

## Effectiveness of Cognitive Behavior Group Therapy in Reducing the Risk of Eating Disorder among University Students

Research Article

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DOI: <https://doi.org/10.3329/jnujsci.v10i2.71264>

Received: 10 September 2023, Accepted: 16 November 2023

### ABSTRACT

Eating disorders are serious mental illnesses that typically originate during adolescence, often persist over an extended period, and significantly affect one's overall well-being. These disorders contribute significantly to the worldwide health burden. Despite a rising number of individuals seeking treatment for eating disorders, there is limited study regarding the effectiveness of therapy in preventive measures of the risk of eating disorders. Therefore, this research aims to study the effectiveness of cognitive behavior group therapy (CBGT) in reducing the risk of eating disorders among university students. Using a pretest-posttest with a control group design. The adapted Bangla version of the Eating Attitude Test (EAT-26) was utilized and socio-demographic data for all participants at the baseline and post-intervention. Thirty-six participants i.e., university students with a risk of eating disorders were chosen by purposive sampling. Participants were randomly assigned into two groups (intervention and non-intervention groups). However, the experimental (intervention) group ( $n = 18$ ) received cognitive behavioral group therapy, and the control also known as the non-interventional group ( $n = 18$ ) did not. To analyze the obtained data descriptive statistics, independent sample  $t$ -test, and paired sample  $t$ -test were performed. Findings showed that receiving CBGT sessions significantly reduced eating disorder risk in the intervention group. However, there is no difference in the risk of eating disorders in the pre-test and post-test of the non-intervention group was observed. This study's findings emphasize the importance and effectiveness of cognitive behavior group therapy in addressing and mitigating the risk of eating disorders among university students.

**Keywords:** *Cognitive behavior group therapy, Risk of eating disorder, University students*

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## Introduction

Eating disorders are dangerous health issues that affect people of all ages but are mainly seen among adolescents and students (Klump et al., 2009). Findings notify an increase in point prevalence of eating disorders (EDs) over recent years from 3.5% in 2000–2006 to 7.8% in 2013–2018 (Galmiche et al., 2019). At present, eating disorders (EDs) among university students have become a top public health challenge (Déchelotte, 2018). Previously thought to be only a Western problem, it is now seen in adolescents of all racial and socioeconomic groups, and above 75% of these cases begin during adolescence (Rohde et al., 2017). Evidence reported that 11.5% of Southeast Asian countries students were at risk for an eating disorder, ranging from below 10% in Indonesia, Thailand, and Vietnam to 13.8% in Malaysia and 20.6% in Myanmar (Pengpid et al., 2018). It is a major public health problem among adolescents because of its high dominance and its potentially serious physical and psychosocial outcomes (Ackard et al., 2003). After substance use disorders, EDs primarily, anorexia nervosa have the second supreme mortality rate of any mental health condition (Chesney et al., 2014). These findings highlight a public health problem and justify additional research into the prevention, assessment, diagnosis, and treatment.

An eating disorder is a mental disorder characterized by abnormal eating behaviors that adversely affect a person's physical or mental health (American Psychiatric Association, 2013). The term "risk of eating disorder among university students" typically refers to the likelihood or probability of university students developing eating disorders, such as anorexia nervosa, bulimia nervosa, or binge-eating disorder. These conditions are characterized by disturbed eating behaviors and attitudes toward food, weight, and body shape.

DSM-5 classifies eating disorders mainly into three types i.e., bulimia nervosa, anorexia nervosa, and binge eating disorder. The university years represent a pivotal stage of development referred to as emerging adulthood (Arnett, 2004). This period, marked by young adults leaving home to search for higher education, aligns with the highest likelihood

of mental and behavioral disorder onset (Auerbach et al., 2016).

In a Canadian study among 3,043 adolescents, the prevalence of estimated sub or full-threshold eating disorders was higher with obesity (20.2% females; 9.3% males) compared with a healthy weight (8.4% females; 2.1% males) (World Health Organization, 2020). Research also indicates a high lifetime prevalence of obesity among people, along with BN (31–33%) and a history of overweight among men with AN (39 %) (Villarejo et al., 2012). Persons with obesity experience high levels of dieting, eating, and body image concerns, and approximately 30% of overweight individuals who seek treatment are inclined to binge eating or compulsive overeating (Grucza et al., 2007). Systematic literature showed that preventive interventions can have significant effects on eating disorder symptoms and risk factors across adult populations (Barendregt et al., 2017).

Cognitive behavioral therapy (CBT) has been verified to be one of the most effective treatments (Agras et al., 2021). However, "*Cognitive-behavioral group Therapy (CBGT) refers to a group approach that makes use of behavioral, cognitive, relational, and group procedures to enhance the coping skills of the participants and ameliorate relational and intrapersonal problems that patients may be experiencing*(Rose,1999)". In group cognitive-behavioral therapy, participants work together under the guidance of a therapist to understand and address detrimental thought patterns that are influencing their actions and feelings. CBT groups empower an individual to reshape experience by getting to the root of the thought. Using any CBT modalities (individual or group therapy), consistently for more than one month can help relieve feelings related to underlying negative emotions i.e., stress, and anxiety (Pahlavanzadeh, Abbasi, Alimohammadi, (2017). Different meta-analyses have persistently shown that therapist-led and supervised CBT outperforms control conditions in treating various types of eating disorders (Linardon, 2018). Randomized controlled trials illustrated that specific forms of CBT produce large improvements in negative symptoms in individuals (Byrne et al., 2017).

### The Rationale of the Study

Numerous studies have revealed that highly industrialized countries are where university students and young adults are most likely to express dissatisfaction with their physical appearance (Conley and Boardman, 2007). Faulty perception of body weight can trigger abnormal eating behaviors (Ruggiero et al., 2003). Eating disorder symptoms in university students may be related to other mental health problems such as depression and anxiety (Fragkos and Frangos, 2013). In Bangladesh, private university students showed a 37.6% eating disorder risk (Pengpid et al., 2015) that harms not only their academic performance but also leads to an interruption in several significant areas, such as daily functioning, social functioning, occupational functioning, etc. Early detection of an eating disorder can reduce serious physical and psychological complications or even death by providing earlier treatment. In this case, cognitive behavior therapy can help them. There are various types of treatment available, among them cognitive behavior therapy found to be more effective (Hay et al., 2014). So, now it is necessary to see the effectiveness of CBGT in reducing the risk of having an eating disorder among university students. Since no study has been carried out to measure its effectiveness in the Bangladeshi context, this research will fill the gap and it would entail immense benefit for those who are at risk.

#### Inclusion Criteria



- Public university students with an age range of 19-25 years.
- Individuals falling within a certain BMI range, such as underweight, normal weight, or overweight.
- Individuals exhibiting signs, symptoms, or behaviors associated with eating disorders, such as extreme weight control behaviors.
- Individuals with a diagnosed psychiatric disorder (e.g., depression, anxiety) or psychological risk factors (e.g., low self-esteem, perfectionism).

### Objectives of the Study

The main objective of the study was to investigate the effectiveness of cognitive behavior group therapy in reducing the risk of eating disorders among university students. The specific objectives were:

1. To investigate whether there is any significant difference in the risk of eating disorders (i.e., dieting, bulimia and food preoccupation, oral control) among university students in terms of a few demographic factors i.e., age, gender, height, and weight.
2. To investigate the effectiveness of cognitive behavior group therapy in reducing the risk of eating disorders among university students.

## 2. Materials and Methods

### Sample and Sampling Technique

The sample comprised 36 students from a public university who are at risk of eating disorders were chosen as a sample of the present study. Participants were selected through the random sampling technique based on several inclusion and exclusion criteria (see Figure 1). There was no significant difference in the risk of eating disorders in terms of various demographic factors, which is why participants were randomly allocated into two groups: one experimental i.e., the interventional group and another control group also known as a non-interventional group.

#### Exclusion Criteria



- Individuals with severe medical conditions that could significantly impact eating behavior or physical health.
- Individuals with severe psychiatric conditions that could confound or complicate the assessment of eating disorders.
- Individuals with current or past substance abuse issues.
- Individuals who do not have the necessary communication abilities to participate effectively in the study or assessment.

**Figure 1.** Inclusion and exclusion criteria of students with risk of eating disorder.

### Measuring Instruments and Outcome Measures

The following questionnaires have been administered here to measure and collect primary raw data.

- Personal Information Form (PIF)
- Adapted Bangla Version of Eating Attitude Test (EAT-26)

**Personal Information Form (PIF).** A personal information form (PIF) is a necessary tool to collect data from participants developed by the researcher by himself. In this research, PIF consists of many domains such as participant's date of birth, gender, height, and weight.

**The Eating Attitude Test (EAT-26).** For the current investigation, Bangla (by following the protocol of the International Test Commission, 2010) adapted version (Zaman and Rakib, 2023) of the "Eating Attitude Test (EAT) -26," created by Garner et al. in 1982, was employed. This scale consisted of a list of 26 items with three sub-scales i.e., *dieting* means participants are engaged in dieting behavior (item number- 1,6,7,10,11,12,14, 16, 17, 22, 23, 24 & 26). *Bulimia and food preoccupation* refer to participants being always busy with food (items number 3,4,9,18,21&25),

*and oral control* measures avoiding food despite of hungry (items number 2,5,8,13,15,19&20). The respondents expressed their feelings on a 6- points "Likert Type of Scale" (i.e., "3" = always, "2" = usually, "1" = often, "0" = sometimes, "0" = rarely, "0" = never) for each item. Here, the total score was calculated by adding all the numbers from each answer rating. The total sum of EAT-26 scores ranges from 0 to 78. The cutoff score for the tool is a total score of  $\geq 20$ , indicating a risk for disordered eating attitudes and behaviors, and the need to be evaluated further by a mental health professional.

**Reliability.** The EAT-26 has a high level of reliability (internal consistency) ( $\alpha = .90$  for the AN group) (Garner et al., 1982). Pearson  $r = 0.98$  (Garner et al., 1982). The Bangla version of EAT-26 contains a Cronbach alpha value of 0.85 (Zaman and Shahriar, 2023).

**Validity.** The EAT-26 has a high level of criterion validity is 0.90 (Lee et al., 2002).

### Study Design

The present research was conducted by pre-post with control group design under experimental design. The design and the protocol of the study are illustrated in the following figure.

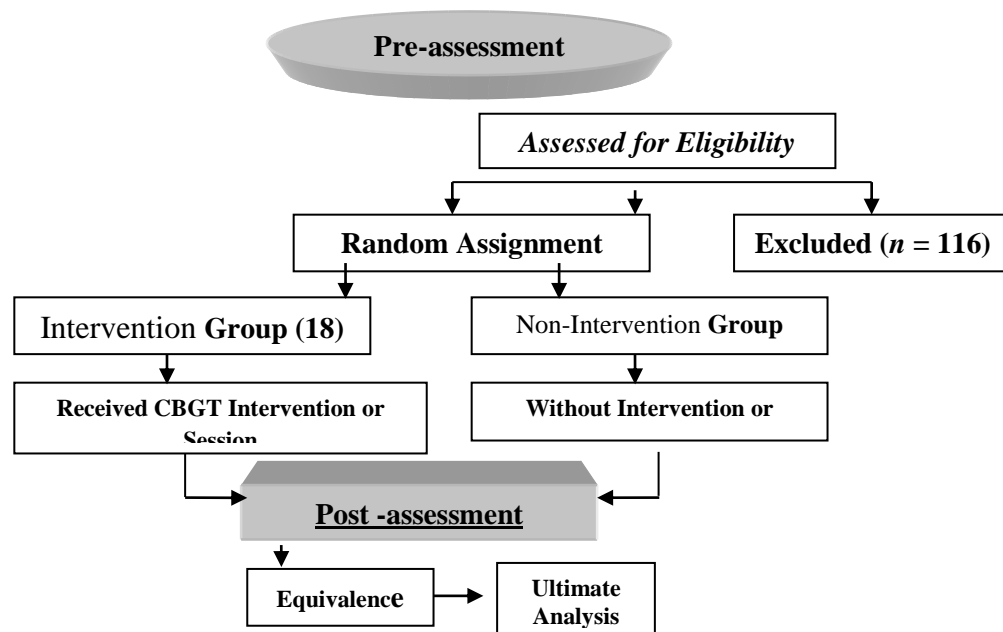


Figure 2. Design of the present research.

**Procedure** In the present study, 300 university students from a public university were selected purposively, After identifying participants with the risk of eating disorders and receiving the final consent, 36 students were randomly assigned into two groups i.e., the experimental or intervention group (both male and female) who received cognitive behavior group therapy and the rest of them belong to the control group (non-intervention) who did not receive any therapy. Further,

participants of the experimental group were divided into 3 groups and each group consisted of 6 students (4 females and 2 males). Before providing treatment sessions, a pre-test was conducted in both groups. After providing treatment to the intervention group within 35 days, post-test data were collected. A total number of 5 CBGT sessions were taken. Each therapeutic session lasted 60 minutes. The following sessions were conducted with the intervention group:

**Table 1.** Summary of Sessions Performed in this Research.

Sessions	Activities	Purpose
<b>One</b>	<ul style="list-style-type: none"> <li>• Structuring</li> <li>• Setting the ground rules for the session</li> <li>• Getting known to each other</li> <li>• Finding out the problematic behavior</li> <li>• Discussing factors affecting eating behavior and the impact of these on students</li> </ul>	Rapport build-up and increasing knowledge
<b>Two</b>	<ul style="list-style-type: none"> <li>• Setting goals related to eating disorder</li> <li>• Introduce the CBT approach, identify the negative thoughts, beliefs, and distorted thinking patterns related to food</li> <li>• Body image and self-worth</li> <li>• Homework: monitoring and recording automatic thought</li> </ul>	Introducing the treatment process and identifying thinking error
<b>Three</b>	<ul style="list-style-type: none"> <li>• Review of session 2 and review of homework</li> <li>• Challenge their negative automatic thought</li> <li>• Relapse negative automatic thought with a positive one</li> <li>• Homework: Cognitive restructuring practice</li> </ul>	Learning and applying CBT
<b>Four</b>	<ul style="list-style-type: none"> <li>• Review of session 3 and review of homework</li> <li>• Applying behavioral strategies-</li> <li>• Meal planning</li> <li>○ <i>Addressing emotional eating</i></li> <li>○ <i>Exploring trigger</i></li> <li>○ <i>Practicing self-care activities</i></li> <li>• Coping skill training</li> </ul>	Overcoming eating problem by confronting the triggered situation

#### Data Processing and Analysis

Participant's response was scored according to the scoring principles of the respective measures. Data were entered and analyzed through Statistical Package for Social Science (SPSS) version 26. Independent sample *t*-test was used to test whether

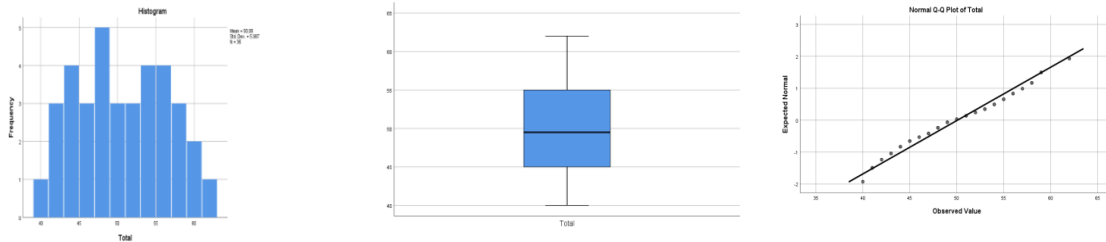
there was a significant difference between the groups in their sample characteristics. A paired sample *t*-test was used to find out the effect of cognitive behavioral group therapy among students with a risk of having an eating disorder. The level of significance was set at .05. Results were

discussed and presented through figures and tables as applicable.

### 3. Results

To test the research objectives, the obtained data

were analyzed. Before applying inferential statistics, the normality and homogeneity of the group of the collected data on risk of eating disorder scores were checked.



**Figure 3.** Visual graphs of pre-test eating disorder risk scores as assumption test.

The data is approximately normally distributed in terms of the visual output i.e., histograms, normal Q-Q plots, and box plots of the assumption test. In Figure 3, the histogram indicates a classic bell-shaped, symmetric histogram with most of the frequency counts bunched in the middle and with the counts dying off in the tails. The Q-Q plot shows that the data points do not seriously deviate from the fitted line. Further, the Box plot clearly

shows a normal pattern of the data. It contains outliers and the data are symmetric.

#### Demographic Profiles of the Respondents

The demographic profiles of the respondents are given in the table.

#### Baseline Characteristics of the Participants (Persons with Risk of Having Eating Disorder)

**Table 2.** Gender of the Participants in the Intervention and Non-Intervention Group.

Characteristics	Intervention Group (n = 18)		Non-Intervention Group (n = 18)		
	Frequency	Percent (%)	Frequency	Percent (%)	
Gender	Female	12	66.7	12	66.7
	Male	6	33.3	6	33.3
<b>Total (N)</b>	18	100	18	100	

The result presented in Table 2 shows that in both the intervention and non-intervention groups 66.7%

(n = 12) were female and 33.3% (n = 6) were male respectively.

**Table 3.** Age, Height, and Weight of the Participants in the Intervention and Non-Intervention Group.

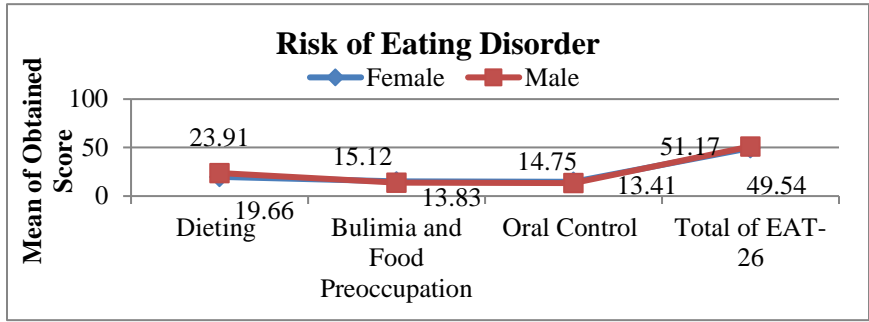
Variables	Intervention Group (n = 18)		Non-Intervention Group (n = 18)	
	M	SD	M	SD
<b>Age</b>	21.00	1.74	21.33	1.78
<b>Height</b>	166.83	6.04	165.67	6.36
<b>Weight</b>	63.39	10.07	63.61	9.08

In the above findings the mean age, height, and weight of the intervention groups were 21.00,

166.83, 63.39 and in the non-intervention group, the mean score was 21.33, 165.67, 63.31

respectively of the same.

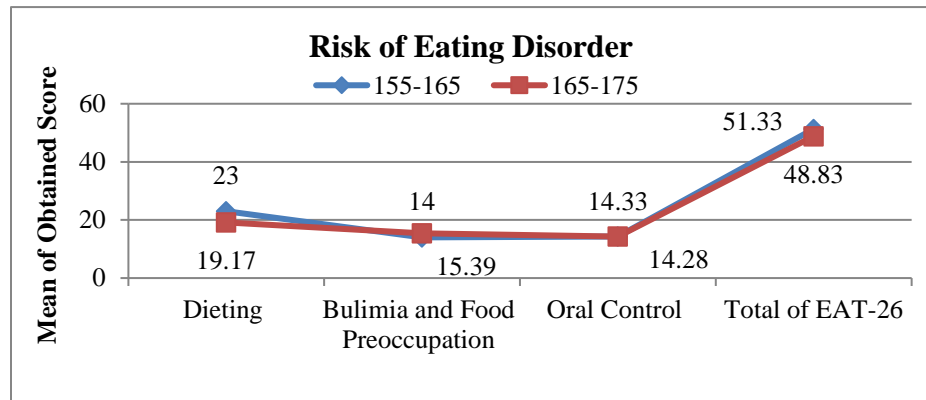
**Independent sample *t*-test (Figure 4-6)**



The results reported in Figure 4 show that there is no significant difference ( $t = -.763, p > .05$ ) in the dimensions of eating disorder in terms of gender.

Note.  $p > .05$ .

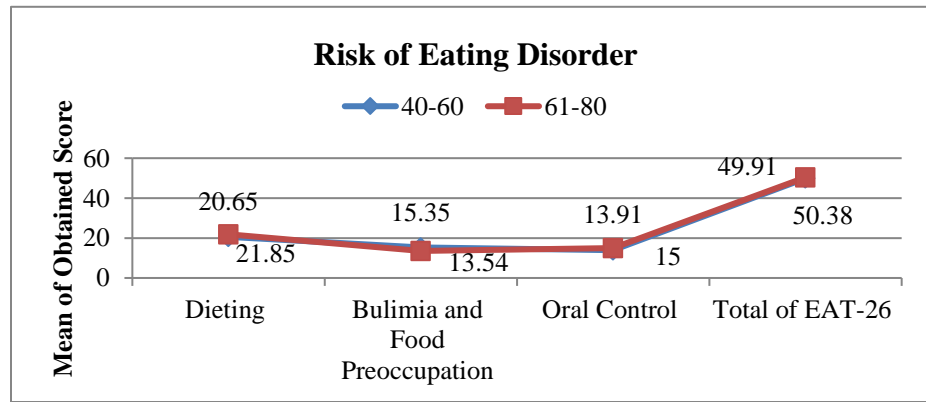
**Figure 4.** Eating disorder risk scores with the levels of participant's gender.



The findings reported in Figure 5 show that in terms of height here is no significant difference ( $t = 1.26, p > .05$ ) in eating disorder.

Note.  $p > .05$ .

**Figure 5.** Eating disorder risk scores with the levels of participant's height.

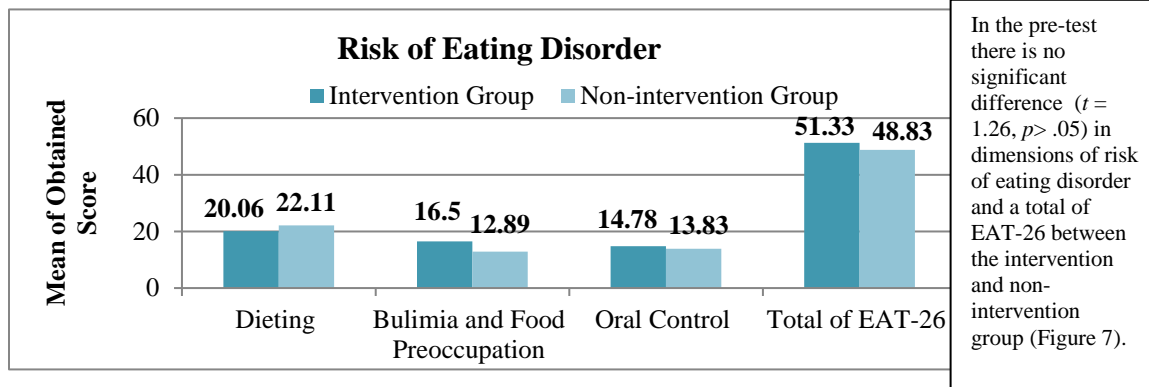


Findings pointed there is no significant differences ( $t = -.224, p > .05$ ) in terms of weight (Figure 6).

Note.  $p > .05$ .

**Figure 6.** Eating disorder risk scores with the levels of participant's weight.

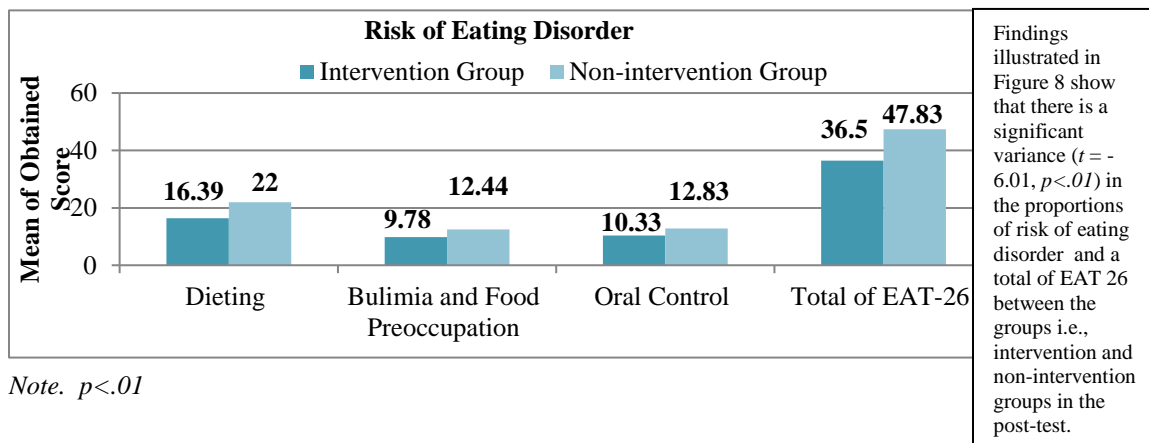
**Intervention Effect {Independent (Figure 7- 8) & Paired Sample *t*-test (Figure 9-10) & of EAT-26 Score)}**



In the pre-test there is no significant difference ( $t = 1.26, p > .05$ ) in dimensions of risk of eating disorder and a total of EAT-26 between the intervention and non-intervention group (Figure 7).

Note.  $p > .05$ .

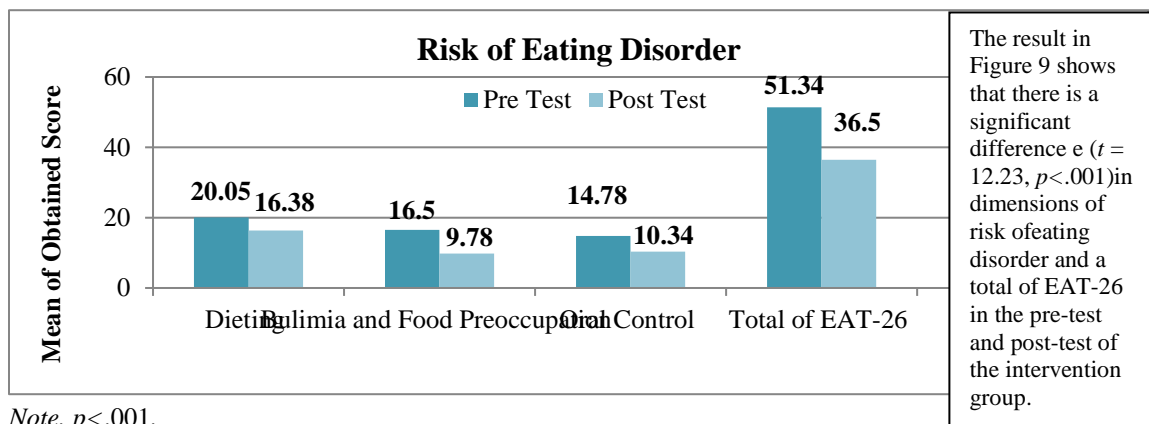
**Figure 7.** The pre-assessment of the intervention and non-intervention group.



Findings illustrated in Figure 8 show that there is a significant variance ( $t = -6.01, p < .01$ ) in the proportions of risk of eating disorder and a total of EAT 26 between the groups i.e., intervention and non-intervention groups in the post-test.

Note.  $p < .01$

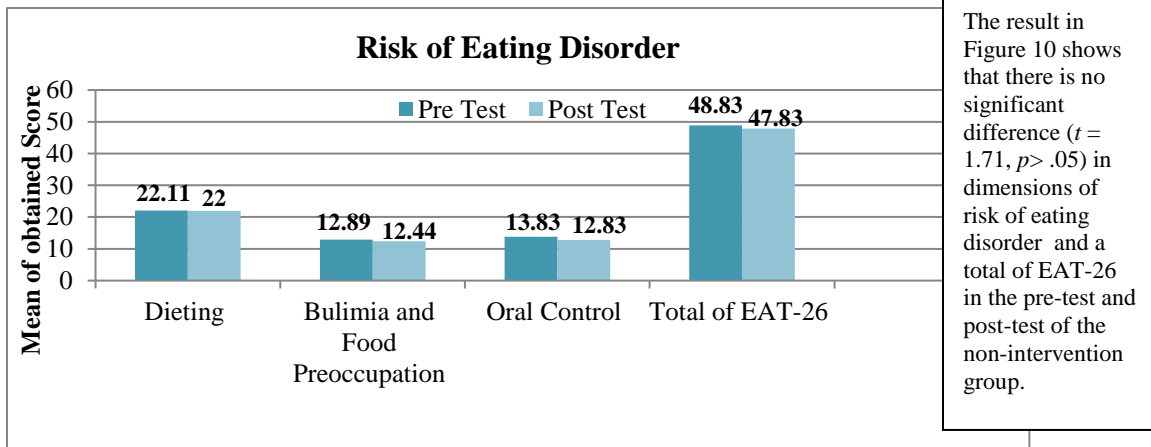
**Figure 8.** The post-assessment of the intervention and non-intervention group.



The result in Figure 9 shows that there is a significant difference ( $t = 12.23, p < .001$ ) in dimensions of risk of eating disorder and a total of EAT-26 in the pre-test and post-test of the intervention group.

Note.  $p < .001$ .



**Figure 9.** Pre and post-assessment of the intervention group.

Note.  $p > .05$ .

**Figure 10.** The pre and post-assessment of the non-intervention group.

A summary of the evidence for this account and of the data supporting the efficacy and effectiveness of this form of treatment was provided. The therapy appeared to be effective in improving overall eating habits and control among the participants. This study also found that even short-term CBGT intervention reduces the risk of eating disorders.

#### 4. Discussion

The findings of the study highlight the potential benefits of cognitive behavior group therapy as an intervention for reducing the risk of eating disorders. The therapy appeared to be effective in addressing disordered eating behaviors and improving overall eating habits and control among the participants. Our finding shows that to improve these students' dysfunctional attitudes self-efficacy and confidence, the CBT intervention needs to be specifically targeted at them.

To satisfy the *first objective* required result is presented in Table 3 which shows that the mean age of the participants in the both intervention group and the non-intervention group is almost similar which indicates no significant difference in the risk of eating disorders among university students in terms of age. This finding suggests that age did not directly impact the likelihood of developing eating disorder risk in this particular student population.

The findings of the present study were supported by the study of Money-Taylor et al. (2022). To achieve the *same* objective results are presented in Figure 4 which shows that there is no significant difference in the dimensions and total of the EAT-26 score of the participants in terms of gender. This implies that both male and female students were equally susceptible to eating disorders, and gender alone did not play a significant role in influencing the risk (Sanlier et al., 2016). Further, Figure 5 displays that there is no significant difference in the dimensions and total score in terms of height (Neale et al., 2020). To aim for the same *objective* required result (Figure 6) shows that there is no significant difference in the dimensions and total of the EAT-26 score in terms of weight. The findings were supported by Sanlier et al. (2016). To accomplish the *second objective* outcome is presented in Figure 7-10. Figure 7 shows that the participants have approximately similar risk of having eating disorders in the pre-test of the intervention and non-intervention groups. However, Figure 8 shows that the post-test mean of EAT-26 in the intervention group is lower than the post-test mean of EAT-26 in the non-intervention group. That indicates that the severity level of risk of having an eating disorder is lower in the intervention group than in the non-intervention group. Further, Figure 9 shows that the post-test mean of EAT-26 is lower than the

pre-test mean of EAT-26 of the intervention group. That indicates that there is a significant reduction in the severity level of risk of having an eating disorder among the participants of the intervention group who received the CBGT. Figure 10 shows that the pre-test and post-test mean of the EAT-26 in the non-intervention group is approximately similar which indicates that the severity level of risk of having an eating disorder neither significantly increased nor decreased among the participants of the control group who did not receive any intervention. The findings supported by the meta-analysis of Linardon et al. (2017) pointed out that CBT is by far the most consistently empirically supported psychotherapeutic option in the treatment of eating disorders. They found that CBT was more efficacious than inactive (wait-lists) and active (any psychotherapy) comparisons in individuals with eating disorders. CBT was shown to be more efficacious than active comparisons at reducing behavioral and cognitive symptoms of eating disorders. Thus, CBT can be recommended as a gold standard in the psychotherapeutic treatment of patients with eating disorders.

Cognitive behavioral group therapy refers to a support group that works to educate group members on techniques to improve cognition, relational skills, and impacted behaviors which could be an excellent option if a patient risk of an eating disorder seeks a support system throughout their healing journey. Challenges for the future development and dissemination of the treatment were also identified. Our finding shows that to improve these students' dysfunctional attitudes self-efficacy and confidence, the CBT intervention needs to be specifically targeted at them.

#### Limitations

The present study had some limitations which should be addressed by the future researcher. **First**, the number of participants was inadequate. **Second**, the number of sessions in CBGT was limited. **Third**, the study was done for a short duration of time.

#### 5. Conclusions and Recommendations

The results contribute to the existing literature on eating disorders and offer valuable information for mental health professionals, educators, and

policymakers working to improve the well-being of university students. The following recommendations may be considered for future research. **Firstly**, empirical investigation of the CBGT intervention for other university students and different types of eating disorders. **Secondly**, the study can be done on a larger sample size. **Thirdly**, studies can be done on different age groups.

#### Acknowledgment

This study was funded by the Ministry of Science and Technology and thanks should be given to all of those who participated in the study and helped to facilitate the research process.

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