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Body Dysmorphia Screening Tool for Aesthetic Treatments

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Body Dysmorphia Screening Tool for Aesthetic Treatments: A Benchmark Study

A Paper Submitted in Partial Fulfillment of the Requirements

For NURS 5382: Capstone

In the School of Nursing

The University of Texas at Tyler

by

Brandi Harper, BSN RN

December 4, 2023

Contents

Acknowledgments

The successful completion of this project was only possible with the invaluable contributions made by the numerous stakeholders involved. Gratitude and appreciation are expressed to all who have participated, and specific recognition is deserved for the following individuals. Jimmi Byrd, the chief executive officer (CEO), provided insight and guidance into the execution of this project and provided information regarding critical aspects to address within this plan. The medical director, Marcus Byrd, provided valuable information to include in this proposed project to enhance its acceptance and offered guidance on best executing this implementation. The key contributors to this project worked collaboratively to provide valuable information that can enhance the successful integration of this change into the practice. I sincerely appreciate each member who put valuable time into this project to better care for our patients.

Executive Summary

This evidence-based project includes a discussion of Body Dysmorphic Disorder (BDD) or body image disturbance as part of pre-treatment screening in medical facilities providing appearance-altering procedures and aesthetic treatments to adult patients. The information provided serves as the foundation for endorsing the adoption of a BDD screening tool into clinical practice to increase the identification of body dysmorphia, thereby facilitating proper referral, diagnosis, and treatment to aid in patient safety and satisfaction and limit medico-legal imputations. The discussion presented here is supported by evidence-based research. It focuses on BDD prevalence and significance amongst adult patients and highlights validated screening tools used to identify BDD. It also identifies the process for a change project that supports the proposed implementation of a validated BDD screening tool.

The milestones for this project include developing an administrative team for the execution of this project, formulating policies and procedures, designing a plan and execution pilot, and identifying the best suitable screening tool for practice use. This project will follow a strategic timeline for integration and will be executed over 12 weeks. The change project will include various stakeholders and personnel working collaboratively to develop and implement this change.

The effectiveness of implementing this evidence-based change in healthcare relies heavily on the support and active involvement of all stakeholders. This includes the administrative members, direct patient-care staff, IT specialists, and the appointed leaders to oversee the tool's proper use and efficacy. The chief officers are critical in promoting safety, making executive decisions, and allocating resources to support this goal. The patients also play an essential role by participating in the change, understanding its purpose and goal, and actively completing the screening tool.

Rationale for the Project

The following question serves as the cornerstone for this benchmark project. In adult patients (P), how does the use of a body dysmorphia screening tool (I) compared to not using a body dysmorphia screening tool (C) increase the identified number of patients with body dysmorphia (O) within three months after implementation (T)? The discussion presented here is supported by evidence-based research focusing on BDD prevalence and significance amongst adult patients and highlights validated screening tools used to identify BDD. It also identifies the process for a change project that supports the proposed implementation of a validated BDD screening tool within clinical practice.

Body Dysmorphic Disorder (BDD) is classified as a psychiatric mental health disorder and defined as the excessive preoccupation with a perceived flaw, whether real or imagined, that can significantly impair aspects of one's life and functionality (Sun & Rieder, 2022). Although BDD can be seen in any setting, there is a dramatic prevalence among aesthetic settings, with prevalence rates of 12.65% in dermatology and 15.04% in plastic surgery settings (Sun & Rieder, 2022). It is essential to recognize BDD in these clinical settings, as patients with this disorder are commonly known as a contraindication for cosmetic interventions. Such treatments can exacerbate their condition, resulting in harm and negative consequences for the facility and provider due to incessant patient dissatisfaction, impractical expectations, and further damage to the patient's body image perception (Auer, 2020). BDD is commonly comorbid with other psychological conditions, such as major depressive disorder, with a high rate of 46% for suicidal ideation and 18% for attempting suicide (Sun & Rieder, 2022). Implementing a BDD screening tool and proper referral have been deemed imperative within these settings (Pikoos et al., 2021). To ensure the safety and well-being of both the patient and provider, BDD screening can prevent adverse outcomes that may arise from exacerbation of the disease, increase identification, and promote prompt referral (Pikoos et al., 2021) (Higgins & Wysong, 2018).

Literature Synthesis

A vital principle of this benchmark project is to establish a screening tool or tools deemed valid and reliable for accurately identifying BDD through their psychometric properties. By conducting a methodical evidence-based search using CINAHL Complete, PubMed, and Google Scholar, multiple approved screening tools were identified and could serve as possible measures for assessing BDD in aesthetic practices. The validated screening measures to identify BDD include the Body Dysmorphic Disorder Questionnaire (BDDQ) created by Dr. Katherine

Phillips et al., Body Dysmorphic Disorder Questionnaire–Aesthetic Surgery (BDDQ-AS) created by Dr. Garyfalia Lekakis et al., Body Dysmorphic Disorder Questionnaire–Dermatology Version (BDDQ-DV) created by Dr. Katharine Phillips et al., and Dysmorphic Concern Questionnaire (DCQ) developed by Piet Oosthuizen et al. (Pereira et al., 2023; Picavet et al., 2011).

BDDQ is notably a favored questionnaire in dermatology, plastic surgery, and dentistry practices, with its brief, self-report questions that reflect the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) diagnostic criteria (Pereira et al., 2023; Türk et al., 2023). It is a well-validated screening tool with a high sensitivity of 100%, specificity of 89-94%, and accurate (91.7%) positive/negative predictive values of 64.3% and 100%, making it a strong, valid competitor as the gold standard for BDD symptom identification and is recommended to be included in patient assessment as the standard of care in the above settings (Brohede et al., 2013; Mortada et al., 2020; Pereira et al., 2023; Türk et al., 2023). BDDQ is the foundation for modified versions designed for special populations, including the BDDQ-DV and BDDQ-AS (Pereira et al., 2023).

BDDQ-DV is a validated 5-point Likert self-report scale that applies to adolescent and adult patients in cosmetic-dermatologic settings that effectively screens for BDD symptomatology. This tool is the most commonly used screening method for BDD in cosmetic studies (Pikoos et al., 2021). The evidence displays congruent sensitivity and specificity values of 100% and 92.3%, with harmonious accuracy of 70%/100% for positive/negative predictive values. The BDDQ-DV tool is broadly recognized as highly effective, valid, and reliable for use in the general population (Champlain et al., 2015; Pereira et al., 2023; Türk et al., 2023).

BDDQ-AS is also an adapted version of BDDQ that caters to patients in the aesthetic setting and applies specifically to aesthetic rhinoplasty patients. This validated self-reported, 7-question scale has been adapted by French, Persian, and German translations for pre-treatment BDD screening, which supports its validity, reliability, and cultural adaptation (Jahandideh et al., 2021; Lekakis et al., 2016; Türk et al., 2023). Amongst Jahandideh, Lekakis, and Türk's research, BDDQ-AS is reported as reliable and valid based on its psychometric properties consistently reported with sensitivity and specificity values of 89.6% and 81.4% in addition to its positive/negative predictive values of 76.8% and 91.9%. Based on the international research obtained, the BDDQ-AS underwent translation and cultural adaption studies for French, Persian, and German use, which concluded that BDDQ-AS is a valid and adaptable screening tool amongst various cultures (Jahandideh et al., 2021; Lekakis et al., 2016).

To supplement the numerous screening tools that can be utilized in cosmetic-medical practices, the Dysmorphic Concern Questionnaire (DCQ) is an additional valid screening tool that can be utilized in aesthetic settings to identify BDD accurately. DCQ is a well-documented and validated screening tool, with its validity recognized in dated studies (Picavet et al., 2011). This questionnaire has also been recognized as a diagnostic tool for female dermatologic patients due to its great convergent validity, internal consistency with correctly classifying 84.6% of patients, and its sensitivity and specificity values of 72% and 90.7% (Mancuso et al., 2010; Pereira et al., 2023; Türk et al., 2023). Through psychometric analysis, DCQ has also been evaluated and found effective for assessing BDD within sexual minority groups and detecting symptoms among the sexual minority Latino, Black, White, and Asian groups, given an additive benefit due to the increased BDD incidence among these groups (Rozzell et al., 2020). In addition to the unique validation among sexual minority groups, Davies et al. (2022) analysis

shows promising internal consistency for using DCQ in adolescents and young adults in contrast to its current indication for adults.

Overall, identifying BDD through screening tools remains a challenge due to the limited availability of such tools and the need for an appointed gold standard tool designated in the aesthetics milieu. However, among the available options, the BDDQ, BBDQ-AS, BDDQ-DV, and DCQ have been proven to be the most efficient and efficacious. These self-report screening tools provide accurate results within a shorter time than interview-based tools, allowing for quick identification and referral to proper personnel (Picavet et al., 2011).

Project Stakeholders

The stakeholders involved in this project encompass those who will be directly and indirectly affected by the initiative. This includes healthcare providers, patients seeking cosmetic interventions, family members, the clinic staff interacting with patients, and the clinic itself. The patients are the primary focus of this initiative, and it is, therefore, crucial to prioritize their best interests when making any decisions. This necessitates considering the patients' time, confidentiality, and preferences when determining the most appropriate approach to implement the tool, deliver it to patients, discuss positive results, and refer them for further care. It is essential to ensure that all stakeholders' perspectives are considered and that the initiative is implemented with professionalism and expertise.

In addition to patients and healthcare professionals, other vital stakeholders hold significant importance in this project. These stakeholders include facility policymakers, executive officers, technology professionals, and local psychological experts. This project's successful implementation aims to incorporate a more comprehensive range of stakeholders who can collectively collaborate towards making BDD screening a standard practice at the

community, state, national, or global level. The stakeholders involved in making BDD screening a standard include governing state boards and their policymakers, accredited associations, and educational programs.

Implementation Plan

The chosen clinical site for this change project will be a privately owned aesthetic and wellness clinic specializing in cosmetic and dermatologic treatments. Essential data gathered to support this includes incidence rates of patients with repeated dissatisfaction, patient satisfaction, and dissatisfaction surveys, reencounter rates for a similar principal problem, statistics on patients who were declined treatment by the practitioner for psychological concerns, patient and provider cost breakdowns for unwarranted interventions, and statistics on the prevalence of BDD within the aesthetic setting.

The implementation must first be permissible by the administrative team, and the project will involve key stakeholders. Also, positive and negative influences on the change project were identified, including gatekeepers such as those who fear revenue loss and those who oppose the change, in addition to champions such as the nurse educator who knows the principal concepts of evidence-based change, understands different levels and styles of learning, has a clinical background with change projects, and will serve as assistant to the change project leader. Potential barriers have also been considered, such as the additional time for the patient to complete the BDD screening tool, the time it takes the provider to review and discuss positive results with the patient, and the platform on which the screening tool can be delivered. To troubleshoot these barriers, the screening tool(s) chosen for implementation should be a brief self-report tool accessible via electronic resources to minimize time and allow for continuity with pre-established electronic patient forms. Additionally, training should be conducted before

implementation and include time-management guidance for provider-patient discussions regarding positive results, instruction on interpreting the designated scale/tool, and guidance from local psychologists who can provide insight on the identification, discussion, and referral process.

Additional benefits to this proposed project are that implementing a screening tool will be relatively low-cost. However, a budget for possible software costs to integrate the electronic screening form should be determined. A benefit vs. cost analysis also indicates that this implementation can conserve resources and limit long-term product costs.

Implementation

- Phase 1: Week 1
    - State the purpose for change and the PICOT question.
    - Forming the administrative team.
    - Designing the plan and execution pilot.
    - Determining the best suitable BDD screening tool for practice use.
- Phase 2: Weeks 2 – 4
    - Generating awareness and notice within the organization.
    - Engage with patients and staff about the change.
    - Provide educational material to patients and clinic personnel.
    - Determine patient preferences.
    - Prepare clinicians regarding the change and establish/determine expectations.
    - Integrate determined screening tool(s) into the software.
    - Identify key personnel to assist in the implementation.

- Phase 3: Weeks 4 – 8
    - Expanding understanding and obtaining committed individuals.
    - Disseminate credible evidence.
    - Host training and educational meetings to expand knowledge of the issue, action plan process, and identify obstacles.
    - Identify champions for the integration and implementation.
    - Troubleshoot use and application.
    - Ensure correct documentation of screening results.
- Phase 4: Weeks 8 – 10
    - Promoting the action plan and adoption into the facility.
    - Obtain data collection.
    - Report progress and updates.
    - Disseminate evaluation results.
    - Troubleshoot.
    - Individual performance evaluations.
    - Auditing.
- Phase 5: Weeks 10 – 12
    - Individual data feedback.
    - Determine the success of the change.
    - Protocol revisions.
    - Trend results.
    - Final report.
    - Report change to quality improvement program.

- Continuation of integration and unceasing use.

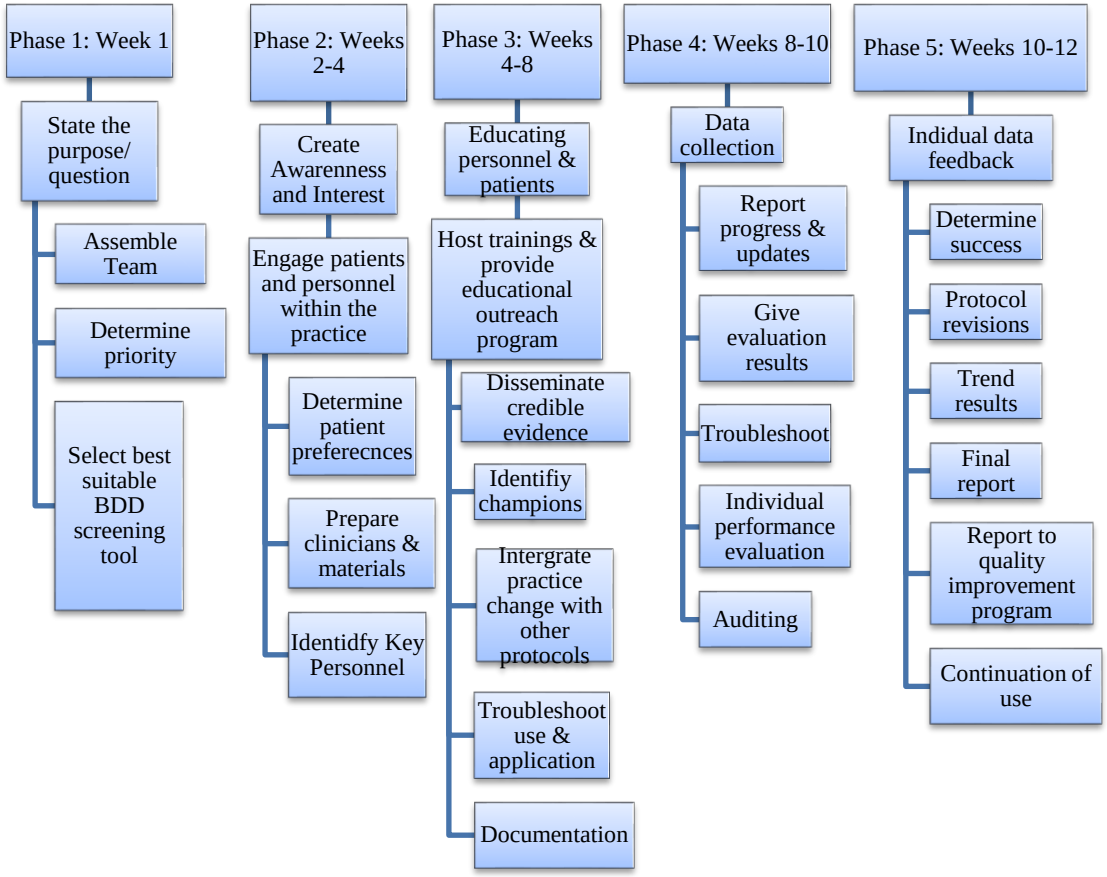
Above is the timeline indicating the five significant phases for implementing this change project. The first phase highlights the administrative tasks to determine the best-executed plan. The initial steps are to form the administrative team to establish the priority of this change and select the screening tool that best suits the practice, software, and budget. The second phase emphasizes highlighting and promoting awareness of the screening tool, the issue and prevalence of BDD, and the impact it will make on patients and the practice. Phase three focuses on educational training, providing resources and physical hand-outs, and identifying champions within the organization. The fourth phase highlights obtaining feedback and progress reports while obtaining/conducting documentation and audits. Lastly, phase four focuses on analyzing feedback, results, and reports and makes revisions to promote the continuation of the change.

The EBP change model chosen for this project is The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Healthcare (Melnyk et al., 2019, pp. 389-398). The Iowa Model was chosen for this change project as it is suitable for clinical-led change, offers an algorithm applicable to various healthcare systems, and provides a comprehensive and systematic implementation plan (Melnyk et al., 2019, pp. 389-398). Additionally, it incorporates valued factors such as addressing individual patient needs, combining team member expertise, and utilizing teamwork tools (Melnyk et al., 2019, pp. 389-398).

Statistical Analyses

For this project, an estimated number of participants will be 100 to 125 women aged 21 to 65. The mean age of the participants is 45.5 years old. There is a possibility for varying races in the project, but the majority ethnicity is Caucasian based on the data reviewed.

Timetable/Flowchart



Data Collection Methods

Due to multiple constraints that inhibit the implementation of this project, a benchmark project was conducted. Although this project will not be implemented, evaluating the results and data obtained from a benchmark project is imperative to ascertain its efficacy. This evaluation process is essential to determine the project's impact and identify areas needing further improvement or modification. Data, individual reports, and audit information will be obtained from the electronic health record (EHR) to evaluate this project. IT specialists appointed will help access, run reports, and gather necessary information for patient charts and administrative tools. The following information will be included in the data collection:

- Patient demographics – age, D.O.B., gender

- BDDQ (AS or DV) or DCQ results
- Staff training records
- Screening tool completion vs. staff patient encounters
- Time taken to complete the screening tool
- Patient surveys
- Staff surveys

To gain a comprehensive understanding of the data that has been collected, reports will be created on descriptive statistics that effectively summarize the data's characteristics. The reports will contain valuable insights into the outcome variables, which will be subjected to rigorous assessment. Once the data has been assessed and evaluated, the administrative team will make an informed decision on the continuation or termination of the change.

Evaluation

The change process will be evaluated collaboratively by obtaining verbal feedback and surveys from administrative personnel, clinicians, and patients. The data collected throughout the implementation process will be reviewed and compared to the initial data. A benefit vs. risks/cost analysis will be reevaluated to establish feasibility. Indications for revisions to the protocol or process will also be addressed amongst the team for collaborative decision-making.

Cost/Benefit Analysis

The proposed project has the benefit that it can be implemented at a relatively low cost by using an already-established EHR. However, there are additional costs to consider, such as modifications to the EHR software for integrating the electronic screening tool, accounting for feedback surveys (including tangible costs), educational and training expenses, including personnel time, and promotional resources such as handouts, posters, signage, and media

productions. An itemized authorization for expenditure (AFE) with tangible and intangible costs was created, representing the total cost expenditure within +/- 10%. The estimated AFE is $1000, with the actual cost being $900-$1100.

By implementing the BDDQ, a BDDQ-modified subtype, or the DCQ, it is safe to assume that it will conserve resources and limit long-term product costs. In addition, medico-legal implications can be accrued due to the increased risk of legal repercussions from dissatisfied or harmed patients. Therefore, offering proper screening to cosmetic patients can exclude compromised patients, limiting legal costs, product costs, and negative consequences to the practice.

Discussion of Results

As previously mentioned, the project implementation remains on hold due to the restructuring of administrative personnel and software at the desired clinic. However, we prioritize the implementation of this project initiative once it becomes feasible. Meanwhile, in the interim, the IT experts are working on developing a section for body dysmorphic disorder (BDD) screening within the intake forms available for patients as part of our efforts to start improving patient care now. With the integration of new software, new leaders, and our dedication to enhancing patient care, we anticipate the successful completion of this project in the near future.

Conclusions/Recommendations

BDD screening is essential to combat the issue of under-recognition and poor patient outcomes among this population in the aesthetic setting. The acknowledged screening tools within this discussion have been proven valid and applicable for identifying BDD amongst adult patients in aesthetic settings. They can be utilized as a mechanism to improve patient safety and

well-being. Additionally, increased identification of BDD allows for appropriate referral and treatment while decreasing the risk of adverse outcomes for patients and providers. The evidence and well-developed plan for change within this setting can create a cascade of change within the industry, allowing for standardization among all appearance-altering facilities and ultimately promoting optimal safety and well-being for this underserved population.

It is my professional recommendation that our facility implement the proposed initiative to enhance patient safety, uphold the oath not to harm, and deliver optimal care to our patients. Adopting this initiative will ensure our patient's well-being and bolster our facility's reputation as a trusted provider of quality healthcare services. I urge all stakeholders to consider the benefits of this proposal and take the necessary steps to implement it promptly and effectively.

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Appendix A

NURS 5382 Capstone Evidence Table

PICOT Question: In adult patients (P), how does the use of a body dysmorphia screening tool (I) compared to not using a body dysmorphia screening tool (C) increase the identified number of patients with body dysmorphia (O) within three months after implementation (T)?
PICOT Question Type: Diagnosis or Diagnostic Test

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Appendix A Continued

Citation: (i.e., author(s), date of publication, & title)	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables Studied and Their Definitions	Measurement of Major Variables	Data Analysis	Study Findings	Strength of the Evidence (i.e., level of evidence + quality [study strengths and weaknesses])
Author, Year, Title	**Theoretical basis for study** **Qualitative Tradition**		**Number, Characteristics, Attrition rate & why?**	**Independent variables (e.g., IV1 = IV2 =)** **Dependent variables (e.g., DV =) Do not need to put IV & DV in Legend**	**What scales were used to measure the outcome variables (e.g., name of scale, author, reliability info [e.g., Cronbach alphas])**	**What stats were used to answer the clinical question (i.e., all stats do not need to be put into the table)**	**Statistical findings or qualitative findings (i.e., for every statistical test you have in the data analysis column, you should have a finding)**	• **Strengths and limitations of the study** • **Risk or harm if study intervention or findings implemented** • **Feasibility of use in your practice** • **Remember: level of evidence (See PICOT handout) + quality of evidence = strength of evidence & confidence to act** • **Use the USPSTF grading schema http://www.ahrq.gov/clinic/3rduspstf/ratings.htm**
1. Brohede, S., Wingren, G., Wijma, B., & Wijma, K. (2013). Validation of the body dysmorphic disorder questionnaire in a community sample of Swedish women	N/A	Comparative study	N=2891 Östergötland Sweden Randomized sampling by SPSS	IV- BDDQ Swedish translation DV1 – validity DV2 – sensitivity & specificity DV3-swedish women identified with BDD	SCID	Pearson's chi-square analysis Mann–Whitney U test	Sensitivity 94% Specificity 90%	**Strengths**: various ages **Limitations**: Only females were included in the study and a small test sample **Risk of harm:** None **Level of Evidence**: 3 **USPSTF Grade**: A **Feasibility**: Feasible
2. Champlain, A., & Laumann, A. (2015).	N/A	MA	7 questionnaires	IV – BDD questionnaire DV – relevance to	N/A	N/A	BDDQ-DV, DCQ, & BICI are authenticated, but all report same prevalence in these patient populations.	**Strength**s: multiple questionnaires **Limitations**: N/A **Risk of harm**: N/A **Level of Evidence**: 3 **USPSTF Grade**: A

Body dysmorphic disorder: Screening patients and associated algorithms.			Dermatology & plastic surgery settings	Derm & plastic surgery patients DV – BBD prevalence				**Feasibility**: Feasible
3. Davies, K. L., 2022, A psychometric validation of the Dysmorphic Concerns Questionnaire (DCQ) in adolescents and young adults.	N/A	Psychometric validation Examine the psychometric properties of the DCQ to see if it's valid in adolescent and young adults.	195 patients ages 12 – 21 59% female patients previously used in the psychometric study of BDDSY	IV3: reliability DV1: BDD identification	Reliability-Cronbach, Coefficient and McDonald's	Mann-Whitney U-test Chi-squared test for goodness-of-fit Confirmatory factor analysis (CFA) with weighted least squares means, and variance adjusted (WLSMV) estimation Spearman's rho bivariate correlation analyses	chi-squared test = 30.43% females & 11.39% males with BDD Mann-Whitney U-test = r = -.15 CFA: $\chi 2$ (14) = 24.59, p = .04, RMSEA =.06, SRMR =.02, and CFI =.99 Cronbach's α=.88 Coefficient H=.93 McDonalds w=.92	**Strengths**: extensively studied in adults, good to excellent reliability in adult testing, good convergent validity in adults **Limitations:** not been comprehensively validated in youth or sexual minorities, no known studies investigated measurement invariance, the psychometric equivalence of a construct, holds across adolescent/young adults, measures lack cut off scores **Risk of harm**: subclinical **Level of Evidence**: 3 **Strength of the evidence**: Medium **USPSTF Grade**: C **Feasibility**: Feasible
4. Jahandideh, H., 2021, Persian validation and cultural adaptation of the Body Dysmorphic Disorder Questionnai	N/A	Cross-sectional study Used to validate BDDQ-AS in Iranian society	70 patients Farsi speaking	IV1: structural validity IV2: internal consistency IV3: reliability DV1: persian validation	Reliability – Cronbach	Internal consistency test Split halt test Spearman's correlation coefficient CVI CVR	Internal consistency = 89.2% Cronbach's & Split half test = 92% Spearman's correlation coefficient = 0.757 ($p<0.001$) CVI = 0.79 CVR 0.54 Sensitivity & specificity = 85.71% and 81%	**Strengths**: good sensitivity and specificity, good reliability **Limitations**: small sample size and no BDD severity findings **Risk of harm**: None **Level of evidence**: III **Strength of the evidence**: medium **USPSTF Grade**: C **Feasibility**: Feasible

re-aesthetic surgery for Iranian rhinoplasty patients						Cronbach's alpha & split test		
5. Lekakis, G., 2016, Body dysmorphic disorder in aesthetic rhinoplasty: Validating a new screening tool.	N/A	Instrument validation To validate a new screening tool for BDD in aesthetic patients	116 patients Aesthetic rhinoplasty patients Dutch speaking ≥ 16 yo Comparable demographic characteristics	IV1: structural validity IV2: internal consistency IV3: reliability DV1: specificity DV2: sensitivity	Reliability – Cronbach & rho Validity - (SDS) & (DAS)	Mann-Whitney U test	Cronbach alpha = .83 and .91 RHO = 0.86	**Strengths**: sensitivity of 89.6% and specificity of 81.4% **Limitations**: small batch number, cannot diagnosis BDD directly **Risk of harm**: None **Level of evidence:** 3 **Strength of the evidence**: medium **USPSTF grade**: C **Feasibility**: Feasible
6. Mancuso, S. G., Knoesen, N. P., & Castle, D. J. (2010). The Dysmorphic Concern Questionnaire: A screening measure for body dysmorphic disorder	N/A	Cohort study	BDD sample 57 Non-clinical sample 280 18–43 years old	IV – BDD screening tool DV – BDD identification	DCQ BDDQ EAT-26 SIAS SDS	CI ROC plot	BDD scores: [CI] = 1.22–1.44, z =6.68, p < 0.001 DCQ scores: r =0.42, t = 7.96, p < 0.001 BDD scores: OR = 1.02, 95% CI = 0.57–1.83, z = 0.06, p= 0.95 DCQ scores: r = 0.04, t = 0.65, p = 0.51	**Strengths**: sensitivity correct classification of 96.4% of BDD patients and 90.6% of undergraduates. **Limitations**: undergraduates used as the non-clinical control group limits the generalizability, exclusion of undergraduates who screened positive for an eating disorder may have inflated the discriminant validity of the DCQ **Risk of harm**: None **Level of evidence**: 3 **Strength of the evidence**: Medium **USPSTF grade**: A **Feasibility**: Feasible
7. Mortada, H., Seraj, H., & Bokhari, A. (2020).	N/A	Cross-sectional study	344 296 women 298 Saudi	IV = plastic surgery IV = oculoplastic surgery	BDDQ	Chi-square test t-test	Prevalence rate 19.2%	**Strengths**: good sample size **Limitations**: study completed in one center, limited period-of-time **Risk of harm**: None **Level of evidence**: 1

Screening for body dysmorphic disorder among patients pursuing cosmetic surgeries in Saudi Arabia				DV = BDD prevalence				**Strength of the evidence**: Strong **USPSTF grade**: A **Feasibility**: Feasible
8. Pereira, I. N., 2023, Evidence-based review: Screening body dysmorphic disorder in aesthetic clinical settings	Best evidence topic methodology	MA Identify validated BDD screening tools for implementation and efficacy in aesthetics	12 studies PubMed database	IV1: eligibility DV1: BDD screening tools	BestBETs checklist	Comprehensive meta-analysis	Validated screening tools: BDDQ-DV, DCQ, BDDQ, BDDQ-AS	**Strengths**: multiple BDD verified tools, variation of diagnosis and screening, **Limitations**: small sample size, gray literature, limited databases **Risk/ harm**: None **Level of evidence**: 1 **Strength of the evidence**: High **USPSTF grade**: A **Feasibility**: Feasible
9. Picavet, V., Gabriëls, L., Jorissen, M., & Hellings, P. W. (2011). Screening tools for body dysmorphic disorder in a cosmetic surgery setting.	N/A	SR	N= 124 Searched through Medline & Embase	IV = screening tool DV= predictive value DV= validity DV = sensitivity DV= specificity	N/A	N/A	No screening tools validated outside Derm setting. BDDQ-DV & (DCQ) = only w validated in Derm setting	**Strengths**: Comparison of all screening tools for BDD **Limitations**: limited predictive value information **Risk/ harm**: none **Level of evidence**: 3 **Strength of the evidence**: moderate **USPSTF grade**: B **Feasibility**: Feasible
10. Pikoos, T. D., Rossell, S.	N/A	Cross-sectiona	154 Women	IV = BDD prevalence	DASS-21 BDDQ-DV FACE-Q	SPSS IBM v26	24.7% positive for BDD	**Strengths**: reflects how screening is likely to work in a cosmetic setting where practitioners without mental health training

L., Tzimas, N., & Buzwell, S. (2021). Is the needle as risky as the knife? the prevalence and risks of body dysmorphic disorder in women undertaking minor cosmetic procedures		l online survery	Online	DV= psychological distress DV = unrealistic expectations DV = reduced satisfaction			DASS-21 score > in BDD group than non-BDD group. 9% of the non-BDD group reported thinking about their appearance for more than 1 hour per day, compared to 68% of the BDD group. Spearman's correlations indicating p > 0.05)	**Limitations**: BDD prevalence in the sample may be elevated as a clinical interview was not used to confirm diagnosis, se of defect rating scales to confirm minimal deformity in BDD participants has been con- tested, given the poor inter-rater reliability observed between mental health and cosmetic practitioners **Risk/Harm**: None **Level of evidence**: 2 **Strength of the evidence**: high **USPSTF grade**: A **Feasibility**: Feasible
11. Rozzell, K. N., 2020, The Dysmorphic Concern Questionnaire: Measurement invariance by gender and race/ethnicity among sexual minority adults.	N/A	Evidence based review Secondary data analysis Validation of DCQ in sexual minorities	957 participants Multi-racial	IV1: validity DV: sexual minority applicability	R version 4.0.0 with the Lavaan package	CFI RMSEA	CFI = 0.977 – 0.991 & 0.33 – 0.46 RMSEA = 0.070 -0.091	**Strengths**: large sample size, racially and ethnically diverse participants **Limitations**: heterosexual individuals not included **Risk of harm**: None **Level of evidence**: 2 **Strength of the evidence**: Medium **USPSTF grade**: B **Feasibility**: Feasible
12. Türk, C. B, 2023, Body dysmorphic disorder: A critical appraisal of	N/A	SR Appraisal of screening, assessm	26 tools Diagnostic, assessment, and screening tools	IV1: structure IV2: content IV3: psychometric properties DV1: validity	Comprehensive literature review	Literature review	Validated tools: BDDQ-DV, BDDQ-AS, COPS, DCQ, BDSS	**Strengths**: identified multiple validated screening tools, **Limitations**: None identified **Risk of harm**: None **Level of evidence**: 2 **Strength of the evidence**: High **USPSTF grade**: A

diagnostic, screening, and assessment tools		ent, and diagnostic tools for BDD						**Feasibility**: Feasible

Legend: Legend: BDDSY = Body Dysmorphic Disorder Scale for Youth, CFA = confirmatory factor analysis, YO = years old, SRMR = Standardized Root Mean Square Residual, RMSEA = Root Mean Square Error of Approximation, CFI = Comparative Fit Index, CVR = Content Validity Ratio, CVI= Content Validity Index (CVI), rho = test-retest reproducibility, SDS = Sheehan Disability scale, DAS = Derriford Appearance Scale-5, SPSS = Statistical Package for Social Sciences, MA = Meta Analysis, DCQ = Dysmorphic Concern Questionnaire, BDDQ = Body Dysmorphic Disorder Questionnaire, EAT-26 = Eating Attitudes Test-26, SIAS = Social Interactional Anxiety Scale, SDS = Self-rating Depression Scale,

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Appendix B

Flowchart