SRMS IMS
10.21761/jms.v10i2.10

ORIGINAL RESEARCH ARTICLE

The Study of Body Dysmorphic Disorder and Psychiatric Comorbidities in Patients of Topical Steroid Damaged Face Attending Dermatology OPD in a Tertiary Care Centre: Hospital-Based Study

Meghna Puyam[1], Shikha Agarwal[2#], Pratik Gahalaut[3], Madhur Kant Rastogi[3*], Amar Singh[2]

ABSTRACT

Introduction: Topical corticosteroids are widely used for their anti-inflammatory effects in dermatology. However, prolonged and unsupervised use, particularly on the face, can result in topical steroid damaged face (TSDF), characterized by skin thinning, erythema, photosensitivity, and acneiform or rosacea-like eruptions. These visible skin changes may lead to significant psychological distress, including body dysmorphic disorder (BDD) and other psychiatric comorbidities. The study aims to assess the prevalence of BDD and associated psychiatric comorbidities among TSDF patients attending a tertiary care center.

Material and Methods: A cross-sectional observational study was conducted in the Department of Dermatology at Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly, from May 2023 to October 2024. A total of 200 patients with TSDF were enrolled. Screening tools included BDDQ-DV, BDD-SS, HADS, BAI, and BDI. Patients meeting BDD criteria were referred for psychiatric evaluation. Statistical analysis involved descriptive statistics, chi-square tests, t-tests, and Pearson correlation.

Results: BDD was identified in 15.5% of TSDF patients. There were no significant associations between BDD and demographic variables. Strong positive correlations were observed between BDD and psychiatric scores: HADS-Anxiety ($r = 0.37$), HADS-Depression ($r = 0.42$), BAI ($r = 0.44$), and BDI ($r = 0.52$); all *p-values* < 0.001. Clinical anxiety and moderate depression were present in all BDD-positive cases. Among dermatological signs, photosensitivity and dryness were significantly associated with BDD.

Conclusion: There is a notable psychiatric burden in TSDF patients. Routine psychiatric screening, interdisciplinary care, public awareness, and clinician training are essential for improving outcomes and preventing corticosteroid misuse.

Keywords: Topical steroid damaged face, Body dysmorphic disorder, Psychiatric comorbidities, Anxiety, Depression, Dermatology, Corticosteroid misuse.

Submission: 26/10/2025; **Acceptance:** 30/11/2025; **Published:** 31/12/2025

[1]Junior resident, [2]Associate Professor, [3]Professor, Department of Dermatology, #Department of Psychiatry,

Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly, Uttar Pradesh, India

***Corresponding Author:** Madhur Kant Rastogi, Professor, Department of Dermatology, Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly, Uttar Pradesh, India, e-mail: email

How to cite this article: Puyam M, Agarwal S, Gahalaut P, Rastogi MK, Singh A. The Study of Body Dysmorphic Disorder and Psychiatric Comorbidities in Patients of Topical Steroid Damaged Face Attending Dermatology OPD in a Tertiary Care Centre: Hospital-Based Study. SRMS J Med Sci. 2025;10(2):120-126.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Topical corticosteroids are commonly used in dermatology for their potent anti-inflammatory and immunosuppressive effects. While effective when used appropriately, their unsupervised and prolonged application on facial skin has led to a rise in cases of topical steroid damaged face (TSDF), characterized by skin thinning, redness, photosensitivity, hyperpigmentation, and steroid-induced acne or rosacea-like eruptions.[1]

Many individuals misuse topical steroids in pursuit of a lighter, smoother complexion, often driven by cultural beauty standards and social media influence. This misuse can lead to chronic skin damage, significantly affecting body image and psychological health. As a result, body dysmorphic disorder (BDD)—a psychiatric condition marked by obsessive concern over perceived physical flaws—has emerged as a growing concern in TSDF patients [1,2]

BDD is often accompanied by anxiety, depression, social withdrawal, and obsessive-compulsive traits.[2] In TSDF cases, visible facial changes may heighten psychological distress, increasing the risk of BDD and complicating treatment.[2] This relationship can become cyclical, as patients may misuse steroids to address appearance concerns driven by underlying psychiatric symptoms, only to worsen both their skin and mental health.[3]

Cultural pressures, particularly in South Asian contexts where fair skin is idealized, along with easy access to unregulated skin-lightening products, further contribute to misuse.[4] While the dermatological effects of steroid abuse are well documented, the psychological consequences especially BDD are

underexplored.[5] TSDF, first defined in 2008, presents with inflammatory and pigmentary changes and requires multidisciplinary management involving both dermatology and psychiatry.[6,7]

This study aimed to determine the prevalence of BDD among patients with TSDF attending a tertiary care center in Bareilly. It also sought to assess associated psychiatric comorbidities—specifically anxiety and depression—and to explore relevant socio-demographic and clinical characteristics linked to BDD in this population.

MATERIAL AND METHODS

This cross-sectional observational study was conducted at the Department of Dermatology, Shri Ram Murti Smarak Institute of Medical Sciences, Bhojipura, Bareilly, India. The research was carried out in the Dermatology Outpatient Department (OPD) between May 1, 2023, and October 31, 2024. The study aimed to evaluate the prevalence of body dysmorphic disorder (BDD) and its psychiatric comorbidities in patients with facial skin damage caused by the misuse of topical corticosteroids.

Participants were included if they were 18 years or older, provided written informed consent, and were able to complete questionnaires in English. Individuals with a known history of psychiatric illness or those currently taking psychiatric medications were excluded from the study. A total of 200 participants were included.

Validated English-language instruments were used for assessment:

BDDQ-Dermatology Version (BDDQ-DV)

A screening tool for BDD specifically adapted for dermatology patients.

Body Dysmorphic Disorder Symptom Scale (BDD-SS)

Measures severity and symptom range in individuals with BDD.

Hospital Anxiety and Depression Scale (HADS)

Evaluates levels of anxiety and depression in outpatient settings.

Beck Anxiety Inventory (BAI)

A 21-item scale assessing the severity of anxiety symptoms.

Beck Depression Inventory (BDI)

A 21-item self-report questionnaire measuring depression severity.

Demographic and clinical data, including age, gender, marital status, source and duration of steroid use, and skin-related symptoms, were collected.

Ethical Considerations

The study received ethical approval from the Institutional Ethics Committee (SRMS IMS/ECC/2023/61) and was registered with the Clinical Trials Registry of India (CTRI/2024/05/083736). The study adhered to ethical guidelines as prescribed by the Indian Council of Medical Research (ICMR) and the Declaration of Helsinki.

Data Collection Procedure

After consent, patients were screened and administered the above questionnaires. Data on socio-demographics and clinical features of topical steroid use were recorded. Questionnaire responses were scored and analyzed to evaluate the prevalence of BDD and its correlation with anxiety and depression. Patients who screened positive for BDD were referred to the Psychiatry OPD for diagnostic confirmation and appropriate intervention.

Statistical Analysis

Categorical variables were expressed as frequencies and percentages; continuous variables were presented as mean ± standard deviation (SD). The chi-square test was used for comparing categorical data, and the independent t-test was used for continuous variables. A *p-value* <0.05 was considered statistically significant.

RESULTS

In this study of 200 clinically diagnosed patients with topical steroid-damaged face (TSDF) at a tertiary dermatology center in Bareilly, the majority were females (97.5%) with a mean age of 27.95 ± 7.5 years. Most participants (59.5%) were aged 21–30 years. The average height and weight were 145.14 ± 4.01 cm and 52.05 ± 5.03 kg, respectively, with a mean BMI of 24.77 ± 2.81 kg/m². Based on BMI classification, 76.5% had normal weight, while 16% were underweight and 7.5% were overweight or obese.

Fitzpatrick skin type IV was the most common (45.5%), followed by types V and III. All participants were urban residents belonging to Class I socioeconomic status, with a mean monthly income of ₹65,450 ± ₹23,020.15. Most had attained graduate or higher education (64.5%) and were students (53.5%) by occupation. A majority (74%) were single, while the rest were married.

In Figure 1 the distribution of daily social media usage among the participants reveals that social media engagement is fairly widespread within the sample. A total of 52 participants (26.0%) reported using social media for 1 hour per day, while 48 participants (50.0%) used it for 2 hours daily. Asbout 50 participants (75.0%) used social media for 3 hours, and the remaining 50 participants (100.0%) reported using social media for 4 hours per day.

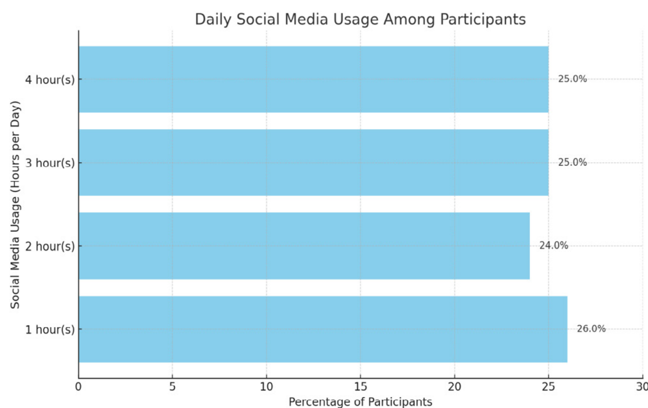

Figure 1: Daily social media uses among participants

A high prevalence of dermatological symptoms was observed in patients with topical steroid-damaged face (TSDF), with 68.5% reporting skin lesions. The most common symptoms included redness (82.0%), skin thinning (76.5%), and pigmentary changes (65.5%). Photosensitivity (64.5%) and itching (62.0%) were also frequent. Other notable features were dryness (58.0%), facial hair growth (56.0%), burning (40.5%), and swelling (35.5%), highlighting the broad spectrum of cutaneous effects from prolonged topical steroid misuse.

Prevalence of Body Dysmorphic Disorder and Psychiatric Comorbidities

Among 200 patients with topical steroid-damaged face (TSDF), 15.5% (n = 31) were diagnosed with BDD using the BDDQ-DV, with psychiatric confirmation. Severity assessment using BDD-SS showed moderate symptoms in 67.7%, mild in 22.6%, and severe in 9.7%. The mean BDD-SS scores were 21.71 ± 3.20 (mild), 36.38 ± 3.97 (moderate), and 48.67 ± 5.03 (severe).

Psychiatric evaluation with HADS, BAI, and BDI showed that most participants had a normal psychological status. On HADS, 92.5% were normal for anxiety and 91.0% for depression. The BAI showed low anxiety in 97.0% and moderate anxiety in 3.0%. The BDI indicated normal mood in 94.5%, with 1.5% having mild and 4.0% moderate depression. No cases of severe anxiety or depression were observed.

BDD distribution across age groups showed no significant variation (p = 0.906). Prevalence was 10.0% in those <20 years, 15.1% in 21 to 30 years, 18.4% in 31 to 40 years, and 18.2% in 41 to 50 years; no cases were found in the 51 to 60 group. Mean age was 29.1 ± 6.5 years in BDD cases and 27.7 ± 7.6 in non-BDD (p = 0.339). Gender differences were not significant, with BDD present in 15.4% of females and 20.0% of males (p = 0.778).

No significant association was found between BDD and BMI (p = 0.653) or Fitzpatrick skin type (p = 0.129). BDD was noted in 12.5% of underweight, 17.0% of normal weight, and 10.0% of overweight individuals; none of the obese had BDD. Mean BMI was similar between BDD (20.46 ± 1.9) and non-BDD (20.50 ± 2.1) groups (p = 0.928). BDD was seen in 21.4% of skin type III, 9.9% of type IV, and 19.4% of type V.

All participants were urban residents, limiting generalizability. BDD prevalence showed no significant association with education (p = 0.549): 8.7% in primary, 18.8% in secondary, and 15.5% in graduates and above. Occupational analysis showed no significant association (p = 0.173), with the highest BDD rates in homemakers (23.5%) and skilled workers (22.9%), followed by students (12.1%) and unskilled workers (8.3%).

Mean monthly income was slightly lower in the BDD group (₹58,870.97 ± ₹21,383.39) than in the non-BDD group (₹66,656.80 ± ₹23,164.80), but this was not significant (p = 0.083). Marital status showed no significant difference (p = 0.675), with BDD seen in 17.3% of married and 14.9% of single participants.

Table 1 presents the distribution of BDD in relation to psychiatric symptoms measured by HADS, BAI, and BDI. The analysis shows statistically significant associations between BDD and both anxiety and depression severity.

In the HADS-Anxiety scale, all individuals with clinical anxiety (10/10) had BDD, compared to only 9.7% among those with normal anxiety. A significant association was found (p = 0.001, r = 0.37), indicating that increasing anxiety correlates with BDD presence.

For HADS-Depression, all participants with clinical depression (9/9) and 33.3% with borderline depression (3/9) had BDD, while only 10.4% of those with normal scores were diagnosed. This was also statistically significant (p = 0.001, r = 0.42), highlighting the link between depression severity and BDD.

According to the Beck Anxiety Inventory (BAI), all individuals with moderate anxiety (6/6) had BDD, while only 12.9% (25/194) of those with low anxiety were affected (p = 0.001, r = 0.44).

On the Beck depression inventory (BDI), 100% of participants with mild (3/3) and moderate (8/8) depression had BDD, compared to 10.6% of those with normal mood. This showed the strongest association (p = 0.001, r = 0.52), emphasizing the correlation between worsening mood and BDD prevalence.

This analysis in Table 2 explored the relationship between BDD severity (BDD-SS scores) and psychiatric symptoms assessed by HADS-Anxiety, HADS-Depression, BAI, and BDI.

In the HADS-Anxiety domain, 100% of participants with BDD-SS scores of 15 to 28 had normal anxiety. In contrast, 80% in the 29 to 42 group and 20% in the 43 to 56 group exhibited clinical anxiety. A moderate positive

Table 1: HADS-Anxiety distribution of body dysmorphic disorder (BDD) status

Scale	*Category*	*BDD present (n, %)*	*BDD absent (n, %)*	*Total (n, %)*
HADS-Anxiety	Normal	18 (58.0%)	167 (98.8%)	185 (92.5%)
HADS-Anxiety	Borderline	3 (9.6%)	2 (1.1%)	5 (2.5%)
HADS-Anxiety	Clinical Case	10 (32.2%)	0 (0.0%)	10 (5.0%)
HADS-Depression	Normal	19 (61.2%)	163 (96.44%)	182 (91.0%)
HADS-Depression	Borderline	3 (9.6%)	6 (3.5%)	9 (4.5%)
HADS-Depression	Clinical Case	9 (29.0%)	0 (0.0%)	9 (4.5%)
BAI	Low Anxiety	25 (80.6%)	169 (100.0%)	194 (97.0%)
BAI	Moderate Anxiety	6 (19.35%)	0 (0.0%)	6 (3.0%)
BDI	Normal	20 (64.5%)	169 (100.0%)	189 (94.5%)
BDI	Mild Depression	3 (9.6%)	0 (0.0%)	3 (1.5%)
BDI	Moderate Depression	8 (25.8%)	0 (0.0%)	8 (4.0%)

*Chi-Square test applied

Table 2 : Distribution of psychiatric comorbidity scores across BDD-SS categories

Scale	*15–28 (n=7)*	*29–42 (n=21)*	*43–56 (n=3)*
HADS-Anxiety			
• Normal	100.0%	55.5%	5.5%
• Borderline	0.0%	100.0%	0.0%
• Clinical	0.0%	80.0%	20.0%
HADS-Depression			
• Normal	100.0%	52.6%	10.5%
• Borderline	0.0%	100.0%	0.0%
• Clinical	0.0%	88.8%	11.1%
BAI (Anxiety)			
• Low	100.0%	55.5%	5.5%
• Moderate	0.0%	100.0%	0.0%
• Severe	0.0%	80.0%	20.0%
BDI (Depression)			
• Normal	100.0%	57.8%	10.5%
• Mild	0.0%	100.0%	0.0%
• Moderate	0.0%	87.5%	12.5%
• Severe	0.0%	0.0%	0.0%
• Extreme	0.0%	0.0%	0.0%

Pearson Correlation (r):HADS-Anxiety = 0.48, HADS-Depression = 0.41, BAI = 0.44, BDI = 0.59 (All $p < 0.001$)
*Chi-square test applied

correlation was found between BDD severity and anxiety (r = 0.48, $p < 0.001$).

For HADS-Depression, normal scores were seen in the lowest BDD group, while 88.8% in the moderate group and 11.1% in the highest group showed clinical depression. The correlation between BDD severity and depression was moderate (r = 0.41, $p < 0.001$).

Using the BAI, all individuals in the 15 to 28 BDD-SS range had low anxiety. However, 80% in the 29 to 42 group and 20% in the 43 to 56 group showed severe anxiety, with a significant correlation (r = 0.44, $p < 0.001$).

On the BDI, all low BDD cases had normal mood. As BDD severity increased, mild and moderate depression became more frequent, though no severe or extreme depression was reported. The correlation between BDD and depression severity was strongest here (r = 0.59, $p < 0.001$).

This analysis of the multipaneled graph in Figure 2 highlights that anxiety and depression scores increase progressively with BDD severity across BDD-SS groups (15–28, 29–42, 43–56). Mean scores for HADS-Anxiety, HADS-Depression, BAI, and BDI were higher in more severe BDD categories. Pearson correlation coefficients showed moderate, statistically significant correlations between BDD severity and all psychological variables ($p < 0.001$), reinforcing the need for thorough psychiatric assessment in individuals with body dysmorphic symptoms.

Among TSDF patients, photosensitivity (19.4%, $p = 0.041$) was significantly associated with a higher prevalence of body dysmorphic disorder (BDD), while dryness (11.2%, $p = 0.049$) was negatively associated. Other skin symptoms—such as redness (15.2%), itching (16.1%), burning (17.3%), skin lesions (14.6%), swelling (14.1%), thinning (14.4%), skin color changes (13.0%), and facial hair (16.1%)—showed no significant correlation with BDD ($p > 0.05$).

In Figure 3, the correlation analysis demonstrated significant positive associations between BDD and psychological distress. The BDD questionnaire—

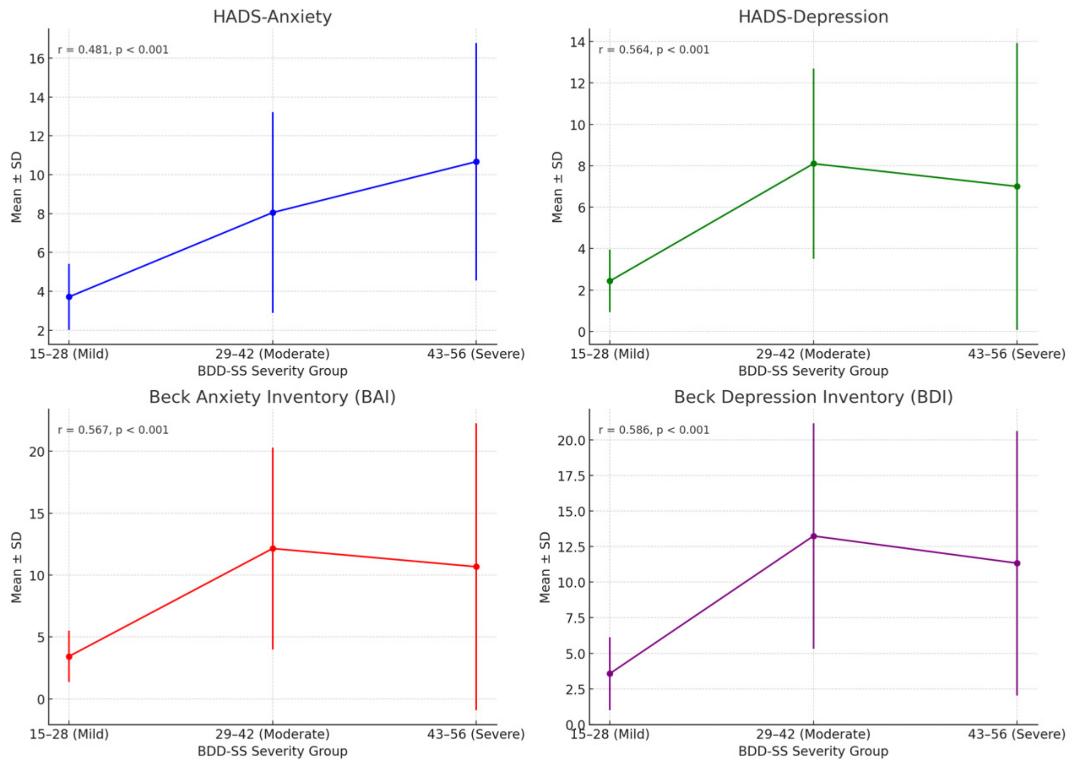

Figure 2: Comparison of mean variable among various BDD-symptom score groups

dermatology version showed moderate correlations with HADS-Anxiety (r = 0.376, $p < 0.001$), HADS-Depression (r = 0.428, $p < 0.001$), Beck anxiety inventory (r = 0.447, $p < 0.001$), and Beck depression inventory (r = 0.529, $p < 0.001$). These findings indicate that individuals with higher BDD symptoms tend to experience elevated levels of anxiety and depression.

Similarly, the body dysmorphic disorder symptom scale (BDD-SS) showed stronger correlations with mental health measures. It was significantly correlated with HADS-Anxiety (r = 0.481, $p < 0.001$), HADS-Depression (r = 0.564, $p < 0.001$), Beck Anxiety Inventory (r = 0.567, $p < 0.001$), and Beck depression inventory (r = 0.586, $p < 0.001$). This reinforces the association between increasing BDD severity and the presence of anxiety and depressive symptoms.

In contrast, social media usage did not show any significant correlation with BDD, as indicated by a high *p-value* (0.621). This suggests that, in this study population, social media exposure was not a contributing factor to body dysmorphic symptoms.

In Table 3, participants with BDD exhibited significantly higher scores across all psychological scales—HADS-Anxiety, HADS-Depression, Beck anxiety inventory, and Beck depression inventory—compared to those without BDD ($p < 0.001$ for all comparisons). These results indicate a strong association between BDD and increased symptoms of both anxiety and depression.

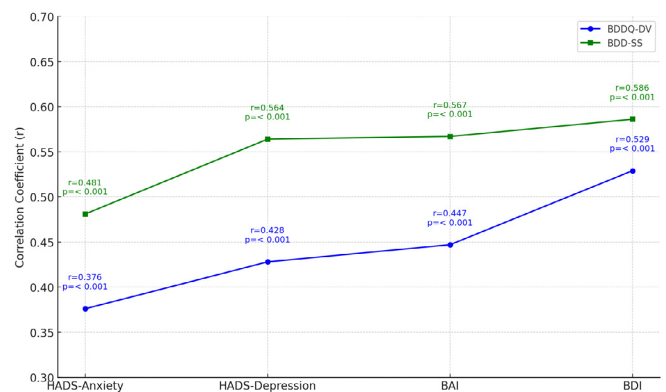

Figure 3: Line diagram of correlation analysis (BDDQ-DV and BDD-SS)

Table 3: Comparison of mean variable among patients with and without BDD

Variable	*BDD present*	*BDD absent*	*p-value*
HADS-Anxiety	7.3 ± 5.0	4.0 ± 1.7	<0.001
HADS-Depression	6.7 ± 4.8	4.2 ± 1.8	<0.001
Beck anxiety inventory	10.0 ± 8.2	4.4 ± 1.7	<0.001
Beck depression inventory	10.9 ± 8.1	4.8 ± 1.8	<0.001

DISCUSSION

In this cross-sectional study of 200 patients with topical steroid-damaged facial skin (TSDF), 15.5% screened positive for BDD using the BDD-DV scale, aligning with previous findings such as AlShahwan *et al.*,[8] who

reported a 14% prevalence in dermatology patients. Most participants were female (97.5%), aged 21 to 30 years (59.5%), with normal BMI (92.5%), higher education (64.5%), and urban residency. Despite demographic clustering, no significant associations were found between BDD prevalence and age, gender, BMI, or education, consistent with Sindi *et al*.[9], though other studies, e.g., Krebs *et al*.[10], Taqui *et al*.[11], reported variable associations.

Fitzpatrick skin types IV (66.5%) and V (33.5%) dominated the sample, with no significant correlation between skin type and BDD. This contrasts with Bohne *et al*.[12], who found a 5.3% BDD prevalence among German students with skin concerns, possibly due to greater skin type diversity in their sample. All participants belonged to Class I socioeconomic status, limiting socioeconomic comparisons. While Phillips *et al*.[13] found SES unrelated to BDD remission, clinical features like symptom severity were more predictive.

Common symptoms included redness (82%), skin thinning (76.5%), and photosensitivity (64.5%), with photosensitivity significantly associated with BDD (p = 0.041), supporting findings from Phillips *et al*.[13] Although 52% had sought dermatological treatment, the persistence of symptoms indicates the psychological nature of BDD and the need for interdisciplinary care.

Social media exposure (3–4 hours/day in 25%) did not correlate with BDD or psychiatric comorbidities, differing from Alsaidan *et al*.[14] who noted a 4.2% BDD prevalence among social media users. This may reflect cultural or evaluative limitations.

Strong associations were found between BDD and psychiatric comorbidities. All participants with clinical anxiety (HADS ≥11) or moderate depression (BDI 20–28) had BDD. BDD prevalence was 100% among those with clinical anxiety, 60% in borderline anxiety, and 9.7% in those with normal anxiety. Significant correlations were observed: r = 0.48 (HADS-Anxiety) and r = 0.59 (BDI), both p < 0.001. These results align with Brohede *et al*.[15] Pinto and Phillips[16] and Wilhelm *et al*.[17] who documented high anxiety rates in BDD, particularly among those with social phobia. McKay *et al*.[18] further supported BDD's overlap with OCD.

Depression was also strongly linked with BDD. Among clinically depressed individuals, BDD prevalence was 100%; borderline and normal groups showed 33.3 and 10.4%, respectively. BDD scores were significantly higher in clinically depressed participants (BDD-DV: 6.78 ± 1.09; BDD-SS: 38.89 ± 6.62; p < 0.001). These findings align with Brohede *et al*.[15] Zeinodini *et al*. [19] and Phillips *et al*.[13] who found high depression rates in BDD patients. In our cohort, 29% of BDD patients had clinical depression, and 32.2% had clinical anxiety, comparable to AlShahwan *et al*. [8] The bidirectional relationship between depression and BDD has therapeutic implications. Phillips and Stout[20] noted that improvement in one often benefits the other, emphasizing the need for integrated psychiatric care. Validated tools like HADS, BAI, and BDI are effective for identifying at-risk individuals, and cognitive behavioral therapy has proven beneficial (Geremia & Neziroglu).[21]

In summary, this study highlights the high psychiatric burden among TSDF patients with BDD. While demographic and socioeconomic factors showed no significant links, anxiety and depression were strongly associated. These findings advocate for routine mental health screening in dermatologic practice and support a multidisciplinary care model. Future research should explore causal links and include more socioeconomically diverse populations.

CONCLUSION

This study highlights the need for a multidisciplinary approach in managing topical steroid-damaged face (TSDF), especially in patients with coexisting BDD. Integrating dermatological and psychiatric care, along with routine mental health screening, is essential. Public education on the risks of unsupervised steroid use and stricter prescription controls are crucial. As many patients obtained steroids from non-dermatologists, inter-specialty training is necessary. Further research into psychosocial factors influencing BDD is warranted for comprehensive care.

RECOMMENDATION

Management of TSDF should include routine psychiatric evaluation and collaborative care between dermatologists and mental health professionals. Regulatory actions to curb over-the-counter steroid sales and increased public awareness are recommended. Training non-dermatologist practitioners and exploring broader psychological influences, beyond social media, will help address the full scope of BDD in affected individuals.

REFERENCES

1. Givan J, Pearce D, Feldman SR. Topical Corticosteroids. In: Mild-to-Moderate Psoriasis, Second Edition. 2023 Jul 10;23–39. DOI: 10.1007/978-3-031-12360-6_3.
2. Jaroszewski AC, Wilhelm S. Body Dysmorphic Disorder. In: Encyclopedia of Mental Health, Third Edition: Volume 1-3. 2024 January 20;1:V1-240-V1-245. DOI: 10.1016/B978-0-12-818697-8.00099-9.
3. Yasir M, Goyal A, Sonthalia S. Corticosteroid Adverse Effects. StatPearls. 2023 Jul 3. Available from: https://www.ncbi.nlm.nih.gov/books/NBK538239/.

4. Karekar SR, Marathe PA, Nagarajan VB, Khopkar US, Chikhalkar SB, Desai PK, *et al*. Use of Topical Steroids in Dermatology: A Questionnaire Based Study. Indian Dermatol Online J. 2020 September 1;11(5):725. DOI: 10.4103/idoj.IDOJ_258_19.
5. Shrestha S, Joshi S, Bhandari S. Prevalence of Misuse of Topical Corticosteroid among Dermatology Outpatients. JNMA J Nepal Med Assoc. 2020;58(231):834. DOI: 10.31729/jnma.5165.
6. Lahiri K, Coondoo A. Topical Steroid Damaged/Dependent Face (TSDF): An Entity of Cutaneous Pharmacodependence. Indian J Dermatol. 2016 May 1;61(3):265. DOI: 10.4103/0019-5154.182427.
7. Pal D, Biswas P, Das S, De A, Sharma N, Ansari A. Topical Steroid Damaged/Dependent Face (TSDF): A Study from a Tertiary Care Hospital in Eastern India. Indian J Dermatol. 2018 September 1;63(5):375. DOI: 10.4103/ijd.IJD_561_17.
8. AlShahwan MA. Prevalence and characteristics of body dysmorphic disorder in Arab dermatology patients. Saudi Med J. 2020;41(1):73–8. DOI: 10.15537/smj.2020.1.24753.
9. Sindi SA, Alghamdi MK, Sindi EE, Bondagji MF, Baashar DS, Malibary JA, *et al*. The Prevalence and Characteristics of Body Dysmorphic Disorder Among Adults in Makkah City, Saudi Arabia. A Cross-Sectional Study. Cureus. 2023 Feb 22;15(2):e35316. DOI: 10.7759/cureus.35316.
10. Krebs G, Clark BR, Ford TJ, Stringaris A. Epidemiology of Body Dysmorphic Disorder and Appearance Preoccupation in Youth: Prevalence, Comorbidity and Psychosocial Impairment. Journal of the American Academy of Child & Adolescent Psychiatry. 2024 Jan 1;63(1):58–68. DOI: 10.1016/j.jaac.2023.08.009.
11. Taqui AM, Shaikh M, Gowani SA, Shahid F, Khan A, Tayyeb SM, *et al*. Body Dysmorphic Disorder: Gender differences and prevalence in a Pakistani medical student population. BMC Psychiatry. 2008 Apr 9;8(1):20. DOI: 10.1186/1471-244X-8-20
12. Bohne A, Wilhelm S, Keuthen NJ, Florin I, Baer L, Jenike MA. Prevalence of body dysmorphic disorder in a German college student sample. Psychiatry Research. 2002 Jan 31;109(1):101–4. DOI: 10.1016/S0165-1781(01)00363-8.
13. Phillips KA, Conroy M, Dufresne RG, Menard W, Didie ER, Hunter-Yates J, *et al*. Tanning in body dysmorphic disorder. Psychiatric Quarterly. 2006 Jun;77(2):129–38. DOI: 10.1007/s11126-006-9002-2
14. Alsaidan MS, Altayar NS, Alshmmari SH, Alshammari MM, Alqahtani FT, Mohajer KA. The prevalence and determinants of body dysmorphic disorder among young social media users: A cross-sectional study. Dermatology Reports. 2020 Dec 22;12(3):8774. DOI: 10.4081/dr.2020.8774.
15. Brohede S, Wingren G, Wijma B, Wijma K. Prevalence of body dysmorphic disorder among Swedish women: a population-based study. Comprehensive Psychiatry. 2015 Apr 1;58:108–15. DOI: 10.1016/j.comppsych.2014.12.016.
16. Pinto A, Phillips KA. Social anxiety in body dysmorphic disorder. Body Image. 2005 Dec;2(4):401–5. DOI: 10.1016/j.bodyim.2005.10.003.
17. Wilhelm S, Otto MW, Zucker BG, Pollack MH. Prevalence of body dysmorphic disorder in patients with anxiety disorders. Journal of Anxiety Disorders. 1997;11(5):499–502. DOI: 10.1016/S0887-6185(97)00026-1.
18. McKay D, Neziroglu F, Yaryura-Tobias JA. Comparison of clinical characteristics in obsessive-compulsive disorder and body dysmorphic disorder. Journal of Anxiety Disorders. 1997 Jul 1;11(4):447–54. DOI: 10.1016/S0887-6185(97)00020-0.
19. Zeinodini Z, Sedighi S, Baghertork Rahimi M, Noorbakhsh S, Rajezi Esfahani S. Dysfunctional Metacognitive Beliefs in Body Dysmorphic Disorder. Global Journal of Health Science. 2015 Jun 25;8(3):10–6. DOI: 10.5539/gjhs.v8n3p10.
20. Phillips KA, Pagano ME, Menard W, Fay C, Stout RL. Predictors of remission from body dysmorphic disorder: a prospective study. Journal of Nervous and Mental Disease. 2005 Aug;193(8):564–7. DOI: 10.1097/01.nmd.0000172681.51661.54
21. Geremia GM, Neziroglu F. Cognitive Therapy in the Treatment of Body Dysmorphic Disorder. Clinical Psychology & Psychotherapy. 2001;8(4):243–51. DOI: 10.1002/cpp.284.