

## The Effect of Cognitive Restructuring Activities to Reduce Anxiety among Body Dysmorphic Adolescent Girls

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### Abstract

**Background:** Body dysmorphic disorder (BDD) involves an excessive preoccupation with a perceived or minor physical flaw, significantly affecting mood and daily functioning. Typically starting in adolescence, BDD leads individuals to spend 3 to 8 hours, or more, daily fixating on disliked body parts, with these obsessions being hard to control and causing substantial anxiety and distress. **Objective:** To find out the effect of cognitive restructuring activities to reduce anxiety among body dysmorphic adolescent girls. **Materials and methods:** This study was done among college students of the late adolescent age group between 18 and 20 in St. Joseph's Hospital. A total of 30 BDD adolescent girls were selected according to inclusion and exclusion criteria. The subject's anxiety level was measured using Hamilton's anxiety scale (HAM-A) to get pre-test values. Then the samples were divided equally, 15 samples in the control group and 15 samples in the experimental group. The experimental group underwent cognitive restructuring activities and the control group underwent conventional occupational therapy. Post-test was conducted after the study period of 3 months using Hamilton's anxiety scale. **Results:** The study's results indicated a significant p-value of 0.001, demonstrating that cognitive restructuring techniques were effective in reducing anxiety among body dysmorphic adolescent girls. **Conclusion:** The results suggested that cognitive restructuring activities given to the experimental group were effective and the level of anxiety decreased after the intervention.

**Keywords:** Body dysmorphic disorder, adolescent, anxiety, Hamilton anxiety scale, cognitive restructuring activities.

### Introduction:

Body dysmorphic disorder (BDD) is characterized by a pathological concern with a person's perceived or insignificant physical flaw to the point where it exerts influence

on one's mood or occupation. BDD typically begins in the teenage phase, when one's concern over their appearance is prevalent.<sup>(1)</sup>Body dysmorphic disorder (BDD) involves an intense preoccupation with a perceived or minor defect in appearance. This condition is often linked to obsessive-compulsive disorder (OCD).<sup>(2)</sup> BDD is marked by a harmful cycle involving maladaptive thoughts about appearance, biased information processing, maladaptive behaviors, and negative emotions. These emotions often include Shame, Disgust, Anxiety, Depression, and Low self-esteem.<sup>(3)</sup>People with BDD typically focus on the disliked body parts for 3 to 8 hours a day, or even more, and these preoccupations are nearly impossible to resist or control. They are intrusive, causing significant anxiety and distress. The most common areas of concern are the skin, hair, and nose, though any body part can be the focus. On average, individuals with BDD fixate on 5 to 7 different body parts over their lifetime. Some are concerned with their overall appearance, including those with muscle dysmorphia, who believe their body is too small and lacks sufficient muscle.<sup>(4)</sup>Body Dysmorphic Disorder (BDD) often begins in the teenage years, a period when concerns about appearance are common. Individuals with BDD frequently describe being hypersensitive about their looks for most or all of their lives, leading them to fixate on past incidents of teasing.<sup>1</sup>Adolescents with BDD experience intense appearance-related preoccupations and compulsive behaviors, causing significant psychosocial impairment. Compared to adults, they are more likely to have delusional beliefs, substance-use disorders, and a history of suicide attempts.<sup>(5,6)</sup>

People with body dysmorphic disorder (BDD) often engage in repetitive behaviors like mirror-checking, skin-picking, and excessive grooming, which can take over three hours daily. These actions, difficult to control, aim to reduce distress or avoid embarrassment. Common behaviors include reassurance-seeking, excessive exercise, and frequent outfit changes, with some causing visible damage through skin-picking.<sup>(7,8,9)</sup> Current cognitive-behavioral models describe Body Dysmorphic Disorder (BDD) as a cycle of maladaptive appearance-related thoughts and information-processing biases. This cycle also includes maladaptive behaviors and negative emotions, such as Feelings of shame, Disgust, Anxiety, Depression, and Low self-esteem.<sup>(10)</sup>

Muscle Dysmorphia (MD), a subtype of Body Dysmorphic Disorder, involves an obsession with being insufficiently lean or muscular. Affected individuals, often men, perceive themselves as small despite a normal or muscular physique. They engage in excessive exercise, strict dieting, and sometimes use steroids, often prioritizing these routines over social or occupational activities. MD is more common in bodybuilders than other athletes and is linked to traits like perfectionism, low self-esteem, and social anxiety. Similar to eating disorders, MD involves compulsive behaviors like rigid dieting and overexercising.<sup>(11,12,13)</sup>Body Dysmorphic Disorder by Proxy (BDDBP) involves an intense preoccupation with perceived defects in another person's

appearance, potentially representing a variant of BDD. The areas of concern are usually the face, hair, or stomach, but may also include multiple body parts such as eyebrows, mouth, teeth, or skin. The primary person of concern (POC) often includes significant others like a spouse or partner, but can also be a stranger, child, parent, or sibling.<sup>(14,15)</sup> Body Dysmorphic Disorder (BDD) and eating disorders share a focus on negative body image, with BDD targeting specific body parts and eating disorders involving broader concerns about shape and weight. Both are linked to depression, low self-esteem, and behaviors like mirror checking. However, eating disorders involve significant eating impairments, while BDD's eating issues are typically less severe. A specialist can help differentiate these conditions.<sup>(16,17)</sup>

Social Anxiety Disorder (SAD) is marked by intense fear and avoidance of social situations where one might feel embarrassed. Body Dysmorphic Disorder (BDD) involves a preoccupation with perceived flaws in one's appearance, often related to facial features. Both SAD and BDD involve a fear of negative evaluation by others, whether due to perceived personal inadequacies or appearance concerns. Individuals with either condition might misinterpret others' laughter as a sign of their foolishness or unattractiveness, leading to significant distress and avoidance, which contributes to the persistence of SAD.<sup>(18)</sup> Insight into perceived appearance defects varies among individuals with Body Dysmorphic Disorder (BDD). Before receiving effective treatment, few patients have good insight, and studies consistently show that insight in BDD is generally poorer than in Obsessive-Compulsive Disorder (OCD). Approximately two-thirds of BDD patients experience delusions of reference, believing that others are focusing negatively on them or mocking their appearance. This referential thinking can lead to feelings of rejection and anger, sometimes resulting in violent reactions against those they think are ridiculing them. Additionally, some individuals with BDD experience fluctuating insight, alternating between being convinced of their ugliness at times and doubting this belief at other times.<sup>(19,20)</sup> Cognitive restructuring techniques involve the collaborative process of identifying and modifying irrational thoughts that contribute to negative emotional behavior.<sup>(21,22)</sup> These techniques aim to alter an individual's negative thought patterns and promote more positive beliefs. By changing how people perceive their beliefs, cognitive restructuring shifts them from negative to positive viewpoints. Studies have shown that cognitive restructuring techniques can reduce academic anxiety,<sup>(23)</sup> alter smoking behaviors in adolescents, and enhance students' self-confidence.<sup>(24,25)</sup>

## **Materials and Methods:**

### **Participants:**

This study was done among college students of the late adolescent age group between 18 and 20 in St. Joseph's Hospital. 30 subjects are selected according to the inclusion and exclusion criteria.

Included participants are females aged 17–20 with body dysmorphic disorder, mild to moderate anxiety, or eating disorders (bulimia, binge eating, or anorexia). Excluded are males, individuals over 21, and those with other psychiatric conditions (e.g., depression, OCD, bipolar disorder, or schizophrenia).

### **Protocol:**

The subject's anxiety level was measured using Hamilton's anxiety scale (HAM-A) to get pre-test values, this tool consists of 14 questions, and each item is scored on a scale of 0 (not present) to 4 (severe), with a total score range of 0–56, where <17 indicates mild severity, 18–24 mild to moderate severity and 25–30 moderate to severe. Then the samples were divided equally, 15 samples in the control group and 15 samples in the experimental group. The Experimental group underwent cognitive restructuring activities such as Journal activity on session 1, Socratic questionnaire on session 2, Thoughts on trial questionnaire on session 3, Decatastrophizing questionnaire on session 4, etc., and the control group underwent conventional occupational therapy such as progressive muscle relaxation technique. 3 sessions per week for 3 months were conducted for both the experimental and control groups, which lasted for 60-120 minutes with 5-10-minute breaks in between the sessions. After 3 months the post-test of both the experimental and control groups was conducted using Hamilton's anxiety scale in a single-blinded assessment method.

### **Statistical analysis:**

The Wilcoxon signed-rank test and Mann-Whitney U test were used to test the statistical differences between the pre-test and post-test scores of the control and experimental groups.

### **Results:**

30 subjects are selected according to the selection criteria. The subject's anxiety level was measured using Hamilton's anxiety scale (HAM-A) to get pre-test values. Then the sample was divided equally,  $n=15$  in the control group and  $n=15$  in the experimental group. The Experimental group underwent cognitive restructuring activities and the control group underwent conventional occupational therapy. A post-test was conducted after the study period. **Table no.4.1**, shows the Statistical analysis of the pre-test and post-test in the control group, the mean values were 30.6 and 28.4 and the P value was 0.033\*, where there was a statistically significant difference between pre-test and post-test scores in the Control Group of the HAM-A, because of the conventional occupational therapy intervention.

**The Table no. 4.2**, shows the Statistical analysis of the pre-test and post-test in the experimental group, the mean values were 31.7333 and 15 and the P value was 0.001\*, where there is statistically a high significant difference in the Experimental Group

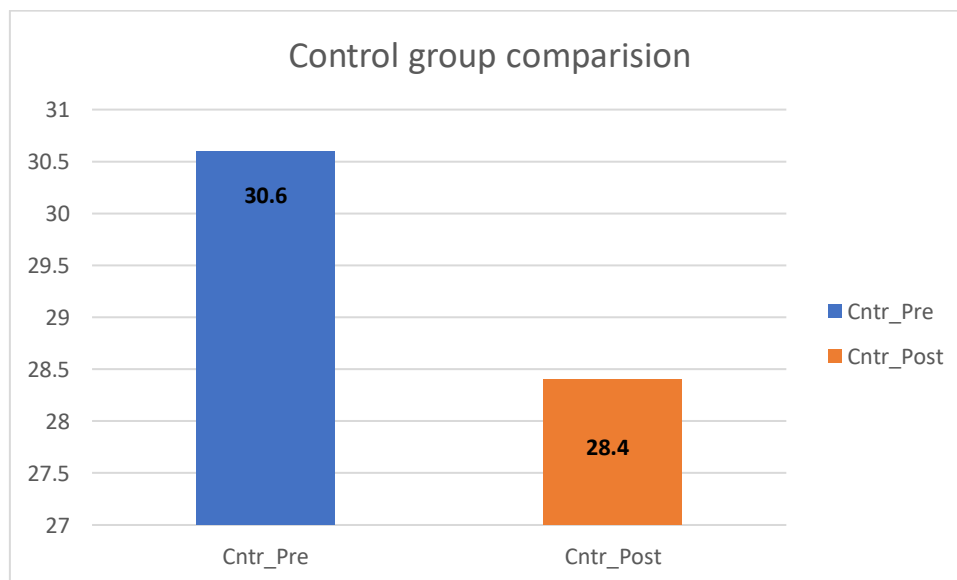
between the pre-test and post-test scores of HAM-A than the pre-test and post-test scores of the control group, because of the cognitive restructuring technique as intervention.

**Table no.4.1: Statistical analysis of pre-test and post-test in control group**

Group	N	Mean	SD	Z value	p value
Control group pre-test	15	30.6	5.43533	-2.137	0.033*
Control group Post-test	15	28.4	4.8668		

**\*Significant at 5% alpha level**

**Figure no.4.1: Statistical analysis of pre-test and post-test in control group**

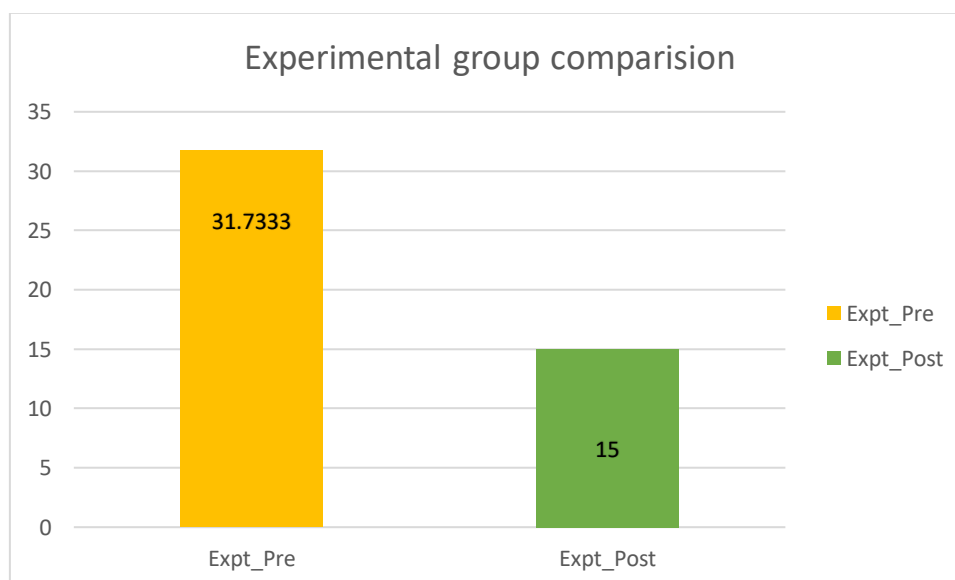


**Table no. 4.2: Statistical analysis of pre-test and post-test in experimental group**

Group	N	Mean	SD	Z value	p value
Experimental group Pre-test	15	31.7333	3.8446	-3.411	0.001*
Experimental group Post-test	15	15	1.81265		

\* Significant at 5% alpha level

**Figure no. 4.2: Statistical analysis of pre-test and post-test in experimental group**



**Discussion:**

The study aimed at finding the effectiveness of cognitive restructuring in reducing anxiety among body dysmorphic adolescent girls. The research took place at St. Joseph's Hospital. A total 30 body dysmorphic adolescent girls were screened by psychiatrist and the samples were selected using the selection criteria in the methodology. The age group selected ranges from 17 to 20. All of the participants were women. All the participants can able to read and write. The current study researched the effectiveness of cognitive restructuring in reducing anxiety among body dysmorphic adolescent girls. This study was based on the previous literature emphasizing the effectiveness of an integrated approach of mindfulness and cognitive behavior therapy (CBT) in symptom alleviation. (Anwasha Bhattacharyya,-2020).<sup>(26)</sup>

Body dysmorphic disorder is characterized by a pathological concern with a perceived or insignificant physical flaw to the point where it significantly affects one's mood or conduct in a variety of ways. BDD typically begins in the teenage years, when worry over one's looks is prevalent and the individuals describe having been hypersensitive about their appearance for most or all of their lives, which caused them to recall and get fixated on incidents of teasing. (Jaimika Patel., - 2023).<sup>(1)</sup>As the BDD usually starts at the adolescent age, their obsessive thoughts and behavior about their body is mostly acquired from the social media, television series, fashion shows and also because the peer group.

The intervention protocol for the OT intervention of the experimental group was based on the therapy performed in the previous studies (Anweshha Bhattacharyya,- 2020)<sup>(26)</sup>, (Asikhia, O.A., - 2014).<sup>(27)</sup>The reviewing of the results and observation regarding their application yielding several key ideas. The level of anxiety about their body dysmorphia in the both experimental group and the control group was measured by Hamilton's anxiety rating scale (HAM-A). The experimental group underwent cognitive restructuring techniques incorporated in activities for a period of 3 months, whereas the control group underwent relaxation techniques for the same period as the experimental group. The effectiveness of intervention was evaluated by pre and post-tests scores of the experimental and control groups. The post-tests of both groups' evaluations were done and the results were analyzed by Wilcoxon signed rank test and Mann Whitney U test and scores were tabulated.

The final objective of the study is to evaluate the post-test scores of both groups. Table 4.3 and graph 4.3 show the HAM-A Scores between the control and experimental groups in the post-test. The mean value of control group is 28.4 and mean value of experimental group is 15 and the Z value is -4.645 and P value is 0.00\*. Hence there is a statistically significant difference in post-test scores between the control and experimental groups of the HAM-A. It reveals that the experimental group intervention is more effective than the control group.

### **Conclusion:**

The study investigates the level of anxiety among body dysmorphic adolescent girls. The study spanned a duration of three months. Thirty body dysmorphic adolescent girls were selected with mild to moderate range of anxiety, where 15 samples were in the experimental group, which underwent cognitive restructuring techniques for intervention and 15 samples were in the control group, which underwent relaxation techniques for intervention. The result found a statistically significant difference between the scores of the pre-test and post-test for the control and experimental groups. Further analysis revealed that there was a significant improvement in the experimental group when compared to the control group after receiving cognitive



restructuring techniques incorporated with some activities for the intervention to reduce anxiety among body dysmorphic adolescent girls.

### **Ethical Approval:**

The participants gave their informed consent before enrolling in the study, which was approved by the Institute Ethics Committee for Human Research (no.SCOT/ISRB/042/2023).

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