



## Original Article

## Prevalence of Body Dysmorphic Disorder in Physically Disabled People

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## ABSTRACT

Physically disabled people are only observed by their physical functioning where studies showed that their cognitive functioning has generally been ignored. Body dysmorphic disorder (BDD) is a psychological health condition where the people having this disorder cannot accept their flaws or impairment. The prevalence of this disorder is approximately 2% of the population worldwide. The Quality of life is suppressed who are suffering from this disorder. To maintain their quality-of-life people engage in different physical activities and exercises which help them to overcome problems and they can easily take part in activities of daily living. **Objective:** To identify the prevalence of body dysmorphic disorder among physically disabled persons. **Methods:** The duration of the study was six months (January 2023 to July 2023) with a sample size of 139 calculated from online open-Epi version 3. Non-probability sampling technique was used for this study. Data were collected from three tertiary care hospitals by using a validated questionnaire appearance anxiety inventory scoring. The data were analyzed by SPSS 23.0 software. **Results:** The results extracted through the use of anxiety appearance inventory score was; out of 139 participants, the body dysmorphic disorder was found to be present in 38 participants and absent in 101 participants which constituted 27.3% and 72.7% respectively. **Conclusions:** Body dysmorphic disorder was found in physically disabled patients but persons attending physiotherapy sessions had improved and accepted their condition.

## INTRODUCTION

Body dysmorphic disorder is a type of chronic psychological disorder which consists of disability of various functions as well as the quality of life is seriously affected. It is related to obsessive compulsive disorder which sometimes undiagnosed or missed by the healthcare professionals [1]. It can be found at any age but the young and disabled population is mostly affected [2]. The onset of illness is usually between 16 and 18 years and, unless adequately treated, can be long-lasting and very disabling [3]. A person with physical disability has some social issues because people do not accept their presence as a normal human being because they are not as normal as

the healthy person. Some of the physical disabilities that affect the gait pattern of a person, hearing issues, and alteration of vision can cause a seriously noticeable behavior in society [4] Worldwide the prevalence rate of body dysmorphic disorder is between 1.9 to 2.2 percent. As reported in a study the prevalence rate of Body dysmorphic disorder is more in female's 14.8 percent as compared to male's 6.8 percent [5]. A condition in which the ability of an individual's function, performance, endurance, and activity of daily living is disturbed due to damage in the physical structure of the body is known as physical disability [6]. Physical disability includes gait problems, hearing issues,

vision problems, long-term pain, and lethargic issues. It also includes impairments of musculoskeletal and neurological systems like muscular dystrophy, degenerative changes, problems of the back region, paralysis of all four limbs, spina bifida, and the inability to move limbs, either one limb or both limbs [7]. It provides a detailed vision of the physical appearance that appeared in the self-actualization of an individual that is dependent upon the performance and the surroundings. A study reported the different aspects of body image that can cause worries to physically disabled people: perception, mental, behavioral, and affective [8]. Hence those people who faced any type of impairment feel embarrassed, hopeless, and have negative self-perception. Basically, disability causes functional limitations that obstruct their activities of daily living [9]. Disability is a common problem in the general population because they are not able to take part in daily activities due to their body impairments [10]. Majority of the population can face psychological, physical, behavioral, and social issues. The self-reported score which can be used to assess the behavior and mental status of an individual known as the Appearance Anxiety Inventory [11]. This scale can provide the features of an individual's personality like body shape, concentration, and the factors which impact one's personality in the surroundings, etc. This scale is world widely used to evaluate the severity of body dysmorphic disorder and the treatment outcome [12]. The main treatment outcome for BDD is to provide self-body awareness in the patients. Helping them to change their point of view related to their body physics, social interactions, general appearance, and thinking of people regarding their confidence and behaviors [13]. Mostly observed that the person is socially isolated this can cause a bad impact on their recovery [14]. Confidence in one's own worth or abilities Self-esteem impacts your decision-making process, your relationships, your emotional health, and your overall well-being [15]. It also influences motivation, as people with a healthy, positive view of themselves understand their potential, and self-worth is determined mostly by our self-evaluated abilities and our performance in one or more activities that we deem valuable [16].

The purpose of our study is to determine the frequency of body dysmorphic disorder in correlation to Appearance anxiety score in physically disabled people. Body dysmorphic disorder exists in people without any disability.

## METHODS

A cross-sectional study was done in which non-probability purposive sampling technique was used. The study was conducted across 3 physical therapy OPDS of (Dr. Ziauddin Hospital, Patel Hospital, Advanced Orthopedic Reconstructive Clinic) in Karachi between the duration of

January to June 2023. There were 139 sample sizes which were calculated by the Open-Epi software. The Ethical approval was taken prior to the initiation of the study by the research committee of AORC with a reference no: 054160/physio.2 Jan 2023. The inclusion criteria were physically disabled patients who attend the physical therapy sessions during the study duration, physically disabled patients who are dependent, and patients with the following disability: Polio, paralysis, adult CP, amputee, fractures, and leg length discrepancy were included. Normal healthy individuals, persons having any psychological issues and the patients who are not willing to participate in our study were excluded. The data was collected through a validated questionnaire named Appearance Anxiety Inventory Scale [17]. AAI is consisting of ten questions in which the measurement of cognitive function and behavior characteristics related to body appearance was assessed in addition to this it can be used to diagnose Body Dysmorphic Disorder and can correlate the symptoms with the effect of treatment outcome. If the score of the participants was  $AAI > 20$  the participants might have or not have BDD but they were at a high risk of clinical problems i.e. the body dysmorphic disorder if present might be very severe. And if the score was  $AAI < 20$  the participants might or might not have body dysmorphic disorder but the risk of severity was at low risk [18]. The statistical analysis was done through SPSS version 23.0 in which prevalence of body dysmorphic disorder was assessed.

## RESULTS

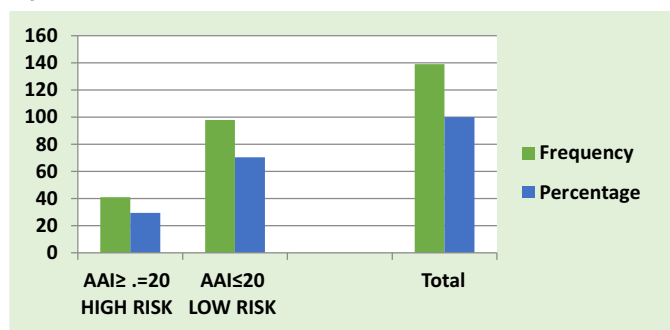
There were 139 research participants was included in our study from which 76(54.67%) was male and 63(45.32%) was female. The age group was in between was  $\leq 20$  to  $\geq 50$  in which the highest number of participants 48(34.53%) was found in  $\leq 20$ . The other demographic characteristics of participants are shown in table 1.

**Table 1:** Demographics of research participants

Demographics characteristics	Frequency (%)
<b>Gender</b>	
Male	76 (54.67%)
Female	63 (45.32%)
<b>Age of Participants</b>	
$\leq 20$	48 (34.53%)
21-30	36 (25.89%)
31-40	29 (20.86%)
41-50	21 (15.10%)
$\geq 51$	5 (3.59%)
<b>Marital status</b>	
Married	42 (30.21%)
Unmarried	71 (51.07%)
Divorced	19 (13.66%)

Widow/widower	7 (5.03%)
<b>Education</b>	
Literate	95 (68.34%)
Illiterate	44 (31.65%)

The response of the AAI score after the data collection from 139 research participants was found to be 41(29.5%) ≥ 20 of AAI score which means they were at high risk for BDD, and 98 (70.5%) were lie in < 20 of AAI score as shown in figure 1.



**Figure 1:** Anxiety appearance inventory score

The cross-tabulation between AAI score and BDD data shows that out of a total of 139 participants, 17 participants i.e. 44.7% were BDD present with an AAI score ≥ 20 which means they were also affected with BDD and had a high risk of clinical problems. Whereas 24 people i.e. 23.8% were indicating the absence of BDD but with a high AAI score ≥ 20 showing that BDD has not yet developed but the participant is at a high risk of developing clinical problems. On the other hand, of 21 participants 55.3% were diagnosed with BDD present but an AAI score of < 20 indicated that although they are present with BDD their condition is not very severe. Also, 77 people i.e. 76.2% were BDD absent and also had an AAI score < 20 indicating that they don't have BDD and not even have a high risk to develop any clinical problem. As a summary, 41 people i.e. 29.5% had an AAI ≥ 20 having a high risk of developing clinical problems among which 17 were BDD present and 24 were BDD absent. And a total of 98 were having a score AAI < 20 among which 21 were BDD present and 77 were BDD absent. The results are significant among those who scored AAI ≥ 20 and had BDD present and also significant among those who scored AAI < 20 and BDD was absent as shown in table 2.

**Table 2:** Correlation of BDD and AAI score

Parameters		BDD		Total	p-value
		BDD present	BDD absent		
AAI SCORE	AAI ≥ 20 HIGH RISK	Count	17	24	0.016
		% within BDD	44.7%	23.8%	
	AAI < 20 LOW RISK	Count	21	77	
		% within BDD	55.3%	76.2%	
Total		Count	38	101	139
		% within BDD	100.0%	100.0%	100.0%

## DISCUSSION

This is the baseline study conducted in physical therapy OPDs for finding the prevalence of body dysmorphic disorder in physically disabled people. The results of our study showed the associated symptoms affected persons had shown decreased body dysmorphic disorder associated symptoms. They had improved their functional impairments and quality of life after taking sessions of physiotherapy treatment. In comparison to this, a study reported as there is a strong association between depression and body dysmorphic disorder because symptoms of both are related to the disability [19]. In our study, positive attitudes of impaired persons showed the benefits of exercise and treatment procedures that they have gained confidence and are eager to learn the substitutes for their daily functioning as compared to this the study reported, the treatment-wise improvement of their impairments is reported which shows that Cognitive Behavior Therapy is better to reduce the severe symptoms as compared to psychotherapy [20]. In another research symptoms of depression are reduced through cognitive behavioral therapy like improvement in functional disability which in turn improves quality of life [21]. In our study, the AAI score is greater than and equal to 20 in 29.5% of participants which means they have a high risk of severity of symptoms as compared to the remaining 70.5% participants. A study related to the correlation between drug abuse and body dysmorphic disorder reported as anxiety and drugs both can cause depression but the major reason for depression in both of them is unclear [22]. while in our study the result of correlation between the anxiety appearance inventory score and the prevalence of body dysmorphic disorder shows 41(29.5%) patients had an AAI ≥ 20, having a high risk of developing disorder, and 98(70.5%) were having a score AAI < 20 where body dysmorphic disorder was absent. Among 17 participants BDD is present but according to AAI score ≥ 20 HIGH RISK counts they have severe clinical issues. As compared to this AAI < 20 LOW RISK results show 21 participants have the presence of BDD and they have mild clinical issues. So physically disabled people who were attending physiotherapy sessions had improved in different aspects of life i.e., physically and psychologically. While working on their impaired parts they accepted their flaws (disability) and adapted to a new lifestyle. In our study, 38 people out of 139 had body dysmorphic disorder. There were very few people who wanted to change their appearance or who were upset about their condition. When discussing their issues, the majority of the population was concerned about their past but they have accepted their future. This proved that attending clinics had brought acceptance in their lives with improvement and adaptation of their impairments showing a positive outcome.

## CONCLUSIONS

It is concluded that the physically disabled patients who visited the department of physical therapy should be evaluated and treated through the counseling sessions of physical therapy with a qualified physical therapist in the future because PT can play a vital role in improving the self-esteem and confidence of those people who were physically disabled or challenged. Physical therapy cannot recover the damaged limbs but it helped them to live with the disability by guiding and teaching the correct way of performing Activities of daily living. Besides that, physical therapy exercises also release certain hormones in the blood which can decrease depression and improve the mood and mental health of the patients.

## Authors Contribution

Conceptualization: FT, EURKG

Methodology: FT, EURKG, MA, LSA, SAW

Formal analysis: FT

Writing-review and editing: FT, EURKG, MA, LSA, SAW, GF, SRB

All authors have read and agreed to the published version of the manuscript.

## Conflicts of Interest

The authors declare no conflict of interest.

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