ORIGINAL ARTICLE

Evaluation of Body Dysmorphic Disorder in Hair Loss Patients and Benefit After Hair Transplant

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ABSTRACT
Introduction: Body dysmorphic disorder (BDD) is excessive concern about physical appearance leading to mental, social & functional distress. Patients seek cosmetic surgery not psychiatry & may remain dissatisfied after surgery. Study includes 100 hair transplant patients. **Materials and Methods:** From 1st Jan to 31st July 2013. Patient's Personal Evaluation, Yale Brown Obsessive Scale, Sheehan Lifestyle Disability Scale & Derriford Appearance Scale were used for evaluation. Patients deformities were corrected with hair transplant and these patients were reassessed. **Results:** 10 months later to judge the benefit. BDD prevalence in hair loss is 28%, which is higher than rhinoplasty 20.7%. Preoccupation of hair loss on the minds of the patients is much higher than perceived by their doctors. After hair transplant 52% patients considered their baldness has been corrected, 32% patients, had milder perception of their defect but 16% continue to feel that they have less hair than others. **Conclusion:** The study shows that hair loss patients who display BDD like concerns, can have significant benefit in personal life, social life and work performance after hair transplant. Study also shows that four different psychiatry scales can be used for evaluation and follow up of BDD in hair loss patients.

Keywords: Body dysmorphic disorder, Derriford Appearance Scale, Rhinoplasty

INTRODUCTION

Body dysmorphic disorder (BDD) can be defined as excessive concern about an imaginary or marginal defect in physical appearance leading to thoughts or actions creating distress, with social and/or functional impairment of routine life.[1-3] The patients believe that cosmetic surgery is required for correction of their problem, they do not seek psychiatric help.[4] Often they will still find a residual deformity after the surgery and continue to be dissatisfied with themselves.[3]

Studies have reported a 0.7-3% prevalence of BDD in the general population, which raises to 2.5-5.3% in college going students and 6-15% among patients approaching for cosmetic surgery.[5-9] The present day exposure to media, the display of well groomed bodies, seen from an early age, often distort the perceived body image and promote a feeling of mismatched body proportions. Most common areas of concern in BDD are skin, hair and nose.[10-12]

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We often find patients with early, moderate, hair loss who always cover their head with a cap and refuse to remove their cap even for evaluation. Figure 1a & 1b show a patient who always wore a cap to hide the vertex or crown area and his improvement after hair transplant. Young patients with early hair loss choose to wear hair pieces, despite having good amount of hair on their head. These patients refusing social events and photographs with friends or insisting for photographs being clicked always at a particular angle, where the hair looks good. Figure 2a & 2b show a patient who refused to attend college unless the hair density was improved after a hair transplant. Men and women conjure hairstyles to hide thinning areas of the scalp.

PATIENT AND METHODS

All patients aged 18 years and above who approached for hair transplant between 1st Jan 2013 to 31st July 2013, were explained and requested to participate in the study. After reading the questions, 19 patients felt uncomfortable answering the questions and refused. In fact these would be the ones who were most concerned about the dysmorphic appearance and shunned even at the mention of the condition. We decided to have 100 patients in the study and reassess them, 10 months after the hair transplant. There are standard questionnaires available and used

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for evaluation of BDD in psychiatry and cosmetic surgery. Four different questionnaires were selected for the study of hair loss.

Patient Evaluation

Patients had a personal evaluation of the extent of their deformity (Table 1). All the patients scored their deformity as severe to extreme going with the fact that they were concerned about it and had come to request a correction of the real or the perceived defect. The surgeons assessment of most deformities was mild to moderate. Surgeons need to have better perception of the patients concerns. Even mild defects do matter more seriously to the patients. Majority of the patients 94% agreed to have corrections as per their surgeons standard guidelines. Figure 3a & 3b show a hair transplant done within the patients original hair line to add better density as per surgeons plan, where patient agreed not to lower the hair line. Very small number 6% patients were adamant about a particular shape or area being transplanted more preferentially, their requests were accommodated within limits of the procedure. Figure 4a & 4b show a patient who insisted on having a lower and more straight hair line with two sittings of hair transplant to have high density, whereas the guideline is to have a soft looking curved hair line.

Yale – Brown Obsessive Compulsive Scale – (Table 2)

The Yale-Brown Scale is a global standard used in evaluation, follow up and improvement in severity of the dysmorphic thoughts and behavior. It is often used for cosmetic surgery patients.[14,15] We used it for scoring the obsessive behavior pattern and severity.

Patients were asked to rate their obsessive feelings as:

Looking into the mirror, spending more time to get the hair set perfectly, wanting to adjust slightest disturbance in their hair, wearing cap all the time, refusing dance, games etc where the hair may fly off and look undone, avoiding photographs and social events.

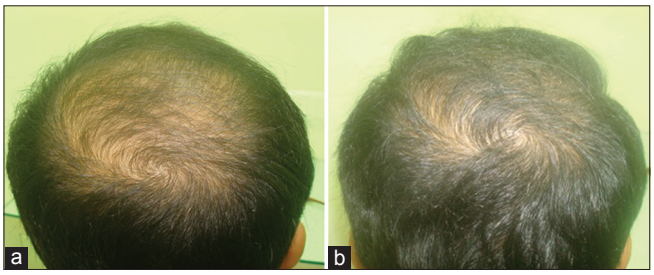

Figure 1: (a) Patient who always wore a cap to hide the vertex or crown area, (b) Improvement hair growth in Crown area after hair transplant

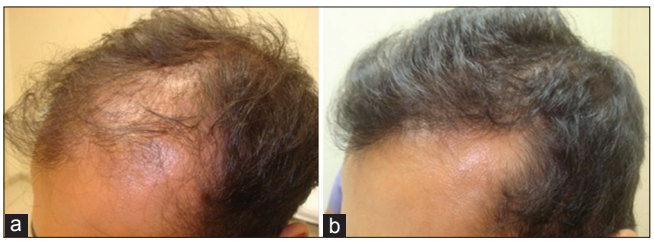

Figure 2: (a) Patient who refused to attend college due to hair thinning, (b) Improved density after a hair transplant

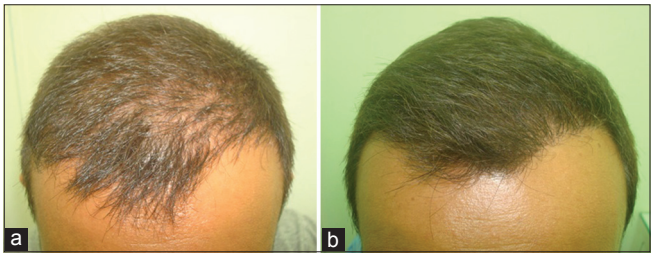

Figure 3: (a) Hair transplant planned as per surgeon's guidelines (b) Improved density patient agreed not to lower the hair line

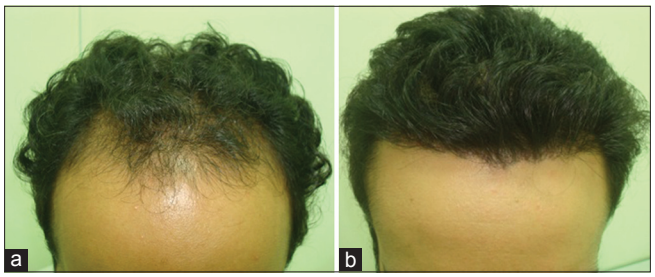

Figure 4: (a) Patient insisted on having low and straight hair line (b) Two sittings dense straight hair line instead of guideline for soft curved hair line

Table 1: Patient's personal evaluation of the deformity

Criteria	Score 0	Score 1	Score 2	Score 3
Level of the hairline	Good as it is	Acceptable with marginal correction	Correction as per doctors Guidelines	Unusual expectations or own ideas
Shape of the hairline	Good as it is	Acceptable with marginal correction	Correction as per doctors Guidelines	Unusual expectations or own ideas
Temporal receding	To match the hairline	Acceptable with marginal correction	Correction as per doctors Guidelines	Unusual expectations or own ideas
Thinning and Scalp show	Average correction to look better	Correction in directly visible areas	Correction as per doctors Guidelines	Very high Density all over
Baldness in one or more areas	Average correction to look better	Correction in directly visible areas	Correction as per doctors Guidelines	Very high Density all over

Mild – 0 to 5, Moderate – 6 to 8, Severe – 9 to 11, Extreme – 12 to 15

Sheehan Disability Scale (Table 3)

Evaluates the quality of life and functional impairment at school/work, social and family life.[14,15]

The Derriford Appearance Scale (Table 4)

This scale has 59 items or questions designed to assess the effect or concern of your appearance on your everyday living, personal relations, self esteem and emotional distress.[16] The scale has a subscale for general self consciousness, social self consciousness, sexual and bodily appearance, facial appearance and negative self concepts. A short version of the scale is utilized in most applications. A 24 point and 12 point scale is already available in several references,[17,18] we used a scale with 20 points for hair loss assessment.

References from previous studies were used to decide a score to be labeled as BDD.[14-18] A score of 10 or above on the Yale-Brown Scale or DASS score of 30 or above shows preoccupation of the mind and are considered to have Body Dysmorphic disorder. Patients with minimal defect requesting complete correction can clinically be considered to have BDD. The Sheehan disability Score of 30 and above indicated that the perception of the deformity affected the routine life of the patients.

Observations and Prevalence of Body Dysmorphic Disorder

Younger patients in the age group of 18 to 30 had higher perception of their deformity. The Grade of hair loss and extent of thinning or baldness did not show direct correlation with the prevalence of BDD. On the Yale – Brown scale 32% scored as mild, while moderate score was seen in 40% patients. Severe Yale – Brown Scale score of 10 and above indicating a BDD, was seen in 27% patients who had varying degrees of hair loss and grade III to grade VI of baldness. Only one patient who refused to attend college scored as extreme. Therefore the prevalence of BDD in hair loss patients as per Yale – Brown Scale is 28%. The incidence is higher when compared to patients in cosmetic surgery. The highest incidence of BDD reported in a study done for patients requesting rhinoplasty is 20.7%.[13]

Sheehan Scale showed that none of the patients had mild score, 78% had moderate influence on their routine life, 20% scored as severe and 2% agreed to have extreme effect on their routine life. Indicating that though the incidence of BDD in hair loss patients is low the daily routine life is affected more than generally perceived.

The questions in DASS score were very specific to hair loss patients. This may be one of the reasons that none of the patients had mild or moderate score. Majority patients, 82% had a severe score of 31 or above indicating severe preoccupation of their hair loss and baldness on their mind. Rest 18% had extreme score, showing even higher effect on the mind. The study indicates that the loss of hair and change in appearance has a higher and deeper impact on the minds and social lifestyle of our patients than we generally perceive. This realization can change our approach to the problem.

Re-assessment of scores after Hair Transplant and Discussion

Hair transplants were carried out for all the patients and a period of 10 months was allowed for good growth of the new hair. Patients were re-assessed 10 months after the hair restoration procedure. The Yale-Brown scores improved showing 48% mild, 36% moderate, 16% severe and no extreme (figure 5). The Sheehan scale showed 32% mild, 56% moderate, 12% severe and no extreme (Figure 6). There was a 12-32% shift towards mild perception, 11-22% shift towards moderate perception, 8 -11% improvement in severe perception and none regarded the deformity as extreme. The shift indicates that hair restoration surgery

Table 2: Yale-Brown obsessive scale modified

Obsession	Score 0	Score 1	Score 2	Score 3	Score 4
Time spent on obsession	0 hours	0-1 hours	1-3 hour	3-8 hours	>>8 hours
Interference from obsession	None	Mild	Definite manageable	Substantial impairment	Incapacitating
Distress from obsession	None	Mild	Moderate manageable	Severe	Constant and disabling
Resistance to the obsession	Always resist	Often resists	Sometimes can resist	Only try to resist	Cannot resist
Control over the obsession	Complete control	Much control	Little control	Some control	No Control

Mild – 0 to 5, Moderate – 6 to 9, Severe – 10 to 14, Extreme – 15 to 20

Table 3: Sheehan disability scale

Criteria	No disturbance	Mild - continue routine but concerned			Moderate - worry makes routine incomplete			Severe - worry stops or reduces routine activity			Extreme - cannot carry on routine life
Score	0	1	2	3	4	5	6	7	8	9	10
Work or school											
Social life											
Family/home											

Mild – 0 to 9, Moderate – 10 to 18, Severe – 19 to 27, Extreme – 27 to 30

Table 4: Derriford appearance short scale - modified

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

	Criteria	Score			
		0 Never	1 Sometimes	2 Considerable	3 Always
1	Feeling loss of Confidence				
2	Distress at Reflection				
3	Irritable at Home				
4	Feel Hurt, Feel Rejected				
5	Self Conscious of appearance				
6	Distress at Pubs Restaurants or Social events				
7	Misjudged due to appearance				
8	Feel incomplete masculine or feminine				
9	Felt I wasn't worth much as a person				
10	Adjust the hair if it flies or gets disturbed				
11	Adopt Concealing Gestures				
12	Difficult to work up the initiative to do things				
13	Tended to over-react getting upset by quite trivial situations				
14	Found others preferred over me for important assignments				
15	Felt sad and depressed sometimes				
16	Found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)				
17	Could have done better with proper looks				
18	Felt that I had nothing to look forward to				
19	Found it difficult to relax				
20	Felt nervous in situations, with raised heart rate sweating or shaking feet				

Mild – 0 to 10, Moderate – 10 to 30, Severe – 31 to 50, Extreme – 51 to 60,

does help to a large extent in improving the appearance, routine lifestyle and perception of the deformity in hair loss patients. Figure 7a & 7b show one such patient who reported improvement in personal confidence, social life, family life and work after hair transplant.

The DASS modified scores reassessed after hair transplant revealed a slightly different outlook. Though the scores of 12% mild, 27% moderate and 45% severe indicated benefit from the procedure. A good 16% still scored as extreme (Figure 8). Compared to 18% extreme score before the surgical correction, these patients who were in extreme category before were still preoccupied in their mind that they have had a hair transplant, others may notice the transplanted hair, the residual thinning may still be seen, areas of less hair could be visible to others and anyway they will always have less hair than others around them (Figure 9a, 9b and Figure 10a, 10b) show two such patients who had good results but thought the hair looked less at particular angles and they will always have less hair than their peers around them. These are the patients to look out for. These patients may continue to be unhappy after the procedure and notice faults or incomplete execution of the procedure, holding on to residual deformities or perception of the deformities. Comparing 27% incidence of BDD and 16% still considering the deformity preoccupied in their thoughts, should we conclude that only 11% of the BDD could be corrected or helped by surgery?

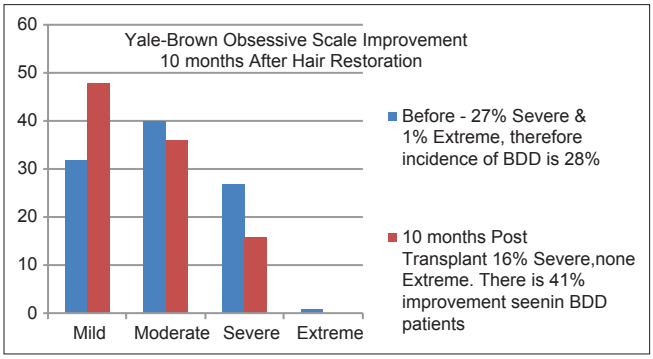

Figure 5: Yale - Brown obsessive scale improvement 10 months after hair restoration

Improvement in living

Patients who improved on their scores were feeling confident, could concentrate better at work, were socially more active, had stopped using caps and concealers, though some still have their favorite angle for photographs. Some of them had taken to a fitness regimen given qualifying exams and had promotions. The families found an emotionally improved and better bonding person.

Younger patients and patients in lower grades of hair loss, with higher initial evaluation scores of the deformity scored less on reassessment of the improvement, showing to be less satisfied and still had one or two residual areas

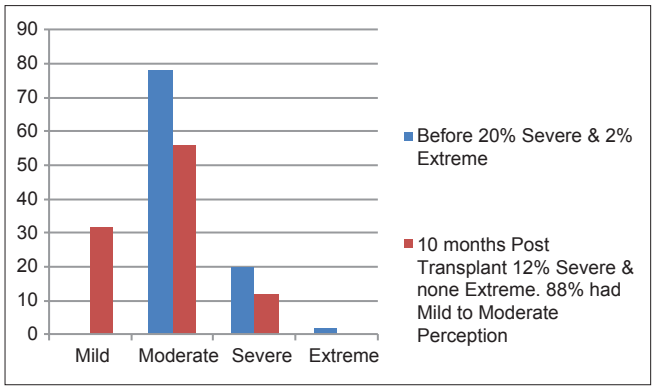

Figure 6: Sheehan scale improved work family & social life after hair restoration

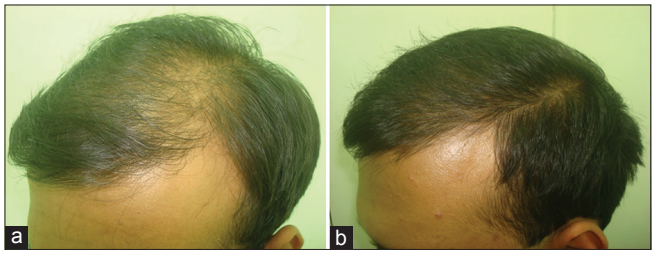

Figure 7: (a) Hair loss on Temporal angle, Frontal & Mid scalp (b) Improved confidence, social life, family life and work after hair transplant

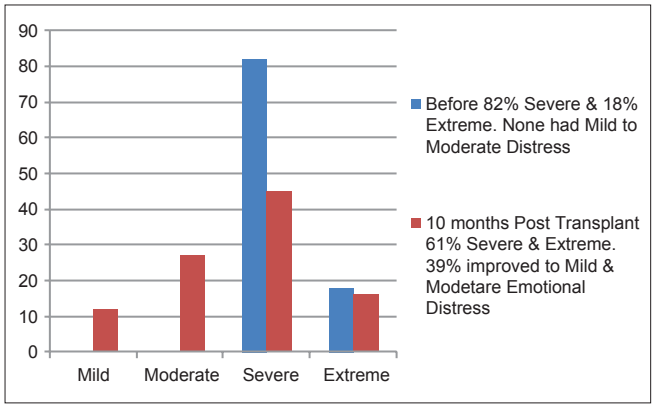

Figure 8: DASS scale shift towards milder emotional distress after hair restoration

to be addressed. The inverse proportion is due to high expectations.

Since patient satisfaction and quality of life are the prime concern in hair restoration, further research in correlation to BDD is necessary.

CONCLUSION

Hair loss patients are very sensitive about thinning and loss of hair. The deformity perceived by the patient is more severe than what is clinically evaluated. Hair loss affects personal, social, family life and performance at work. Hair loss plays on the minds and emotions of the person. Hair transplant can replace lost hair with new hair and

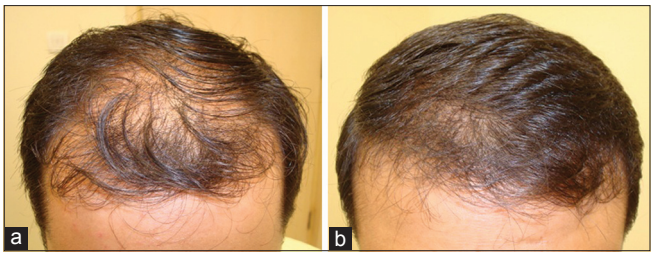

Figure 9: (a) Baldness on frontal and mid scalp (b) Good Hair Transplant but patient feels hair looks less at particular angle

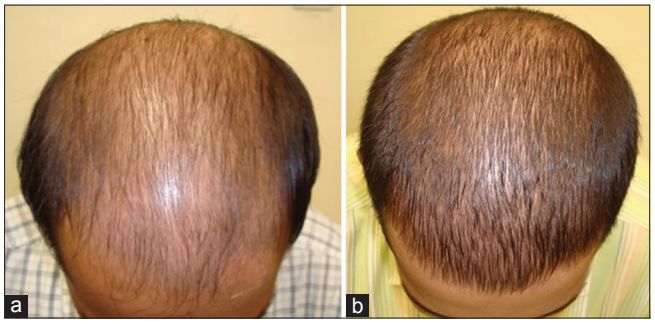

Figure 10: (a) Grade V, Large area of hair loss (b) Good Hair Transplant but patient feels he will always have less hair than his friends

significantly bring back the confidence, improve personal life, social interaction and work performance. Though BDD in hair loss patients is not as sever and self mutilating as seen in a psychiatric disorder, the Yale – Brown scale, Sheehan scale and DASS scoring systems can be utilized for evaluation and follow up of the recovery and progress of these patients.

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