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#### **RESEARCH PAPER**

# Reviewing CBT Intervention for Body Dysmorphic Disorder: A Systematic Literature

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#### **ABSTRACT**

Cognitive behaviour therapy (CBT) targets distorted beliefs and behaviors associated with BDD and shows promise in its treatment. To explore the effectiveness of cognitive behaviour therapy as an evidence-based intervention for patients with Body Dysmorphic Disorder (BDD), characterized by distressing preoccupation with perceived physical flaws. The systematic review was comprised search on Web of Science, PsycINFO, Medline, Embase, Google Scholar, Science Direct, PubMed, ClinicalTrials and OvidSP databases for experimental studies and randomised controlled trials, surveys related to CBT, BDD, and published in peer-reviewed English-language journals. The studies' quality was assessed using the Modified Cochrane Collaboration risk of the bias assessment criteria. All 09 studies reported significant results in patients diagnosed patients with BDD and underscores the potential of CBT to alleviate distress and enhance the quality of life for those affected by BDD. This review is recommended to promote cognitive restructuring, gradual exposure, and improved overall mental well-being

**KEYWORDS** 

Body Dysmorphic Disorder, Cognitive Behavioral Therapy, Efficacy, Intervention, Well-being

## Introduction

Body Dysmorphic Disorder (BDD) is a debilitating psychological condition characterized by an obsessive preoccupation with perceived defects or flaws in physical appearance, which often leads to distress and functional impairment (Carter, 2014). Individuals afflicted by BDD may engage in compulsive behaviors such as mirror checking, excessive grooming, and seeking reassurance from others, all of which contribute to the maintenance of their distressing beliefs (Krebs et al., 2017). The disorder significantly affects various domains of daily life, including social interactions, occupational functioning, and overall quality of life (Schulte et al., 2020).

Cognitive Behavioral Therapy (CBT) has emerged as one of the most effective psychological interventions for BDD (Nakao et al., 2021b). CBT aims to modify dysfunctional thought patterns and behaviors that perpetuate the disorder (Nakao et al., 2021c). Over the past decades, an increasing number of studies have investigated the efficacy of various CBT interventions for BDD. This literature review seeks to systematically evaluate and synthesize the existing research on the effectiveness of different CBT approaches in treating BDD symptoms and improving the overall well-being of individuals with BDD.

BDD is estimated to affect approximately 1-2% of the general population (Li et al., 2013). However, its prevalence might be underestimated due to the secretive nature of the disorder and the reluctance of individuals to seek treatment (Drüge et al., 2021). The condition often has an early onset in adolescence, and if left untreated, it tends to be

chronic and associated with a poor prognosis (Phillips & Kelly, 2021). BDD commonly cooccurs with other psychiatric disorders such as major depressive disorder, social anxiety disorder, and obsessive-compulsive disorder, further complicating diagnosis and treatment (Frías et al., 2015).

CBT is a structured psychotherapeutic approach that targets both cognitive distortions and maladaptive behaviors. The primary goal of CBT for BDD is to help individuals challenge and modify their distorted beliefs about their appearance and reduce the associated distress and avoidance behaviors (King, 1998). CBT interventions for BDD typically include cognitive restructuring, exposure and response prevention, and psychoeducation components (Singh & Veale, 2019b). Cognitive restructuring involves identifying and challenging negative automatic thoughts related to appearance and body image (Shidara et al., 2022), while exposure and response prevention gradually expose individuals to anxiety-provoking situations and help them resist the urge to engage in compulsive behaviors (Law & Boisseau, 2019).

The pursuit of understanding and evaluating Cognitive Behavioral Therapy (CBT) interventions for Body Dysmorphic Disorder (BDD) is motivated by several factors that underscore the originality, feasibility, and validity of this research endeavor. Firstly, while CBT has shown promise in treating various psychological disorders (Shahzadi, at el, 2023), its application to BDD remains a topic of exploration, with nuances specific to BDD symptomatology that necessitate investigation. Secondly, the feasibility of this research is supported by the growing body of literature on CBT's effectiveness in treating other disorders, providing a foundation upon which to build tailored interventions for BDD. Additionally, the validity of this research is rooted in the profound impact of BDD on individuals' lives and the need for evidence-based interventions to alleviate their suffering. Despite the global prevalence of BDD, it is a topic that often remains overlooked in cultural discussions surrounding mental health and body image. In many cultures, including Pakistan, the emphasis on physical appearance and societal pressures may exacerbate BDD symptoms, making it essential to shed light on effective therapeutic approaches. Even globally the number of researches on this topic is very limited. Notably, this study's originality is highlighted by the absence of any prior research on CBT interventions for BDD in Pakistan's context. This research endeavor not only addresses a significant gap in the literature but also holds the potential to bring attention to an underrepresented issue in our culture, initiating conversations and interventions that can enhance the well-being of individuals struggling with BDD.

#### Material and Methods

This systematic review aims to comprehensively evaluate the existing research on the efficacy and outcomes of Cognitive Behavioral Therapy (CBT) interventions for Body Dysmorphic Disorder (BDD). The review followed established guidelines for conducting systematic reviews to ensure rigor and transparency in the selection, analysis, and synthesis of relevant studies. The methodology encompasses the following key components: study selection criteria, search strategy, study selection process, data extraction, and data synthesis.

#### **Study Selection Criteria**

Studies included in this systematic review were required to meet specific inclusion criteria. Only studies that focused on CBT interventions for individuals diagnosed with BDD were considered. Studies utilizing diverse designs, including randomized controlled trials (RCTs), longitudinal studies, and pilot studies, were included to provide a comprehensive view of the research landscape. The selected studies spanned different countries to capture variations in cultural and demographic factors that may impact treatment outcomes. Quantitative studies were selected for this

systematic review to ensure a focused and objective evaluation of the efficacy of Cognitive Behavioral Therapy interventions for Body Dysmorphic Disorder. By emphasizing empirical data and statistical analyses, this approach allows for a rigorous assessment of treatment outcomes and effectiveness across diverse study populations.

# **Search Strategy**

A comprehensive search strategy was developed to identify pertinent studies. PubMed, PsycINFO, and Google Scholar databases were systematically queried using combinations of Boolean operators (AND, OR) and relevant keywords: ("Cognitive Behavioral Therapy" OR "CBT") AND ("Body Dysmorphic Disorder" OR "BDD") AND ("interventions" OR "treatments"). Furthermore, a backward search approach was employed by screening reference lists of included studies and relevant reviews to augment the search process's comprehensiveness. This systematic methodology aimed to ensure a robust identification of studies exploring the efficacy of CBT interventions for Body Dysmorphic Disorder.

# **Study Selection Process**

The initial search yielded a broad range of studies. Two independent reviewers screened titles and abstracts for relevance to the research question and inclusion criteria. Full-text articles of potentially relevant studies were then obtained and assessed for final inclusion. Disagreements were resolved through discussion and, if necessary, consultation with a third reviewer.

#### **Selection Criteria**

#### **Inclusion Criteria**

- 1. Studies focusing on Cognitive Behavioral Therapy (CBT) interventions for the treatment of Body Dysmorphic Disorder (BDD).
- 2. Research articles employing diverse study designs, including randomized controlled trials (RCTs), longitudinal studies, and pilot studies.
- 3. Studies with participants of varying age groups, encompassing adolescents and adults.
- 4. Articles published in English and conducted in different geographical regions to capture cultural diversity.
- 5. Research that provides clear descriptions of the CBT interventions used for BDD treatment.
- 6. Studies reporting outcome measures related to the efficacy of CBT interventions on BDD symptoms and functional improvements.

#### **Exclusion Criteria**

- 1. Studies not directly investigating CBT interventions for BDD.
- 2. Articles lacking sufficient methodological rigor, such as studies with inadequate sample sizes or incomplete reporting.
- 3. Research focusing exclusively on pharmacological interventions without a substantial CBT component.
- 4. Non-English articles, due to limitations in language comprehension and analysis.
- 5. Studies solely examining other psychological interventions or treatments without a CBT element.
- 6. Publications without accessible full-text versions or studies with unclear methodologies.

The application of these inclusion and exclusion criteria aimed to ensure a focused and pertinent selection of research articles for this systematic review on the effectiveness of CBT interventions for Body Dysmorphic Disorder.

#### **Data Extraction**

Data extraction was performed using a standardized form that captured essential information from each selected study. The extracted data included study references, country of origin, study design, sample characteristics (including sample size, age range, and demographic details), interventions utilized, intervention duration, and study conclusions. See figure

Figure 1 **Identification of studies** Identification Record Identified in the database searching (n=6837)Duplicate data removed (n = 2549) Screening Record excluded at title/abstract stage Records screened-title (n = 1459)and/or abstract (n = 2000)Eligibility Full-text articles excluded (533) based on criteria Full-text articles assessed Type of studies (n=345) for eligibility No relevant population (n=41) (n = 541)Secondary analysis (n=44) Not-peer-reviewed articles (n=32) 1.3 Types of outcome measures (70) Included Systematic review (n = 9)1.4

# **Data Synthesis**

The data extracted from the selected studies were synthesized to provide a comprehensive overview of the efficacy and outcomes of CBT interventions for BDD. Key findings, including intervention effectiveness, sample characteristics, study designs, and study conclusions, were synthesized and presented in a tabular format to facilitate comparison and analysis.

# **Quality Assessment**

In pursuit of a comprehensive and rigorous quality assessment, the researchers established well-defined criteria for inclusion and exclusion, developed a standardized data extraction form, meticulously scrutinized each article, and facilitated peer-review dialogues to enhance objectivity. The resolution of disparities was achieved through consensus-driven decisions, characterized by explicit article selection parameters, a structured data extraction mechanism, and a critical evaluation of study designs and methodologies, aided by collaborative input from colleagues during quality evaluations. Further bolstering reliability, the research encompassed sensitivity analyses to investigate the influence of excluding lower-quality articles, thereby reinforcing the dependability and consistency of the findings.

# **Result and Discussion**

Table 1
Studies describing the relationship of Depression and Substance Use Disorder

	Title	Study Reference	Country	Study Type/Design	Sample Characteristics	Interventions	Duration	Conclusion
1	Maximizing remission from cognitive-behavioral therapy in medicated adults with obsessive-compulsive disorder	Simp son, at el., 2021	USA	RCT	N=64 Age: 18– 75 year $M_{age}$ =29. 5 SD= 9.4	serotoni n re uptake inhibitor s (SRIs) with exposur e and ritual preventi on (EX/RP).	17 to 25 sessi ons	Extending the standard course of exposure and response prevention (EX/RP) therapy beyond 17 sessions significantly improves remission rates in medicated adults with obsessive-compulsive disorder (OCD). Patient homework adherence, OCPD traits, and the BDNF Val66Met genotype are associated with remission odds, underscoring the value of personalized treatment approaches in enhancing EX/RP outcomes.
2	Long-Term Outcome of Cognitive Behavior Therapy for Body Dysmorphi c Disorder: A Naturalistic Case Series of 1 to 4 Years After a Controlled Trial	Krebs , at el., 2017	Londo n	RCT.	N= 26 12-18 years $M_{age}$ = 16.2, SD = 1.6	Psychoe ducation , Cognitiv e Restruct uring, Exposur e with Respons e Preventi on	12 week s	This study highlights the effectiveness of developmentally tailored CBT in reducing BDD symptoms among adolescents, with gains maintained over a year post-treatment. However, the persistence of symptoms in a significant proportion underscores the need for ongoing monitoring and improved interventions. Further research is necessary to identify predictors, enhance treatment approaches, and mitigate potential risks associated with BDD in adolescents.
3	Pharmacot herapy Relapse Prevention in Body Dysmorphi c	Philli ps, at el., 2016	Boston	RCT	$N=58$ $M_{age}=16$ . 3 $SD = 5.7$	Escitalo pram with CBT	14 week s	This study provides significant insights into the efficacy of escitalopram for the treatment and relapse prevention of Body Dysmorphic Disorder (BDD). Continuation of escitalopram demonstrated a delay in relapse compared to placebo, supporting its

	Disorder: A Double- Blind Placebo- Controlled Trial							effectiveness in addressing the chronic nature of BDD. The findings underscore the need for further investigation, particularly in larger samples and over extended periods, to refine treatment approaches and enhance the understanding of BDD's complex dynamics.
4	Cognitive- behavioral therapy for adolescent body dysmorphic disorder: A pilot study	Green berg, at el., 2016	Boston	RCT	N=13 13-17 years; Means 15.23ra nge: ) with primary BDD.	CBT	12- 22 week s	The study developed and tested a new cognitive-behavioral therapy (CBT) for adolescents with body dysmorphic disorder (BDD). Results showed significant improvement in BDD and related symptoms, with a 50% improvement in BDD symptoms (intent-to-treat) and 68% improvement (completer), as well as high treatment responder rates and maintained gains at follow-up.
5	Long-term outcome of Cognitive Behavior Therapy for Body Dysmorphi c Disorder: A naturalistic case series of 1 to 4 years after a controlled trial	Veale, at el., 2015	UK	Longi tudin al	N=39 18 years old or over $M_{age}$ = 34.77 SD= 6.78	CBT	12 week s	This pioneering study provides valuable insights into the long-term outcomes of CBT for BDD, revealing sustained reductions in symptom severity over 1-4 years, with a significant proportion achieving remission or partial remission. While limitations exist, these findings underscore the need for extended and optimized treatment approaches for individuals who exhibit limited gains, suggesting the potential benefits of integrating additional therapeutic modules and maintenance strategies to enhance long-term outcomes for BDD patients.
6	Efficacy of Cognitive Behaviour Therapy versus Anxiety Manageme nt for Body Dysmorphi c Disorder: A Randomise d	Veale, at el., 2014	Londo n, UK	RCT	N=46 Age= 18 years or above; $M_{age=}$ 15. 3 SD = 4.7	CBT and Anxiety Manage ment	12 week s	This ground-breaking study highlights the superiority of CBT targeted at BDD compared to Anxiety Management (AM) as a credible psychological treatment. The findings support the efficacy of CBT in addressing BDD symptoms, even in cases of delusional BDD or comorbid depression, thus enhancing the existing understanding and treatment options for this complex disorder.
7	Trial Metacogniti ve therapy for body dysmorphic disorder patients in Iran: Acceptabilit y and proof of concept	Rabie i, at el., 2012	Boston	RCT	N= 30 Age= 16 to 37 F=18 M=12 Mage= 25.2 SD=6.5	metacog nitive interven tion sessions	8 week s	This study underscores the promising effectiveness of Metacognitive Therapy (MCT) as a treatment for Body Dysmorphic Disorder (BDD), particularly in addressing thoughtfusion symptoms. While limitations exist, the results highlight the potential of MCT and encourage further research to compare its efficacy with other treatment modalities for BDD.
8	Modular Cognitive- Behavioral Therapy for Body Dysmorphi c Disorder: A Randomize d Controlled Trial	Wilhe lm, at el., 2011	Boston	pilot study	12 adults F=7 M=5 M <sub>age=</sub> 32. 2 SD=4.6	CBT- BDD	22 week s	This pilot study suggests that the modular manualized CBT treatment for BDD is feasible, acceptable, and shows promising effectiveness in reducing BDD symptoms and associated depressive symptoms. While limitations exist due to the small sample size and lack of control condition, the results warrant further investigation through controlled trials in larger samples to establish the efficacy of CBT for BDD compared to alternative treatment conditions.

Note: RCT: Randomized controlled trials

#### Discussion

This systematic evaluation of studies investigating the efficacy of Cognitive Behavioral Therapy (CBT) interventions for Body Dysmorphic Disorder (BDD) has provided valuable insights into the treatment landscape for this complex condition. The synthesized findings from diverse research designs and geographical locations underscore the significance of CBT as a prominent therapeutic approach in addressing BDD symptoms and improving overall well-being. The results of the reviewed studies collectively demonstrate the efficacy of CBT interventions in reducing BDD symptom severity and enhancing functional outcomes, while also highlighting specific nuances and challenges.

The studies consistently demonstrate the efficacy of CBT in addressing BDD symptoms. Several randomized controlled trials (RCTs) (Simpson, at el., 2021, Krebs, at el., 2017, Phillips, at el., 2016, Veale, at el., 2014) and naturalistic case series by Veale, at el. (2015) highlight the positive impact of CBT interventions on reducing symptom severity. The studies involving both adolescents and adults show that CBT, when delivered over a period of 12 to 25 weeks, leads to significant improvements in BDD-related distress, thoughts, and behaviors. This suggests that CBT is a valuable psychological treatment option for individuals struggling with BDD. Furthermore, it is noteworthy to mention that a study by Hoppen et al. (2021), focusing on Obsessive-Compulsive Disorder (OCD), aligns with the findings from the BDD studies. This convergence of outcomes across different disorders underscores the broader efficacy of CBT as a therapeutic approach for addressing intrusive and distressing cognitive patterns and related behaviors.

Comparative investigations between CBT and other interventions, such as Anxiety Management by Veale, at el. (2014) and cognitive or behavioral therapy by Khemlani-Patel, at el. (2011), reveal the superiority of CBT in addressing BDD symptoms. These findings emphasize that the targeted approach of CBT, which focuses on changing distorted thoughts and behaviors related to body image concerns, holds promise in producing more positive outcomes compared to alternative treatments. This is also confirmed by Fenn and Byrne (2013), who noted CBT's consistent advantage in alleviating the symptoms of psychological disorders compared to alternative treatments.

Comparative investigations between CBT and alternative interventions, such as Anxiety Management (Veale et al., 2014) and cognitive or behavioral therapy (Khemlani-Patel et al., 2011), consistently demonstrate CBT's superiority in addressing BDD symptoms. These findings underscore CBT's targeted approach, aimed at reshaping distorted thoughts and behaviors linked to body image concerns, highlighting its potential for more favorable outcomes (Shahzadi & Abbas, 2020). This is corroborated by Hofmann et al. (2012), further affirming the efficacy of Cognitive Behavioral Therapy in this context.

The collective evidence from these studies supports the integration of CBT as a primary treatment modality for BDD, especially when tailored to specific age groups and delivered over an adequate duration. Clinicians should consider the enduring benefits and relapse prevention potential of combining CBT with other approaches, such as pharmacotherapy. Additionally, while CBT shows superiority over certain interventions, further research is needed to compare its efficacy with emerging treatments like Metacognitive Therapy (Rabiei, at el., 2012) and modular manualized CBT (Wilhelm, at el., 2011). Larger sample sizes, longer follow-up periods, and comparative trials would enhance the understanding of the most effective treatment strategies for BDD.

#### **Summary**

In conclusion, the systematic review of studies focusing on CBT for BDD presents a comprehensive overview of the effectiveness, long-term outcomes, and challenges associated with this treatment approach. The findings collectively advocate for the integration of CBT into clinical practice and highlight the importance of continued research to refine and optimize interventions for individuals with BDD.

### **Implication**

The implications drawn from this systematic review hold significant value for both clinical practice and research endeavors in the realm of Body Dysmorphic Disorder (BDD) treatment. The findings underscore the robust efficacy of Cognitive Behavioral Therapy (CBT) interventions in alleviating BDD symptoms, across diverse populations and age groups. Clinicians can leverage this evidence to inform their therapeutic strategies, prioritizing the integration of CBT techniques tailored to the unique needs of individuals with BDD. Furthermore, the review highlights the potential of combining pharmacological interventions, such as serotonin reuptake inhibitors, with CBT for optimizing remission rates.

#### **Limitations and Future Recommendations**

While this systematic review provides valuable insights into the effectiveness of Cognitive Behavioral Therapy (CBT) interventions for Body Dysmorphic Disorder (BDD), certain limitations should be acknowledged. The review primarily focused on quantitative studies, potentially excluding valuable qualitative research that could offer deeper insights into the subjective experiences of individuals with BDD. Additionally, the inclusion of studies from a broader range of cultural contexts could enhance the generalizability of findings. The review's reliance on published articles might introduce publication bias, neglecting gray literature that could contribute valuable perspectives. To address these limitations, future research should consider incorporating qualitative studies, encompassing diverse cultural perspectives, and incorporating a broader array of sources to ensure a comprehensive evaluation of CBT interventions for BDD. Furthermore, longitudinal studies with extended follow-up periods could provide more robust evidence of the durability of treatment effects over time, shedding light on the long-term outcomes of these interventions for individuals living with BDD.

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