

**Original Article**  
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**Development, Validation and Testing of an Arabic Version of the Cosmetic Procedure Screening Questionnaire COPS for Body Dysmorphic Disorder**

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**Running Title**

Arabic Screening Tool for BDD

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**ABSTRACT**

**Objectives:** Body dysmorphic disorder BDD is a preoccupation with perceived defects in physical appearance that are not observable to others. Those with this disorder frequently resort to cosmetic procedures and the majority will not be satisfied with results because of the psychiatric origin of their symptoms. Prevalence of BDD is higher in patients who request cosmetic surgery and therefore, the cosmetic surgeon should be able to identify those with high probability of having BDD before attempting any surgical procedure. Unfortunately, we are unaware of any screening tool in Arabic language.

**Design:**

Prospective observational study.

The Cosmetic Procedure Screening Questionnaire (COPS) was translated into Arabic language. Validation was achieved by back translation and by testing it on bilingual subjects. The developed instrument was then tested on Arabic speaking cosmetic surgery patients.

**Setting:**

King Saud University, Riyadh, Saudi Arabia.

**Subjects:**

Bilingual subjects fluent in both Arabic and English. For the second phase, patients were recruited from the facial plastic outpatient clinic of a teaching university hospital.

**Intervention:**

Not applicable.

**Main outcome measure:**

Not applicable.

**Results:** 60 responses from bilingual subjects showed high internal consistency (cronbach's  $\alpha$  of 0.798 and 0.780 for the original and translated COPS, respectively). In the second phase, 166 responses showed significant internal consistency with cronbach's  $\alpha$  of 0.863. Eleven patients (6.63%) were found to have BDD; nearly double the prevalence in our community sample (3.33%)

**Conclusion:** The tool was found to be reliable, feasible, and easy to administer as a BDD screening tool for Arabic speaking subjects.

KEYWORDS: plastic surgery, questionnaires, translations.

## INTRODUCTION

Body dysmorphic disorder BDD was first recognized as a psychiatric disorder in 1987<sup>[1]</sup>. The American Psychiatric Association has re-classified body dysmorphic disorder under a new category, obsessive-compulsive spectrum, and defined it as a preoccupation with one or more perceived defects or flaws in physical appearance that are not observable or appear slight to others and repetitive behaviors or mental acts in response to preoccupations, which leads to significant distress or impairment in functioning<sup>[2]</sup>. A more severe variant includes delusional form of BDD, which is characterized by delusions about external physical appearance not explained by another psychiatric disorder<sup>[3]</sup>

The Cosmetic Procedure Screening Questionnaire (COPS) for Body Dysmorphic Disorder is a 9-item self-administrated instrument. The scale is available online to download for free<sup>[4]</sup>. It takes usually less than 5 minutes to complete and is sensitive to changes, has good test-retest reliability, strong internal consistency and good convergent validity<sup>[5]</sup>. Therefore we elected to translate it to Arabic language and validate the translated version of the COPS in order to evaluate and follow up Arabic speaking patients.

## METHODS AND MATERIALS

This was a prospective, observational study conducted from September to December 2014 in King Saud University, Riyadh, Saudi Arabia. Institutional review board approval was obtained from King Saud University as well. The Cosmetic Procedure Screening Questionnaire (COPS) for Body Dysmorphic Disorder was translated from English into Arabic by two medical experts with experience in health survey development and translation. The Arabic version was then back translated into English by a third certified English translator who was unaware of the original questionnaire. The back translation was reviewed by the primary author of the original questionnaire, Dr. Veale and a panel of five bilingual health care professionals (staff members of the College of Medicine, King Saud University). The final questionnaire was then reviewed by a certified Arabic linguistic. Bilingual subjects who were fluent in both Arabic and English were asked to complete both versions of the COPS allowing a period of one day in between. Correlation between the total and individual scores for each item in the original and translated questioners was calculated. Internal consistency was measured using Cronbach's alpha as a measure for inter-item reliability .

Following initial validation of the Arabic version of the COPS tool, all patients who were booked for any cosmetic facial surgery from the outpatient clinic were asked to complete the newly developed questionnaire on two separate clinic visits, 4 weeks apart. All patients who completed the COPS questionnaire were also evaluated by a psychologist – who is unaware of the questionnaire results – through the means of a structured clinical interview<sup>[6]</sup> to determine whether they have BDD or not. Cronbach's alpha coefficient was used to measure the internal consistency of the Arabic version of COPS. All results were analyzed using IBM SPSS Statistics V.22 (IBM, Armonk, NY). For all statistical purposes, a value of  $p \leq 0.05$  was considered significant.

## RESULTS

A total of 60 bilingual subjects completed 60 paired Arabic-English forms. Responders reported that all questions in both versions were clear and understandable. Each form took an average of 3 minutes to fill. The average total score for the original form was 13.8 with a standard deviation of 10, and 14.45 with a standard deviation of 9.45 for the translated form. Internal consistency, assessed using Cronbach's  $\alpha$ , was statistically significant for both the original and translated versions at 0.798 and 0.780, respectively. Correlation between the total scores of both instruments was significant ( $r = 0.957$   $p \leq 0.01$ ) (figure 1). Correlation between all individual items was significant as well (table 1).

In the second phase of the study, a total of 185 adult patients were recruited, out of which 19 responses were excluded for incomplete data. Out of the 166 responses that were included in the analysis, 132 (79.5%) were females and 34 (20.5%) were males, their demographic data can be viewed in table 2. Internal consistency for the Arabic version of COPS in our patient sample was significant with a Cronbach's alpha measuring 0.863. Good test-retest reliability

was observed ( $r = 0.91$ ,  $p < 0.01$ ). 11 patients (6.63%) were suspected and then confirmed to have BDD; nine females and two males. Their demographics can be viewed in table 3.

## DISCUSSION

BDD is a relatively common psychiatric disorder with its prevalence in the general population ranging between 0.7% to 2.4%<sup>[7-9]</sup>. However, studies have shown that BDD is much more prevalent in cosmetic surgery and dermatology clinics, with reported rates reaching 20%<sup>[10-16]</sup>. Interestingly, Serwer reported that although aesthetic surgeons estimated the prevalence of BDD in their patients to be around 2%, 84% have had operated on a patient whom they believed was appropriate for surgery, only to realize afterwards that the patient had BDD<sup>[17]</sup>.

Patients with BDD frequently seek plastic or cosmetic surgery to address a very slight or even non-existent defect. Cosmetic surgeons and dermatologists should be equipped with reliable screening tools to identify patients with high probability of having BDD as most of these patients are usually first encountered in cosmetic surgery or dermatology clinics, rather than psychology or psychiatry clinics<sup>[18]</sup>. Moreover, although patients with mild to moderate BDD may benefit from surgery<sup>[19]</sup>, this improvement is rarely sustained long term<sup>[20-22]</sup>, and most patients wouldn't be satisfied with post-operative results due to their impaired judgment and psychiatric origin of their symptoms<sup>[23-25]</sup>. Identification of those with high probability of having BDD enables early referral to a trained psychiatrist/psychologist before attempting any surgical intervention, as those would most likely benefit more cognitive-behavioral-therapy and/or from pharmacological therapy<sup>[26-27]</sup>.

To our knowledge, no validated screening tool for BDD exists in Arabic language. The Cosmetic Procedure Screening Questionnaire (COPS) for Body Dysmorphic Disorder is composed of 9 items which are scored from zero (least impaired) to eight (most impaired). It is filled by the patient and responses to questions are facilitated by a Likert scale which serves to help the responder to quantify his/her answers. Total score is calculated by summing Q2-10 (items 2, 3 and 5 are reversed). The total ranges from 0 to 72 with a cut-off value of  $\geq 40$  reflecting high probability (almost 90%) of having BDD<sup>[5]</sup>. The Internal consistency – whether several items of a composite score show significance to the final score – was high for both the original and translated COPS versions. Feasibility was assessed from the responders' feedback and from the average time spent on filling the forms. Reliability is another important factor of any evaluation tool that was assessed by ensuring acceptable inter-item correlation between the two questionnaires. We believe our translated version has proven to be valid, feasible, and reliable as a screening tool for patients that can be implemented in cosmetic practice before attempting any surgical intervention for a minor defect. In our cosmetic patients' sample, 6.63% were confirmed cases of BDD, nearly double the rate in our community sample (3.33%, for 2 cases).

## CONCLUSION

BDD screening tools are essential in any cosmetic surgery practice. Development of culturally adapted versions of the existing validated questionnaires is essential. This study shows that the Arabic translated version of the COPS questionnaire is a feasible, reliable and valid tool that can be used in Arabic speaking subjects. However, larger patient-based studies are required to further validate its usefulness in clinical practice.

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### **Figure Legends**

**Fig. 1** Correlation between the total scores of the original and Arabic version of the COPS questionnaire ( $r=0.957$   $p \leq 0.01$ )

**Table 1:** Correlation between individual items of the original and translated versions of the Cosmetic Procedure Screening Questionnaire

Item Number	*r =
1	0.711
2	0.881
3	0.711
4	0.960
5	0.747
6	0.907
7	0.899
8	0.978
9	0.907

\* r: Spearman correlation coefficient ( $p \leq 0.01$ )

**Table 2:** Demographic data of 166 cosmetic surgery clinic patients

Variables	Females 132 (79.52%)	Males 34 (20.48%)
Age	25.8 ± 4.12	25.85 ± 10.55
Single	66 (50)	24 (70.59)
Married	66 (50)	10 (29.41)
Education		
Highschool Degree	75 (56.82)	16 (47.06)
College Degree	74 (56.06)	18 (52.94)
Masters	2 (1.52)	0
PHD	1 (0.76)	0
Previous Surgery/Procedure		
Yes	50 (37.88)	5 (14.70)
No	82 (62.12)	29 (85.29)

**Table 3:** Demographic data of body dysmorphic disorder cases

Variables	Females 9 (81.81%)	Males 2 (18.18%)
Age	29.5 ± 4.12	27.5 ± 6.87
Single	8 (100)	1 (50)
Married	1	1 (50)
Education		
Highschool Degree	2 (25)	1 (50)
College Degree	7 (75)	0
Masters	0	1 (50)
Had Previous Surgery/Procedure	2 (50)	1 (50)
COPS	47.63 ± 2.36	45 ± 2.82



Figure 1

