

2018

The Relationship Between Body Dissatisfaction and Cosmetic Enhancement Surgery

Amanda Crandall Sharp
Walden University

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>

 Part of the [Social Psychology Commons](#)

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Amanda Sharp

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee

Dr. Carolyn Davis, Committee Chairperson, Psychology Faculty
Dr. Susan Rarick, Committee Member, Psychology Faculty
Dr. Matthew Fearington, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

The Relationship Between Body Dissatisfaction and Cosmetic Enhancement Surgery

by

Amanda Sharp

MS, Walden University, 2009

BS, University of Texas at San Antonio, 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

August 2018

Abstract

Previous research has indicated an increasing trend toward elective cosmetic surgery to achieve a perceived ideal body image and meet psychological and social needs. However, there remains a gap in the literature regarding the number of procedures performed on a single patient, and the potential that patients may suffer from body dysmorphic disorder (BDD). Therefore, the purpose of this quantitative study was to examine the relationship between the number of cosmetic surgeries undergone, level of body dissatisfaction, level of dysmorphic concern, and preoccupation with appearance. Participants included 75 females and 55 males, ranging in age from 18 to 64 years. The majority of participants identified as Caucasian and resided in the United States. Most participants reported having two or three cosmetic surgeries. A multiple regression analysis was run to predict whether dysmorphic concern, body image concern, and/or BDD symptomology predict the number of cosmetic procedures undergone. The first significant finding was that body dissatisfaction, level of dysmorphic concern, and likelihood of BDD predict the number of cosmetic surgeries an individual chooses to undergo. The second significant finding was that the level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire does predict the number of cosmetic procedures undergone. The results from this study provide support for the prerequisite of a psychological screening for cosmetic surgery and thus may contribute to positive social change for the cosmetic surgery community and its patients. Successful implementation of such a screening tool would contribute to social change, particularly for those candidates with diagnosed or undiagnosed mental health concerns.

The Relationship Between Body Dissatisfaction and Cosmetic Enhancement Surgery

by

Amanda Sharp

MS, Walden University, 2009

BS, University of Texas at San Antonio, 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

August 2018

Acknowledgments

I want to extend my appreciation to my committee members: my chair, Dr. Carolyn Davis, and my methodologist, Dr. Susan Rarick. I am grateful to you both for your patience, attention to detail, and timely responses.

To my mom, sister, and children, thank you for your patience, understanding, and support, which have contributed to my success.

Table of Contents

List of Tables	vi
List of Figures	vii
Chapter 1: Introduction to the Study.....	1
Introduction and Background	1
Sources of Body Dysmorphic Disorder	2
Gaps in Body Dysmorphic Disorder and Cosmetic Surgery Research.....	5
Recognition of a “Suitable” Candidate	5
Statement of the Problem.....	7
Purpose of the Study	9
Theoretical Constructs	9
Definitions of Key Terms	11
Nature of the Study	12
Research Questions and Hypotheses	13
Significance, Limitations, and Assumptions	15
Summary	17
Chapter 2: Literature Review	19
Introduction.....	19
Research Strategy.....	20
Overview of Cosmetic Surgery and Related Body Concerns	21
Dissatisfaction and Cosmetic Surgery	22

Risk Behaviors: Suicidality, Substance Abuse, and BDD Comorbidity	
Disorders.....	23
Theoretical Framework.....	26
Media Influence and Cognition	30
Body Image.....	32
Background.....	32
Relationship of Body Dysmorphic Disorder and Cosmetic Surgery	33
Body Dysmorphic Disorder	33
Etiology.....	34
Prevalence.....	35
Gender Differences	36
Risk Factors	39
Cultural Issues.....	40
Social Support.....	41
Plastic Surgery	41
History.....	41
Plastic Surgery Today.....	43
Ethics and Legality	44
Consent	47
Body Dysmorphic Disorder Examinations	47
Multiple Procedures	48
Media Influence	49

Statistical Findings.....	50
Summary.....	51
Chapter 3: Methodology.....	53
Introduction.....	53
Research Methodology.....	53
Sampling Procedures and Participants.....	55
Demographics.....	56
Body Image Ideals Questionnaire.....	57
Dysmorphic Concern Questionnaire.....	59
Body Image Disturbance Questionnaire.....	63
Research Questions and Hypotheses.....	65
Validity.....	67
Data Collection.....	68
Data Analysis.....	69
Assumptions.....	71
Ethical Considerations.....	73
Summary.....	74
Chapter 4: Results.....	75
Introduction.....	75
Overview of the Study.....	75
Research Questions and Hypotheses.....	76
Demographics of the Sample.....	77

Body Image Ideals Questionnaire.....	82
Dysmorphic Concern Questionnaire.....	83
Body Image Disturbance Questionnaire.....	85
Test Results of Required Assumption of Multiple Regression Analysis.....	86
Normality.....	86
Linearity.....	86
Homoscedasticity.....	87
Outlier Investigation.....	88
Hypotheses Testing.....	89
Hypotheses 1 and 2.....	89
Hypotheses 3 and 4.....	90
Results of Multiple Regression Analysis.....	91
Summary.....	92
Chapter 5: Discussion.....	94
Overview of the Study.....	94
Interpretation of Hypothesis 1.....	97
Interpretation of Hypothesis 2.....	97
Interpretation of Hypothesis 3.....	98
Interpretation of Hypothesis 4.....	99
Limitations.....	100
Recommendations for Future Research.....	100
Implications for Social Change.....	102

Conclusion	103
References.....	106
Appendix A: Demographic Survey.....	124
Appendix B: Permission to Use the Body Image Ideals Questionnaire	126
Appendix C: Permission to use Body Image Disturbance Questionnaire	129
Appendix D: Z-Scores.....	132

List of Tables

Table 1. Summaries of Demographic Information	79
Table 2. Results of Levene's Test of Equality of Error Variances.....	88
Table 3. Multiple Regression Results of Relationships of Independent Variables and Dependent Variable.....	92

List of Figures

Figure 1. Participant composite BIQ scores.	83
Figure 2. Participant DCQ scores.	84
Figure 3. Participant BIDQ scores.	85
Figure 4. Linear plots of independent variables versus dependent variable.	87

Chapter 1: Introduction to the Study

Introduction and Background

Physical attractiveness is perceived as being a favorable attribute when one is seeking opportunities professionally and in other aspects of life, in that it affords one advantages compared to those viewed as less physically attractive (Park, Calogero, Young, & Diraddo, 2010). When individuals do not meet cultural standards for physical attractiveness, they may be teased, discriminated against, and stigmatized, and they may experience heightened sensitivity to rejection based on physical appearance (Park et al., 2010). Childhood teasing and societal pressure can have long lasting effects on the way that individuals perceive themselves and others around them. There are certain body image concerns that are portrayed throughout life as more acceptable than others. During adolescence in particular, weight, complexion, and pubescent concerns are considered a norm; these perceived norms appear to be related to a variety of behaviors and attitudes including body image disturbance (Bergstrom & Neighbors, 2006). Self-esteem schemas are easily influenced and developed early in life; therefore, it is important to teach children at an early age to distinguish between healthy and unhealthy body image concepts (Dyl, Kittler, Phillips, & Hunt, 2006). Current research reflects on the influences that affect self-image, such as the environment and media resources that portray unrealistic images of public figures that people admire (Dittmann, 2005).

Today, many people choose to undergo cosmetic enhancements in an effort to meet desired standards, or to fulfill psychological and social needs. According to the American Society for Aesthetic Plastic Surgery (ASAPS, 2012), since 1997, there has

been a 155% increase in the number of cosmetic enhancement procedures performed. The American Society of Plastic Surgeons (ASPS) reported in 2011 that 1.6 million surgical procedures were performed in the United States, which was a 2% increase from 2010 (ASPS, 2012). As cosmetic enhancements have become more common, surgery has been viewed as the solution to underlying appearance concerns, which in turn can become excessive in nature (Nugent, 2009). Research supports that appearance or dysmorphic concerns can lead people to seek cosmetic enhancement (Castle, Molton, Hoffman, Preston, & Phillips, 2004). Presumably, self-esteem and self-confidence can be improved through a patient's perceived level of satisfaction with a cosmetic procedure. There are instances when concern with physical appearance increases to the point that it leads to impairment of functioning in social interactions, employment, and other areas of life. When this occurs, and when the perceived appearance concern is nonexistent or minimal, the individual may have a psychiatric disorder known as *body dysmorphic disorder* (BDD; Castle et al., 2004). To this point, individuals seeking cosmetic enhancement may experience both inter- and intra psychological distress and disablement.

Sources of Body Dysmorphic Disorder

While most individuals feel dissatisfied with their appearance from time to time, those who experience significant distress or interference with daily activities due to this dissatisfaction may display symptoms characteristic of BDD (Park et al., 2010). BDD is concern about a perceived defect in appearance, which can lead to psychosocial and emotional distress, multiple cosmetic procedures, and impairment in functioning.

Typically, appearance “flaws” are viewed by outsiders as slight or nonexistent (Castle et al., 2004). BDD is recognized in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association [APA], 2013) as related to obsessive-compulsive disorder, which is often undiagnosed since the patient is too embarrassed to discuss the problem with others or the problem is not viewed as a presenting issue (Castle et al., 2004). A large number of individuals diagnosed with BDD tend to seek surgical or cosmetic enhancement methods of treatment for the perceived defect (Castle et al., 2004). Of the nearly 46% who follow through with surgical treatment, 76% are dissatisfied with the outcome (Castle et al., 2004). While data on developing or triggering BDD are not found in any great number, there are certain factors that may increase the risk of being diagnosed with the disorder. These factors include childhood teasing; low self-esteem; societal pressure or influence; biological relatives who have the disorder; and anxiety or depressive symptoms (Dyl, Kittler, Phillips, & Hunt, 2006; Mayo Foundation for Medical Education and Research, 2011). Research indicates that 20% of individuals with a first-degree relative such as a parent, sibling, or child suffer from BDD (Phillips, 2005). However, the vast majority of individuals with BDD do not appear to have first-degree biological relatives who develop this disorder. There is a complex combination of environmental and genetic factors that influence a diagnosis of BDD; therefore, it is difficult to determine the degree of genetic influence on patients diagnosed with BDD (Phillips, 2005).

A number of studies have been published relating to neuroimaging and BDD.

Atmaca et al. (2010) found that brain abnormalities can place a person at higher risk of

the disorder, as found in MRI studies. Another example of neuroimaging techniques supporting the biological basis for BDD was offered in a study by Feusner et al. (2010), accounting for the obsessive-compulsive behaviors seen in patients diagnosed with BDD. Although many studies have contributed information on the neurological and etiological factors in BDD, there is still much to discover with regard to how BDD relates to societal influence, psychological concerns, and correction-seeking behaviors.

It is important to note that for the 6%–15% of cosmetic surgery patients diagnosed with BDD, findings suggest that increased screening, counseling, and postsurgical monitoring of patients are warranted (Nugent, 2009). While there are patients who are satisfied with the results of their procedures, patients diagnosed with BDD continue to see a discrepancy between the surgical outcome and their expectation of the procedure. Typically, cosmetic procedures produce no change or worsen the symptoms of BDD since the feared “flaw” will continue to be a focus of change efforts, or the focus may move to another area of the body. This maladaptive thought process contributes to the BDD population’s increased rate of repeat and multiple procedures (Nugent, 2009).

Cosmetic surgery has become less stigmatized, less costly, and more mainstream (Nugent, 2009). Many medical professionals believe that media have influenced the normalization of cosmetic surgery in popular culture, and concerns have been raised that cosmetic procedures are performed excessively, unnecessarily, and without regard for psychological hazards (Nugent, 2009). Nugent’s (2009) research affirms that excessive cosmetic surgery patients tend to have deficient body image ideals and are more likely to

be treated with psychotropic medication. Psychotropic medication can aid in diminishing BDD symptoms as it normalizes a “chemical imbalance” (Phillips, 2005). However, medication does not have this effect on normal appearance concerns, since the chemical imbalance does not exist in this case. Research has shown, however, that serotonin reuptake inhibitors (SRIs) have been used as effective treatments in decreasing distress and preoccupation with the perceived defect, improving functioning, and decreasing depressive symptoms (Phillips, 2002).

Gaps in Body Dysmorphic Disorder and Cosmetic Surgery Research

Physicians have varying opinions of when patients have become obsessive with regard to appearance concerns. Adato and Harrington’s (2007) study stated that a patient’s level of obsession could not be predicted or predetermined by a specific number of surgeries. The dilemma lies within the patient’s expectations of the outcome of the surgery. The formation of scar tissue and decreased blood flow to areas of the body where multiple procedures have been performed are among the risks and complications of multiple procedures (Adato & Harrington, 2007). Excessive surgeries, an unnatural “operated” look, and continued dissatisfaction with surgical outcomes can be symptomatic of dysmorphic concerns (Adato & Harrington, 2007) and therefore remain problematic for affected patients.

Recognition of a “Suitable” Candidate

The psychological construct of body image—in particular, body dissatisfaction—is believed to motivate many appearance enhancing behaviors and to play an important role in the decision to seek cosmetic surgery. Several studies have found that before

seeking surgery, cosmetic surgery patients report heightened body image dissatisfaction (Didie & Sarwer, 2003). Many of the studies have focused on either the patients' overall body image or improvements specifically related to the feature altered by surgery. Few studies and cosmetic procedure practices have investigated other dimensions of body image, including dysmorphic concerns that occur before and symptomatology following cosmetic procedures (Sarwer et al., 2005).

Gorney (2007) and other scholars have suggested that cosmetic surgeons have an obligation to ensure that patients are aware of the risks and benefits associated with surgery. Additionally, it has been suggested that the surgeon is responsible for determining that the patient has realistic expectations of the surgical outcome and should examine the patient's rationale for the procedure (Gorney, 2007). Unsuccessful outcomes occur when a surgeon fails to properly evaluate the candidate (Gorney, 2007). Surgeons may concur that patients should be free of psychiatric symptoms when requesting a surgical consultation. However, focus is often placed on the surgical aspects of the visit, rather than the motivating factors that led the patient to the consultation (Gorney, 2007). In determining a patient's candidacy for cosmetic surgery, the patient's motives for pursuing cosmetic enhancement should be examined. Surgeons should not necessarily concentrate on personality type; instead, they should focus on the traits associated with personality types such as coping skills and the ability to tolerate and solve problems. Literature suggests that surgical change in appearance does not directly lead to improved psychosocial functioning (Sarwer et al., 2005). A patient's social situation and

quality of life can be factors motivating the patient to seek out changes in appearance that the patient believes will positively influence life outcomes (Gorney, 2007).

Statement of the Problem

The research and literature addressing the increase in the number of elective cosmetic procedures performed in the United States and beyond are growing. While the popularity of the type of procedure performed varies, the number of elective cosmetic procedures performed increased by 1% between 2010 and 2013 (ASPS, 2013).

Additionally, the body of research and literature on elective cosmetic surgery and its link to the media and body dissatisfaction continues to develop. Research supports the concept that media approved ideals of attractiveness influence attitudes toward cosmetic surgery. The frequency at which a person is exposed to elective cosmetic procedures increases the likelihood that the person will accept the procedures as mainstream (Harrison, 2003; Henderson-King & Henderson-King, 2005). Correlational and experimental designs have produced data to support the relationship between viewing reality television programs depicting cosmetic surgery, body image dissatisfaction, and an interest in altering one's own appearance (Markey & Markey, 2009; Sperry et al., 2009). Additionally, the likelihood of having an elective procedure increases when the person considering the procedure knows someone who claims to be satisfied with the results (Delinsky, 2005).

While there may be many reasons that a person seeks out cosmetic surgery, a primary contributing factor is body image disturbance and dysmorphic concern (Didie & Sarwer, 2003). The psychological characteristics of a person prior to an elective

cosmetic procedure provide evidence that the patient showed a certain level of dissatisfaction with a part of the body and felt compelled to seek improvement (Didie & Sarwer, 2003). Currently, cosmetic surgeons are not required to screen for psychological and mental health issues before performing a surgery. Additionally, the surgeon's judgment is used to determine a patient's mental health status and ability to consent to and understand the limitations of the procedure and surgeons at hand. Despite the tremendous amount of research on this issue, few studies have examined the potentially negative effects that elective procedures may have on a patient without properly prescreening a candidate for mental health disturbances.

A greater risk of physical harm to the patient may be caused when a surgeon knows the potential risks of a procedure and proceeds with surgery regardless of the patient's ability to meet physical and psychological criteria for the procedure (Gorney, 2007). Results of this study may inform researchers, treatment providers in the field of psychology, and cosmetic surgeons about the potentially negative effects that elective procedures may have on a patient when performed without first screening properly for mental health problems. More specifically, this study was intended to educate those in the fields of psychology and mental health services, as well as the fields of medicine and cosmetic surgery. The intent is to further evaluate the need for preoperative assessment for mental health concerns associated with multiple surgical procedures. Specifically, it is proposed that prescreening measures examine dysmorphic concerns of patients (Gorney, 2007).

Purpose of the Study

The purpose of this study was to examine the relationships between body image dissatisfaction, dysmorphic concern, BDD, and the number of elective cosmetic surgeries undergone. The basis for this study stemmed from Gorney's (2007) research, which reported that more physical harm might be inflicted on a patient when a surgeon moves forward with a procedure without regard to the patient's psychological standing. Therefore, examining a participant's level of satisfaction and expected outcome in relation to multiple procedures is essential when identifying the danger associated with having multiple procedures performed without the proper preoperative assessment for mental health concerns (Gorney, 2007). Specifically, the screening should serve to assess an individual's level of body image disturbance, dysmorphic concern and/or related behaviors, and the primary rationale for seeking the elective procedure (Gorney, 2007).

Theoretical Constructs

Bandura's social learning theory contains several components that explain the reciprocal interaction among cognitive, behavioral, and environmental influences (Bandura, 1986). Specifically, Bandura contended that humans process information and consider the relationship between behavior and its consequences. The theory states that people do not automatically observe the behavior of a model and imitate the behavior; a learning process determines the response (Bandura, 1986). Bandura proposed that people are more likely to imitate a behavior that draws the observer's attention. Various factors increase or decrease the amount of attention paid by the observer, including distinctiveness, prevalence, functional value, and other characteristics (i.e., arousal level,

perceptual set, past reinforcement) of the observer (Bandura, 1986). Therefore, attention is very important in determining whether a behavior will be imitated. The next important aspect of the behavior is the memory the individual has of the behavior. Thus, in order for the behavior to be reproduced, a memory of the behavior is necessary as a reference (Bandura, 1986). Third, the observer's level of exposure to the behavior affects whether the behavior will be modeled. For example, if the individual is exposed on a daily basis to messages reinforcing the benefits of cosmetic surgery, and this is a desired behavior, the observer is more likely to imitate the behavior. Last, if the behavior coincides with the observer's schema, the reinforcement and punishment that follow imitation of the behavior are considered (Bandura, 1986). If the rewards outweigh the perceived costs, then the behavior is more likely to be imitated. Bandura's theory is related to this study in that it supports the idea of physical imitation. In that physical appearance is a component of an ideal image, a person may attempt to imitate a media image by way of cosmetic surgery in an effort to obtain this ideal.

In Chapter 2, using the aforementioned framework for the literature review, the discussion provides background identifying how an environment influences schemas. In particular, attitudes toward cosmetic enhancements can be influenced through social learning in the media, peers, or social networks, and sources found to be credible (Tait, 2007). Specifically, credible influences, such as peer networks, will be able to enhance and persuade the message of the benefits of cosmetic surgery (Tait, 2007). Surgical cultures tend to provide their "expertise" by staging, promoting, and normalizing cosmetic surgery, and it will become increasingly difficult for scholars to credibly

criticize cosmetic procedures (Tait, 2007). Messages from the media may influence individuals to view cosmetic enhancements as an attractive option to achieve a desired outward appearance. At times, this option is more attractive than changing one's lifestyle to be more conducive to a healthier looking body (Tait, 2007; van Reijmersdal, Neijens, & Smit, 2010).

Moreover, the appeal of undergoing cosmetic enhancement surgery increases when little to no adverse symptoms are mentioned in the advertised message. Often, reality shows and magazines show detailed pictures of individuals before procedures to demonstrate the flaws, only to prove that these surgeries were not warranted (Tait, 2007). Attitudes toward this issue can be changed by providing a two-sided message that includes objections from loved ones, complications and risks that are associated with procedures, maintenance of procedures, and dissatisfaction with outcomes (Heyes, 2007; Tait, 2007). Some research has found that if unrealistic expectations are held about the outcomes of surgery, then depression, anxiety, repeat procedures, and internalized and/or externalized anger can manifest (Dittmann, 2005).

Definitions of Key Terms

Body dysmorphic disorder (BDD): Diagnostic criteria as defined by the DSM-5 include excessive concern over an imagined or slight physical anomaly; performance of repetitive, compulsive behaviors in response to appearance concerns; a perception of a defect that causes significant impairment in everyday life; and behavior that cannot be accounted for by another mental disorder (APA, 2013).

Body image: A person's positive or negative perceptions of his or her physical attributes, and how he or she believes he or she appears to others (Oliveira Damasceno et al., 2011).

Plastic surgery/cosmetic enhancement: Surgical procedures that are not related to medically necessary conditions, such as liposuction, breast augmentation, and rhinoplasty, which alter the shape of the body to make it more pleasing to the individual (Dolsky, 1999; Melmed, 2003).

Nature of the Study

This correlational study examined the relationship between the number of cosmetic surgeries undergone and body dissatisfaction, dysmorphic concern, and likelihood of BDD diagnosis. Participants in the study included individuals who had undergone two or more cosmetic procedures. The study used data collected via the Internet through surveys. The focus of the study was the association between the number of cosmetic surgeries undergone to the independent variables, which included level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD; therefore, a correlational research design was used. This design did not involve any experimental manipulation. Statistical analyses were used objectively to determine the relationship of the dependent variable, which was the number of cosmetic surgeries undergone, to the independent variables, which included level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD.

Research Questions and Hypotheses

1. Does the level of body dissatisfaction, level of dysmorphic concern, or likelihood of body dysmorphic disorder predict the number of cosmetic surgeries an individual chooses to undergo?

H₀: Body dissatisfaction, level of dysmorphic concern, and likelihood of body dysmorphic disorder do not predict the number of cosmetic surgeries an individual chooses to undergo.

H_a: Body dissatisfaction, level of dysmorphic concern, and likelihood of body dysmorphic disorder do predict the number of cosmetic surgeries an individual chooses to undergo.

2. Does body image satisfaction-dissatisfaction predict number of cosmetic surgeries undergone?

H₀₁: The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) is not related to the number of cosmetic procedures undergone.

H₁₁: The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) predicts the number of cosmetic procedures undergone.

3. Does dysmorphic concern predict number of cosmetic surgeries undergone?

H₀₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) does not predict the number of cosmetic procedures undergone.

H₁₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) predicts the number of cosmetic procedures undergone.

4. Does preoccupation with appearance predict number of cosmetic surgeries undergone?

H₀₃: Preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) are not related to the number of cosmetic procedures undergone.

H₁₃: Preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) predict the number of cosmetic procedures undergone. Specifically, higher scores on the Body Image Disturbance Questionnaire (BIDQ) will be associated with higher number of procedures undergone.

There is an increasing trend toward cosmetic procedures as a means to address appearance concerns. Patients can potentially undergo multiple cosmetic procedures without a psychological screening to rule out underlying mental health disorders. In particular, this study examined the relationship of the scores on the Body Image Ideals Questionnaire (Cash, 2005), Dysmorphic Concern Questionnaire (Castle, Jorgensen, Roberts, & Groth-Marnat, 2001), and Body Image Disturbance Questionnaire (Giovannelli, Cash, Hensen, & Engle, 2007) with the number of procedures undergone.

Researchers have acknowledged the importance of dysmorphic concern and its relationship to the number of cosmetic surgeries undergone and the need for psychological screening prior to surgery (Gorney, 2007; Phillips, 2005). However, regardless of such findings, a prescreening procedure has not been implemented in the practices of cosmetic surgeons. The findings of this study are intended to promote greater ratification of incorporating a prescreening procedure as an intervention measure for proper mental health treatment. Examining a participant's level of satisfaction as it relates to multiple procedures is essential when identifying the danger associated with having multiple procedures performed without the proper preoperative assessment for mental health concerns.

Significance, Limitations, and Assumptions

This study is intended to offer insight regarding the potential negative effects of multiple cosmetic procedures on individuals with body dysmorphic concern. The number of cosmetic procedures and the commonness of these procedures continue to rise in the United States (ASAPS, 2012). In 2014, ASPS reported that over the past four years, the prevalence of cosmetic procedures had increased an average of 2% annually. According to Gorney (2007), surgeons should be familiar with BDD symptomatology as it may present in varying degrees of concern. Additionally, scholars have reported that surgeons and paraprofessionals who perform procedures on individuals with BDD have noted that the physical changes sought through the surgery are often unrealistic (Gorney, 2007; Sarwer et al., 2006). Therefore, individuals who suffer from a dysmorphic concern and/or BDD subsequently present with postoperative dissatisfaction. The level of

dissatisfaction can be attributed to a lack of insight as to the difference between the perceived outcome and the realistic outcome (Gorney, 2007). Many researchers, mental health professionals, and surgical professionals support a prescreening technique for cosmetic procedures; however, a standard has yet to be established for the medical field. In this respect, additional research may drive positive change in motivating individuals in the field of cosmetic surgery to establish a prescreening standard of practice prior to performing an elective cosmetic procedure.

Limitations of this research study included the participants being confined to individuals who had undergone multiple cosmetic procedures and were willing to discuss personal information of a sensitive nature. In addition, participants who minimized or overstated their responses to the questionnaires could have influenced the results of the study. Many of the participants recruited for this study were obtained from social network sources; thus, the study was limited by the number of individuals who have access to these websites. Restrictions were placed on the characteristics of the participants, which prevented the results from being generalizable to those who do not possess the same characteristics. Additional research would need to be conducted across various populations, from a range of settings, to determine whether the results could be reproduced. A convenience sample, via the Internet, was used, which may have weakened external validity. This strategy was used since random sampling of the study population was outside the scope of resources. The results of the study are not generalizable; however, the results are believed to reflect the study population's attitudes.

With regard to this study, the following assumptions were made. First, it was assumed that the variables are appropriately measurable with the chosen instruments. Second, it was assumed that participants' responses were honest and accurate on the virtual surveys. It was my hope that individuals who had undergone multiple procedures would be willing to participate in a research project that addressed concerns related to a very sensitive topic.

Summary

Chapter 1 has provided an overview regarding the relationship between body image dissatisfaction, BDD, and cosmetic surgery, in addition to presenting the purpose of this study. Information about the cosmetic surgery phenomenon and the dangers associated with multiple surgical procedures have been provided in an effort to inform those unfamiliar with this type of study. The significant relationship between media and body image dissatisfaction reflects the pressures of media ideal content that is portrayed to consumers. Most recently, cosmetic surgeons have been portrayed as irresponsible when it comes to considering patients with potential significant mental health histories and/or body image disturbances for cosmetic surgical procedures.

Chapter 2 provides in-depth information regarding the relationship of body image dissatisfaction to BDD, the history of plastic surgery, and the biological, psychological, and etiological factors that contribute to BDD through a review of related literature. Chapter 3 presents the research methodology and the rationale for choosing and conducting a quantitative study. Additionally, Chapter 3 provides an overview of the tools and assessments used to assess BDD symptomatology, in addition to describing

how the instruments were used to assess data about the number of cosmetic surgical procedures undergone. Moreover, Chapter 3 includes justification for the chosen sample size, data collection strategies, and data analysis.

Chapter 2: Literature Review

Introduction

There are limited data regarding what predicts people's desires to pursue and receive cosmetic surgery, and subsequently, how cosmetic surgery influences people's overall satisfaction with physical appearance and mental health. Literature suggests that a person's body image perception is likely the foundation upon which cosmetic surgery is sought (Greitemeyer & Weiner, 2008). The number of cosmetic procedures performed over the last decade has continued to increase, according to the American Society of Aesthetic Plastic Surgery (ASAPS). According to ASAPS, there were 17.5 million surgical and minimally invasive cosmetic procedures performed in the United States in 2017, a 2% increase over 2016 (ASAPS, 2017). Recent research provides statistics regarding the percentage of cosmetic surgery recipients who undergo surgical enhancements in an effort to achieve a desired level of body satisfaction (Greitemeyer & Weiner, 2008).

Bandura's social learning theory was used to explain the relationship between thought processes and behaviors associated with cosmetic surgery patients. Social learning theory identifies key components of the relationship between attribution and self-worth, and it pairs cognitive theory with emotion and behavior (Greitemeyer & Weiner, 2008). Therefore, it is assumed that individuals with low self-worth can allow these feelings to affect their thoughts and behaviors, thus influencing their emotional reaction to plastic surgery propaganda.

In order to make a “probable” diagnosis of BDD, it is important to understand that several constructs concerning appearance are likely to contribute to BDD symptomatology, such as appearance comparison, appearance evaluation, body site satisfaction, and self-esteem (Boroughs, Krawczyk, & Thompson, 2010). Negative body image and dissatisfaction are linked to BDD and cosmetic surgery procedures, as evidenced by the discrepancy between the individual’s perceived self and the individual’s ideal or desired self (Lambrou, Vale, & Wilson, 2011). Although it is common for people to feel dissatisfied with their appearance from time to time, individuals who are highly sensitive to appearance rejection may experience obsessive concerns that can lead to interference with daily activities (Park, Calogaro, Young, & Diraddo, 2010). Researchers theorize that interpersonal and social motives are two broad factors endorsing cosmetic surgery (Park et al., 2010). The focus of this study was addressing the issue of multiple cosmetic surgeries and the potential implications of multiple surgeries for body image satisfaction.

Research Strategy

Research literature on BDD, body image, cosmetic surgery, and risk factors related to multiple procedures was obtained through the EBSCOhost search engine. Several databases were specifically targeted: Academic Search Premier, Mental Measurements Yearbook, PsycARTICLES, Google Scholar, Medline, Science Direct, PsycINFO, Sage, *Aesthetic Surgery Journal*, Communication and Mass Media, and SocINDEX. Keywords used for the online research included *body image*, *elective surgery*, *plastic surgery*, *cosmetic surgery*, *body dysmorphic disorder*, *dysmorphic*

concern questionnaire, cosmetic enhancement, self-esteem, multiple cosmetic procedures, media influence and cosmetic surgery, treatment of body dysmorphic disorder, etiology of body dysmorphic disorder, history of cosmetic surgery, and attribution theory. These terms identified the initial journal articles I gathered, which led to further research on the references cited in these articles. Specific titles and authors were researched that were pertinent to the topic. An Internet search was used as a supplemental source to obtain information from such websites as those of the ASPS and American Society for Plastic Surgery, and Psychiatry Online. A supplemental research database included the Alumni University of Texas library.

Overview of Cosmetic Surgery and Related Body Concerns

In 2011, 13.8 million cosmetic procedures were performed in the United States, representing a 5% increase from 2010 in both cosmetic surgical and cosmetic minimally invasive procedures (ASPS, 2012). In 2011, the following surgical procedures ranked as most popular, each increasing 2–6% from the previous year: minimally invasive cosmetic surgeries (e.g., Botox, chemical peel, laser hair removal), reconstructive procedures (e.g., tumor removal, laceration repair, scar revision), and cosmetic surgical procedures (e.g., breast augmentation, nose reshaping, liposuction; ASPS, 2012). Ninety-two percent of these procedures were performed on females (ASPS, 2012). Many researchers agree that the primary reasons for seeking surgical cosmetic procedures are body image concerns. Subsequently, when the outcome is perceived as satisfactory, body image perception and self-confidence levels increase (Castle et al., 2004). Variables that have been shown to be predictive of cosmetic surgery interest include personal factors such as body image

dissatisfaction, basing self-esteem on appearance, previous experience with cosmetic surgery, vicarious experiences of cosmetic surgery via family and friends, and internalization of sociocultural messages from media industries (Park et al., 2010).

Dissatisfaction and Cosmetic Surgery

Although dissatisfaction with one's body is thought to motivate many life changing behaviors such as weight loss and exercise, one life altering cosmetic surgery may not provide exact restructuring that one might desire (Sarwer et al., 2005). While body image dissatisfaction is consistent behavior among individuals who seek cosmetic surgery, the degree of dissatisfaction and preoccupation can often be consistent with BDD (Sarwer, Crerand, & Magee, 2011). BDD is characterized by excessive preoccupation with physical appearance that causes significant distress or impairment in social, occupational, or other areas of functioning (American Psychiatric Association, 2000). Roughly, 5–15% of individuals seeking cosmetic surgical procedures appear to suffer from BDD (APA, 2000). Individuals diagnosed with BDD are often preoccupied with a perceived physical flaw, and this perceived flaw might ultimately lead them to have a cosmetic procedure performed in an effort to reduce the distress. However, undergoing a cosmetic procedure may only increase preoccupation and distress with appearance (Sarwer et al., 2011).

BDD was re-categorized in the DSM-5 as an obsessive-compulsive spectrum disorder (OCD), which is distinct both in behavioral aspects and in occurrence from other anxiety disorders (Van Ameringen, Patterson, & Simpson, 2014). OCD and BDD are similar in many ways, such as in thought process, and both disorders are inclusive of

preoccupational thoughts that are intrusive, are considered one's own thoughts, and cause significant distress (van der Meer et al., 2012). Similarly, BDD patients perform repetitive behaviors. However, the characteristics specific to BDD patients include a lack of insight, difficulty in reexamining belief systems, and the rituals performed being less likely to decrease the level of experienced distress (van der Meer et al., 2012). Social anxiety is more prevalent in BDD patients, which may contribute to the onset and exacerbation of symptoms of BDD (van der Meer et al., 2012). For example, BDD was preceded by social phobia in a study consisting of 165 patients with anxiety disorders, additionally, 11 of the patients met the criteria for BDD (Wilhelm et al., 1997). Major depression is often a comorbid diagnosis among BDD patients; specifically, atypical depression is more prevalent than nonatypical depression (Nierenberg et al. 2002). Van der Meer et al. (2012) found that psychotic disorder may be concurrently diagnosed due reported paranoia-like symptoms endorsed by those diagnosed with BDD. Recent studies have found that 90% of individuals with BDD report no change or increased BDD symptoms following a cosmetic enhancement procedure (Crerand, Menard, & Phillips, 2010).

Risk Behaviors: Suicidality, Substance Abuse, and BDD Comorbidity Disorders

Of even greater concern are reported suicidal ideation, suicide attempts, and self-harm behaviors among BDD patients. There is limited research on the prevalence of suicidal ideation in individuals diagnosed with BDD; however, comorbid disorders are known to be associated with suicidality (Phillips et al., 2005). Elevated rates of suicidal ideation, self-injurious acts, and completed suicide are often present in individuals

diagnosed with BDD (Bjornsson, Didie, & Phillips, 2010). Past and current suicidal ideation are reported in approximately 80% of individuals diagnosed with BDD, and approximately 25% have engaged in self-injurious acts that are attributed to BDD symptomology (Bjornsson et al., 2010; Perugi et al., 1997). Less than 1% of patients with BDD per year were found to have completed suicide (Phillips & Menard, 2006). While the suicide rates among BDD patients appear to be markedly elevated, it should be noted that these studies consist of relatively small sample sizes and brief follow up periods. It should further be noted that the mortality ratio in this study is higher than that reported for other mental health disorders; therefore, the reader should use caution when comparing this rate to that of other disorders (Bjornsson et al., 2010).

Violent anger outbursts (e.g., attacking someone or damaging property) are reported in approximately one third of people diagnosed with BDD; these behaviors are largely attributed to BDD symptomology (Bjornsson et al., 2010). The anger and violent behaviors are believed to be fueled by maladaptive thought processes of the “deformity” such as believing others are mocking the “defect,” feeling rejected, and the inability to fix the “defect” (Bjornsson et al., 2010). Additionally, dissatisfaction with cosmetic procedures can contribute to the anger and violent behaviors.

According to one survey, 12% of plastic surgeons report physical threats from a dissatisfied patient diagnosed with BDD (Sarwer, 2002). Additionally reports suggest that individuals with probable BDD diagnosis have attempted to harm or even killed their plastic surgeon after being dissatisfied with the outcome of a cosmetic procedure (Phillips, 1991). Substance abuse problems have been reported for many individuals

diagnosed with BDD. Approximately 49% of BDD participants were diagnosed with lifetime substance use disorder, this particular study found that alcohol and cannabis use disorders were most frequently endorsed (Grant & Phillips, 2005). In this study, 60% of participants had exhibited BDD symptomology for 1 year before the onset of a substance use symptomology (Grant & Phillips, 2005). Sixty-eight percent of participants in the study reported that BDD symptoms contributed problematic illicit substance use (Grant & Phillips, 2005).

Phillips et al.'s (2005) study found that posttraumatic stress disorder (PTSD), substance use disorder, and psychosocial impairment due to BDD were uniquely associated with suicide attempts. More recently, several variables were found to be associated with suicidal ideation and attempts: lifetime PTSD, work/academic/role impairment due to BDD, and BDD related restrictive food intake (Witte, Didie, Menard, & Phillips, 2012). Patients with BDD related restrictive food intake symptomatology had the greatest positive relationship with regard to suicide attempts; however, feeding disorders were not believed to attribute to suicidal ideation. It is theorized that since restricting food intake can be physically painful, a person capable of enduring such physical discomfort would likely endure enough physical discomfort to inflict self-harm (Witte et al., 2012).

Anorexia nervosa (AN), bulimia nervosa (BN), and BDD share a variety of body image dissatisfaction traits. When compared to BN, AN and BDD appear to occur more frequently; evidenced by research indicates that these two disorders share delusional symptomology of the distorted body image beliefs (Hartmann, Greenberg, & Wilhelm,

2013; Konstantakopoulos et al., 2012; Mancuso, Knoesen, & Castle, 2010). Grant et al. (2002) found that 27 of 41 inpatients with a diagnosis of AN were found to have a high lifetime prevalence of comorbid BDD, unrelated to weight concerns. More than 80% of the comorbid AN/BDD patients considered their BDD symptomology a major problem and were assessed to have more severe symptoms when compared to the AN patients without comorbid BDD. Comorbid AN/BDD patients endorsed elevated appearance concern and delusions, had increased number of psychiatric hospitalizations, and were at elevated risk of engaging in suicide attempts (Ruffolo et al., 2002).

Theoretical Framework

Bandura's social learning theory emphasized that people learn through observation of others' behaviors, attitudes, and outcomes of those behaviors (Bandura, Ross, & Ross, 1961). Repetitive common interaction between cognitive, behavioral, and environmental influences are examples of human behavior explained in social learning theory (Bandura et al., 1961). Individuals observe the various ways that people behave around them, as Bandura et al. (1961) illustrated through the "Bobo doll" experiment. Individuals who are observed are called *models*. People are surrounded by many influential models, such as family members, characters in the media, friends within peer groups, and so on. The models are examples of behavior to observe and imitate—such as masculine and feminine behaviors, or extroversion and introversion—as well as how society defines particular cultural aspects of wealth and beauty. People attend to some models and encode their behavior; at any given time, they may imitate the behavior that has been observed. People may imitate behavior regardless of appropriateness.

However, there are a number of processes that increase the likelihood that a person will reproduce the behavior that society deems appropriate (Bandura et al., 1961). First, people are more likely to attend to and imitate those people perceived to be similar to them. Consequently, people are more likely to imitate behavior modeled by the same sex (Bandura et al., 1961). Second, those close to an individual will respond to the imitated behavior with either reinforcement or punishment. If a modeled behavior is rewarded or reinforced, either intrinsically or extrinsically, the person is likely to continue performing this behavior. Reinforcement can be external or internal, as well as positive or negative. If a person wants approval from family or peers, confirmation of approval is an external reinforcement, but feeling happy about the confirmation is an internal reinforcement. Individuals typically seek approval from others; thus, their behaviors will model those that they believe will earn them approval (Bandura et al., 1961). Positive (or negative) reinforcement will have little impact if external reinforcement does not match an individual's perceived needs. Reinforcement (positive or negative) should lead to change in a person's behavior (Bandura et al., 1961). Third, before mimicking another's behaviors, a person will observe rewards and punishments for those behaviors rather than directly experiencing them, in a process referred to as *vicarious reinforcement* (Bandura et al., 1961).

Social learning theory posits that an individual may internalize or adopt another person's behavior, and it relates attachment to specific models that possess qualities that an individual views as rewarding. Therefore, observers will identify several models to which they relate and thus mimic behaviors from family members, peers, fantasy

characters, or media figures. Individuals are typically motivated to identify with a particular model's quality when the characteristics of the model's behaviors, values, beliefs, and attitudes match those the individual would like to possess. Identification differs from imitation, in that identification may involve adoption of a number of behaviors, whereas imitation usually involves copying a single behavior (Bandura et al., 1961). Bandura recognized that individuals absorb favorable and unfavorable responses by attending to their environment. As children, people imitate most responses around them; subsequently, schemas are formed based on the environment, as well as the definitions of "beauty" and "age". As schemas and personalities develop, individuals become more selective in the ways that they model appearance. Individuals are exposed to various forms of media, and the images are embedded in the individual's schematic framework. Thus, it can be inferred that through social interaction and social media, schemas are formed, which can influence an individual's body image and level of body image satisfaction. It can furthermore be deduced that the frequency at which an individual is exposed to cosmetic procedures via these sources increases the likelihood of a favorable response to these procedures (Bandura et al., 1961; Potter, 2004).

The progression of Bandura's theory resulted in significant changes placing emphasis on the role of modeling and what Bandura termed *self-efficacy* (Crain, 2000). In the last decade, there has been a significant increase in media and social influence, specifically with regard to the media's effects on body image. Of the variables affecting whether a person internalizes media messages, attention is most affected by a person's characteristics of sensory capacity, arousal level, perceptual set, and past reinforcement

(Deaton, 2015). In particular, with a constant stream of media messages via television, cell phone, and other media, the reinforcing stimuli, providing graphical representations and the ability to interact with the information in various settings such as social media, provides the individual opportunities for memory creation and retention (Deaton, 2015). In social learning, *symbolism* refers to the person's ability to create mental images and memories based on temporary sensory experiences (Ponton & Rhea, 2016). These experiences are enhanced via media representations as a variety of learning styles are engaged through interaction with social media (Deaton, 2015). Media messages provide visual and auditory stimuli as well as numerous ways of interacting via electronic devices and technology sources, thus providing increased opportunities for symbolization and memory creation (Deaton, 2015).

Stern (2005) conducted several studies applying concepts of social learning theory asserting that smoking, drinking, and drug use continue to remain prevalent among teens in the United States due to media influence. In particular, the study iterated that films are potential pressures to teens' attitudes towards and initiation of substance use (Stern, 2005). This correlation was supported by social learning theory due to the implications that teen viewers are likely to learn from teen models who they view as similar, desirable, and attractive (Stern, 2005).

Young and Cline (2005) examined social learning theory with regard to whether direct to consumer advertisements motivated patients to change their communication styles with their doctors. The results provided support which points to the significance of improving consumers' media and health literacy skills to prevent potentially damaging

effects of drug advertising (Young & Cline, 2005). Furthermore, research examining the attributes of violent characters in video games applying social learning theory (Lachlan, Smith, & Tamborini, 2005). This research is based on the correlation between models of aggressive behavior based on behavioral and personality features of violent characters in popular video games which revealed that some players perceive the violent video game characters as appealing and similar (Lachlan et al., 2005). Additionally, players were found to perceive the aggressive behaviors portrayed by the characters as justified (Lachlan et al., 2005).

Media Influence and Cognition

Bandura's social learning theory and social cognitive theory has been used in empirical tests of media influence (Potter, 2004). According to Potter's research, media content is "demand driven" (2004). Therefore, to cease distribution of media sources contributing to the social acceptance of cosmetic surgical procedures are not necessarily the source of the problem. Instead, it is important to understand the rationale for the high acceptance and subsequently, the high demand for cosmetic procedures (Potter, 2004). Potter notes there are four concepts that assist with the understanding of how media and non-media sources influence a person (2004).

First, individuals typically receive an automatic media message, meaning that many individuals remain at a relatively unconscious state where attention is directed by automatic processing (Potter, 2004). Second, media messages are so great that schemas have previously formed and created a "story" which has conditioned individuals to believe that certain messages are more important than others (Potter, 2004). Thus, the

media's definitions of attractiveness, health, and success influence the way individuals decide to achieve and attain such effects. Third, individuals have a personal locus of control that can override the automatic routines; however, it is rarely used (Potter, 2004). A rationale for the lack of override is that the personal loci are shaped by information and drive states. The drive states are what provide energy for action; therefore, the current message is encouraging a drive state – encouraging the definitions of “attractiveness” and how it can be “achieved” (Potter, 2004). Finally, Potter states that individuals do not have an internal way to filter or prevent the flood of messages from integrating into the unconscious (2004). The distinction between meaning matching and meaning construction has become automatic based on the media's image matched with the media's construct.

Social learning theories note that media portrayals are more readily accepted as realistic through repeated exposure (Grabe, Ward, & Hyde, 2008). The consistent depiction of, for example, a thin body ideal, leads viewers to accept this portrayal as normative, expected, and central to attractiveness (Grabe, Ward, & Hyde, 2008). Thus, showcasing an unrealistic body ideal can lead viewers to adopt this portrayal as a schema which may lead to decreased satisfaction with one's own body and to behaviors aimed at meeting this ideal. The findings in more than 100 studies demonstrate links and provide evidence that support exposure to unrealistic body ideals predicts a form of body image disturbance (Grabe, Ward, & Hyde, 2008).

The relationship between media messages and body concerns was examined through a message interpretation process (MIP) model (McLean, Paxton, & Wertheim,

2016). This model outlines how one interprets media messages and develops skepticism is formed; thus, a person would choose to accept or reject the message. Messages are rejected when the media image is perceived as unrealistic, dissimilar to one's experience of reality, undesirable, and if expectations of positive outcomes associated with behaviors promoted by media messages are low (McLean, Paxton, & Werthei, 2016). This study was designed to support research showing heightened attention to appearance content exacerbates body concerns, highlighting the differences between one's perceived appearance and ideal appearance portrayed in the media (McLean, Paxton, & Werthei, 2016). Individuals who are exposed to these messages may find their awareness of body dissatisfaction enhanced through visual media strategies that create unrealistic appearance ideals, and by default, involve increased exposure to these ideals.

Body Image

Background

Body image is described as the internal representation of an individual's body structure or physical appearance (Oliviera et. al., 2011). Research from the last ten years supports evidence that people are increasingly dissatisfied with their appearance. Many external and internal factors such as age, gender, psychological factors, and the influences of the media and social support systems influence body image. Media messages are known for providing frequent and extreme exposure to 'ideal' images of individuals creating a preoccupation and dissatisfaction with the body (Oliviera et. al., 2011). This preoccupation potentially leads to self-destructive behaviors that are geared towards changing the body through excessive dieting and exercise routines, performance

enhancing substances, and cosmetic surgical procedures (Oliveira et al., 2011). In these extreme cases, health risks are involved such as lower self-esteem, higher levels of depression, anorexia, bulimia, and in some cases BDD.

Relationship of Body Dysmorphic Disorder and Cosmetic Surgery

Many people have become fixated with cosmetic enhancements and have increasingly relied on these procedures as a “quick fix” method of self-improvement and body image enhancement. Seemingly, there is a strong relationship between self-esteem and body image; self-esteem can increase and decrease during different situational events (Figuroa, 2003). Improved appearance has also been found to increase self-esteem and how others are treated (Figuroa, 2003). Cosmetic surgery affects an individual’s level of self-esteem contributing to the procedure that is sought in an effort to achieve the desired level of self-perceived attractiveness desired (Kenealy, Gleeson, Frude, & Shaw, 1991; Rosen, Underwood, & Beron, 2011).

Body Dysmorphic Disorder

Body dysmorphic disorder (BDD) is a preoccupation with a body part that is imagined or hard to detect; appearance is considered unattractive or deformed despite an objectively normal appearance (Castle et al., 2004). On average, individuals dedicate 3 to 8 hours daily grooming or trying to hide the perceived defect (Mancuso, Knoesen, & Castle, 2010). Diagnostic criteria as defined by the DSM-5 include excessive concern over an imagined or slight physical anomaly, repetitive, compulsive behaviors in response to the appearance concerns, the defect causes significant impairment to everyday life, and it cannot be accounted for by another mental disorder (American

Psychiatric Association, 2013). BDD is classified in the DSM-5 under the chapter containing “Obsessive-Compulsive and Related Disorders” and tends to affect individuals during late adolescence with moderate to severe symptoms lasting 15 to 16 years (APA, 2013; Mancuso et al., 2010). Scholars have found that the primary difference between the delusional and non-delusional patients is the severity of the symptoms (Mancuso et al., 2010). Delusional patients are found to have increased rates of suicide, greater impairment of functioning, poorer quality of life, and an increased tendency towards substance abuse.

Etiology

Little is known about the cause of BDD, although it is thought to be a combination of environmental and biological factors. Most recently, brain-imaging studies have provided more insight into the visual processing centers of patients diagnosed with BDD (Atmaca et al., 2010). One study surveyed 17 patients diagnosed with BDD and 16 control patients to watch images while undergoing a functional MRI (fMRI). The images contained photographs of famous actors as well as all of the patients. When viewing photographs of their faces, the BDD patients reported feeling repulsed by the image. The fMRI also revealed brain activity alterations in several areas: visual processing center in the orbital frontal cortex, and the front striatal system, which affect emotional reactions and behaviors (Atmaca et al., 2010). These findings suggest that patients diagnosed with BDD are processing visual information differently, helping to explain the perceptual differences.

Additionally, there is evidence that BDD is biologically inherited. Patients with BDD are four times as likely to have had a first degree relative with BDD (Mackley, 2005). Moreover, individuals of American nationality tend to be preoccupied with appearance more so than other nationalities. Other populations are at increased risk of a BDD diagnosis including dermatology and cosmetic patients, and those suffering from depression, eating disorders, and obsessive-compulsive disorders (Mackley, 2005). A commonality among patients suffering from these disorders is a level of body image dissatisfaction.

Body image dissatisfaction forms early in life; the internal model that a person creates of self is reflected in the way one will recognize features, movements, and qualities (Mackley, 2005). Memories require emotional output; therefore, perceptions of the body that are stored are associated with the emotions from when the memory occurred. Selective attention to the perceived defect is also a hindrance for patients diagnosed with BDD, which result in reinforcement of the disorder. Reinforced conditioning and social learning help develop the values and beliefs about attractiveness and a personal emphasis on body image (Feusner et al., 2010). Negative experiences involving appearance can create an emotional response to body image ideals, including shame, disgust, and anxiety.

Prevalence

BDD affects both males and females at a similar rate, with different areas of perceived defects particular to gender, and usually begins in late adolescence. Men are more likely to be preoccupied with thinning hair/balding, muscle dysmorphia, and their

genitals; women are more concerned with weight, excessive body hair, breasts, legs, thighs, and hips (Didie et al., 2010). Women are more likely to engage in picking at their skin and attempting to hide perceived defects with makeup. Men are less likely to work due to the psychopathology, more likely to be single, receive disability payments due to BDD, and have an overall poor level of psychosocial functioning when compared to women (Didie et al., 2010). The prevalence of under diagnosis of BDD ranges from 3.2%–53.6% in cosmetic surgery patients (Mancuso et al., 2010). Individuals diagnosed with BDD often pursue cosmetic procedures for their perceived flaws; prevalence in this type of setting ranges from approximately 6%–15% (American Psychiatric Association, 2000). Most BDD patients are diagnosed with comorbid personality disorders such as obsessive-compulsive disorder, and paranoid and avoidant personality disorders. In the clinical setting, reported rates of BDD range from approximately 5%–40% (American Psychiatric Association, 2000).

Gender Differences

Although the number of male cosmetic surgery patients is on the rise, the overwhelming number of cosmetic surgery patients are female. In 2011, male patients made up 13% of the overall procedures performed in the United States, which is a 1% increase from 2010 (American Society of Plastic Surgeons, 2012). Scholars report that, compared to men, women tend to have lower levels of body dissatisfaction and allow media influence to affect their level of body satisfaction (Adams, 2010). Body dissatisfaction results from a discrepancy between the actual self and the ideal self. It remains unclear as to where the discrepancy exists with regard to the defect, or if any/all

combinations of these issues (i.e., unrealistically high standards of appearance in general, more aesthetically sensitive than average, an underestimation of attraction) can lead to body dissatisfaction (Phillips, 2005). Media messages suggest that cosmetic surgery enhancements are both readily accessible and acceptable as an appropriate way to obtain an ideal perfection and beauty (Markey & Markey, 2009). Additionally, media messages have framed cosmetic surgery as an effective way to address body dissatisfaction as an appropriate means to achieve a body similar to those represented in the media (Adams, 2010).

According to the literature, cosmetic surgery is a more acceptable option for women, because of the long established precedent that “medicine has historically defined the female body as deficient and in need of repair” (Davis, 2002, p.55). Hence, cosmetic surgery is seen as an acceptable therapeutic expression for women, whereas stigmatization still exists when men choose this approach (Adams, 2010; Davis, 2002). Appearance concerns are viewed as gender specific. According to one study, women who had undergone cosmetic surgery did not expect the procedure to make them beautiful, but instead believed that the procedure would create a more “normal” appearance (Adams, 2010). Cosmetic surgery is widely viewed as a women’s issue; therefore, the justification is made by men to legitimize cosmetic surgery aimed towards career advancement purposes, arguing that looking fit and attractive allow and help them to maintain a competitive edge (Adams, 2010). Men are often able to escape judgment due to the procedure viewed as positively motivated (Adams, 2010). However, upon further examination, scholars have found that men and women seem to be similarly

motivated towards surgical enhancement (Adams, 2010). Both genders are equally as likely to seek and use cosmetic enhancement as a way to treat their appearance concerns (Phillips, 2005). Gimlin's (2002) study found that women rationalized having undergone a cosmetic procedure as a means to mitigate the effects of aging or correct a feature that they found to be abnormal or flawed. Similarly, Atkinson (2008) found that men undergo cosmetic surgery in an effort to achieve an "average" appearance and diminish certain aging features.

Several studies, which included the most representative population-based samples, found that BDD symptomology were present in 1.9%–2.5% of women and 1.4%–2.2% of men (Buhlmann et al., 2010; Didie, Megan, Kelly, Phillips, 2010; Dingemans, van Rood, de Groot, & van Furth, 2012). Research supports that there are more gender similarities than differences across individuals with BDD symptomology including demographic and clinical features, obsessions and compulsions, symptom severity, comorbidity, and suicidality (Perugi et al., 2004). A significant gender difference is present in comorbidity, specifically, men are more likely to have a comorbid substance use disorder, and women are more likely to have a comorbid eating disorder (Perugi et al., 2004). Additionally, men are more likely to be preoccupied with muscle dysmorphia, thinning hair/balding, and their genitals, whereas women are more likely to be concerned about excessive body hair, weight, breast size, legs, and hips (Didie, Kelly, & Phillips, 2010).

According to related literature, women have been socialized to be overly concerned with regard to appearance and are consistently under pressure to maintain a

youthful look and physical attractiveness (Clarke, Repta, & Griffin, 2007). This ideal form of beauty is often obtained by excessive exercise, unhealthy dieting, and most recently surgical procedures that provide quick solutions to these perceived flaws (Clarke et al., 2007). Some scholars criticize that cosmetic surgeons have a financial stake in individuals with poor body image and deceive individuals into feeling a “need” for the surgery as a form of therapeutic relief from low self-esteem (Clarke et al., 2007). Other criticisms stem from the focus of subjugation to external judgment by the public, rather than looking at personal traits of the individual. Additionally, cosmetic surgery has been seen as a way of conforming individuals to a particular mold, rather than playing off of the unique features of the individual (Clarke et al., 2007).

Risk Factors

Certain factors may increase the risk of a diagnosis of BDD including childhood teasing, low self-esteem, societal pressure or influence, biological relatives that have the disorder, and anxious or depressive symptoms (Mayo Foundation for Medical Education and Research, 2011). Childhood teasing and societal pressure can have long lasting effects on a person’s self-perception and the way others view that individual. There are certain body image norms that are portrayed throughout image sources as more acceptable than others; if at a young age, children are not taught to distinguish between healthy and unhealthy images, self-esteem can be adversely affected. Dittman’s (2005) research illustrates the influences that affect self-image such as environment and media sources that portray unrealistic images of prominent public figures. Scholars have found that 20% of individuals with a first-degree relative such as a parent, sibling, or child

suffer from BDD. Finally, brain abnormalities can place a person at higher risk of the disorder as found in the fMRI studies (Atmaca et al., 2010).

Cultural Issues

Many studies identifying cases of BDD have utilized participants from Western cultures (Phillips et al., 2010). Phillips et al. (2010) performed a qualitative study across BDD cases in various countries and found more similarities than differences. The similarities included gender ratio, demographic features, types of compulsive behaviors, level of satisfaction of body areas, and the level of distress related to BDD symptoms in social and occupational settings. Aspects of culture that seem to vary cross-culturally largely depend upon values and preferences, which to some degree shape the onset of the BDD symptoms (Phillips et al., 2010). Most notably, Asian cultures have similar appearance concerns; many of these concerns are the subtypes of *taijin kyofusho*, which literally translates to “the fear of interpersonal relations” (Phillips et al., 2010). Ten percent of participants who met criteria for *taijin kyofusho* also met the DSM-IV-TR criteria for BDD.

Koro symptoms also resemble BDD symptomology including excessive concern and distress over appearance. In particular, Koro differs from BDD in that the primary focus of the disorder is the feared event of disappearance of the genitalia resulting in death; often this disorder responds well to reassurance (Phillips et al., 2010). Similar to cultural concerns for proper physical appearance, is the preoccupation with proper physical presentation and the influence on appearance concerns.

Social Support

Studies have shown that people diagnosed with BDD tend to be more introverted and exhibit increased symptoms of social anxiety (Phillips, 2005). Social support is an important variable that influences the severity of BDD symptomology (Marques, Weingarden, LeBlanc, Siev, & Wilhem, 2011). Reportedly, body image concerns fluctuate with teasing and consistent pressure from family and peers to alter appearance (Ata, Ludden, & Lally, 2007). Additionally, poor and conflict-ridden relationships with parents are predictive of lower body image. Scholars found that females ages 11 to 19 reported increased weight anxiety when the relationship with their mothers lacked a desired level of intimacy, whereas linking mother-son relationships with weight anxiety is less prevalent (Ata et al., 2007). Both men and women report weight anxiety when the relationship with the father is conflicted (Ata et al., 2007). Ata et al. (2007) reported that emotional support from family members may serve as a buffer to negative peer and media influences, and may help both genders develop a healthy body image. Finally, perceived support from peers may have a greater negative impact on body image perception (Ata et al., 2007).

Plastic Surgery

History

Prior to the 19th century, the concept of plastic surgery did not exist. Initially, a few surgeons explored the possibilities of altering the shape of the nose, not as a functional or reconstructive procedure, but to create a more aesthetically pleasing feature (Dolsky, 1999). Accounts of rhinoplasty can be found published as early as 1845,

wherein the articles documented surgical incisions on the exterior portion of the nose (Dolsky). In 1887, John Roe, published that an “endonasal hump” was successfully removed in five patients. In 1892, Robert Weir, purportedly performed successfully several rhinoplasty procedures that did not scar the face (Dolsky, 1999). In 1898, Jacques Joseph was the first to dedicate his career to the field of rhinoplasty; subsequently, he invented many of the instruments that are found on the surgical tray today (Rogers, 1971).

The warfare of World War I produced many facial injuries. Surgeons from varying professions united in an effort to alleviate some of the destructive effects of the war (Bennett, 1983). These surgeons laid the foundation for reconstructive and plastic surgery procedures that are used today in the medical field. In 1939, Simon Fomon attempted to document all procedures known to the area of reconstructive and plastic surgery (Dolsky, 1999). The next year, he began teaching the study of these procedures in Boston.

During the 1930's, annual meetings were held by members of the American Society of Plastic and Reconstructive Surgery (ASPRS) to exchange ideas (Dolsky, 1999). Specifically, members regarded “legitimate” plastic surgery as those procedures performed to reconstruct and assist patients with trauma and congenital defects (Dolsky). Until the 1960's, the public was hostile to the field of plastic surgery; therefore, education and practice in the field declined (Dolsky, 1999). Surgeons had conflicting opinions as to how these procedures should be approached, but much advancement has been made in the 20th century. Liposuction, rhinoplasty, and breast augmentation are some of the more

popular procedures performed today (Dolsky, 1999). The techniques and sophistication of these procedures has changed over time to meet the demands and concerns of the public. Today, scaring and recovery period have been minimized through endoscopic procedures. Press releases stated that the number of procedures in 2010 alone jumped over 155% since the ASAPS began gathering statistics in 1997 (ASAPS, 2012; ASPSP, 2012).

Plastic Surgery Today

In 2011, the top five surgical procedures performed were: breast augmentation, nose reshaping, liposuction, eyelid surgery, and facelifts (ASPS, 2012). In 2010, 1.4 million of the procedures were performed on women; the majority of surgical procedures were performed on individuals ages 35 to 50, equal to 44% of the total procedures performed (ASAPS, 2012; ASPSP, 2012). Men and women ages 19 to 34 had undergone 20% of the procedures; individuals aged 51 to 64 had undergone 28%; and those ages 65 and over, and 18 and younger comprised of 8% of the procedures (ASPS; ASAPS). Racial and ethnic minorities had undergone approximately 19% of all cosmetic procedures: Hispanics, 8%; African-Americans, 6%; Asians, 4%; and other non-Caucasians, 1% (ASAPS, 2012). The region with the most cosmetic procedures performed in the United States is the Mountain/Pacific (ASPS, 2012). By 2010, patient behavior had also changed in terms of frequency of procedures; 50% of all patients were repeating customers and 47% of all patients had multiple procedures performed (ASPS, 2012).

MacPherson's (2005) study on self-esteem and cosmetic procedures focused on the increase of procedures in 2003 and proposed that cosmetic procedures can improve one's self-esteem. MacPherson (2005) stated that in the past 15 years, the general population has become increasingly concerned about physical appearance, which MacPherson attributes to media influence. The primary focus of MacPherson's (2005) study was the psychological benefits of these procedures and providing patients with the information to make an informed decision before having undergone a procedure. Although the study made great strides towards the examination of this topic, he identified several gaps in literature such as sample size and participant experience with cosmetic procedures (MacPherson, 2005). Specifically, a convenience sample of the first 30 new patients was used, which was reported to decrease control of the variables; many of the participants had no prior experience with cosmetic surgery (MacPherson, 2005). The Rosenberg Self-Esteem Scale was administered to the participants, and the final study consisted of 26 of the 30 participants due to incomplete and missing data. MacPherson's (2005) study found a significant difference in global self-esteem pretreatment and post treatment. Additionally, findings suggested a strong relationship in the improvement of self-esteem following cosmetic enhancement (MacPherson, 2005).

Ethics and Legality

The acceptable ethical and legal standards of cosmetic procedures have been a matter of debate (Elliot, 2009). The more commonly known procedures that individuals have performed, such as rhinoplasty and breast augmentations are to enhance the perceived flaw in appearance. However, ethical concerns arise when an individual

requests that a surgeon remove a healthy limb purely due to the individual's strong desire to have the limb removed. Individuals with such concerns have been suggested to have a disorder called Body Integrity Identity Disorder (BIID) (Elliot, 2009). Surgeons' ethics have been called into question when patients have undergone such elective amputation; one such physician contends that surgery is the only successful treatment for such a "condition" (Elliot, 2009).

For example, in 2000 a Scottish surgeon, Robert Smith, performed two amputee surgeries on male adults reportedly suffering from BDD (Elliot, 2009). Based on legalities of radical procedures such as these, even when consent is obtained from adults, there are still limitations to consent of cosmetic procedures. Robert Smith was the first surgeon known to perform operations on patients who wished to have a physically healthy limb amputated. Smith was first approached by a 39-year-old man, who since the age of 8, wished to have part of his left leg removed since he felt it was not 'part of him' (Elliot, 2009). In 1999, Smith was approached by a 71-year-old man who felt his 'leg was on the wrong body' and reportedly wished to have the leg removed since 14 years of age (Elliot, 2009). These cases immediately attracted the media; consequently, Smith received additional requests for healthy limb amputation, and a waiting list began to form. In early 2000, the Forth Valley Acute Hospitals NHS Trust, where Smith performed the surgeries, refused to continue to grant permission to use the hospital as the location for the operations. Due to widespread public concern, Smith was effectively barred from performing such operations at institutions. There are many arguments for and against these cases. Arguments that support amputation state that the operations

allow a safe and medically trained person to perform the surgery – this prevents the patient from self-mutilating and causing fatal or devastating injury (Elliot, 2009).

However, the counter argument is that amputation is not an appropriate form of treatment for psychological concerns and behaviors that potentially represent BDD symptomology. Moreover, amputations are generally used a last resort in cases where physical disease has been identified (Elliot, 2009). The main concern with perceived dissatisfaction regarding this type of misguided treatment is that it could potentially cause the patient to return for another amputation on a healthy limb.

The literature concerning the history of surgical interventions to address psychiatric or psychological concerns provides several misguided examples of treatment gone wrong. Two examples of these misguided treatments include the use of lobotomy to treat psychosis and clitoridectomy to treat epilepsy, catalepsy, and hysteria in women (Elliot, 2009). As with any type of surgery, a patient can become dissatisfied with the outcome and regret the course of action. In addition, as with any cosmetic procedure, there is concern that the patient will return for a second or perhaps a third amputee procedure. The question remains whether it is ethical to continue to perform these procedures, at the client's request, knowing that the operations can result in a disabled or disfigured person (Elliot, 2009). It is believed that this concern originates from the legality of these performed procedures on individuals suffering from psychiatric or psychological disorders related to their cosmetic concern (Elliot, 2009). Additionally, it is believed that this legal concern is a result of the awareness that there is no therapeutic

benefit in performing cosmetic surgery for individuals suffering from a mental health disorder (Elliot, 2009).

Consent

Medical practitioners must obtain informed consent before an operation, explaining the potential benefits, risks, and alternatives involved in any surgical procedure. It is the physician's duty to disclose information to the patient, so that a reasonable decision regarding treatment can be determined (American Medical Association, 2012). Recently, lawsuits over cosmetic surgical "mistakes" have surfaced (Campbell, 2012). Britain's Medical Defense Union (MDU) provides data that breast surgery, facelifts, eyelid operations, rhinoplasty, and weight loss procedures account for 80% of the rising number of legal actions (Campbell, 2012). The MDU states that the increase in lawsuits is due to the rising number of surgeries performed, and the patient's expectations of the procedure outcome. Leaders in the field of cosmetic surgery suggest that regulations may need to be established for such procedures (Campbell, 2012).

Body Dysmorphic Disorder Examinations

In extreme cases, a BDD survey can be issued to assess appearance concerns (Phillips, 2006). However, the length of time to administer this survey can be approximately one hour in length. The self-report version of the assessment may be too demanding on patients due to the attention and concentration required for the assessment (Castle, Jorgensen, Roberts, & Groth-Marnat, 2001). Therefore, a less lengthily instrument was devised; the Dysmorphic Concern Questionnaire, which targets dysmorphic concern rather than symptoms of BDD. Psychologists and cosmetic

surgeons have differing opinions as to what the standards should be established and the definitions associated with the degree of appearance concern. This instrument assesses the degree to which a patient is preoccupied with and distressed by appearance concerns (Phillips, 2006). Past research explains that BDD remains largely under recognized due to the patient's fear of seeking psychological treatment and the pursuit of surgical, dermatological, as well as other non-psychological treatments (Castle et al., 2001). Scholars have found that in cosmetic or plastic surgery settings, 3–15% of patients have BDD symptomology (Phillips, 2006). Severity of BDD can vary from slight to distressing preoccupations with appearance (Phillips, 2006). The scores from these assessments reflect the opinions that a patient has about their appearance across time and within context (Kernis, 2005). Changes in representation occur over time; therefore, self-esteem rating can be inconsistent. It is possible for the explicit and implicit assessments to provide varying results which is attributable to how the information is processed by the individual (Kernis, 2005). These discrepancies most often occur when there is a discrepant high level of self-esteem; this would be viewed as outwardly having a high level of self-esteem, but inwardly, the person possesses feelings of insecurity and self-doubt, which would produce low implicit self-esteem (Kernis, 2005).

Multiple Procedures

Currently, there is no mental health prescreening for individuals who have undergone multiple cosmetic surgeries. Many professionals agree that reliance on cosmetic surgical procedures should be recognized as a problem, when patients attempt to fill an emotional void; this type of motive can be symptomatic of BDD (Adato &

Harrington, 2007). BDD affects 1 to 3% of Americans; however, 15% of cosmetic surgery patients suffer from this debilitating disorder (Adato & Harrington, 2007). Ethical concerns arise when an operation is performed and the patient is suspected to suffer from BDD (Adato & Harrington). Additionally, there is a quality mimicking that of an addiction when patients seek out multiple cosmetic procedures without obtaining the desired results (Adato & Harrington, 2007).

Media Influence

Research by Maltby and Day (2011) examined the relationship between young adults and celebrity idolization to determine whether these variables predicted incidence of elective cosmetic surgery. The study was spurred by the prevalence of elective surgery among individuals aged 13 to 19 years in the United States (Maltby & Day, 2011). The findings do not indicate that celebrity worship and willingness to undergo cosmetic surgery are interrelated. However, the study provided a framework of the relationships between celebrity idolization and incidence of elective cosmetic surgery to body image. A questionnaire that measured the attitudes towards a celebrity whose body image is admired, previous and vicarious experience of elective cosmetic surgery, attitudes toward cosmetic surgery, and a range of psychological and demographic measures was issued to 137 young adults. Eight months following the questionnaire, the participants were asked to report whether they had undergone elective cosmetic surgery. The study confirmed that participants with elevated admiration of body image and idolization of a media personality predicted the participant's choice to undergo elective cosmetic surgery (Maltby & Day, 2011). Para social relationships are one-sided

relationships and are commonly formed with sports teams, celebrities, and other media related figures. This research suggests that individuals of increased risk of seeking cosmetic surgeries are those who have formed a para social relationship with celebrities (Maltby & Day, 2011).

Statistical Findings

Pavan et al. (2006) surveyed 27 patients' emotional characteristics and how these coincided with a diagnosis of BDD. The researchers referred the patients for preoperative psychiatric evaluations with 21 control patients who were without a psychiatric history and had undergone surgical procedures (Pavan et al., 2006). Of the surgery patients, 37% had a BDD diagnosis and were found exhibit increased depressive, anxious, and angry symptomology with regard to their situation than the control participants (Pavan et al., 2006).

Aouizerate et al. (2003) studied a sample of cosmetic surgery recipients to determine the presence of BDD; participants were administered questionnaires and interviews undertaken. Approximately 9.1% of the 132 participants exhibited BDD symptomology. Twenty-five percent of male participants were categorized as having BDD. The most frequent comorbid disorder reported among participants was major depressive disorder (Aouizerate et al., 2003).

The notion of body image is relevant to the field of cosmetic surgery. Cash and Pruzinsky (2002) suggested that from early age body image is essential in understanding the human experience. Addressing body dissatisfaction is necessary due to the significant impact these issues have on people's lives. Sarwer and Didie (2002) describe

an interaction between the importance of body image to an individual and the value placed on level of satisfaction or dissatisfaction an individual places upon appearance. These factors termed *body image valence* and *body image value* respectively are said to influence the decision to pursue cosmetic surgery. For example, a person with a high body image valence and a low body image value is more likely to undergo cosmetic surgery.

Additionally, Sarwer et al. (2000) suggest that body image dissatisfaction to be the most relevant psychological construct through which to assess motivations for procedures such as breast augmentation. This study reported nearly half of the 803 women studied reported overall negative body image, which suggested that body image dissatisfaction was such a prevalent contributor to the patients' discontent. Hence, body image dissatisfaction has been considered a principal motivator for cosmetic surgery (Sarwer et al., 2000).

Summary

The purpose of this study was to examine the relationship among participants' dysmorphic concern, body image concern, the presence of BDD symptoms, and the number of cosmetic surgery procedures received by the participant. Current research focuses on the influences that affect self-image such as the environment and media resources that portray unrealistic images of public figures people admire (Dittmann, 2005). Therefore, the implication for positive social change would be to contribute to the existing literature regarding BDD and cosmetic surgery, in hopes to increase understanding regarding the psychosocial factors related to a patient's perceived need for

cosmetic surgery and potential associated risks. Specifically, the aim of this study was to illustrate the prevalence of individuals with a dysmorphic concern and/or symptoms of BDD that have undergone multiple cosmetic procedures. It is vital that medical professionals involved in cosmetic enhancements more closely examine a patient's treatment plan, which should include a prescreen for underlying mental health concerns. The following chapter highlights the research methodology of the study. The chapter contains information about the plan of study, the participants, and the measures and procedures.

Chapter 3: Methodology

Introduction

The purpose of this quantitative study was to examine the relationship of participants' dysmorphic concern, body image dissatisfaction, and BDD symptoms to the number of cosmetic surgery procedures received by participants. Additionally, the analysis of this study determined whether there were differences in the level of body dissatisfaction, dysmorphic concern, and preoccupation with appearance, and whether those levels correlated with elective cosmetic surgeries undergone. This chapter focuses on the procedures and methods that were used to gather and analyze the data, including descriptions of instruments, participants, sample size, data collection, data analysis, and ethical considerations.

Research Methodology

I used a correlational research design and incorporated three self-report measures. As a predictive analysis, multiple linear regression was used to explain the relationship between one continuous dependent variable from two or more independent variables (Tabachnick & Fidell, 2007). Additionally, the independent variables can be continuous or categorical. A correlational design was also used since the focus of this study was the comparison of scores on body dissatisfaction, dysmorphic concern, and preoccupation with appearance to the number of cosmetic surgeries undergone by examining the association between these variables. The study did not prove causation since there was no experimental manipulation of the variables. Additionally, the study provided information with regard to the existing relationship between these variables. The

dependent variable was the number of cosmetic surgeries undergone, while the independent variables were the level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD.

Appropriateness of Design

A quantitative, correlational research design was determined to be appropriate for the study since such a design allows for the collection of data from a large number of participants fitting a specific demographic outline. The research questions were analyzed using multiple linear regression in order to model the relationship between two or more explanatory variables and a response variable by fitting a linear equation to the observed data (Tabachnick & Fidell, 2007). Every value of the independent variables (level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD) was associated with a value of the dependent variable (number of cosmetic procedures performed). A correlational design was used to analyze Research Questions 2 and 3, which allowed me to evaluate relationships between groups and make inferences on the existence of that relationship with confidence. This research approach enabled me to collect and analyze data with limited resources from a sample in a relatively short length of time. Furthermore, survey data were collected at the interval level, and a correlation was used to test the research questions. Although these constructs may change over time, the hypothesis was formulated to evaluate the here-and-now. The value in using a survey design was that it allowed me to access individuals who were unable to meet in person. Moreover, use of a survey ensured that immediate results were available to me at low cost.

Sampling Procedures and Participants

A power analysis using GPower3 software was conducted to determine the appropriate sample size for this research study. A priori power analysis assuming a small effect size ($f = .25$) and an alpha set at $p = .05$ indicated that a sample size of 120 participants was required to achieve a statistical power of .80 for the social sciences (Gravetter & Wallnau, 2007). Cohen's d has two advantages over other effect size measurements. The calculation and popularity of Cohen's d have enabled immediate comparison to increasingly large numbers of published studies (Cohen, 1992). Additionally, Cohen's (1992) suggestion that effect sizes of .20 are small, effect sizes of .50 are medium, and effect sizes of .80 are large enables a researcher to compare a study's effect size results to other benchmarks (Kelley, 2007). Thus, the number of participants obtained for the study provided the minimum number of participants necessary to obtain statistically valid results (Gravetter & Wallnau, 2007).

Participants were recruited from social networking sites such as Survey Monkey and Facebook, as well as from the Walden Participant Pool. In order to participate, individuals had to be over the age of 18 years and needed to have undergone more than one cosmetic procedure. For effect size, Cohen's d was selected due to the increasing popularity as the standard in research and since it allows for comparison to increasingly large quantities of published studies. Although the minimum sample required for this study was set at 120, increasing the sample size to 197 increased power to .95. Therefore, I sought between 120 and 197 participants for the study.

Demographics

The participants constituted a convenience sample of 130 participants who were fluent in the English language (for reading purposes) and were aged 18 years or older. All participants were solicited and self-identified through social media network sites and Walden University's Research Participant Pool. The data were received from the participants via a self-report survey method. Participants with a reported professional diagnosis of BDD were excluded from the study, in that this study's aim was to identify the importance of screening for BDD. Participants who reported an age of younger than 18 years, a diagnosis of BDD, and/or having undergone a cosmetic procedure to correct a birth defect or correction due to an -ectomy (i.e., surgical removal of a body part out of medical necessity), as reported in the demographic information section of the survey, were restricted from participating in the study.

Standard demographics rendering age; gender; race; number of, history of, and satisfaction with cosmetic surgeries undergone; and mental health diagnoses were gathered as part of the study in order to provide a more detailed description of the subjects. Information regarding the number of, history of, and level of satisfaction with cosmetic procedures was especially important, given the association with preoccupation with appearance and dysmorphic concern (Gorney, 2007). Additionally, participants were asked to report current diagnosis and/or diagnostic history of treatment for stress, depression, anxiety, or an eating disorder over the last year. See Appendix A for the questionnaire. This research study was conducted online via a Survey Monkey link. The

Body Image Ideals Questionnaire (BIQ), the Dymorphic Concern Questionnaire (DCQ), and the Body Image Disturbance Questionnaire (BIDQ) were used in this study.

Body Image Ideals Questionnaire

Researchers developed the Body Image Ideals Questionnaire (BIQ) to include ten attributes: height, skin complexion, hair texture and thickness, facial features, muscle tone and definition, body proportions, weight, chest size, physical strength, and physical coordination (BIQ; Cash, 2005; Cash & Szymanski, 1995; Szymanski & Cash, 1995). The BIQ (see Appendix B) provides an index of body image evaluation derived from an individual's self-perceived discrepancies from ten physical ideals, each weighted by the importance of that ideal to the individual (Cash & Szymanski, 1995). For each attribute, participants are asked to think about their personal ideal (i.e., how they wish or prefer to be) and evaluate how well their body resembles or matches this ideal (Cash & Szymanski, 1995).

In Part A of the BIQ, participants are asked to rate the extent to which they resemble the personal physical ideal using a 4-point response scale: 0 = *exactly as I am*, 1 = *almost as I am*, 2 = *fairly unlike me*, and 3 = *very unlike me* (Cash & Szymanski, 1995). Participants are asked in Part B to rate the importance they place on each ideal using the following scale: 0 = *not very important*, 1 = *somewhat important*, 2 = *moderately important*, and 3 = *very important*. The mean of the item-by-item product of discrepancy and importance ratings are used to calculate the composite score. First, self-congruent items (*exactly as I am*) are weighted by importance by re-coding discrepancy scores of 0 to a value of -1 (Cash, 2000). Higher scores indicate a larger actual, ideal discrepancy

with a greater emphasis on physical ideals; composite scores range from -3 to $+9$. Body dissatisfaction and body image dysphoria support the concurrent validity of the BIQ due to the variables being significantly correlated (Cash, 2000).

The BIQ has been established as an internally consistent and valid measure of evaluative body image. Cash and Szymanski (1995) reported internal consistency estimates of alpha from $.75$ to $.82$ for the three subscales of the BIQ. The BIQ was confirmed as a valid measure as gauged by the level of responsiveness to interventions; effect sizes were $.87$ and $.67$ for the body image and self-esteem image programs, respectively (Cash & Lavallee, 1997). Discriminant validity was determined by examining the correlations between each BIQ index and the Social Desirability Scale (Cash & Szymanski, 1995). It was found that socially desirable responding was not statistically significant and had little influence on the study's results (Cash & Szymanski, 1995). Researchers have found that appearance-schematic individuals are more psychologically invested in their appearance as a standard of self-evaluation and index of self-worth (Cash & Larbarg, 1996). Thus, Cash and Labarge (1996) sought to determine the relationship between appearance-schematic individuals and parameters of body image and determine what amount can be accounted for by differences in self-esteem and depression. Results indicated that appearance-schematic individuals' responses converged moderately and significantly with other cognitive-evaluative, affective, and reported behavioral aspects of body image. This literature supports a commonality between negative body-image attitudes and certain impairments of psychosocial

functioning such as poor self-esteem, self-consciousness, and depression (Cash & Labarge, 1996).

Cash and Szymanski's (1995) findings support the reliability and validity of the BIQ as an assessment of body image. The BIQ incorporates (a) an evaluative dimension as the discrepancy between perceived and idealized physical characteristics, (b) consideration of multiple physical attributes that are not specifically related to weight, and (c) emphasis on the individual's physical standards and ideals (Cash & Szymanski, 1995). The Discrepancy and Importance subscales are reported to be two internally consistent and reasonably reliable subscales that, when combined, derive a reliable Weighted Discrepancy composite score. The findings from the aforementioned confirm the validity of the BIQ in relation to existing measures of attitudes toward body image. In this sample, scores were internally consistent at 0.78 for women and 0.86 for men (Giovannelli, Cash, Henson, & Engle, 2008).

Permission to use the BIQ was obtained from the publisher and Dr. Thomas Cash via email inquiry. Dr. Cash provided a copy of the BIQ. A copy of the email correspondence with Dr. Cash is available in Appendix B.

Dysmorphic Concern Questionnaire

Approximately 5%–15% of patients who seek cosmetic surgery have BDD (Sarwer & Crerand, 2008). Research has suggested that individuals diagnosed with BDD rarely experience improvement of symptoms following cosmetic procedures (Sarwer & Crerand, 2008). Therefore, the role that cosmetic surgery has in assisting those with BDD comes into question. The Dysmorphic Concern Questionnaire (DCQ) assesses

over-concern with an imagined defect and has been used in cosmetic surgery and dermatology settings.

The term *dysmorphic concern* applies to individuals whose lives are impacted by body concerns, not those diagnosed with BDD. In an Australian study examining the correlation between dysmorphic concern and individuals seeking cosmetic enhancement, a questionnaire survey was used and found that four of the 137 participants in the study were diagnosed with BDD (Castle et al., 2004). However, a notable difference in patients who attended the practices of two cosmetic surgeons; many of these patients expressed over-concern with physical appearance—a dysmorphic concern.

The DCQ is a 7-item report measure that assesses cognitive and behavioral symptoms of over-concern with an imagined defect (Mancuso, Knoesen, & Castle, 2010). The items cover the physical appearance concerns; belief in being misshapen or malformed; belief in bodily malfunction; consultation with cosmetic specialists; disbelief after having been told by others that one is normal looking; excessive worrisome thoughts about appearance; and excessive time used masking perceived appearance defects (Castle et al., 2004). This researcher received permission to use the Dysmorphic Concern Questionnaire for this study.

The total score for the questionnaire is the sum of the ratings for the seven questions; higher scores indicate that the patient is most concerned about that perception (Castle et al., 2004). A score of 11 or above indicates high probability for BDD. The DCQ is a self-report measure that was administered via the web based survey engine

Survey Monkey. The assessment typically takes approximately 20 minutes for participants to complete.

Jorgensen et al. (2001) studied 65 psychiatric inpatients who were diagnosed with BDD using the Composite International Diagnostic Interview (CIDI-A). Participants were administered follow up questionnaires such as the DCQ and various questionnaires measuring BDD (i.e., the Body Dysmorphic Disorder Examination [BDDE]), depression, social phobia, and obsessive-compulsive disorder (OCD). This study supported the validity and reliability of the DCQ due to the sensitivity to participants' dysmorphic concern. Furthermore, BDD symptomatology was best defined by the presence of negative body image opinions as measured by the DCQ (Jorgensen et al., 2001).

Jorgensen et al. (2001) assessed construct validity of the DCQ in three ways. First, a factor analysis was performed, with the one-factor model considered the most optimal. While the loadings of items on the factor ranged from 0.40 (fair) to 0.87 (good), Item 5 was an exception with a loading of 0.37 (Jorgensen et al., 2001). Item 5 was extracted and considered irrelevant, accounting for 39% of the variance. With the removal of Item 5, the variance accounted for by the one-factor solution increased to 43% ($\chi^2 = 4.41, df = 9, p > 0.80$). Subsequently, Item 5 was permanently removed from the DCQ (Jorgensen et al., 2001).

The convergence of the DCQ and BDDE was used to determine construct validity. Jorgensen et al., 2001 found that the BDDE significantly predicted dysmorphic concern on the DCQ, accounting for 48% of the discrepancy ($F = 58.2, df = 1,63, p < 0.001$). Adding the subclinical concerns to the regression equation added 3% to the

amount of variance accounted for on the DCQ. T-values indicated that the BDDE added to predictive power in the final equation; however, f -values were statistically significant when a variable was entered into the equation (Jorgensen et al., 2001).

A third evaluation of construct validity utilized a test of mean between the BDD diagnostic groups and the DCQ differences (Jorgensen et al., 2001). A one-way ANOVA established that participants diagnosed with BDD obtained elevated scores on the DCQ (mean = 8.80) compared to participants not diagnosed with BDD ($n = 46$, mean = 4.50, $F = 19.27$, $df = 1,63$, $p < 0.001$) (Jorgensen et al., 2001). DCQ variance 0.36 ($p > 0.05$) was measured using the Levene's test for homogeneity indicating greater variance between BDD groups than within groups. These findings supported greater negative body image beliefs for participants diagnosed with BDD compared to those without a diagnosis of BDD (Jorgensen et al., 2001).

Jorgensen et al., (2001) found that the DCQ and BDDE measure the same construct due to the large amount of variance. Participants diagnosed with BDD received elevated scores on the DCQ. This finding is attributed to the extent to which negative body image beliefs are measured on the DCQ (Jorgensen et al., 2001). Thus, supporting participants with BDD symptomatology are best identified by the presence of negative body image beliefs, rather than negative beliefs associated with subclinical concerns such as depression, OCD, and social phobia (Jorgensen et al., 2001).

Overall, the DCQ is a reliable and valid source that provides reliable internal consistency and measures similar constructs as the BDDE (Jorgensen et al., 2001). The results of Jorgensen et al.'s study provided statistical support for evidence of good

internal consistency, suggesting that with the exception of Item 5, the majority of items measure the same construct.

The DCQ correlates strongly with scores on the BDDE; however, the DCQ also assesses both clinical and subclinical appearance concerns (Kisely, Morkell, Allbrook, Briggs, & Jovanovic, 2002). Clinical appearance concerns are more recognizable through signs and symptoms. Subclinical appearance concerns would be considered those symptoms below the surface of clinical detection and has no recognizable clinical findings. BDD can initially be subclinical before symptoms are apparent (Gieler et al., 2016). Research by Jorgensen et al. (2001) supports important theoretical implications for subclinical appearance concerns. Although there was a significant and positive relationship between all of the measures, (the Beck Depression Inventory, Fear Questionnaire (social phobia), and Compulsion Checklist) these assessments did not predict DCQ score in the regression analysis beyond the predictive ability of the BDDE (Jorgensen et al., 2001). These implications do not discount the relationship between BDD and other disorders. Thus, negative body image beliefs associated with BDD symptomology manifest in a more specific form when compared to the negative cognitions of a more general nature associated with depressive symptoms (Jorgensen et al., 2001).

Body Image Disturbance Questionnaire

The Body Image Disturbance Questionnaire (BIDQ; see Appendix C) is a 7-item self-report measure that screens for appearance-related concerns including: level of preoccupation; emotional distress: impairment associated with social, occupational, or

other life functioning; and consequential behavioral avoidance (Cash, Phillips, Santos, & Hrabosky, 2004). There are five open-ended questions that request clarification of participants' responses that can be informative in clinical contexts or qualitative research. The BIDQ is self-administered in about 5 minutes. This assessment was derived from modifications of Phillips' Body Dysmorphic Disorder Questionnaire (BDDQ). The advantage of the BIDQ is that it measures a range of body image disturbance rather than a categorical *yes/no* measure (Cash et al., 2004). With the BDDQ, when a respondent indicates "no" to a concern or preoccupation, subsequent items remain unanswered.

Cash et al. (2004) used the BIDQ to study body image distress among 220 women and 75 men ranging in age from 18 to 63 years. The Cronbach's alpha was .89 for both men and women, indicating strong internal consistency. Additionally, the BIDQ was found to be free of impression-management response bias (Cash et al., 2004). For women and men separately, among women alpha was .89, with corrected item-total correlations ranging from .43 to .78. Subsequently, among men, internal consistency was also .89 and corrected item-total correlations ranged from .46 to .81 (Cash et al., 2004). Therefore, the BIDQ offers acceptably internally consistent measure for both sexes.

With regard to convergent validity, the BIDQ was hypothesized to specifically correlate with body image dissatisfaction, body image dysphoria, body image investment, and body image quality of life. The BIDQ was found to be significantly associated with each of these dimensions for men and women when the alpha for significance was set at the .01 level (Cash et al., 2004). The assessment also converged applicably with other body image indices, and was positively correlated with depression, social anxiety, and

eating disturbances. Finally, psychosocial functioning beyond body dissatisfaction was also predicted on this assessment (Cash et al., 2004).

Permission to use the BIDQ was obtained from the publisher and Dr. Thomas Cash via email inquiry. Dr. Cash provided a copy of the BIDQ. A copy of the email correspondence with Dr. Cash is available in Appendix C.

Research Questions and Hypotheses

The rate of BDD in cosmetic surgery samples has not been firmly established. Studies utilizing appropriate control groups and assessments that are able to distinguish between less severe body image dissatisfaction, thought to be a motivational component to cosmetic medical treatments and BDD are needed (Sarwer & Crerand, 2003). Additionally, studies that incorporate non-physician raters of defect severity may be able to more accurately capture the rate of BDD among patients seeking cosmetic procedures.

1. Does the level of body dissatisfaction, level of dysmorphic concern, or likelihood of body dysmorphic disorder predict the number of cosmetic surgeries an individual chooses to undergo?

H_0 : Body dissatisfaction, level of dysmorphic concern, and likelihood of body dysmorphic disorder do not predict the number of cosmetic surgeries an individual chooses to undergo.

H_a : Body dissatisfaction, level of dysmorphic concern, and likelihood of body dysmorphic disorder do predict the number of cosmetic surgeries an individual chooses to undergo.

2. Does body image satisfaction-dissatisfaction predict number of cosmetic surgeries undergone?

H₀₁: The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) is not related to the number of cosmetic procedures undergone.

H₁₁: The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) predicts the number of cosmetic procedures undergone.

3. Does dysmorphic concern predict number of cosmetic surgeries undergone?

H₀₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) does not predict the number of cosmetic procedures undergone.

H₁₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) predicts the number of cosmetic procedures undergone.

4. Does preoccupation with appearance predict number of cosmetic surgeries undergone?

H₀₃: Preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) are not related to the number of cosmetic procedures undergone.

*H*₁₃: Preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) predict the number of cosmetic procedures undergone. Specifically, higher scores on the Body Image Disturbance Questionnaire (BIDQ) will be associated with higher number of procedures undergone.

Validity

Threats related to procedures, treatments, or experiences by the participants of the study that prevent the researcher from extracting accurate inferences are addressed and included in internal and external validity. Internal validity encompasses and addresses accurate and consistent conclusions based upon research design. Threats to external validity can occur when the researcher applies the conclusions of a study incorrectly by generalization (Creswell, 2003). External validity is the extent to which conclusions of the study can be applied beyond the study in other contexts.

Researchers who utilize random selection of participants generally obtain greater external validity than studies that do not use this method. The convenience sample consisted of male and female adults. It should be noted that I chose this strategy because random sampling of the study population was outside the scope of available resources. Therefore, the results of this study may not necessarily reflect study population attitudes as some groups may be underrepresented in the sample population. Additional studies are needed from a wide range of settings to determine if results from this analysis can be

replicated and thus generalized. The participants' age and ethnicity were collected to describe participants with the intent to generalize in this regard.

Data Collection

Participants were recruited by announcement, via the Walden University Participant Pool and Survey Monkey. Participants were asked to participate in an online survey through the Survey Monkey Participant Panel. Survey Monkey is an online survey deployment tool that also provides access to participant panels via a list purchase that guarantees responses. An email containing the invitation letter and a link to the survey was distributed to potential participants included in the list of Survey Monkey. Participants who were interested in participating in the study were instructed to access the link provided in the email. Once the link was accessed, a description of the purpose of the study and my contact information was provided. Participants could only take part in the study if they met the age criteria of 18 years or older. In addition, an informed consent form was presented to survey takers before gaining access to the actual survey.

Once participants agreed to participate, they gained access to a brief demographic questionnaire constructed for the purposes of this study to gather pertinent demographic variables. Next, individuals were administered four questionnaires to assess the relationship between participants' dysmorphic concern, body image concern, BDD symptoms, satisfaction with procedures performed, and the number of cosmetic surgery procedures undergone. Multiple regression analysis was used to determine if there was a statistically significant relationship between the independent variables of level of BDD and the dependent variable of the number of cosmetic surgeries undergone.

Data Analysis

All data collected in the study were analyzed in SPSS v21.0. Cases with missing data were detected by running frequency counts in SPSS v21.0. Those cases with missing data on more than 5% of the items were summarily removed from further analysis. Those cases with missing data in less than 5% of the items were kept by imputing field means into an empty cell (Leedy & Ormrod, 2013).

Descriptive statistics were used to present the demographic characteristics of participants. The demographic characteristics included age, weight, height, income, ethnicity, and level of education. Prior to conducting the inferential analyses, assumptions of normality, linearity, and homoscedasticity was evaluated to detect any violation of parametric assumptions. Specifically, a histogram was generated to provide visual evidence of degree of normality. If the distribution of data were found to be non-normal, transformations were conducted to normalize the data for the analysis. Every value of the independent variables (level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD) is associated with a value of the dependent variable (number of cosmetic procedures performed). A separate analysis was run for each research question. A correlational design was used to analyze Research Questions 2 and 3, which allowed me to evaluate relationships between groups and make any inferences of the existence of that relationship with confidence.

Another issue related to sampling is the presence of outliers. Due to the high self-selection possibility in non-random sampling, outliers are cases that will, in random sampling, make the research findings subject to suspicion (Farrokhi, 2012). The statistics

computed from samples are often used to draw inferences about population parameters. Outliers adversely affect sample statistics and decrease the precision of estimates about a population. Therefore, to approach the true parameters of the population as closely as possible, a control should be in place for the effect(s) of outliers (Farrokhi, 2012). Since reliability and validity are important and the statistics are going to provide generalizations, there should be ways of accounting for the presence of outliers and defining similarity in precise terms. Farrokhi (2012) proposed that essential elements of two intact groups should be determined; the researchers then determine the degree of acceptable variation scores. Finally, the researcher determines whether the groups qualify as similar and therefore comparable, or about the degree of their similarity (Farrokhi, 2012).

A test for univariate outliers was conducted to determine if any cases might not be statistically part of the collected data. To detect outliers, case scores were converted into z-scores and compared to the critical value of ± 3.29 or $p < .001$ (Tabachnick & Fidell, 2007). Cases that exceed this value were removed for all variables.

To test the hypotheses posed in the study, a multiple regression analysis was conducted. This quantitative method is a systematic approach, which defines and measures relationships between variables (Patten, 2002). A multiple regression analysis is an effective technique used for predicting the unknown value of a variable from the known value of two or more variables, also called the predictors or independent variables. The multiple regression analysis in this study helped to predict the number of cosmetic procedures undergone given of the level of dysmorphic concern, the level of

body image concern, and/or BDD symptomology. Categorical variables were represented using dummy variables wherein two variables were created for the dichotomous variable, presence of BDD symptoms. One value represented those who have BDD symptoms while the other variable represented those who did not have BDD symptoms. A dummy variable is necessary when including categorical variables in a multiple regression analysis (Johnson & Onwuegbuzie, 2004).

In multiple regression analysis, each predictor variable predicts the value of a criterion variable. A stepwise regression analysis was conducted to identify the significant predictors to the criterion variable. A backward elimination was used to ensure that all variables are considered as part of the regression model (Farrokhi, 2012). However, only significant predictors were included in the model. In the backward elimination method, predictor variables that are least significant were excluded from the model (Farrokhi, 2012). A significance level of .05 was used to determine whether variables of the level of dysmorphic concern, the level of body image concern, and/or BDD symptomology predict the number of cosmetic procedures undergone.

Assumptions

Below are the assumptions needed for conducting the multiple regression analysis. First, the dependent variable should be measured on a continuous scale – either as an interval or ratio variable (Statistics Solutions, 2011). Since the dependent variables used are measured using interval scales, a multiple regression analysis was appropriate. Second, it is assumed that there were two or more independent variables, which can be either continuous (i.e., an interval or ratio variable) or categorical (i.e., an ordinal or

nominal variable). A third assumption of a regression analysis is that there is the independence of residuals, which was checked using the Durbin-Watson statistic, which is run using SPSS (Statistics Solutions, 2011). The result of the analysis determined whether this assumption was met or not and whether transformations were necessary in order to fit the data into a multiple regression analysis.

It is assumed that there is a linear relationship between (a) the dependent variable and each of the independent variables, and (b) the dependent variable and the independent variables collectively. This was determined by creating scatterplots and partial regression plots using SPSS Statistics, and then visually inspecting these scatterplots and partial regression plots to check for linearity. If the relationship displayed in the scatterplots and partial regression plots were not linear, either a non-linear regression analysis was run or the data would need to be "transformed" using SPSS.

The data should have shown homoscedasticity, which is where the variances along the line of best fit remain constant as you move along the line. The data were analyzed for homoscedasticity. If the data failed to meet the homoscedasticity assumptions, possible ways such as transformations to continue with the analysis of the data were determined.

The comprehensive scores from the independent variables, dysmorphic concern, and diagnosis for BDD were obtained from the DCQ and BDDQ. R-squared—the multiple correlation coefficient of determination—reported and determined whether the independent variables can predict the dependent variable. The *t*-test determined the

significance of each predictor and beta coefficients were used to determine the extent of prediction for the independent variable. For significant predictors, every one-unit increase in the predictor, the dependent variables will increase or decrease by the number of unstandardized beta coefficients (Statistic Solutions, 2011).

Ethical Considerations

Ethical consideration was given to this study in an effort to comply with the American Psychological Association Code of Ethics (2002) and the Walden University guidelines for ethical research. Concerns for this study included (a) voluntary participation and (b) accuracy and authenticity of data collection. Participants were informed that participation in the study was voluntary and honest responses were expected from them. Walden University's Institutional Review Board (IRB) approval was sought to conduct the study and use human participants. Participants were informed of their right to withdraw from the study at any time. The informed consent form addressed the issues of confidentiality, risks and benefits of the study, and research procedures. The participants were assured of the measures of confidentiality and the voluntary nature of the study. Only individuals who consented to participate in the study via a check box on the first page were included as research subjects. It was unnecessary for any post study follow up. All data were stored in a password protected jump drive, which will be maintained for a minimum of five years. The committee members and I are the only individuals who have access to these data. If accepted, this research study will be disseminated via publication in a professional journal. However, only aggregate data will be presented. Participants were provided with a contact list of counseling

resources should they feel distressed. There were no direct benefits for participating in this research; participants were notified in the consent form that participation in the study may advance future research on the topic and may improve understanding of BDD and history of multiple cosmetic procedures.

Summary

In this chapter, the methodology of this study was described. This is a quantitative, correlational research project that examined the relationship among participants' dysmorphic concern, body image dissatisfaction, and the presence of BDD symptoms, to the number of cosmetic surgery procedures received by the participant. Body image dissatisfaction was examined using the BIQ, while dysmorphic concern and preoccupation with appearance was measured with the DCQ and BIDQ respectively. All measures that the study used were self-report inventories; there was no manipulation of variables. Chapter 4 provides the results of this study.

Chapter 4: Results

Introduction

The purpose of this study was to examine the relationships between body image dissatisfaction, dysmorphic concern, BDD, and number of elective cosmetic surgeries undergone. I examined the relationship between the number of cosmetic surgeries undergone and the independent variables, which included level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD; therefore, a correlational research design was used. This chapter provides a description of the sample population; the participants' responses to the BIQ, DCQ, and BIDQ; and statistical analyses of the hypotheses.

Overview of the Study

The purpose of this quantitative study was to determine whether the number of cosmetic surgeries undergone was related to the level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD. A sample of 130 participants was used. An online survey was created; this survey included demographic questions as well as the BIQ, DCQ, and BIDQ. SPSS was used to statistically analyze the participants' responses. Significant relationships were found between body dissatisfaction, level of dysmorphic concern, and likelihood of BDD and the level of body image satisfaction-dissatisfaction as measured by the BIQ in predicting the number of cosmetic procedures undergone. Significant relationships were not found between dysmorphic concern as measured by the DCQ and preoccupations with appearance and repetitive compulsive

behaviors affecting day-to-day functioning as measured by the BIDQ and the number of cosmetic procedures undergone.

Research Questions and Hypotheses

1. Does the level of body dissatisfaction, level of dysmorphic concern, or likelihood of body dysmorphic disorder predict the number of cosmetic surgeries an individual chooses to undergo?

H₀: Body dissatisfaction, level of dysmorphic concern, and likelihood of body dysmorphic disorder do not predict the number of cosmetic surgeries an individual chooses to undergo.

H_a: Body dissatisfaction, level of dysmorphic concern, and likelihood of body dysmorphic disorder do predict the number of cosmetic surgeries an individual chooses to undergo.

2. Does body image satisfaction-dissatisfaction predict number of cosmetic surgeries undergone?

H₀₁: The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) is not related to the number of cosmetic procedures undergone.

H₁₁: The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) predicts the number of cosmetic procedures undergone.

3. Does dysmorphic concern predict number of cosmetic surgeries undergone?

H₀₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) does not predict the number of cosmetic procedures undergone.

H₁₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) predicts the number of cosmetic procedures undergone.

4. Does preoccupation with appearance predict number of cosmetic surgeries undergone?

H₀₃: Preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) are not related to the number of cosmetic procedures undergone.

H₁₃: Preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) predict the number of cosmetic procedures undergone. Specifically, higher scores on the Body Image Disturbance Questionnaire (BIDQ) will be associated with higher number of procedures undergone.

Demographics of the Sample

Data were collected through a survey available on Survey Monkey, using a purposive sample of individuals who had undergone multiple cosmetic procedures.

Participants were recruited via the Walden Participant Pool and by distributing the survey to multiple cosmetic surgery practices.

One hundred and seventy individuals completed an online survey; the final sample consisted of 130 participants. For 40 of the surveys, responses were incomplete and/or the participant did not have more than one elective procedure performed.

Eligibility criteria encompassed individuals aged 18 years and older who had undergone more than one elective cosmetic procedure. Table 1 presents the demographics of the participants.

Table 1

Summaries of Demographic Information

Characteristic	Category	Frequency	Percent
Number of surgeries performed	2-3	96	73.8
	4-5	24	18.5
	6 or more	10	7.7
Age range	18 to 24	13	10
	25 to 34	62	47.7
	35 to 44	39	30
	45 to 54	9	6.9
	55 to 64	7	5.4
Location	California	12	9.2
	New York	25	19.2
	Texas	21	16.2
	Other United States	71	54.6
	United Kingdom	1	0.8
Gender	Female	75	57.7
	Male	55	42.3
Ethnicity	Asian, American Indian, or Alaskan Native	7	5.3
	Black or African American	8	6.2
	Hispanic or Latino	15	11.5
	White/Caucasian	100	76.9
Type of cosmetic surgery performed	Breast augmentation	76	58.5
	Face lift	57	43.8
	Tummy tuck	53	40.8
	Rhinoplasty	43	33.1
	Liposuction	46	35.4
	Other	42	32.5

(table continues)

Characteristic	Category	Frequency	Percent
Have you had multiple surgeries completed on the same area?	No	35	26.9
	Yes	95	73.1
Have you been satisfied with your procedures?	No	3	2.3
	Somewhat	24	18.5
	Yes	103	79.2
Have you been diagnosed or have you been diagnosed by a healthcare professional with a mental illness?	No	93	71.5
	Yes	37	28.5
Have been diagnosed with or have a history of treatment for (in the last year)	Stress	31	23.8
	Anxiety	36	27.7
	Depression	34	26.2
	Eating disorder	13	10
	Not applicable to me	71	54.6
	Bipolar disorder	1	0.8
	ADHD	1	0.8

Participants included 75 females and 55 males. The majority of participants 47.7% ($n = 62$) were in the age range of 25 to 34 years, closely followed by 30% ($n = 39$) in the 35 to 44 age range, 10% ($n = 13$) in the 18 to 24 age range, 6.9% ($n = 9$) in the 45 to 54 age range, and 5.4% ($n = 7$) in the 55 to 64 age range. The majority of participants—76.9% ($n = 100$)—reported their ethnicity as White or Caucasian, and 11.5% ($n = 15$) classified themselves as Hispanic or Latino. Less than 7% ($n = 8$) indicated Black or African American, and less than 6% ($n = 7$) indicated Asian or Pacific Islander, or American Indian or Alaskan Native. The locations of participants varied significantly; 19.2% came from New York ($n = 25$), 16.2% ($n = 21$) came from Texas, 9.2% ($n = 12$) came from California, 54.6% ($n = 70$) came from various locations in the United States, and .8% ($n = 1$) came from the United Kingdom.

The majority of participants reported having two or three cosmetic surgeries, 73.8% ($n = 96$), while 18.5% ($n = 24$) reported having had four to five surgeries performed, and 7.7% ($n = 10$) had undergone six or more elective surgeries. Of the 130 participants—95 (73.1%)—had more than one procedure completed on the same area. Fifty-eight and a half percent of the participants endorsed having undergone breast augmentations ($n = 76$), 43.8% face lifts ($n = 57$), 40.8% tummy tucks ($n = 53$), 33.1% rhinoplasties ($n = 43$), 35.4% liposuction procedures ($n = 46$), and 32.5% other surgeries ($n = 42$).

Participants were asked to self-classify their level of satisfaction with the procedures performed. The majority of participants—79.2% ($n = 103$)—were satisfied; less than 3% were not satisfied. Other respondents (18.5%) reported being somewhat

satisfied with their procedures. Per respondent self-report, 71.5% ($n = 93$) of participants had not been formally diagnosed with a mental health illness. Seventy-one participants (54.6%) reported that they had not been diagnosed with or had a history of treatment for mental illness. Of the 59 participants who endorsed a diagnosis or had a history of treatment for mental illness, 26.2% suffered from depression ($n = 34$), 27.7% suffered from anxiety ($n = 36$), 23.8% suffered from stress-related disorders ($n = 31$), and 10% suffered from eating disorders ($n = 13$).

Body Image Ideals Questionnaire

Participants completed the 22 items on the BIQ online. Their composite scores were computed per the BIQ scoring manual. Figure 1 represents these data.

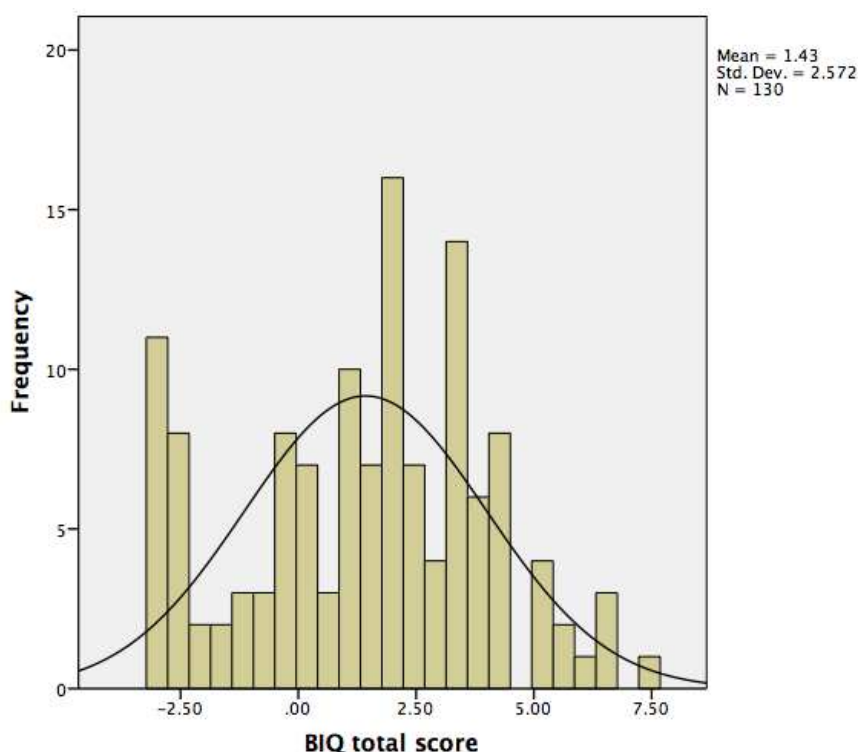


Figure 1. Participant composite BIQ scores.

The BIQ provides an index of body image evaluation derived from one's self-perceived discrepancies from 10 physical ideals, each weighted by the importance of that ideal to the individual. Potential range of the composite BIQ score is -3 to +9-points. Participants had a mean composite BIQ score of 1.43 indicating similar ideals with regard to belief of the ideal physical attributes. Ten responses (7.69%) fell within -3-point range, meeting criteria for "very important congruence across all physical attributes". Eleven (8.46%) of participants' composite scores fell within the +5 to +7.27-point range, indicating greater disparity with strongly held physical ideals.

Dysmorphic Concern Questionnaire

Participants completed the seven items on the DCQ online. Their responses were tallied. Figure 2 represents these data.

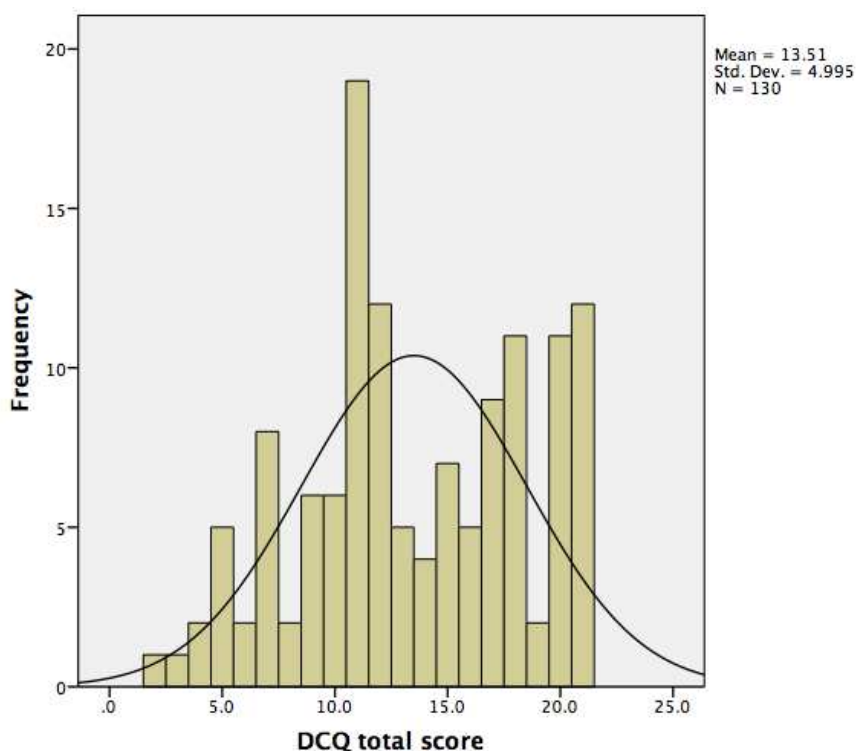


Figure 2. Participant DCQ scores.

The DCQ measures concern with physical appearance; belief in being misshapen or malformed; belief in bodily malfunction; consultation with cosmetic specialists; having been told by others that one is normal-looking, but not believing them; spending excessive time worrying about appearance; and spending a lot of time covering up perceived defects in appearance. Total scores range from 0–21, with higher scores indicating more dysmorphic concern. Participants had a mean score on the DCQ of 13.51, indicating a high average range. A DCQ cutoff score of 9 on the scale is indicative of probable BDD symptomology. The majority of participants, 83.85% ($n = 109$), obtained a score of 9 or higher.

Body Image Disturbance Questionnaire

Participants completed the seven items on the BIDQ online. Their responses were tallied. Figure 3 represents these data.

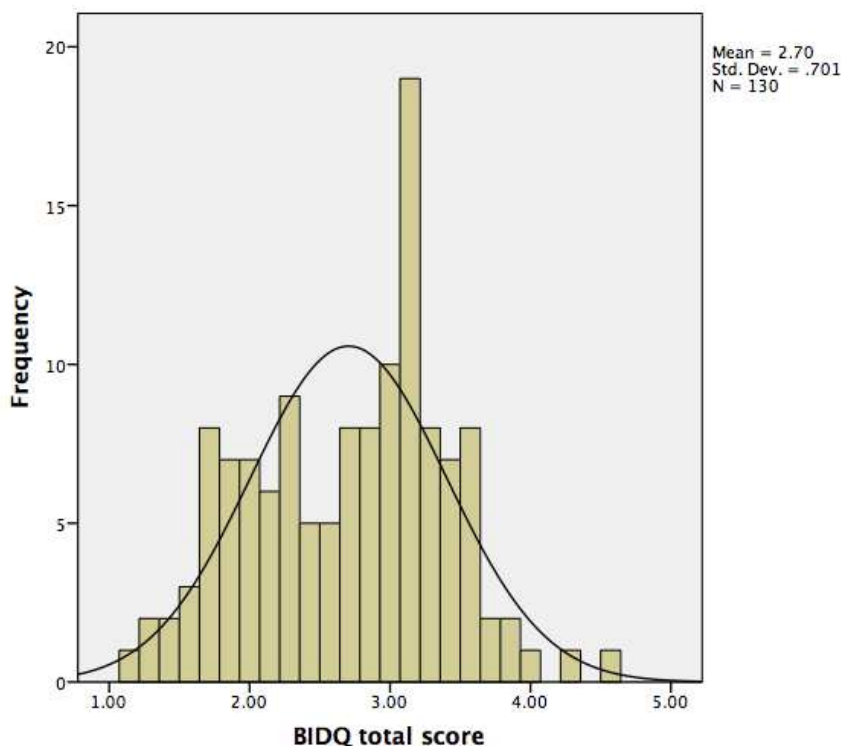


Figure 3. Participant BIDQ scores.

The BIDQ screens for appearance-related concerns, mental preoccupation with these concerns, associated experiences of emotional distress, resultant impairment in social, occupational, or other important areas of functioning, interference with social life or with school, job, or role functioning, and consequential behavioral avoidance. The BIDQ score is a mean of the seven items scaled from 1 to 5 points. Participants had a mean score on the BIDQ of 2.70, falling within the low average of the scaled score range.

Fifteen (11.54%) of participants' scores fell above the average range; the scores obtained ranged from 3.57 to 4.57.

Test Results of Required Assumption of Multiple Regression Analysis

Normality

Assumption of the normality distribution of the different study variables were tested. Normality testing was conducted by investigation of the histogram to check the distribution of data of the independent variables (level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD) and dependent variable (number of cosmetic procedures performed). The different histograms presented in Figure 1 show bell-shaped curves representing a normal distribution and are displayed in the different plots for the different study variables. Although the bell-shaped curves represented were not perfect, these data results of all variables used did not violate the normality assumption.

Linearity

Second, the required assumption to be tested is to determine whether a linear relationship between the independent variable and dependent variables is required. This means that there should be a linear relationship between the independent variables of level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD with the dependent variable of number of cosmetic procedures performed. Scatterplots between the independent variable and dependent variable were created to test whether a linear relationship exists between the two variables. The scatterplots are presented in Figure 4. The scatterplots showed a linear trend. Thus, the assumption that there needs

to be a linear relationship between the independent variables and dependent variable was not violated.

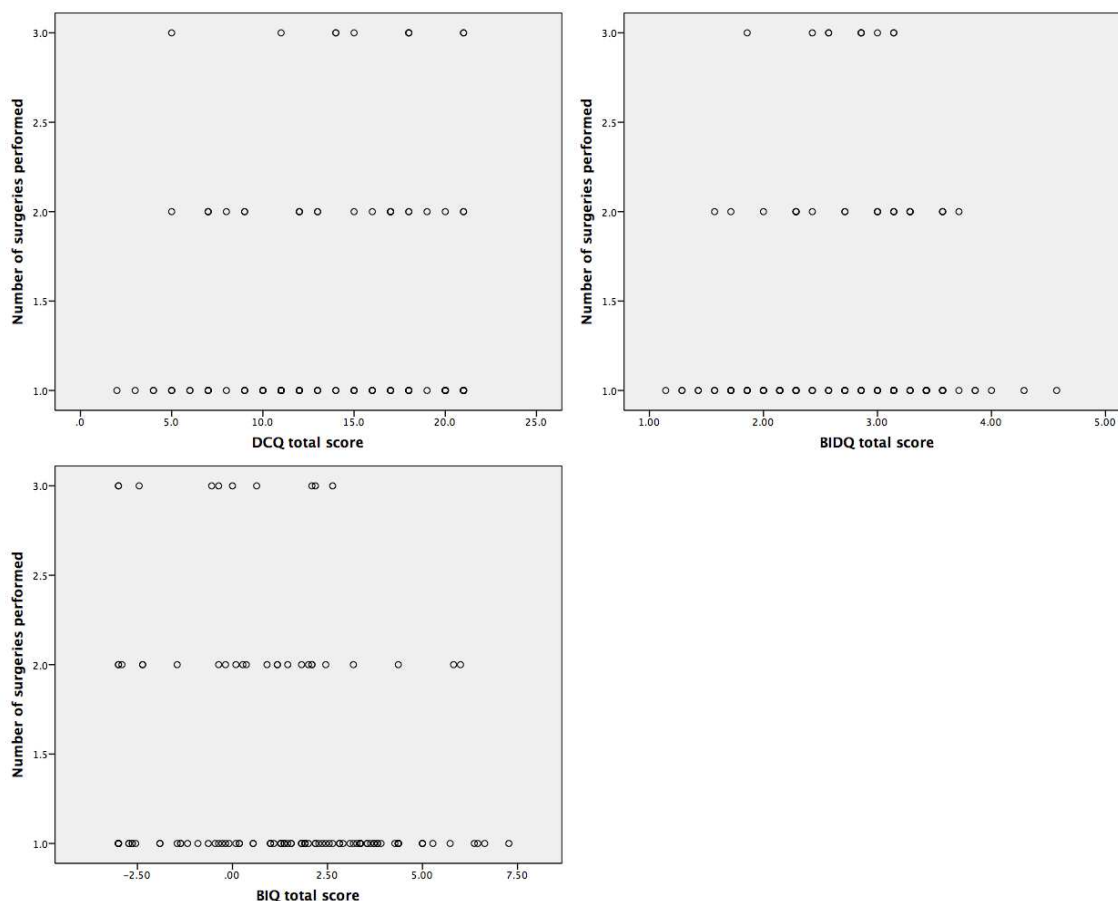


Figure 4. Linear plots of independent variables versus dependent variable.

Homoscedasticity

The third assumption tested is that the data were required to show homoscedasticity which means that the variance of the dependent variable of number of cosmetic procedures performed should be homogenous across the three independent variables of level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD. A Levene's test of equality of variance was conducted to test this

assumption. The result is presented in Table 2 and showed that the variance of number of cosmetic procedures performed was not homogenous across the three independent variables. There was no homoscedasticity since the p -value ($F(120, 9) = 3.15, p = 0.03$) of the F statistics was less than the level of significance of 0.05. The significance level for the study was determined before data collection. There was a possibility, such as in this study that the observed effect occurred due to sampling error alone. When the p -value is less than the significance level, one can conclude that the homogeneity assumption was violated. The homogeneity of variances assumption implies that a regression analysis is performed subject to the constraint that all regression equations (slopes) across the cells of the design are the same. As is the case with this study, if a violation of this assumption occurs, it is likely that conducting the non-parametric equivalent of the analysis is more appropriate. However, the regression analysis does not have a non-parametric version. Thus, the regression analysis can be conducted.

Table 2

Results of Levene's Test of Equality of Error Variances

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
3.15	120	9	0.03

Note. Tests the null hypothesis that the error variance of the dependent variable is equal across groups. Design: Intercept + DCQtotal + BIDQtotalScore + BIQSCORE. Dependent variable: number of surgeries performed.

Outlier Investigation

Univariate outlier detection examined if any cases may not be statistically part of the collected data. The computed z-scores of the data of each of the study variables of

level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD were presented in Appendix D. Not all z-scores were in the critical value of ± 3.29 . There were no outliers in the dataset of level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD.

Hypotheses Testing

The hypotheses were designed to examine the relationship of the number of cosmetic surgeries undergone to the level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD.

Hypotheses 1 and 2

H_0 : Body dissatisfaction, level of dysmorphic concern, and likelihood of BDD do not predict the number of cosmetic surgeries an individual chooses to undergo.

H_a : Body dissatisfaction, level of dysmorphic concern, and likelihood of BDD do predict the number of cosmetic surgeries an individual chooses to undergo.

H_{01} : The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) is not related to the number of cosmetic procedures undergone.

H_{11} : The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) predicts the number of cosmetic procedures undergone.

Results of the regression analysis for Research Question 1 showed that the level of body dissatisfaction has a significant negative relationship with number of cosmetic procedures performed. With these results, the null hypothesis for Research Question 1

that “Body dissatisfaction, level of dysmorphic concern, likelihood of BDD do not predict the number of cosmetic surgeries an individual chooses to undergo” was rejected. Instead, the alternative hypothesis of “Body dissatisfaction, level of dysmorphic concern, and likelihood of BDD do predict the number of cosmetic surgeries an individual chooses to undergo” was supported. The null hypothesis for Research Question 2 that “the level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) is not related to the number of cosmetic procedures undergone” was rejected. Instead, the alternative hypothesis of “The level of body image satisfaction-dissatisfaction as measured by the Body Image Ideal Questionnaire (BIQ) predicts the number of cosmetic procedures undergone” was supported.

Hypotheses 3 and 4

H₀₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) does not predict the number of cosmetic procedures undergone.

H₁₂: The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) predicts the number of cosmetic procedures undergone.

H₀₃: The preoccupations with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) is not related to the number of cosmetic procedures undergone.

H₁₃: The preoccupations with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) predicts the number of cosmetic procedures undergone.

Specifically, higher scores on the Body Image Disturbance Questionnaire (BIDQ) will be associated with higher number of procedures undergone.

On the other hand, the null hypotheses for Research Question 3 that “The presence of a dysmorphic concern as measured by the Dysmorphic Concern Questionnaire (DCQ) does not predict the number of cosmetic procedures undergone” and Research Question 4 that “The preoccupations with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the Body Image Disturbance Questionnaire (BIDQ) is not related to the number of cosmetic procedures undergone” were not rejected.

Results of Multiple Regression Analysis

Table 3 summarized the results of the multiple regression analysis using a backward elimination. The regression results showed that the model fit of the final regression model generated ($F(1, 128) = 7.06, p = 0.01$) was significant indicating that the regression model had an acceptable model fit. The r-square value of the regression model was 0.05, which indicates a very low effect size and that the combined effects of all three independent variables captured only 5% of the variance in predicting the number of cosmetic procedures performed. The final model showed that only the BIQ total score which measures the level of body dissatisfaction ($t(126) = 2.13, p = 0.04$) was significant related to the number of cosmetic procedures undergone. This was the only p -value less than the level of significance value. Investigation of the unstandardized beta coefficient value showed that the level of body dissatisfaction ($B = -0.06$) has a significant negative relationship with number of cosmetic procedures performed. A one score increase in the

level of body dissatisfaction score will result to a -0.06 decrease in the number of cosmetic procedures performed. This result indicates that higher levels of body dissatisfaction results in lower numbers of cosmetic procedures performed.

Table 3

Multiple Regression Results of Relationships of Independent Variables and Dependent Variable

Model	Unstandardized coefficients		Standardized coefficients Beta	t	Sig.
	B	Std. error			
1 ^a (Constant)	1.16	0.21		5.42	0.00*
DCQ total score	0.01	0.01	0.07	0.63	0.53
BIDQ total score	0.06	0.10	0.06	0.56	0.58
BIQ total score	-0.06	0.02	-0.24	-2.67	0.01*
2 ^b (Constant)	1.24	0.16		7.90	0.00*
DCQ total score	0.01	0.01	0.11	1.25	0.21
BIQ total score	-0.05	0.02	-0.23	-2.62	0.01*
3 ^c (Constant)	1.42	0.06		23.40	0.00*
BIQ total score	-0.06	0.02	-0.23	-2.66	0.01*

^a $F(3, 126) = 2.97, p = 0.03, R \text{ square } (R^2) = 0.07, N = 129$. Dependent variable: number of surgeries performed. Predictors: (Constant), BIQ total score, DCQ total score, BIDQ total score.

^b $F(2, 127) = 4.33, p = 0.02, R \text{ square } (R^2) = 0.06, N = 129$. Dependent variable: number of surgeries performed. Predictors: (Constant), BIQ total score, DCQ total score.

^c $F(1, 128) = 7.06, p = 0.01, R \text{ square } (R^2) = 0.05, N = 129$. Dependent variable: number of surgeries performed. Predictors: (Constant), BIQ total score.

*Significant at level of significance of 0.05.

Summary

I aimed to investigate four hypotheses that were designed to examine whether the number of cosmetic surgeries undergone were associated with the level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD. Significant relationships were identified between level of body dissatisfaction, level of dysmorphic

concern, and likelihood of BDD predicting number of cosmetic surgeries an individual chooses to undergo. Similarly, there was a significant relationship identified between the level of body image satisfaction-dissatisfaction as measured by the BIQ predicting the number of cosmetic procedures undergone. Conversely, the presence of a dysmorphic concern as measured by the DCQ did not predict the number of cosmetic procedures undergone. The repetitive compulsive behaviors affecting day-to-day functioning and preoccupations with appearance and as measured by the BIDQ was not related to the number of cosmetic procedures undergone.

Chapter 5 provides a comprehensive interpretation of the results in Chapter 4.

Chapter 5: Discussion

Chapter 5 begins with an overview of the study, followed by interpretations of the findings in Chapter 4. A brief summary of the purpose of the study along with an additional summary of key findings is presented below. This chapter further includes a discussion of the study's implications for social change, the limitations of this study, and recommendations for future research.

Overview of the Study

The purpose of this quantitative study was to determine whether the number of cosmetic surgeries undergone was related to the level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD. This study included a sample of 130 participants. An online survey was created for the study that included demographic questions and the BIQ, DCQ, and BIDQ. SPSS was used to statistically analyze the participants' responses. The hypotheses addressed whether the number of surgeries undergone was associated with the level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD. Significant relationships were found between body dissatisfaction, level of dysmorphic concern, and likelihood of BDD and the level of body image satisfaction-dissatisfaction as measured by the BIQ in predicting the number of cosmetic procedures undergone. Significant relationships were not found between dysmorphic concern as measured by the DCQ and preoccupations with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the BIDQ and the number of cosmetic procedures undergone.

According to literature, high levels of body image dissatisfaction, dysmorphic concern, and preoccupation with appearance are characteristics of cosmetic surgery patients (Cash et al., 2004; Didie & Sarwer, 2007; Gorney, 2007). Specifically, my results suggest that combined, participants' levels of body image dissatisfaction, dysmorphic concern, and preoccupation with appearance are associated with increased probability of having undergone multiple cosmetic surgeries. This supports findings by Didie and Sarwer (2003) indicating that the primary factors contributing to an individual having undergone cosmetic surgery are body image disturbance and dysmorphic concern. Additionally, the results from this study support Cash's (2000) research on the BIQ, further establishing the BIQ as a valid predictor of body image dissatisfaction and body image dysphoria. Results further support studies that suggest that body image dissatisfaction is associated with dysmorphic concern (Cash et al., 2004; Didie & Sarwer, 2007; Gorney, 2007). Furthermore, Gorney's (2007) findings are supported indicating that surgeons should be familiar with dysmorphic concern symptomatology that present in varying degrees.

The results from this study indicate a significant relationship among high levels of body image dissatisfaction alone and the number of cosmetic procedures undergone, supporting findings by Gorney (2007), which indicate that level of dissatisfaction can contribute to a patient's desire to seek out cosmetic surgery. Additionally, the findings of Markey and Markey (2009), which demonstrated that body dissatisfaction significantly predicts interest in cosmetic surgery procedures, are supported by the results of this study.

Although results from this study support a significant relationship among the number of cosmetic surgeries undergone and high levels of dysmorphic concern as measured by the DCQ, high body image dissatisfaction as measured by the BIQ, and preoccupation with appearance as measured by the BIDQ, the results from this study indicate that dysmorphic concern alone does not have a significant relationship with the number of cosmetic surgeries undergone. Therefore, although patients express a dysmorphic concern, individuals having undergone multiple procedures may exhibit symptomology from body image dissatisfaction and an over concern with physical appearance.

With regard to the BIDQ, which measures how the individual's actual self matches the ideal self with respect to particular characteristics, literature suggests that self-discrepancies play an important role in the context of body image. Subsequently, these discrepancies can negatively affect individuals' body satisfaction and can have implications for appearance-related behaviors such as seeking out cosmetic enhancement procedures (Cash & Szymanski, 1995; Cash et al., 2004). The results from this study suggest that the level of appearance-related discrepancy alone does not have a significant relationship with the number of cosmetic procedures undergone. The results indicate that appearance related discrepancy must be paired with high levels of body image dissatisfaction and dysmorphic concern to predict an increased probability of having undergone multiple cosmetic procedures.

Interpretation of Hypothesis 1

Hypothesis 1 addressed whether the level of body dissatisfaction, level of dysmorphic concern, or likelihood of BDD predicts the number of cosmetic surgeries an individual chooses to undergo. Statistically significant findings showed that level of body dissatisfaction, level of dysmorphic concern, and likelihood of BDD do predict the number of cosmetic surgeries an individual chooses to undergo. Thus, individuals who share lower levels of body dissatisfaction, high levels of dysmorphic concerns, and preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning are more likely to have had multiple cosmetic procedures performed.

Interpretation of Hypothesis 2

Hypothesis 2 addressed whether body image satisfaction-dissatisfaction, as measured by the BIQ, predicts number of cosmetic surgeries undergone. Individuals with greater disparity between self-perceived physical ideals and importance of that ideal to the individual were more likely to continue to undergo cosmetic procedures than those with congruence among physical ideals and importance of that ideal. This statistically significant finding showed that, also considering the importance of each of the physical ideals to the person, individuals with greater disparity between self-perceived and idealized physical attributes are more likely to undergo cosmetic surgery in an attempt to create congruence between the attribute and importance of that attribute. This finding might have occurred by chance or because the level of body image satisfaction-dissatisfaction did not differ significantly pre and postoperatively. Thus, an individual's

level of satisfaction-dissatisfaction with physical attributes and how one wishes to be, have little relationship to the specific number of surgeries performed.

Interpretation of Hypothesis 3

Hypothesis 3 addressed whether level of dysmorphic concern predicts number of cosmetic surgeries undergone. There is no statistically significant association between the level of dysmorphic concern as measured by the DCQ and number of cosmetic surgeries performed. The results suggest that there is not enough evidence to support the idea that an increased score on the DCQ predicts the number of surgeries performed. One possible explanation for this finding is that individuals who undergo multiple procedures tend to share increased levels of dysmorphic concern—specifically, 84% of participants met the cutoff criteria for probable body dysmorphic symptomology. This finding is supported by Mancuso et al.'s (2010) study indicating that higher levels of dysmorphic concern in BDD patients' responses on the DCQ reflect a preoccupation with a perceived defect in physical appearance. That study correctly classified those participants with BDD using the DCQ cutoff score of 9, as used in this study (Mancuso, Knoesen, & Castle, 2010). However, Stangier et al. (2003) found that when using a convenience sample of participants and an increased cutoff score of 14, a lower sensitivity increased false negative rates, resulting in more patients with BDD having been incorrectly classified as not suffering from BDD. The rationale for using the cutoff score of 9 is that patients seeking cosmetic procedures to enhance their appearance are likely to experience higher levels of dysmorphic concern, and that some of these patients may be less forthcoming about their BDD symptoms. Therefore, it is appropriate to

maintain the lower DCQ cutoff score to ensure that more individuals with clinically significant dysmorphic concern are identified in surgical settings (Mancuso, Knoesen, & Castle, 2010). The present findings must be interpreted within the context of several limitations. First, the criteria established for participants of the study were individuals who have had two or more cosmetic procedures performed limited the generalizability of the present findings. Second, 13 participants had been diagnosed with or treated for an eating disorder. These participants alone might have inflated the discriminant validity of the DCQ, as dysmorphic concern appears to be common among females with an eating disorder (Mancuso, Knoesen, & Castle, 2010). Since there are notable differences between dysmorphic concern in BDD patients and patients with comorbid diagnoses such as eating disorders, additional research is required in which the DCQ is administered. Future research could use clinical and nonclinical controls to screen for BDD through a structured clinical assessment rather than self-report measures. The findings from this study did not support the DCQ as a predictor of the number of cosmetic surgeries performed. However, when the DCQ is used as an initial assessment, a cutoff score of 9 would permit the identification of individuals who may benefit from further assessment and possible treatment of appearance concerns.

Interpretation of Hypothesis 4

Hypothesis 4 addressed preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning as measured by the BIDQ and whether these predict the number of cosmetic surgeries undergone. There is no statistically significant association between participants' scores on the BIDQ and number of cosmetic procedures

undergone. The results of this study suggest that there is not enough evidence to support the idea that increased scores on the BIDQ predict the number of cosmetic surgeries undergone. One possible explanation for this finding is that individuals who undergo multiple procedures tend to share a higher than average score on the BIDQ.

Limitations

A limitation of this study was that the sample size of participants from each location was not large enough to generalize the results to the general population. An additional limitation involved the race/ethnicity of the sample population, in that the majority of the participants identified as Caucasian/White. This was considered a limitation, as the sample may not be representative of the likely larger population of patients from multiple racial/ethnic communities that pursue elective surgery. With regard to the survey, many of the open-ended responses required clarification and/or participants appeared to repeat responses from previous questions. It is also possible that participants provided untruthful answers on the online questionnaire to provide desirable responses to questions.

Recommendations for Future Research

The results of this study showed statistically significant findings that body dissatisfaction, level of dysmorphic concern, and likelihood of BDD contribute to predicting the number of cosmetic surgeries an individual chooses to undergo, and that participants' level of body image satisfaction-dissatisfaction can potentially predict the number of cosmetic procedures undergone. The level of significance between dysmorphic concern, and preoccupations with appearance and repetitive compulsive

behaviors affecting day-to-day functioning and prediction of number of cosmetic surgeries undergone was not great enough to determine a relationship between the variables. Therefore, future researchers might further explore this particular trend. Further, a qualitative research design would allow researchers to conduct in-depth interviews with participants to further clarify participants' understanding of the questions presented and responses to open-ended questions. Moreover, a qualitative longitudinal research design could allow researchers to administer pre and postoperative surveys and attempt to observe change or stagnation in terms of body image satisfaction-dissatisfaction, dysmorphic concerns, and preoccupation with appearance and repetitive compulsive behaviors affecting day-to-day functioning.

Another recommendation might be to create a research study that reflects a variety of cosmetic surgery practices, which would assist in providing a more representative sample of participants. A future study that includes a more representative sample of participants from each U.S. state would increase sample size and lead to increased reliability and validity for a similar study. Future research could also use various data collection methods to create a mixed-method study that would expand on this study by including a qualitative component such as interviews. A qualitative component that could provide more in-depth information was missing in this study, and qualitative data could provide valuable information and insight to support and further develop the findings. It may be useful for researchers to examine other demographic factors to determine if significant associations exist. Examples of these factors are age, ethnicity, and gender. The final recommendation would be to examine the prescreening

practices of cosmetic surgery facilities and determine if there is a significant relationship between the prescreening procedure and level of satisfaction with the procedure.

Implications for Social Change

The purpose of this study was to expand on current research and literature examining the relationships between body image dissatisfaction, dysmorphic concern, BDD, and the number of elective cosmetic surgeries undergone. Dysmorphic concern and prescreening practices were addressed and identified as a research problem due to current practices of cosmetic surgeons who routinely lack screening practices for patients receiving elective cosmetic surgery and have no practice in place to assess for or attempt to identify BDD and other psychological problems, diagnoses, and/or patient treatment history. Additionally, there is no industry standard protocol to determine a patient's motivation and goals for seeking elective cosmetic surgery. The goal of this study was to provide insight and information for mental health providers and cosmetic surgery providers that would lead to successful implementation of such screenings to improve levels of satisfaction among surgical candidates.

Although the results of this study did not provide new findings in the relationships between body image dissatisfaction, dysmorphic concern, BDD, and number of elective cosmetic surgeries undergone, the findings did support previous research conclusions. This study provides mental health professionals and cosmetic surgeons a potential profile of what an individual's body image satisfaction-dissatisfaction, dysmorphic concern, and probability of BDD symptomology might be when having undergone multiple cosmetic procedures. This study may be helpful to surgeons and mental health professionals who

are interested in implementing a screening process to identify patients who have had multiple surgeries and the likelihood of a patient with a BDD diagnosis being among patients engaging in a cosmetic procedure. The results may increase mental health professionals' and cosmetic surgeons' levels of awareness and assist these professionals to choose an appropriate screening tool and/or pre- or postoperative screening process when accepting candidates for cosmetic procedures. Improved screening processes for surgical candidates could assist in diagnostic clarification and/or treatment recommendations for candidates. Prescreening processes could assist professionals in identifying poor surgical candidates (i.e., those with elevated body dissatisfaction and dysmorphic concern) before the candidate continues with cosmetic surgical procedure. Poor clinical judgment with regard to a suitable candidate due to lack of screening tools or use of non-evidenced-based screening tools can be costly to candidates financially and psychologically. Surgical candidates who suffer from underlying psychological problems may then continue to suffer emotionally from their experience.

Conclusion

The purpose of the study was to examine the relationships between body image dissatisfaction, dysmorphic concern, BDD, and number of elective cosmetic surgeries undergone. The results of this study indicated two significant relationships in both correlation and regression analysis. The first significant relationship was that body dissatisfaction, level of dysmorphic concern, and likelihood of BDD do predict the number of cosmetic surgeries an individual chooses to undergo. The second significant relationship was that the level of body image satisfaction-dissatisfaction as measured by

the BIQ does predict the number of cosmetic procedures undergone. The BIDQ and DCQ screening tools alone were not found to have a significant relationship related to the number of cosmetic procedures undergone.

Mental health providers and cosmetic surgeons can use the findings from this study in several ways. The results of this study provide support for use of a combination of screening tools. In particular, when used concurrently, the DCQ, BIQ, and BIDQ may help surgeons better identify suitable surgical candidates. Further, the implementation of evidence-based screening tools can assist in identifying candidates for whom surgery is not appropriate. Understanding the surgical candidate's motivation and goals for surgery is important in predicting level of satisfaction. A cosmetic surgery practice can implement prescreening tools in an effort to enhance the patient's level of body satisfaction. Use of assessments to obtain information regarding the surgical candidate's psychological history and any comorbid disorders may improve the patient's level of satisfaction and expectation of the procedure. Research supports that surgical candidates with BDD, depressive, and eating disorder symptomology can complicate the level of satisfaction, motivation for, and expectation of the procedure.

Cosmetic procedures performed within the general population of the United States rapidly increases. Specifically, ASAPS (2017) reported that the number of surgeries from 1997 to 2016 increased 99.1%. Additionally, it was reported that from 2015 to 2016, the number of procedures increased 3.5% (ASAPS, 2017). The conclusions from this study may support a rationale for presurgical psychological screening by a mental health professional for cosmetic surgery candidates. This study may contribute to

positive social change as more psychologists examine issues related to the increasing trend of cosmetic surgery and the link between psychological disorders. As the cosmetic surgical population increases, it is important to consider and identify outcome variables and implement evidence based prescreening measures. Prescreening measures can assist surgeons in identifying surgical candidates that may not adjust well to the outcome of the procedure, thus improving the overall quality of care provided to the surgical population.

References

- Adams, J. (2010). Motivational narratives and assessments of the body after cosmetic surgery. *Qualitative Health Research*, 20(6), 755-767.
- Adato, A., & Harrington, M. (2007). Obsessed with plastic surgery. *People*, 67(2), 84-92.
- American Medical Association. (2012). Home page. Retrieved from <http://www.ama-assn.org>
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- American Society for Aesthetic Plastic Surgery. (2016). Home page. Retrieved from <http://www.surgery.org>
- American Society of Plastic Surgeons (2012). Home page. Retrieved from <http://www.plasticsurgery.org>
- Ameringer, K. J., Chou, C. P., & Leventhal, A. M. (2015). Shared versus specific features of psychological symptoms and cigarettes per day: structural relations and mediation by negative- and positive-reinforcement smoking. *Journal of Behavioral Medicine*, 38(2), 224–236. <http://doi.org/10.1007/s10865-014-9597-y>
- Aouizerate, B., Pujol, H., Grabot, D., Fayout, M., Suire, K., Braud, C ... Tignol, J. (2003). Body dysmorphic disorder in a sample of cosmetic surgery applicants. *European Psychiatry*, 18(7), 365-368.
- Ata, R., Ludden, A., & Lally, M. (2007). The effects of gender and family, friend, and

media influences on eating behaviors and body image during adolescence.

Journal of Youth and Adolescence, 36(8), 1024-1037.

<http://doi.org/10.1007/s10964-006-9159-x>

Atkinson, M. (2008). Exploring male femininity in the “crisis”: Men and cosmetic surgery. *Body and Society*, 14, 67-87.

Atmaca, M., Bingol, I., Aydin, A., Yildirim, H., Okur, I., Yildirim, M ... Gurok, M.

(2010). Brain morphology of patients with body dysmorphic disorder. *Journal of Affective Disorders*, 123(1-3), 258-263. <http://doi.org/10.1016/j.jad.2009.08.012>

Bandura, A., & National Institute of Mental Health. (1986). *Prentice-Hall series in social learning theory: Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through the imitation of aggressive models. *Journal of Abnormal and Social Psychology*, 63, 575-582.

Bennett, J. P. (1983). Aspects of the history of plastic surgery since the 16th century. *Journal of the Royal Society of Medicine*, 76(2), 152-156.

Bergstorm, R. L., & Neighbors, C. (2006). Body image disturbance and the social norms approach: An integrative review of the literature. *Journal of Social and Clinical Psychology*, 25(9), 975-1000. <http://doi.org/10.1521/jscp.2006.25.9.975>

Bessenoff, G., & Snow, D. (2006). Absorbing society’s influence: Body image self-discrepancy and internalized shame. *Sex Roles*, 54(10), 727-731.

<http://doi.org/10.1007/s11199-006-9038-7>

- Bjornsson, A. S., Didie, E. R., & Phillips, K. A. (2010). Body dysmorphic disorder. *Dialogues in Clinical Neuroscience, 12*(2), 221-232.
- Boroughs, M., Krawczyk, R., & Thompson, J. J. (2010). Body dysmorphic disorder among diverse racial/ethnic and sexual orientation groups: Prevalence estimates and associated factors. *Sex Roles, 63*(9-10), 725-737.
<http://doi.org/10.1007/s11199-010-9831-1>
- Brohede, S., Wingren, G., Wijma, B., & Wijma, K. (2013). Validation of the Body Dysmorphic Disorder Questionnaire in a community of Swedish women. *Psychiatry Research, 210*(2), 647-652.
<http://doi.org/10.1016/j.psychres.2013.07.019>
- Buhlmann, U., Glaesmer, H., Mewes, R., Fama, J. M., Wilhelm, S., Brähler, E ... Rief, W. (2010). Updates on the prevalence of body dysmorphic disorder: A population-based survey. *Psychiatry Research, 178*(1), 171-175.
- Campbell, D. (2012, January 8). More patients sue plastic surgeons over faulty cosmetic operations. *Guardian*. Retrieved from <https://www.theguardian.com/society/2012/jan/08/patients-sue-plastic-surgeons-faulty>
- Cash, T. F. (2000). *Manual for the Body-Image Ideals Questionnaire*. Retrieved from <http://www.body-images.com>
- Cash, T. F., & Labarge, A. S. (1996). Development of appearance schemas inventory: A new cognitive body-image assessment. *Cognitive Therapy and Research, 20*(1), 37-50.
- Cash, T. F., & Lavalley, D. M. (1997). Cognitive-behavioral body image therapy:

Extended evidence of the efficacy of a self-directed program. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 15(4), 281-294.

<http://dx.doi.org/10.1023/A:1025041926081>

Cash, T. F., Phillips, K. A., Santos, M. T., & Hrabosky, J. I. (2004). Measuring "negative body image": Validation of the Body Image Disturbance Questionnaire in a nonclinical population. *Body Image*, 1(4), 363-372.

Cash, T. F., & Pruzinsky, T. (2002). *Body image: A handbook of theory, research and clinical practice*. London, England: The Guilford Press.

Cash, T. F., & Szymanski, M. L. (1995). The development and validation of the body-image ideals questionnaire. *Journal of Personality Assessment*, 64(3), 466-477.
http://doi.org/10.1207/s15327752jpa6403_6

Cast, A., & Burke, P. (2002). A theory of self-esteem. *Social Forces*, 80(3), 1041-1068.

Castle, D., Jorgensen, L., Roberts, C., & Groth-Marnat, G. (2001). A clinical validation of the dysmorphic concern questionnaire. *Australian & New Zealand Journal of Psychiatry*, 35(1), 124-128.

Castle, D. J., Molton, M., Hoffman, K., Preston, N. J., & Phillips, K. A. (2004). Correlates of body dysmorphic concern in people seeking cosmetic enhancement. *Australian and New Zealand Journal of Psychiatry*, 38, 439-444.

Castle, D. J., Phillips, K. A., & Dufresne, R. G. (2004). Body Dysmorphic Disorder and cosmetic dermatology: More than skin deep. *Journal of Cosmetic Dermatology*, 3(2), 99-103. <http://doi.org/10.1111/j.1473-2130.2004.00105.x>

Clarke, L., Repta, R., & Griffin, M. (2007). Non-surgical cosmetic procedures: Older

- women's perceptions and experiences. *Journal of Women and Aging*, 19(3), 69-87.
- Conrado, L. A., Hounie, A. G., Diniz, J. B., Fossaluzza, V., Torres, A. R., Miguel, E. C., Rivitti, E. A. (2010). Body dysmorphic disorder among dermatologic patients: Prevalence and clinical features. *Journal of American Academy of Dermatology*, 63, 235–243.
- Crain, W. (2000). *Theories of development: Concepts and applications*. Upper Saddle River, NJ: Prentice Hall.
- Crerand, C. E., Menard, W., & Phillips, K. A. (2010). Surgical and minimally invasive cosmetic procedures among persons with body dysmorphic disorder. *Annals of Plastic Surgery*, 65, 11-16. <http://doi.org/10.1097/SAP.0b013e3181bba08f>
- Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. New York, NY: Sage.
- Davis, K. (2002). A dubious equality: Men, women and cosmetic surgery. *Body and Society*, 8, 49-65.
- Deaton, S. (2015). Social learning theory in the age of social media: Implications for educational practitioners. *Journal Of Educational Technology*, 12(1), 1-6.
- Delinsky, S. S. (2005). Cosmetic surgery: A common and accepted form of self-improvement? *Journal of Applied Social Psychology*, 35(10), 2012–2028. <http://dx.doi.org/10.1111/j.1559-1816.2005.tb02207.x>
- Phillips, K. A., Didie, E. R., Menard, W., Pagano, M. E., Fay, C., & Weisberg, R. B. (2006). Clinical features of body dysmorphic disorder in adolescents and

- adults. *Psychiatry Research*, 141(3), 305–314.
<http://doi.org/10.1016/j.psychres.2005.09.014>
- Didie, E. R., & Sarwer, D. B. (2003). Factors that influence the decision to undergo cosmetic breast augmentation surgery. *Journal of Women's Health*, 12(3), 241-253. <http://doi.org/10.1089/154099903321667582>
- Dingemans, A. E., van Rood, Y. R., de Groot, I., & van Furth, E. F. (2012). Body dysmorphic disorder in patients with an eating disorder: Prevalence and characteristics. *International Journal of Eating Disorders*, 45(4), 562-569.
- Dittmann, M. (2005). Plastic surgery: Beauty or beast? *Monitor on Psychology*, 36(8), 30. Retrieved from <http://www.apa.org/monitor/sep05/surgery.html>
- Dolsky, R. (1999). Cosmetic surgery in the United States: Its past and present. *Dermatologic Surgery*, 25(11), 886-892.
- Dufresne, R., Phillips, K., Vittorio, C., & Wikel, C. (2001). A screening questionnaire for body dysmorphic disorder in a cosmetic dermatologic surgery practice. *Dermatologic Surgery: Official Publication for American Society for Dermatologic Surgery [Et Al.]*, 27(5), 457-462.
- Dyl, J., Kittler, J., Phillips, K. A., & Hunt, J. I. (2006). Body dysmorphic disorder and other clinically significant body image concerns in adolescent psychiatric inpatients: Prevalence and clinical characteristics. *Child Psychiatry and Human Development*, 36(4), 369-382. <http://doi.org/10.1007/s10578-006-0008-7>
- Eisen, J. L., Phillips, K. A., Coles, M. E., & Rasmussen, S. A. (2004). Insight in obsessive compulsive disorder and body dysmorphic disorder. *Comprehensive*

Psychiatry, 45(1), 10-15.

Elliot, T. (2009). Body dysmorphic disorder, radical surgery and the limits of consent.

Medical Law Review, 17(2), 149-182.

Fang, A., & Hofmann, S. (2010). Relationship between social anxiety disorder and body dysmorphic disorder. *Clinical Psychology Review*, 30(8), 1040-1048.

Farrokhi, F. (2012). Rethinking convenience sampling: Defining quality criteria. *Theory and Practice in Language Studies*, 2(4), 784-792.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175-191.

Feusner, J. D., Neziroglu, F., Wilhelm, S., Mancusi, L., & Bohon, C. (2010). What causes BDD: Research findings and a proposed model. *Psychiatric Annals*, 40(7), 349-355. <http://doi.org/10.3928/00485713-20100701-08>

Figueroa, C. (2003). Self-esteem and cosmetic surgery: Is there a relationship between the two? *Plastic Surgical Nursing*, 23(1), 21.

Gieler, T., Schmutzer, G., Brahler, E., Schut, C., Peters, E., & Kuper, J. (2016). Shadows of beauty - Prevalence of body dysmorphic concerns in Germany is increasing: Data from two representative samples from 2002 and 2013. *Acta Dermato-Venereologica*, 96, 83-90. <http://doi.org/10.2340/00015555-2375>

Gimlin, D. (2002). *Body work: Beauty and self-image in American culture*. Berkeley, CA: University of California Press.

Giovannelli, T. S., Cash, T. F., Henson, J. M., & Engle, E. K. (2008). The measurement

- of body image satisfaction-dissatisfaction: Is rating importance important? *Body Image: An International Journal of Research*, 5, 216–223.
- Gorney, M. (2007). Recognition of the patient unsuitable for aesthetic surgery. *Aesthetic Surgery Journal*, 27(6), 626-629.
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597-606. Retrieved from <http://nsuworks.nova.edu/tqr/vol8/iss4/6>
- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134(3), 460-476. <http://doi.org/10.1037/0033-2909.134.3.460>
- Grant, J. E., Kim, S. W., & Eckert, E. D. (2002). Body dysmorphic disorder in patients with anorexia nervosa: Prevalence, clinical features, and delusionality of body image. *International Journal of Eating Disorders*, 32(3), 291-300.
- Grant, J. E., & Phillips, K. A. (2005). Recognizing and treating body dysmorphic disorder. *Annals of Clinical Psychiatry*, 17(4), 205-210.
- Greitemeyer, T., & Weiner, B. (2008). Asymmetrical effects of reward and punishment on attributions of morality. *Journal of Social Psychology*, 148(4), 407-422.
- Gunstad, J., & Phillips, K. A. (2003). Axis I comorbidity in body dysmorphic disorder. *Comprehensive Psychiatry*, 44(4), 270-276.
- Harrison, K. (2003). Television viewers' ideal body proportions: The case of the curvaceously thin woman. *Sex Roles*, 48(March), 255–264.

- Hartmann A., Greenberg J., & Wilhelm S. (2013). The relationship between anorexia nervosa and body dysmorphic disorder. *Clinical Psychology Review*. 33(5), 675-685. <https://doi-org.ezp.waldenulibrary.org/10.1016/j.chb.2013.04.002>
- Heath, H., & Cowley, S. (2004). Developing a grounded theory approach: A comparison of Glaser and Strauss. *International Journal of Nursing Studies*. 41(2), 141-150.
- Henderson-King, D., & Henderson-King, E. (2005). Acceptance of cosmetic surgery: Scale development and validation. *Body Image*, 2, 137-149.
- Heider, F. (1958). *The Psychology of Interpersonal Relations*. New York, NY: Wiley.
- Heider, F., & Simmel, M. (1944). An experimental study of apparent behavior. *The American Journal of Psychology*, 57(2), 243-259.
- Heyes, C. (2007). Cosmetic surgery and the televisual makeover. *Feminist Media Studies*, 7(1), 17-32.
- Higgins, J. (2006). *The radical statistician: A beginners guide to unleashing the power of applied statistics in the real world*. (5th ed.). USA: Jim Higgins Publishing.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*. 33(7). 14-26. <https://doi.org/10.3102/0013189X033007014>
- Jorgensen, L., Castle, D., Roberts, C., & Groth-Marnat, G. (2001). A clinical validation of the Dysmorphic Concern Questionnaire. *Australian and New Zealand Journal of Psychiatry*, 35(1), 124-128.
- Kenealy, P., Gleeson, K., Frude, N., & Shaw, W. (1991). The importance of the

individual in the 'causal' relationship between attractiveness and self-esteem.

Journal of Community & Applied Social Psychology, 1(1), 45-56.

Kernis, M. (2005). Measuring self-esteem in context: The importance of stability of self-esteem in psychological functioning. *Journal of Personality*, 73(6), 1569-1605.

Kisely, S., Morkell, D., Allbrook, B., Briggs, P., & Jovanovic, J. (2002). Factors associated with dysmorphic concern and psychiatric morbidity in plastic surgery outpatients. *Australian and New Zealand Journal of Psychiatry*, 36(1), 121-126.

Konstantakopoulos, G., Varsou, E., Dikeos, D., Ioannidi, N., Gonidakis, F., Papadimitriou, G., & Oulis, P. (2012). Delusional of body image beliefs in eating disorders. *Psychiatry Research*, 200(2-3), 482-488.

Kundra, Z., & Sinclair, L. (1999). Motivated reasoning with stereotypes: Activation, application, and inhibition. *Psychological Inquiry*, 10(1), 12.

Lachlan, K. A., Smith, S. L., & Tamborini, R. (2005). Models for aggressive behavior: The attributes of violent characters in popular video games. *Communication Studies*, 56(4), 313-329.

Lambrou, C., Vale, D., & Wilson, G. (2011). The role of synthetic sensitivity in body dysmorphic disorder. *Journal of Abnormal Psychology*, 120(2), 143-153.
[https://doi.org/ 10.1037/a0022300](https://doi.org/10.1037/a0022300)

MacPherson, S. (2005), Self-esteem and cosmetic enhancement, *Plastic Surgical Nursing*, 25(1), 5-20.

Mackley, C. L. (2005). Body Dysmorphic Disorder. *Dermatologic Surgery*, 31(5), 553-558.

- McClain, A. D., Chappuis, C., Nguyen-Rodriguez, S. T., Yaroch, A. L., & Spruijt-Metz, D. (2009). Psychosocial correlates of eating behavior in children and adolescents: A review. *International Journal of Behavioral Nutrition and Physical Activity*, 6(54), 1479-1503. <https://doi.org/10.1186/1479-5868-6-54>
- McLean, S. A., Paxton, S. J., & Wertheim, E. H. (2016). The role of media literacy in body dissatisfaction and disordered eating: A systematic review. *Body Image*, 19, 9-23. <http://doi.org.ezp.waldenulibrary.org/10.1016/j.bodyim.2016.08.002>
- Maltby, J., & Day, L. (2011). Celebrity worship and incidence of elective cosmetic surgery: Evidence of a link among young adults. *Journal of Adolescent Health*, 49(5), 483-489.
- Mancuso, S. G., Knoesen, N. P., & Castle, D. J. (2010). The Dysmorphic concern questionnaire: A screening measure for body dysmorphic disorder. *Australian & New Zealand Journal of Psychiatry*, 44(6), 535-542. <https://doi.org/10.3109/00048671003596055>
- Mancuso, S. G., Knoesen, N. P., & Castle, D. J. (2010). Delusional versus nondelusional body dysmorphic disorder. *Comprehensive Psychiatry*, 51(2), 177-182. <https://doi.org/10.1016/j.comppsy.2009.05.001>
- Markey, C., & Markey, P. (2009). Correlates of young women's interest in obtaining cosmetic surgery. *Sex Roles*, 61(3-4), 158-166. <https://doi.org/10.1007/s11199-009-9625-5>
- Marques, L., Weingarden, H., LeBlanc, N., Siev, J., & Wilhelm, S. (2011). The relationship between perceived social support and severity of body dysmorphic

- disorder symptoms. *The Role of Gender*, 33(3), 238-244.
- Mayer, R. (2003). *Learning and Instruction*. Upper Saddle River, NJ: Pearson Education.
- Mayo Foundation for Medical Education and Research. (2011). *Body dysmorphic disorder*. Retrieved from <http://www.mayoclinic.com/health/body-dysmorphic-disorder>.
- Melmed, E. P. (2003). Who decides the criteria? *Plastic and Reconstructive Surgery*, 111, 513–514.
- Muijs, D. (2004). *Doing quantitative research in education*. London, England: Sage Publications.
- Nierenberg, A. A., Phillips, K. A., Petersen, T. J., Kelly, K. E., Alpert, J. E., Worthington, J. J., ... Fava, M. (2002). Body dysmorphic disorder in outpatients with major depression. *Journal of Affect Disorders*, 69, 141–148.
- Nugent, K. (2009). Cosmetic surgery on patients with body dysmorphic disorder: Cutting the tie that binds. *Developments in Mental Health Law*, 28(2), 77-104.
- Oliveira Damasceno, V., Macedo Vianna, J., Silva Novaes, J., De Lima, J., Miguel Fernandes, H., & Machado Reis, V. (2011). Relationship between anthropometric variables and body image dissatisfaction among fitness center users. *Revista De Psicologia Del Deporte*, 20(2), 367-382.
- Park, L. E., Calogero, R. M., Young, A. F., & Diraddo, A. M. (2010). Appearance-based rejection sensitivity predicts body dysmorphic disorder symptoms and cosmetic surgery acceptance. *Journal of Social and Clinical Psychology*, 29(5), 489-509.
- Patten, M. L. (2002). *Understanding research methods: An overview of the essentials*

- (3rd ed.). Los Angeles, CA: Pyrczak Publishing.
- Pavan, C., Vindigni, V., Semensin, M., Muzzdeni, F., Gardido, M., Simonato, P., & Marini, M. (2006). Personality, temperament and clinical scales in an Italian plastic surgery setting: What about body dysmorphic disorder? *International Journal of Psychiatry in Clinical Practice*, *10*, 91-96.
- Perugi, G., Giannotti, D., Frare, F., Vaio, S. D., Valori, E., Maggi, L., ... Akiskal, H. S. (1997). Prevalence, phenomenology and comorbidity of body dysmorphic disorder (dysmorphophobia) in a clinical population. *International Journal of Psychiatry in Clinical Practice*, *1*(2), 77-82.
- Phillips, K. A. (1991). Body dysmorphic disorder: The distress of imagined ugliness. *American Journal of Psychiatry*, *148*(9), 1138-1149.
- Phillips, K. A. (2002). Pharmacologic treatment of body dysmorphic disorder: Review of the evidence and a recommended treatment approach. *CNS Spectrum*, *7*(6), 453-460.
- Phillips, K. A. (2005). *The broken mirror: Understanding and treating body dysmorphic disorder*. New York, NY: Oxford University Press.
- Phillips, K. A. (2006). The presentation of body dysmorphic disorder in medical settings. *Primary Psychiatry*, *13*(7), 51-59.
- Phillips, K. A., 2009. *Understanding body dysmorphic disorder: An essential guide*. New York, NY: Oxford University Press.
- Phillips, K. A., Coles, M. E., Menard, W., Yen, S., Fey, C., & Weisberg, R. (2005). Suicidal ideation and suicide attempts in body dysmorphic disorder. *Journal of*

Clinical Psychiatry, 66, 717-725.

- Phillips, K. A., Didie, E. R., Feusner, J., & Wilhelm, S. (2008). Body dysmorphic disorder: Treating an underrecognized disorder. *American Journal of Psychiatry*, 165(9), 1111-1118. <https://doi.org/10.1176/appi.ajp.2008.08040500>
- Phillips, K. A., & Menard, W. (2006). Suicidality in body dysmorphic disorder: A prospective study. *American Journal of Psychiatry*, 163(7), 1280-1282.
- Phillips, K. A., Menard, W., Fay, C., Weisberg, R. (2005). Demographic characteristics, phenomenology, comorbidity, and family history in 200 individuals with body dysmorphic disorder. *Psychosomatics*, 46, 317-325.
- Phillips, K. A., Wilhelm, S., Koran, L. M., Didie, E. R., Fallon, B. A., Feusner, J., & Stein, D. J. (2010). Body dysmorphic disorder: Some key issues for DSM-V. *Depression & Anxiety*, 27(6), 573-591. <https://doi.org/10.1002/da.20709>
- Picavet, V., Gabriëls, L., Jorissen, M., & Hellings, P. (2011). Screening tools for body dysmorphic disorder in a cosmetic surgery setting. *The Laryngoscope*, 121(12), 2535-2541. <https://doi.org/10.1002/lary.21728>
- Ponton, M. K., & Rhea, N. E. (2006). Autonomous learning from a social cognitive perspective. *New Horizons in Adult Education & Human Resource Development*, 20(2), 38-49.
- Potter, W. J. (2004). Argument for the need for a cognitive theory of media literacy. *American Behavioral Scientist*, 48, 266-272. <https://doi.org/10.1177/0002764204267274>
- Rogers, B. O. (1971). A chronologic history of cosmetic surgery. *Bulletin of the New*

York Academy of Medicine, 47(3), 265–302.

- Rosen, J. C., & Reiter, J. (1996). Development of the body dysmorphic disorder examination. *Research and Therapy*, 34(9), 755-766.
- Rosen, L. H., Underwood, M. K., & Beron, K. J. (2011). Peer victimization as a mediator of the relation between facial attractiveness and internalizing problems. *Merrill-Palmer Quarterly*, 57(3), 319-347.
- Rudestam, K. E., & Newton, R. R. (2007). *Surviving your dissertation: A comprehensive guide to content and process* (3rd ed.). London, England: Sage
- Ruffolo, J. S., Phillips, K. A., Menard, W., Fay, C., & Weisberg, R. B. (2006). Comorbidity of body dysmorphic disorder and eating disorders: Severity of psychopathology and body image disturbance. *International Journal of Eating Disorders*, 39(1), 11-19. <https://doi.org/10.1002/eat.20219>
- Sarwer, D. B. (2002). Awareness and identification of body dysmorphic disorder by aesthetic surgeons: Results of a survey of American Society for Aesthetic Plastic Surgery members. *Aesthetic Surgery Journal*, 22(6), 531-535.
- Sarwer, D. B., Crerand, C. E., Magee, L. (2011). Cosmetic surgery and changes in body image. In Thomas F. Cash & Linda Smolak (Eds.) *Body image: A handbook of science, practice, and prevention* (2nd ed.), (pp. 394-403). New York, NY: Guilford Press.
- Sarwer, D. B., & Didie, E. R. (2002). Body image in cosmetic surgical and dermatological practice. In D. J. Castle & K. A. Phillips (Eds.), *Disorders of body image* (pp. 37-53). Petersfield, Hampshire: Wrighton Biomedical Publishing Ltd.

- Sarwer, D. B., Gibbons, L. M., Magee, L., Baker, J. L., Casas, L. A., Glat, P. M., ...
 Young, L. (2005). A prospective, multi-site investigation of patient satisfaction and psychosocial status following cosmetic surgery. *Aesthetic Surgery Journal*, 25(3), 263-269.
- Sperry, S., Thompson, J. K., Sarwer, D. B., Cash, T. F. (2009). Cosmetic surgery reality tv viewership: Relations with cosmetic surgery attitudes, body image, and disordered eating. *Analysis of Plastic Surgery*, 62, 7-11.
- Stern, S. R. (2005). Messages from teens on the big screen: Smoking, drinking, and drug use in teen-centered films. *Journal of Health Communication*, 10(4), 331-346.
- Stangier, U., Janich, C., Adam-Schwebe, S., Berger, P, Wolter, M. (2003). Screening for body dysmorphic disorder in dermatological outpatients. *Dermatol Psychosom*, 4, 66–71.
- Szymanski, M., & Cash, T. F. (1995). Body-image disturbances and self-discrepancy theory: Expansion of the Body-Image Ideals Questionnaire. *Journal of Social and Clinical Psychology*, 14, 134–146.
- Tabachnick, B. C., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.
- Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson Education.
- Tait, S. (2007). Television and the domestication of cosmetic surgery. *Feminist Media Studies*, 7(2), 119-135.
- Tiggemann, M., & Pickering, A. S. (1996). Role of television in adolescent women's

body dissatisfaction and drive for thinness. *International Journal of Eating Disorders*, 20, 199-203.

U.S. Census Bureau. (2014). *State and county quick facts*. Retrieved from

<http://quickfacts.census.gov/qfd/states/00000.html>

Van Ameringen, M., Patterson, B., & Simpson, W. (2014). DSM-5 obsessive-compulsive and related disorders: Clinical implications of new criteria. *Depression and Anxiety*, 31(6), 487-493. <https://doi.org/10.1002/da.22259>

van der Meer, J., van Rood, Y. R., van der Wee, N. J., den Hollander-Gijsman, M., van Noorden, M. S., Giltay, E. J., & Zitman, F. G. (2012). Prevalence, demographic and clinical characteristics of body dysmorphic disorder among psychiatric outpatients with mood, anxiety, or somatoform disorders. *Nordic Journal of Psychiatry*, 66(4), 232-238. <https://doi.org/10.3109/08039488.2011.623315>

Van Reijmersdal, E. A., Neijens, P. C., & Smit, E. G. (2010). Customer magazines: Effects of commerciality on reader reactions. *Journal of Current Issues and Research in Advertising*, 32(1), 59-67.

Vulink, N. C., Rosenberg, A., Plooij, J. M., Koole, R., Berge, S. J., Denys, D. (2008). Body dysmorphic disorder screening in maxillofacial outpatients presenting for orthognathic surgery. *International Journal of Oral and Maxillofacial Surgery*, 37, 985–991.

Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer-Verlag.

Weiner, B. (Ed). (1972). *Attribution: Perceiving the causes of behavior*. Morristown, NJ:

General Learning Press.

Wilhelm, S., Otto, M. W., Zucker, B. G., Pollack, M. H. (1997). Prevalence of body dysmorphic disorder in patients with anxiety disorders. *Journal of Anxiety Disorder, 11*, 499-502.

Witte, T., Didie, E., Menard, W., & Phillips, K. (2012). The relationship between body dysmorphic disorder behaviors and the acquired capability for suicide. *Suicide and Life-Threatening Behavior, 42*(3), 318-331. <https://doi.org/10.1111/j.1943-278X.201>

Young, H. N., & Cline, R. J. (2005). Textual cues in direct-to-consumer prescription drug advertising: Motivators to communicate with physicians. *Journal of Applied Communication Research, 33*(4), 348–369.

Appendix A: Demographic Survey

The purpose of this questionnaire is to gather some basic information on individuals who have had multiple cosmetic procedures. Please answer the following questions below. For each question, please check the correct line that best describes you. If you do not understand a question, please indicate that on the sheet.

1. How many elective cosmetic surgeries have you had performed?
2. What is your age?
3. What is your geographical location?
4. Are you a participant from: Survey Monkey or the Walden University Participant Pool
5. What is your race/ethnicity?
 Caucasian/white African American Hispanic Native American
 Asian Other
6. Please choose the type of cosmetic surgery you have had performed
 Breast Augmentation
 Face Lift
 Tummy Tuck
 Rhinoplasty
 Liposuction
 Filler Injections
 Other, Specify
7. Have you had multiple procedures performed in the same area?
 Yes No
8. Please list the areas on which you have had multiple procedures performed:
9. Have you been satisfied with your procedures?
 0 Not Satisfied 1 Somewhat Satisfied 2 Very Satisfied
10. Have you been diagnosed or do you currently have a diagnosis by a healthcare professional with a mental illness?
 Yes No
 Please list diagnoses.

11. Please check if you have been diagnosed with or have a history of treatment for (in the last year):

Stress Depression Anxiety Eating Disorder

Appendix B: Permission to Use the Body Image Ideals Questionnaire

Body Image Ideals Questionnaire

THE BIQ Instructions.

Please read carefully: Each item on this questionnaire deals with a different physical characteristic. For each characteristic, think about how you would describe yourself as you actually are. Then think about how you wish you were. The difference between the two reveals how close you come to your personal ideal. In some instances, your looks may closely match your ideal. In other instances, they may differ considerably. On Part A of each item, rate how much you resemble your personal physical ideal by circling a number from 0 to 3. Your physical ideals may differ in their importance to you, regardless of how close you come to them. You may feel strongly that some ideals embody the way you want to look or to be. In other areas, your ideals may be less important to you. On Part B of each item, rate how important your ideal is to you by circling a number on the 0 to 3 scales.

A. My ideal height is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal height?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal skin complexion is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal skin complexion?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal hair texture and thickness are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal hair texture and thickness?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal facial features (eyes, nose, ears, facial shape) are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal facial features?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal muscle tone and definition is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal muscle tone and definition?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal body proportions are:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you are your ideal body proportions?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal weight is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal weight?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal chest size is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal chest size?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal physical strength is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal physical strength?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal physical coordination is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your ideal physical coordination?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

A. My ideal overall physical appearance is:

0	1	2	3
Exactly As I Am	Almost As I Am	Fairly Unlike Me	Very Unlike Me

B. How important to you is your overall physical appearance?

0	1	2	3
Not Important	Somewhat Important	Moderately Important	Very Important

Appendix C: Permission to use Body Image Disturbance Questionnaire

Body Image Disturbance Questionnaire

Version Attached: Full Test

PsycTESTS Citation:

Cash, T. F., Phillips, K. A., Santos, M. T., & Hrabosky, J. I. (2004). Body Image Disturbance Questionnaire [Database record]. Retrieved from PsycTESTS. doi: <http://dx.doi.org/10.1037/t20989-000>

Instrument Type:

Inventory/Questionnaire

Test Format:

This measure comprises seven items rated on 5-point scales ranging from 1 to 5. Items 1, 2, and 5–7 also ask for an open-ended clarification of responses.

Source:

Cash, Thomas F., Phillips, Katharine A., Santos, Melanie T., & Hrabosky, Joshua I. (2004). Measuring "negative body image": Validation of the Body Image Disturbance Questionnaire in a nonclinical population. *Body Image*, Vol 1(4), 363-372. doi: 10.1016/j.bodyim.2004.10.001, © 2004 by Elsevier. Reproduced by Permission of Elsevier.

Permissions:

Test content may be reproduced and used for non-commercial research and educational purposes without seeking written permission. Distribution must be controlled, meaning only to the participants engaged in the research or enrolled in the educational activity. Any other type of reproduction or distribution of test content is not authorized without written permission from the author and publisher. Always include a credit line that contains the source citation and copyright owner when writing about or using any test.

Body Image Disturbance Questionnaire
(BIDQ)

1A. Are you concerned about the appearance of some part(s) of your body, which you consider especially unattractive? (Circle the best answer)

1	2	3	4	5
Not at all concerned	Somewhat concerned	Moderately concerned	Very concerned	Extremely concerned

1B. What are these concerns? What specifically bothers you about the appearance of

these body parts?

2A. If you are at least somewhat concerned, do these concerns preoccupy you? That is, you think about them a lot and they're hard to stop thinking about? (circle the best answer)

1	2	3	4	5
Not at all preoccupied	Somewhat preoccupied	Moderately preoccupied	Very preoccupied	Extremely preoccupied

2B. What effect has your preoccupation with your appearance had on your life? (Please describe)

3A. Has your physical "defect" often caused you a lot of distress, torment, or pain? How much? (Circle the best answer)

1	2	3	4	5
No distress still manageable	Mild, and not too disturbing	Moderate and disturbing, but	Sever, and very disturbing	Extreme, and disabling

4A. Has your physical "defect" caused you impairment in social, occupational or other important areas of functioning? How much? (Circle the best answer)

1	2	3	4	5
No limitation	Mild and not too disturbing	Moderate, definite interference, but still manageable	Severe, causes substantial impairment	Extreme, incapacitating

5A. Has your physical "defect" significantly interfered with your social life? How much? (Circle the best answer)

1	2	3	4	5
Never	Occasionally	Moderately often	Often	Very often

5B. If so, how?

6A. Has your physical "defect" significantly interfered with your schoolwork, your job, or your ability to function in your role? How much? (Circle the best answer)

1	2	3	4	5
Never	Occasionally	Moderately often	Often	Very often

6B. If so, how?

7A. Do you ever avoid things because of your physical “defect?” How often? (Circle the best answer)_

1	2	3	4	5
Never	Occasionally	Moderately often	Often	Very often

7B. If so, what do you avoid?

Appendix D: Z-Scores

DCQ total score	BIDQ total Score	BIQ total score
-1.30	-1.62	-0.62
-0.30	-0.39	-0.17
-0.50	0.63	0.75
-0.90	-1.41	-1.62
0.90	0.63	1.11
-0.50	0.63	0.75
0.70	0.63	0.86
1.30	0.42	1.14
1.50	1.65	-1.72
0.90	-0.60	-0.73
0.70	1.24	-0.10
-0.70	0.42	-0.17
1.50	1.24	-1.72
0.70	-0.60	-1.69
-0.50	-2.03	0.44
0.70	0.83	-0.20
-1.30	-1.41	-0.48
-0.30	1.24	0.26
-0.50	-0.80	0.29
1.30	0.22	1.14
1.30	0.42	1.14
-0.50	0.42	-1.08
1.10	0.83	1.39
-0.50	-0.39	0.75
1.30	0.22	1.14
1.30	1.44	-1.30
-0.10	0.63	0.15
-0.50	0.01	0.05
-0.90	0.42	-0.62
-1.50	-1.41	-0.06
-1.50	-1.21	-0.66
0.70	1.03	2.03
0.50	-1.21	0.54
0.30	0.83	0.68
1.30	1.03	1.14
0.90	-0.60	-0.06

0.30	0.63	0.29
-0.30	0.42	0.90
0.50	0.63	1.92
1.50	2.26	-0.52
-0.30	-1.41	0.36
0.50	0.63	0.47
1.50	0.22	-1.72
-0.30	0.01	-0.13
-0.30	1.03	0.93
-0.30	-1.41	0.33
0.30	-0.60	0.01
-0.10	-1.01	0.15
0.30	0.63	0.22
-1.30	-1.21	0.05
-1.10	-1.01	-0.48
-0.70	-1.82	0.15
0.90	0.42	0.26
0.10	-0.19	-0.55
-0.10	-1.01	-0.03
-0.30	-1.21	0.97
-0.70	-1.62	0.65
0.10	1.24	0.19
0.90	0.22	-1.72
1.50	0.83	-1.72
-0.50	0.63	0.75
1.50	0.22	-1.51
-0.90	0.63	0.75
0.90	0.63	-1.01
1.50	1.24	-1.72
0.30	0.22	-0.17
-0.90	-0.60	-1.12
1.30	1.03	1.14
-0.10	-1.01	-1.30
1.50	1.24	-1.72
0.10	1.24	1.95
1.30	0.01	1.67
1.10	0.83	-1.47
1.30	1.24	2.27
-0.70	0.01	-1.58
0.30	-0.60	0.68

0.10	-0.39	-0.69
0.50	-0.60	1.71
-0.50	0.22	0.75
-1.10	-0.60	-0.69
0.70	0.63	-0.10
-0.50	0.63	-0.91
1.50	-0.39	-1.72
-1.90	-0.80	0.72
1.50	1.85	-1.72
-0.50	0.22	0.75
-1.30	0.01	-0.41
-1.70	-1.21	1.49
-0.50	0.63	0.83
1.50	2.67	0.90
-0.50	0.63	0.15
0.70	-0.19	-1.55
-0.30	0.01	0.01
-1.70	-1.41	-0.03
-0.50	0.63	-0.31
0.90	-0.19	0.47
1.30	1.03	1.14
0.70	-0.80	-1.08
-0.50	1.03	0.75
-1.70	-1.41	-1.47
-1.30	0.42	0.40
-0.50	1.65	0.19
-0.50	0.83	0.75
-0.70	-0.60	0.29
-1.70	-1.21	-0.77
-2.10	-1.82	-0.69
-0.30	-1.62	0.22
-1.30	-1.01	0.26
0.50	0.63	-0.03
-1.30	-1.41	-1.58
-1.70	-1.21	-0.06
-0.30	-0.80	0.54
-0.90	0.01	0.19
-0.30	-0.80	-1.12
1.50	0.01	-1.72
-0.90	-0.19	0.58

0.70	-1.01	-0.59
1.30	1.03	1.39
-0.10	1.44	1.78
0.90	0.83	-0.52
0.90	0.63	-0.45
-0.50	-0.19	-1.62
0.90	-0.80	-0.34
-1.90	-2.03	-0.34
-1.30	-1.01	0.93
-0.50	0.42	1.39
-2.30	-2.23	-0.80
-0.70	-0.39	0.83
0.30	0.42	0.19
0.90	0.83	0.40
0.00	0.00	0.00
-1.70	-2.86	0.45