the underlying associations between stress and eating behavior in student populations. While international research has acknowledged this link, there is a limited body of context-specific data from developing nations, including India. A cross-sectional approach to examining this association can offer valuable insights for early screening and preventive interventions.

This study aims to fill the gap by evaluating the relationship between perceived stress and disordered eating behaviors among undergraduate students, with the goal of informing mental health professionals and academic institutions about targeted support strategies.

Aim of the Study

To examine the association between perceived stress levels and disordered eating patterns among undergraduate students.

Objectives of the Study

1. To determine the prevalence of disordered eating patterns among undergraduate students.
2. To assess the levels of perceived stress within the undergraduate student population.
3. To analyze the association between perceived stress and disordered eating behaviours.

4. To identify potential gender, age, or BMI-related trends in stress and eating behaviours.
5. To generate evidence that may inform campus-based mental health and wellness interventions.

METHODS

Study Design and Setting

This study employed a cross-sectional survey design conducted within a community setting. The research aimed to assess the association between perceived stress and disordered eating patterns among undergraduate students.

Participants

A total of 80 undergraduate students aged between 18 and 28 years participated in the study. Participants were recruited using convenience sampling from academic institutions and peer networks. The sample included both male and female students, with 22 males and 58 females.

Inclusion Criteria

- Undergraduate students aged 19–25 years
- Willingness to provide informed consent
- Ability to read and understand the questionnaire in English

Exclusion Criteria

- Students diagnosed with a psychiatric illness or chronic medical condition (e.g., epilepsy)
- Incomplete responses or voluntary withdrawal from the study

Ethical Considerations

Informed consent was secured from all participants. Confidentiality and anonymity of all data were strictly maintained throughout the study.

Assessment Tools

- **Eating Attitudes Test (EAT-26):** A 26-item standardized self-report questionnaire assessing symptoms and concerns characteristic of eating disorders, including dieting behaviours, bulimia, and food preoccupation. Higher scores indicate greater risk for disordered eating patterns.

- **Perceived Stress Scale (PSS-10):** A 10-item psychological instrument designed to assess the degree to which individuals perceive situations in their life as stressful. Higher scores reflect greater perceived stress.

Procedure

Participants were provided with a brief overview of the study and completed both the EAT-26 and PSS-10 questionnaires in a quiet, distraction-free environment. Data collection took approximately 25 minutes per participant. Demographic information including age, gender, academic year, and BMI (calculated from self-reported height and weight) was also recorded.

DATA ANALYSIS

Data were entered into Microsoft Excel and analyzed using SPSS version 26.0. Descriptive statistics were calculated for demographic and clinical variables. Multinomial logistic regression analyses were performed to explore associations between perceived stress levels, disordered eating attitudes, and BMI categories.

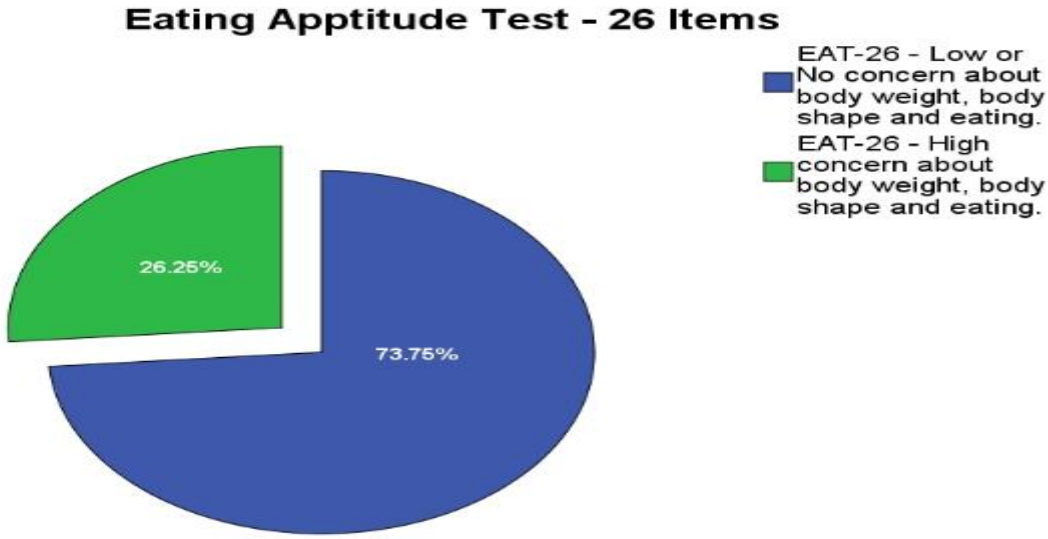
Descriptive

Table 1- Descriptive Statistics

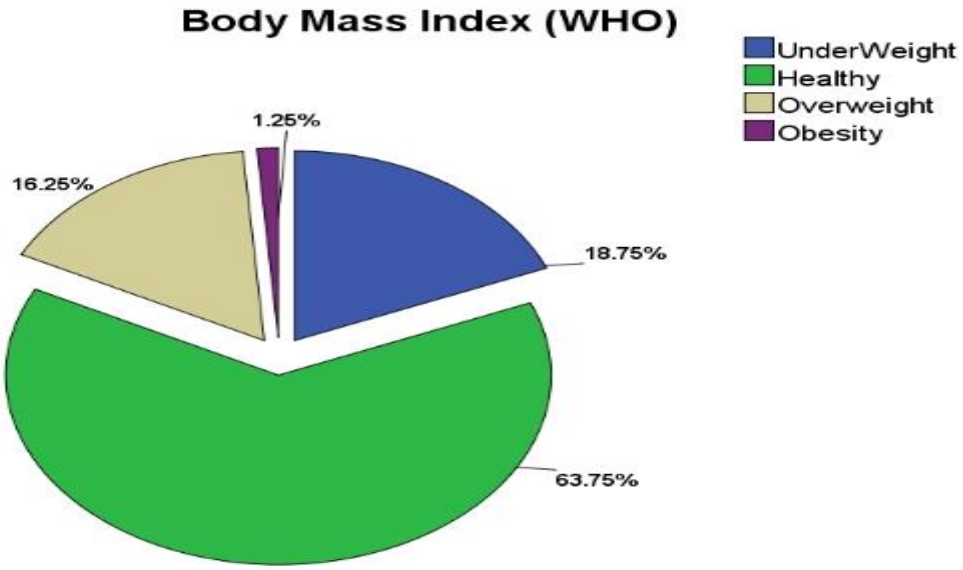
	N	Minimum	Maximum	Mean	Std. Deviation
AGE	80	19.0	25.0	21.963	1.2573
Gender	80	1	2	1.72	.449
Eating Aptitude Test - 26 Items	80	0	1	.26	.443
Body Mass Index (WHO)	80	1	4	2.00	.636
Perceived Stress Scale - 10 Items	80	1	3	2.06	.431
BMI	80	15.2	32.9	21.971	3.6112
Perceived Stress Scale	80	4.0	38.0	20.938	5.5378
Eating Attitudes Test	80	.0	49.0	14.725	11.6987
Valid N (list wise)	80				

Table-1 Shows the descriptive analysis of outcome measures.

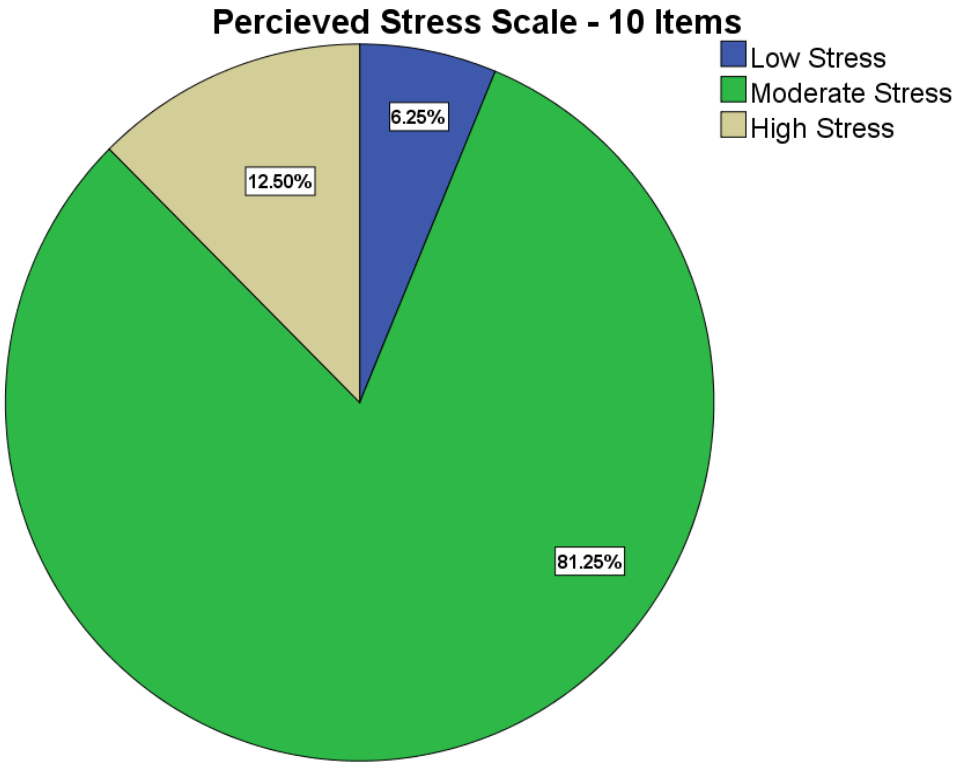
Pie Chart



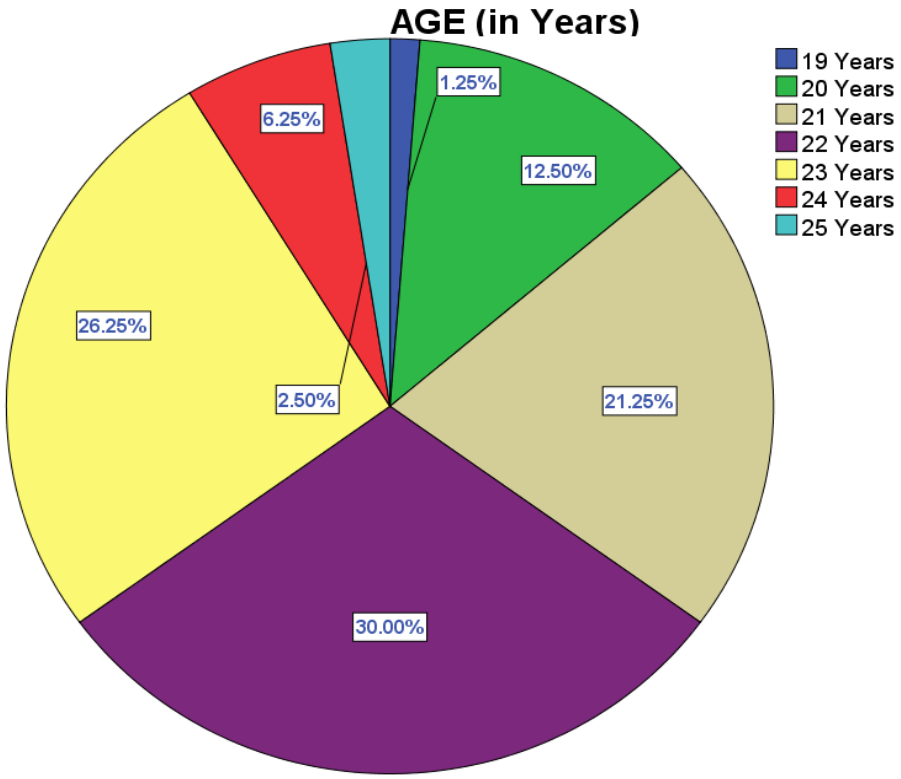
Pie chart 1- depicting the participants on the basis of low and high concern about body weight, body shape and eating.



Pie chart 2- depicting the participants on the basis of level of Body mass index (WHO).

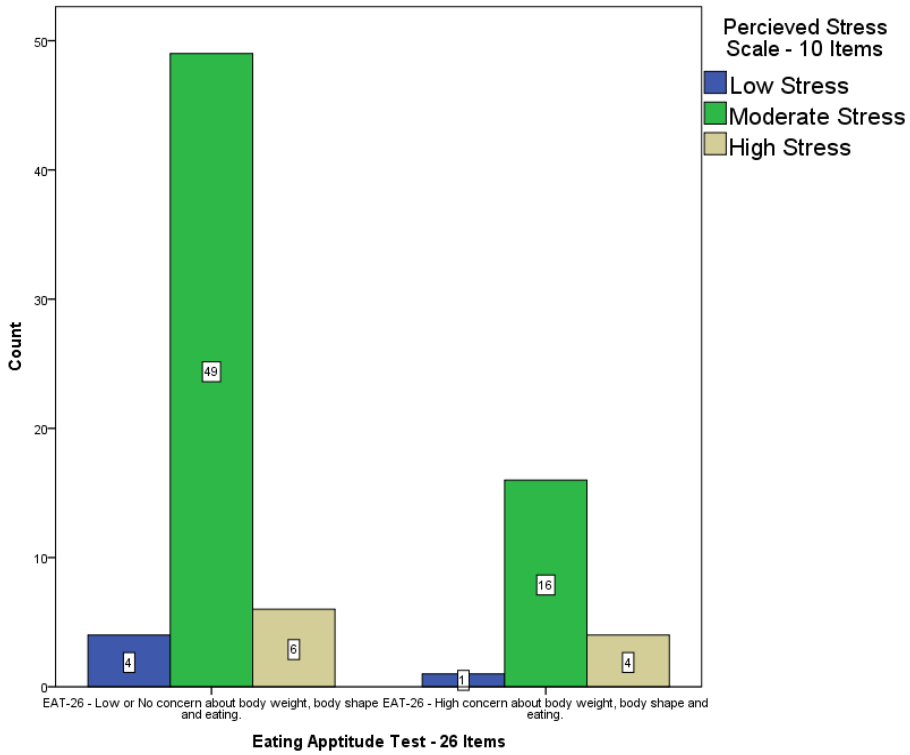


Pie chart 3- depicting the participants on the basis of level of stress with perceived stress scale.

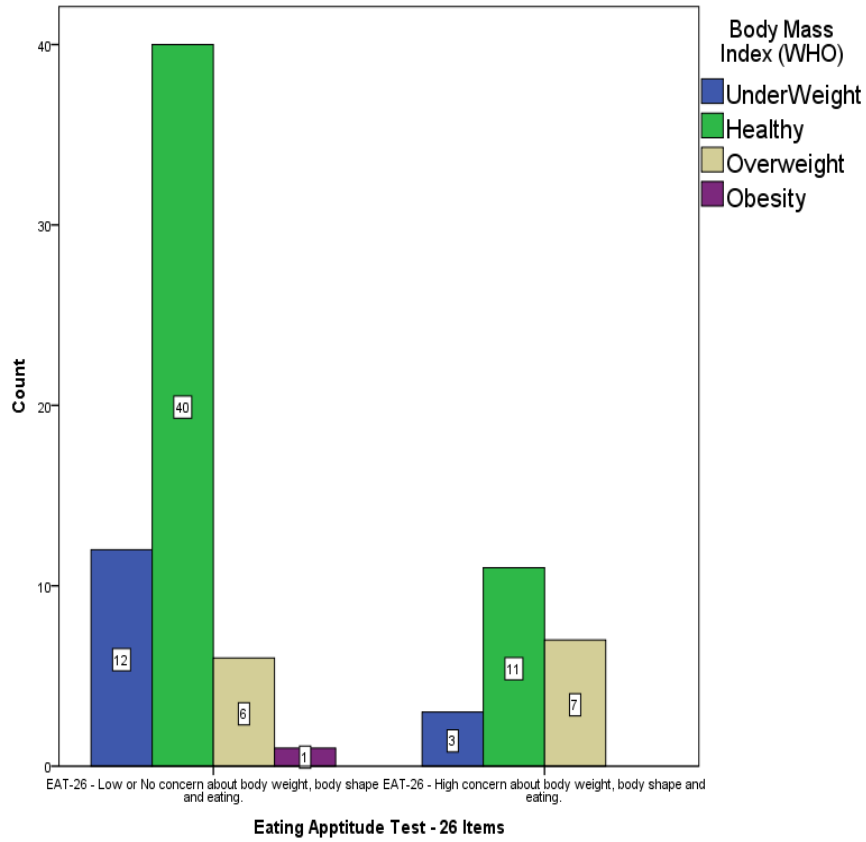


Pie chart 4- depicting the participants on the basis of their age.

Graph 1- This Graph shows that the moderate level of stress is 49.



Graph 2- This Graph shows that the healthy body mass index is 40.



RESULTS

Participant Characteristics

The final sample consisted of 80 undergraduate students (22 males, 58 females) aged between 19 and 25 years (M = 21.96, SD = 1.26). Body mass index (BMI) ranged from 15.2 to 32.9 (M = 2.00, SD = .636). The average score on the Perceived Stress Scale (PSS-10) was 20.93 (SD = 5.54), and the mean score on the Eating Attitudes Test (EAT-26) was 14.72 (SD = 11.70).

Stress and Body Mass Index

Multinomial logistic regression analysis revealed a significant relationship between perceived stress levels and BMI categories. Students with high perceived stress were 1.36 times more likely to be overweight compared to those with low stress. Conversely, students with high stress were less likely to be underweight or within a healthy BMI range than those with lower perceived stress levels.

Stress and Eating Attitudes

A positive association was observed between perceived stress and disordered eating attitudes. Students with moderate stress were 1.55 times more likely to report high concern about body weight, shape, and eating behaviors compared to those with low stress. Additionally, students with moderate stress were less likely to show low concern about eating and body image. Students with high stress were significantly less likely to report low concern about eating and body shape than students with low stress.

BMI and Eating Concerns

Among the 80 participants, 64% had a healthy BMI, 18.7% were underweight, 16.2% were overweight, and 1.3% were obese. Notably, higher concern regarding body weight and eating behaviors was more frequently observed among participants in the healthy and overweight BMI categories.

DISCUSSION

The present study explored the association between perceived stress and disordered eating patterns in undergraduate students. Findings revealed that higher levels of perceived stress were significantly associated with increased disordered eating attitudes, consistent with prior research indicating that stress is a major contributor to maladaptive eating behaviours among university students (Kandiah et al., 2006; Gan et al., 2011). Stress may function as a trigger for behaviours such as binge eating, emotional eating, and dietary restriction, serving

as a psychological coping mechanism in response to internal or external pressures (Greeno & Wing, 1994; Scott & Johnstone, 2012).

Increased stress has also been associated with heightened consumption of energy-dense, palatable foods, often referred to as "comfort eating" (Oliver & Wardle, 1999; Zellner et al., 2006). This tendency may explain the study's findings, where students with higher perceived stress were more likely to be overweight, a result supported by prior evidence linking stress with body mass index (Serlachius et al., 2007; Laitinen et al., 2002). Stress-induced hormonal changes—such as elevated cortisol—may increase appetite and drive preferences for high-calorie foods, leading to weight gain (Yau & Potenza, 2013; Chami et al., 2019).

The results further support previous findings that both hyperphagia and hypophagia can occur under stress, depending on individual psychological characteristics (Zellner et al., 2006; Liu et al., 2007). Disordered eating patterns can develop even in students experiencing moderate levels of stress, as indicated by Ruggiero et al. (2008), who found that stress enhances cognitive vulnerability to body dissatisfaction and perfectionism—both risk factors for disordered eating.

Additionally, the study's focus on undergraduate students highlights a population known to be at increased risk due to academic and social transitions. Several studies have shown that university life introduces unique stressors which may contribute to mental health challenges and unhealthy behaviors (Stallman, 2010; Wong et al., 2006; Abdulghani et al., 2011). These findings suggest that even in the absence of clinical eating disorders, subclinical eating disturbances deserve serious attention, as they may progress into more severe conditions if left unaddressed (Swanson et al., 2011; Hudson et al., 2007).

Despite these insights, the present study shares limitations common in similar research. For instance, the cross-sectional design restricts causal interpretations (Ngan et al., 2017), and self-reported measures of height, weight, and psychological variables may introduce bias (Kwan et al., 2018). Furthermore, the study's limited sample size and scope reduce generalizability.

Future research should employ longitudinal methods and larger, more diverse samples to examine causal pathways and generalize findings. Additionally, interventions that focus on stress management—such as mindfulness or cognitive-behavioural strategies—could be studied for their effectiveness in mitigating disordered eating patterns (Sassaroli & Ruggiero, 2005; Troop, 1996).

In conclusion, the observed link between perceived stress and disordered eating aligns with a broad body of literature and underscores the importance of early identification and intervention. By addressing stress as a modifiable risk factor, universities and health professionals can work collaboratively to support the mental and nutritional well-being of students (Yau & Potenza, 2013; Gan et al., 2011).

Role of Occupational Therapy

Occupational therapy (OT) plays a vital role in supporting individuals experiencing disordered eating and stress-related challenges by addressing both functional impairments and psychosocial well-being. The contributions of OT in this context include:

- **Assessment and Goal Setting:** Evaluating the impact of stress and disordered eating on daily functioning and collaboratively setting recovery goals.
- **Routine Development:** Assisting individuals in establishing balanced daily routines that incorporate healthy eating, sleep, self-care, and leisure activities.
- **Coping Strategies:** Teaching stress management techniques, emotional regulation skills, and mindfulness-based approaches to improve resilience.
- **Body Image Work:** Facilitating body acceptance and self-esteem through expressive therapies and cognitive-behavioural interventions.
- **Sensory Integration:** Addressing sensory sensitivities related to food texture and eating environments that may contribute to restrictive behaviours.
- **Life Skills Training:** Supporting development of essential life skills such as meal planning, budgeting, and time management to promote independent and structured living.
- **Environmental Modifications:** Recommending adjustments to home or academic environments to reduce eating triggers and support recovery.
- **Interdisciplinary Collaboration:** Working closely with psychologists, dietitians, and medical professionals to deliver comprehensive and coordinated care.
- **Relapse Prevention:** Developing personalized plans to maintain progress and prevent recurrence of disordered eating behaviours.

CONCLUSION

The present study provides evidence of a significant association between perceived stress and disordered eating patterns among undergraduate students. Students with higher levels of stress demonstrated greater concerns related to body image and eating behaviours and were more likely to be overweight. These findings underscore the urgent need for integrated health programs that address both psychological stress and eating behaviours within university settings. Early screening, psychoeducation, and multidisciplinary interventions can play a vital

role in promoting healthy coping strategies and preventing the development of eating disorders among young adults.

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