



Assessment and Management of Eating Disorders in Tweens and Teenage Girls

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ABSTRACT

Eating disorders are a growing concern among tween and teenage girls, often linked to poor dietary habits, low physical activity, academic stress, and disturbed sleep. Early interventions like nutritional counseling may help prevent these disorders. This study aims to assess the prevalence of eating disorders and promote healthier dietary patterns by evaluating girls' physical, emotional, behavioral, and nutritional status. The study was conducted at two schools in Lahore: Allied School and Al-Hamd School of Sciences. A cross-sectional approach was used, involving tween and teenage girls from both schools. Data were gathered using interviews, questionnaires (including the SCOFF Questionnaire), and participatory activities like quizzes and competitions. The results of the study revealed that 86% of students from Allied School and 60% from Al-Hamd School exhibited healthy eating habits. However, regular physical activity was found to be low in both schools. Academic stress was a common issue, with all students reporting significant stress related to their studies. Additionally, many students experienced disturbed sleep cycles. The prevalence of eating disorders was notably high, affecting 59% of students at Allied School and 64% at Al-Hamd School. The study concludes that lifestyle changes in diet, sleep, stress management, and physical activity are crucial for preventing eating disorders in tween and teenage girls. Early nutritional counseling is key to supporting their well-being.

Keywords: Eating Disorder, SCOFF Questionnaire, Body Mass Index, Eating habit, Physical Activity

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INTRODUCTION

Eating disorders are mental illnesses characterized by abnormal eating behaviors, including excessive restriction or overeating, which can significantly impact both physical and mental health. The most common disorders are anorexia nervosa, bulimia nervosa, and binge eating disorder, all of which are associated with a preoccupation with appearance, diet, and body weight

(Ward et al., 2019). These conditions often coexist with other psychiatric issues such as anxiety, depression, and substance abuse. While the precise causes remain unclear, eating disorders are believed to arise from a combination of genetic, psychological, and environmental factors, with the adage "Genetics loads the gun, environment pulls the trigger" reflecting this understanding (Mitchison and Hay, 2014).

International studies report a notable prevalence of anorexia nervosa and bulimia nervosa, particularly in Western countries (Hoek, 2016; Smink et al., 2016; Postich, 2020). Medical students are considered to be at higher risk due to heightened stress levels (Moutinho et al., 2017). In Pakistan, however, the prevalence of eating disorders appears to be lower, with studies in Lahore and Mirpur reporting few or no cases of anorexia nervosa and bulimia nervosa among schoolgirls (Mahmood and Bibi, 2014; Mushtaq et al., 2023).

This cross-sectional study aims to investigate the prevalence of eating disorders among teenage girls in two schools in Lahore: Allied School and Al-Hamd School of Sciences. The findings will guide appropriate nutritional counseling and intervention strategies for the affected students.

MATERIALS AND METHODS

Study Area

The study was conducted in 2023 at two middle-class schools in Lahore, Pakistan: Allied School and Al-Hamd School of Sciences.

Study Design

An institutional-based cross-sectional study design was used.

Study Population

Participants included schoolgirls aged 11–17 years from the selected schools.

Sampling Technique

A purposive, non-probability sampling method was employed to identify participants likely to have experienced various eating disorders.

Data Collection Method

Data collection involved interviews, self-reported questionnaires (SCOFF), and anthropometric assessments. The SCOFF questionnaire comprised five yes/no questions, with two or more affirmative responses indicating potential eating disorders. Measurements of height and weight were taken using standardized methods to calculate BMI, which was categorized according to WHO standards.

Analysis and Interpretation of data

Data will be analyzed and interpreted by using Microsoft Word, Origin 16, and Excel. Frequency and percentage were calculated for all quantitative variables.

Ethical Consideration

- The subjects were briefed about the study.
- Consent was obtained from the subjects after explaining the purpose of the study for the collection of data.

Demographics Information	General Information	SCOFF QUESTIONNAIRE
Name: _____	How many meals do you typically eat in one day?	Fill in the blanks with “yes” or “no”.
Gender: _____	How often do you eat fruit and vegetable?	S – Do you make yourself sick because you feel uncomfortably full?
Age: _____	How many times a week do you exercise?	C – Do you worry you have lost control over how much you eat?
Address: _____	Do you feel stress while studying?	O – Have you recently lost more than one stone (6.35 kg) in a three-month period?
School Name: _____		F – Do you believe yourself to be fat when others say you are too thin?
Class: _____		F – Would you say food dominates your life?
Family Background	Anthropometric Measurements	
How many people live in your household?	Height (cm): _____	
Does anyone in your family have a history of eating disorders?	Weight (kg): _____	
Does your family encourage healthy eating habits?	BMI (Body Mass Index): _____	
Do you often hear your family talking about weight or dieting?		

Questionnaire form

Eating Disorder Screening Measure

Question	Always	Usually	Often	Sometimes	Rarely	Never
1. Am terrified about being overweight.	3	2	1	0	0	0
2. Avoid eating when I am hungry.	3	2	1	0	0	0
3. Find myself preoccupied with food.	3	2	1	0	0	0
4. Have gone on eating binges where I felt that I may not be able to stop.	3	2	1	0	0	0

5. Cut my food into small pieces.	3	2	1	0	0	0
6. Aware of the calorie content of foods that I eat.	3	2	1	0	0	0
7. Particularly avoid foods with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	3	2	1	0	0	0
8. Feel that others would prefer if I ate more.	3	2	1	0	0	0
9. Vomit after I have eaten.	3	2	1	0	0	0
10. Feel extremely guilty after eating.	3	2	1	0	0	0
11. Am preoccupied with a desire to be thinner.	3	2	1	0	0	0
12. Think about burning up calories when I exercise.	3	2	1	0	0	0
13. Other people think that I am too thin.	3	2	1	0	0	0
14. Am preoccupied with the thought of having fat on my body.	3	2	1	0	0	0
15. Take longer than others to eat my meals.	3	2	1	0	0	0
16. Avoid foods with sugar in them.	3	2	1	0	0	0
17. Eat diet foods.	3	2	1	0	0	0
18. Feel that food controls my life.	3	2	1	0	0	0
19. Display self-control around food.	3	2	1	0	0	0
20. Feel that others pressure me to eat.	3	2	1	0	0	0

RESULTS AND DISCUSSION

Results

Table 1. Descriptive statistics of various health-related behaviors among students from Allied School (n = 22) and Al-Hamd School (n = 48)

Category	Allied School (n = 22)	Al-Hamd School (n = 48)	Proportion (%) Allied School	Proportion (%) Al-Hamd School
Skipping Breakfast	4	7	18%	14%
Skipping Lunch	7	0	31%	0%
Skipping Dinner	2	5	9%	10%
Consuming	20	29	90%	60%

Cereals/Legumes/Pulses Daily				
Eating fruits regularly	13	40	59%	83%
Eating vegetables daily	12	38	56%	80%
Eating meat and meat products regularly	11	18	49%	37%
Taking dairy products regularly	11	31	50%	64%
Eating Junk Food	17	43	77%	89%
Drinking carbonated beverages Occasionally	18	36	83%	74%
Eating bakery items frequently	13	21	61%	44%
Engaging in Television Watching	20	46	92%	96%
Daily Walking	6	15	27%	31%
Regular Jogging/Running	2	6	9%	12%
Attention	18	30	81%	62%
Concentration	15	20	68%	41%
Interaction	21	44	95%	93%
Disturbed Sleep Cycle	14	35	64%	73%
Aggressive Behavior	3	5	14%	10%
Friendly Behavior	19	43	86%	90%
Restlessness	13	35	59%	73%

Eating Habits

The results shown in Table 1 indicate that 18% of students from Allied School and 14% from Al-Hamd School reported skipping breakfast. For lunch, 31% of Allied School students skipped the meal, compared to none from Al-Hamd School. Dinner skipping rates were 9% for Allied School students and 10% for Al-Hamd School students.

Daily consumption of cereals, legumes, and pulses was reported by 90% of Allied School students and 60% of Al-Hamd School students. Regular fruit consumption was higher in Al-Hamd (83%) than in Allied (59%), while vegetable intake was reported by 56% of Allied and 80% of Al-Hamd students. Meat and dairy consumption were common, with 49% of Allied and 37% of Al-Hamd students regularly consuming meat, and 50% and 64% respectively consuming dairy. Junk food consumption was prevalent, with 77% from Allied and 89% from Al-Hamd indulging in such items. Carbonated drinks were consumed occasionally by 83% of Allied and 74% of Al-Hamd students, and 61% from Allied and 44% from Al-Hamd students frequently ate bakery items.

Physical Activity

The results shown in Table 1 indicate that high screen time, including television, mobile, and computer use, was reported by 92% of Allied School students and 96% of Al-Hamd School students. Daily walking was reported by 27% of Allied students and 31% of Al-Hamd students, while only 9% of Allied and 12% of Al-Hamd students engaged in regular jogging or running.

Behavioral Performance

The results shown in Table 1 indicate that attention and concentration levels were higher among Allied students (81% and 68%, respectively) compared to Al-Hamd students (62% and 41%). However, interaction levels were high in both schools (95% in Allied and 93% in Al-Hamd). Allied students also exhibited slightly better working efficiency and memory.

Stress Levels

The results shown in Table 1 indicate that all participants reported experiencing academic stress. Sleep disturbances affected 64% of Allied students and 73% of Al-Hamd students. Aggressive behavior was noted in 14% of Allied students and 10% of Al-Hamd students, while the majority displayed friendly behavior (86% and 90%, respectively). Restlessness was reported by 59% of Allied students and 73% of Al-Hamd students.

Table 2. Descriptive statistics for the prevalence of eating disorders among students from Allied School (n = 22) and Al-Hamd School (n = 48)

Category	Allied School	Al-Hamd School	Total (N = 70)	Proportion (%)	
	(n = 22)	(n = 48)		Allied School	Al-Hamd School
Normal Students	9	17	26	40.9%	35.4%
Eating Disorders	13	31	44	59.1%	64.6%
Anorexia Nervosa	13	17	30	59.1%	35.4%
- Initial Stage	12	14	26	54.5%	29.2%
- Moderate/Severe Stage	1	3	4	4.5%	6.3%
Bulimia Nervosa	1	11	12	4.5%	22.9%
- Initial Stage	1	10	11	4.5%	20.8%
- Moderate Stage	0	1	1	0%	2.1%
Binge Eating Disorder	1	3	4	4.5%	6.3%
- Initial Stage	1	3	4	4.5%	6.3%

The majority of students affected by eating disorders were diagnosed with anorexia nervosa (n = 30), with a significant proportion in the initial stage (n = 26). Bulimia Nervosa and Binge Eating Disorder were less prevalent, with 12 and 4 students, respectively.

Eating Disorders

The results shown in Table 2 indicate that 40.9% of students from Allied School and 35.4% from Al-Hamd School had normal eating patterns. However, 59.1% of Allied students and 35.4% of Al-Hamd students were diagnosed with Anorexia Nervosa. Bulimia Nervosa was reported in 4.5% of Allied students and 22.9% of Al-Hamd students. Binge Eating Disorder affected 4.5% of Allied students and 6.3% of Al-Hamd students.

At Allied School, out of the 22 students, 13 were found to have eating disorders— all with anorexia nervosa, and most in the early stages. One of these students also had bulimia nervosa, and another was in the initial stage of Binge Eating Disorder.

At Al-Hamd School, 31 out of 48 students had eating disorders. Seventeen had anorexia nervosa, with 14 in the initial stage and 3 at moderate severity. Bulimia Nervosa affected 11

students, 10 in the initial stage, and 1 with moderate symptoms. Three students were diagnosed with Binge Eating Disorder, all of whom were in the initial stages and classified as obese class 1.

Discussion

The current cross-sectional study revealed that eating disorders, including Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder, are prevalent among students from both Allied School and Al-Hamd School. In Allied School, 13 out of 22 students were diagnosed with eating disorders, while in Al-Hamd School, 17 out of 48 students were affected. These findings align with the study's objective of identifying the prevalence of eating disorders in tweens and teenage girls, highlighting the need for early identification and intervention.

The study observed that meal skipping was common, particularly breakfast and lunch, due to reasons like time constraints, snacking habits, and poor appetite, as supported by recent research (**Pengpid and Peltzer, 2020**). Additionally, the high consumption of junk food and soft drinks poses serious health risks, including obesity and nutritional deficiencies, as observed by previous studies (**Li et al., 2020; Yang et al., 2017; Datta and Husain, 2020**). Physical inactivity was another key finding, with many students engaging in minimal physical exercise but excessive screen time, contributing to increased risk of obesity and behavioral issues (**Kashif et al., 2019; Evans et al., 2014; Badri et al., 2017; Shakoor et al., 2021**).

Academic stress was prevalent in both schools, with disturbed sleep, restlessness, and behavioral issues linked to poor dietary habits and stress (**Lipson and Sonnevile, 2017; Ahmed et al., 2019**). Nutritional counseling, participatory interventions like quizzes, chart competitions, and healthy lunch box challenges were implemented to encourage healthier eating behaviors, which aligns with effective treatments for eating disorders involving psychotherapy, medication, and nutritional guidance (**Haroon et al., 2016; Waris et al., 2020; Grenon et al., 2018; Linacre et al., 2016; Cuijpers et al., 2014; R. Brown et al., 2021**).

The findings of this study are consistent with similar research conducted internationally, which also highlights the growing prevalence of eating disorders among adolescents. The results reinforce the importance of early diagnosis and intervention, especially in school settings where academic pressures and unhealthy dietary habits often coexist. Although this study successfully identified key patterns of eating disorders, further research with a larger sample size and control groups would provide more precise insights into the severity and progression of these conditions among students.

While the study provides valuable insights into the prevalence of eating disorders among schoolgirls in Lahore, the results may not be easily generalizable to all schools or regions in Pakistan due to the small sample size and specific demographic focus. Further studies in diverse settings, with larger and more varied samples, are needed to enhance the external validity of the findings and to better understand the broader scope of eating disorders among Pakistani adolescents.

The study had several limitations. First, the sample size was relatively small, which may not fully represent the broader population of students in Lahore. Second, data were collected through self-reported questionnaires, which can introduce bias or inaccuracies in reporting eating habits and behaviors. Additionally, the lack of a control group limits the ability to make broader comparisons. Potential biases may have also arisen from the exclusion of incomplete responses, which could have influenced the overall results. These limitations suggest that caution should be exercised in interpreting the findings.

CONCLUSION

The study concludes that eating disorders, particularly Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder, are prevalent among tweens and teenage girls in both schools. Early detection of these disorders, combined with proper interventions such as nutritional counseling, can mitigate the long-term health risks associated with disordered eating. Effective strategies, including healthy dietary plans and physical activity, are essential for improving students' physical and emotional well-being.

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Authors' Contributions

All authors equally contributed to the designing, experiments and wrote the manuscript. All authors read and approved the final manuscript.

Competing Interest

The authors have declared that no competing interests exist.

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Consent

A consent letter was signed by both school principals prior to the commencement of this cross-sectional study.

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