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**Effect of Breast Augmentation Mammoplasty on Self-Esteem and  
Sexuality: A Quantitative Analysis**

Cynthia Figueroa-Haas

EFFECT OF BREAST AUGMENTATION MAMMOPLASTY ON SELF-ESTEEM  
AND SEXUALITY: A QUANTITATIVE ANALYSIS

DISSERTATION

Presented in Partial Fulfillment of the Requirements of the  
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Cynthia Figueroa-Haas Ph.D., ARNP

2005

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DISSERTATION

By

Cynthia Figueroa-Haas

2005

APPROVED BY:

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Jessie M. Colin, PhD., R.N.  
Chairperson, Dissertation Committee

---

Claudette M. Spalding, PhD., A.R.N.P.  
Member, Dissertation Committee

---

Pegge L. Bell, PhD., A.P.N.  
Member, Dissertation Committee &  
Dean, School of Nursing

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## ACKNOWLEDGEMENTS

What a mission, what an accomplishment, and what rewards, have I experienced while completing my doctoral degree. While midstream through the doctoral program, my husband tragically died. I encountered obstacles and fears with which I never imagined I would ever be faced. Throughout this horrible, challenging chapter in my life, there were so many individuals who continued to encourage me through the program. Accordingly, this doctoral degree would not exist without the unremitting encouragement, love, patience, and prayers obtained from my two sons, family members, friends, colleagues, and professors at Barry University School of Nursing.

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## DEDICATION

I would like to dedicate this scholarly study to my parents Aurelio and Grace Firpi, my siblings, Jo Ellen Goldberg, Linda Orsini, and Joseph Acebal. The strength in the bond between our families has made me the person I am today and has brought me this far. To my beloved former husband, Harry Etienne Figueroa, I dedicate your gift to me; the gift of knowing my strengths and allowing me to blossom as an outstanding professional. You showered me with kindness and love that you also diligently taught me to express during our 24 years of marriage. This will never be overlooked or forgotten. I also expressively dedicate my study to my lovingly uncle, Daniel Acebal, now deceased. His quest for me to continue achieving academically was imbedded in me as a child, and it has carried me through to my adulthood years. To my two handsome sons, Harry Etienne Jr. and Christopher Daniel Figueroa, I dedicate my life to you two always, and I pray that by my example, you will also strive to become all you can be. I know that by achieving your dreams, you will obtain happiness with yourselves and live long fruitful lives. I thank God for your love, support, and for the two absolutely most beautiful grandsons for whom “GaMa” could ever ask for, Harry Etienne III and Zachary William. I also commit my love to my daughter-in-law, Melissa Figueroa and my two step children, Robert “Rob” and Denise Haas. My dedication to my new husband, Robert “Bob” Haas, transcends an era of my new found dreams. I believe he was brought to me at a time when life was the grimmest. Additionally, I look forward to sharing the rest of my life with him. He has been an inspiration to me during this arduous undertaking. This scholarly study is also thereby dedicated to him, and it will always be a part of him because he is now a part of me. I thank each and everyone for their love, confidence, and faithfulness. I will always love you forever. Thank you all!!

## ABSTRACT

### Effect of Breast Augmentation Mammoplasty

#### On Self-Esteem and Sexuality: A Quantitative Analysis

Although not extensively researched, psychological factors have attributed to the growing number of performed breast augmentation procedures. The American Society of Plastic Surgery (2003) reported a 293% increase in cosmetic surgery since 1997. The percent increase in breast augmentation procedures performed in 2003 was up 12% (280 procedures up to 401). Currently in the United States, the entertainment industry and popular images in magazines and movies convey that our society values large, symmetrically shaped breasts with a great deal of cleavage (Crooks & Baur, 2002).

As the number of women seeking breast augmentation surgery continues to rise, an increasing number of health professionals are likely to be confronted with questions, concerns, and complications that often accompany the procedure. Consequently, it is important that health care providers comprehend the degree to which self-esteem and/or sexuality may affect their patients' outcomes. Healthcare professionals must ascertain specific nursing skills and attitudes while caring for the cosmetic surgical patient. Therefore, the purpose of this research is to gain an understanding of the changes that occur in the levels of self-esteem, measured by the Rosenberg Self-Esteem Scale (1965), and sexuality, as measured by the Female Sexual Function Index (2000), following breast augmentation procedures.

The following five hypotheses were tested using a descriptive research approach. They are as follows: H1, there will be a significant increase on the levels of self-esteem in means scores following breast augmentation. H2, there will be a significant increase on the levels of sexuality in mean scores following breast augmentation. H3, there will be a



significant increase in the FSFI sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, and pain) after receiving breast augmentation. H4, there will be a positive correlation between self-esteem, sexuality, and breast augmentation. H5, there will be a correlation between the demographic variables and levels of self-esteem and sexuality before and after receiving breast augmentation. Participants (84 women) were obtained from privately owned cosmetic surgical centers in South and North Central Florida. An experimental design paired difference t-test was used to analyze self-esteem and sexuality as reported by women undergoing breast augmentation, preoperatively and postoperatively. Repeated measures ANOVA, SAS's Proc GLM tested differences in the sexuality six subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain), and Pearson Product-Moment Correlation Coefficients ( $r$ ), measured the differences in the relationship of sexuality and self-esteem following breast augmentation. Correlations between participants' demographic profiles and their levels of self-esteem and sexuality were analyzed using ANOVA – SAS Proc GLM (General Linear Model) to determine the marginal means. The quantitative analysis was performed using a combination of Excel Solver Statistical Package and the SAS statistical system (SAS, 1999 - 2004).

Test of the study hypotheses one through four failed to be rejected, thereby, supporting significant positive relationships between the variables. Statistical analysis of H5 found positive significance between breast augmentation, self-esteem, and the demographic variables; educational level and history of previous cosmetic surgery. A new model has emerged from this study. The model begins with the studied variables, self-esteem, demographic variables, psychological status (i.e., body image, situational

events), and sexuality. The literature review and the conceptual model developed for this study provided support for explaining the relationship between the concepts and answering the study variables. For this study, the literature review and the research study results following the breast augmentation procedure revealed increased levels of self-esteem, affect on physical and psychosocial burdens (i.e., re-imagining, acceptance, obsession, anxiety, depression, body image), and increased sexuality levels.

The knowledge gained from this research will educate nurses regarding the relationship of breast augmentation to self-esteem and sexuality, in order for nurses to provide the best care to this patient population. Additionally, nursing education programs can greatly benefit from research obtained from studies based on cosmetic surgical procedures, namely breast augmentation. Adding this knowledge throughout educational programs regarding the psychological and or sociological changes which occur in women following cosmetic surgery can significantly enhance patient outcomes following their procedure.

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## Chapter I

### *Introduction*

“Throughout history, members within some cultures have deliberately altered their body’s natural appearance” (Blair & Shalmon, 2005, p. 14). Since the mythical Narcissus first saw his face in a pool of water, humankind has been fascinated with appearance. Cleopatra used natural substances to care for her skin and applied cosmetics to her face. Sour milk baths (lactic acid) and plants, such as berries, and clay, were just a few natural substances which were used as cosmetics to smooth the skin and brighten the face. The art of facial decoration has been recorded for centuries, as far back as in ancient Crete. These superficial changes in appearance are only one form of ego building and self-adornment (Dugas, 1999).

Obsession with the breast has materialized in fashion, advertisement, and the media (Clark, 2001). This cultural fascination has placed a great deal of pressure on women to conform to society’s ideals of beauty. According to Sarwer, Nordmann and Herbert (2000) “As early as 300BC, Minoan women used primitive brassieres and corsets to emphasize their breast” ( p. 844). Today women are also consumed with various ways of enhancing outward appearance (Clark, 2001). These include various types of surgical procedures ranging from non-surgical cosmetic procedures to different types of invasive surgical procedures, such as breast augmentation. According to Clarke (2001), attention to appearance and the pursuit of physical attractiveness are crucial aspects of femininity that many women endeavor to achieve. Some women consider themselves less attractive or feminine because of the lack of “ideal” size and shape of their breast. This feeling of inadequacy has been found to lead to lowered levels of self-esteem and sexuality (Flentje,

2001). Akin (2002) discovered that individuals seeking plastic surgery procedures were definitely a vulnerable population. Therefore, cosmetic surgery may be associated with issues concerning self-esteem levels and sexuality.

Self-esteem refers to how much a person values or accepts him or herself for whom and what he or she is (Sarwer et. al., 2000). There are several ways of describing self-esteem. For example, Baumeister (2001) states that self-esteem represents the degree to which people are satisfied or dissatisfied with themselves. King (1997) adds, some writers have asserted that self-esteem reflects the difference between the ideal self and the actual self, how one actually is. In addition, he writes that others have suggested that an individual with substantial distance between the actual self and ideal self will develop a negative perception of self which will manifest itself in low self-esteem. Therefore, he summarizes that an individual with modest distance between the actual self and ideal self will develop a more positive perception of self, which is high self-esteem (King, 1997). Flynn (2004), states that it is his professional opinion that women have found that by restoring or creating fullness and shape in their breast, improvement of self-esteem, sense of well-being and femininity could be achieved. Additionally, he adds, self-confidence and satisfaction about one's physical appearance affects the way one perceives self and how one interacts with others.

The development of self may also have an affect on the level of an individual's perceived sense of sexuality. For the purpose of this study sexuality refers to sexual attractiveness and responsiveness. In many instances cosmetic surgery is motivated by sexual concerns, such as sexual attractiveness and responsiveness. Culturally, women are defined and define themselves by their sexuality, as bestowed on them by a sexist society

(The Nation, 1992). According to Flentje (2001), the lack of feeling attractive dramatically affects one's confidence to make positive sexual health choices; on the other hand, poor sexual health can have an enormous impact on sexual attractiveness and responsiveness.

The measurement of the subjective component of sexuality is of increasing importance in clinical research and practice. Sexuality is an important outcome in many specialties and is also recognized as a component of quality of life (Daker-White, 2002). The Arc of the United States (2004) defines sexuality as a natural part of every person's life, including identity, friendships, self-esteem, body image and awareness, emotional development and social behavior, as well as involvement in physical expressions of love, affection and desires. Female sexuality has only recently been recognized by medical and scientific communities as a priority for further understanding and development. In the recent past, women have made major advances in political and professional fields alongside their male counterparts. However, a clear understanding of concepts which dominate women's sexuality has on the whole, remained lacking. Therefore, continued research in this area of study is imperative in order to increase not only medical awareness, but also scientific awareness regarding women's sexuality. Female sexual medicine is now undergoing a rebirth due largely to recent advances in clinical and basic science research in both conventional as well as alternative medicine (Cheng, 2002).

Cosmetic surgical patients and their level of self-esteem and sexuality are, therefore, intrinsic concerns for nurses in their practice. It is imperative that health professionals be well versed in the physiological and psychological aspects of breast augmentation

surgery so that they are prepared to address the needs of their patients most effectively (Sarwer et. al., 2000).

### *Purpose of the Study*

The purpose of this research is to gain an understanding of the changes that occur in the levels of self-esteem, measured by the Rosenberg Self-Esteem Scale (1965) and sexuality, as measured by the Female Sexual Function Index (2000), following breast augmentation procedures. Empirical study of self-esteem is considered vital to understanding the motivations and factors that influence women to seek cosmetic surgery (Sarwer, 2001). The level of sexuality is another motivational factor which may affect a woman's decision to seek cosmetic surgery or breast augmentation procedure. Because of the enormous importance the American culture has attached to breasts, their size and shape, many women worry that their breasts are too small, too large, or just the wrong shape. Women's breast size has also been associated with their level of femininity, sexuality, and attractiveness. Not only may this negatively affect their self-image and self-acceptance, it leads some women to seek cosmetic surgery (Flentje, 2001). Ogden (1999, p.413) states, "women's sexuality is a powerful source of energy and pleasure". This compelling statement, therefore, supports the significance of sexuality in women, thus illustrating how sexuality can play an important part in the level of energy and vivaciousness that is experienced in women. It is additionally important for scholars and researchers to continue the study of sexuality with respect to psychological and social levels that motivate women to seek cosmetic surgery. Fundamentally, many women seek breast augmentation because they are not satisfied with the appearance of their breasts (Flentje, 2001). This dissatisfaction invariably affects self-esteem and also sexuality.

Brumberg (1997, p.98) suggests, “it is not so much one’s actual appearance or how others perceive one, but one’s own internal view of one’s looks, how one thinks one appears to others, how one feels about one’s looks that is indeed, everything”.

In the Twentieth century, the body has become the central personal project of American women. Today many women worry about the contours of their bodies; especially weight, shape, size, and muscle tone. They believe that the body is the ultimate expression of the self. Concern about physical appearance may be a defining characteristic of patients which influences their decision to seek breast augmentation (Sarwer, 2001). The mental representation of one’s physical appearance can be understood through the psychological constructs of self-esteem, and sexuality. This may be the most relevant psychological constructs, by which to understand the motivations of cosmetic surgery candidates (Sarwer, LaRossa, Bartlett, Low, Bucky & Whitaker, 2003).

According to Roberts and Gettman (2004), this culture of sexual objectification functions to socialize women to treat themselves as objects to be evaluated based on appearance. They learn that their looks matter, that other people’s evaluations of their physical appearance can determine how they are treated and, ultimately, affect their social and economic life outcomes ( i.e., personality, and possible job opportunities). Many of these social outcomes contribute to a variety of mental and physical problems, such as eating disorders, sexual dysfunction, and depression (Roberts et. al., 2004). Therefore, breast augmentation, a means of improving one’s physical appearance, may be a solution to these mental and physical problems, such as sexual dysfunction.

With moderate research data collected on self-esteem levels and cosmetic surgery, there is however, limited research on the levels of sexuality following breast

augmentation procedures. This study is significant in that it will add to the growing body of knowledge regarding the potential complex changes that take place following breast augmentation, specifically in reference to the levels of self-esteem and sexuality. The knowledge gained from this study will enlighten health care professionals to better understand these issues pertaining to patients seeking breast augmentation, and influence nursing programs to include cosmetic surgery as part of their curricula.

#### *Statement of the Problem*

The staggering statistics collected by the American Society of Plastic Surgeons (ASPS) show that more than 1.3 million people had cosmetic surgery procedures in 2000, an increase of 198% from 1992. There were 32,607 breast augmentation procedures performed in 1992 and 187,755 in 2000. Breast augmentation procedures increased 476% since 2000 (American Society of Plastic Surgeons, 2001). And the latest statistics collected by ASPS (2004) show the number of surgical and non-surgical cosmetic procedures in the United States increased by 20% from 2002 to 2003, to a total of nearly 8.3 million. Furthermore, the number of breast augmentation procedures increased 12% from 2002 to 2003 (American Society of Plastic Surgeons, 2004). Zuckerman (2004) noted that this is the highest number of breast augmentation procedures performed since its origination. This is an underestimate of the number of augmentation procedures performed annually, as increasing numbers of non-plastic surgeon physicians now perform breast augmentation surgery. It is estimated that as many as over two million women in the United States currently have breast implants (Zuckerman, 2004). Figure 1 is a linear graph illustrating the breast augmentation surgery trends from 1992 to 2004.

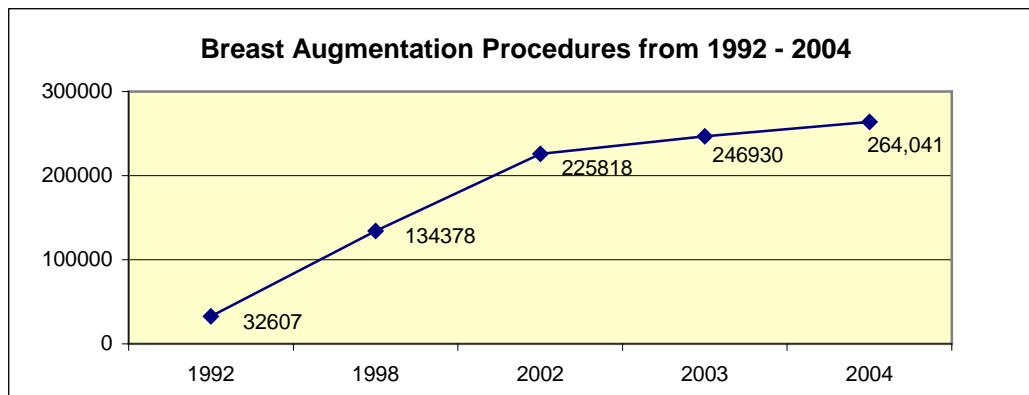


Figure 1. American Society of Plastic Surgeons Cosmetic Surgery Trends

Breast augmentation has become one of the very important aspects of cosmetic surgery. Even the enlisted military staff and their family members are seeking breast augmentation. A Defense Department spokeswoman confirmed, according to the army, between 2000 and 2003 its doctors performed 496 breast augmentation procedures. And in the first three months of 2004, a total of 60 more procedures were performed (Abacquer - Seggelin, 2004). According to the newest National Plastic Surgery Statistics (American Society of Plastic Surgeons, 2005), 264,041 breast augmentation procedures were performed in 2004, a 4% increase from 2003.

Almost any type of surgery affects the body physically, psychologically as well as emotionally. Breast augmentation patients have been described as women with psychopathology, with descriptions of increased symptoms of depression, anxiety and decreased levels of self-esteem (Sarwer, Bartlett, Bucky, LaRossa, Low, Pertschuk, Wadden & Whitaker, 1998). Breast augmentation is often sought because of dissatisfaction with body image which may negatively impact self-esteem. This in turn may affect one's feelings of sexual attractiveness and sexual responsiveness. This study

will address to what extent breast augmentation procedures influence self-esteem, and sexuality.

The increased occurrence of breast augmentation and cosmetic surgery in general makes breast augmentation surgery an important issue for women's healthcare professionals. It is very likely that women will turn to their primary healthcare providers for advice and guidance about breast augmentation (Sarwer, et. al., 2000). The researcher seeks to make nurses, as healthcare advocates, aware of the significance of these possible influential changes which may occur on their patients' levels of self-esteem and sexuality, so that they can appropriately care for this particular population of patients.

#### *Research Questions*

The following research questions are identified for this study:

1. Is there a statistical difference in the level of self-esteem before and after receiving breast augmentation?
2. Is there a statistical difference in the level of sexuality before and after receiving breast augmentation?
3. Is there a statistical difference in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) before and after receiving breast augmentation?
4. Is there a positive correlation between self-esteem, sexuality, and breast augmentation?
5. Is there a correlation between demographic variables and levels of self-esteem and sexuality before and after receiving breast augmentation?



### *Significance to Nursing*

The ANA has provided nurses with additional standard of practices regarding their social roles and responsibilities in the United States healthcare system. *Nursing's Social Policy Statement* (ANA, 2003) was derived from the 1980 landmark document, *Nursing: A Social Policy Statement and Nursing's Social Policy Statement* published in 1995. This document was created by nurses for nurses and is the social contract between the nursing profession and society in the United States. It frames the profession's relationship with society and the individual nurse's responsibilities to the patient. Nursing is dynamic rather than static, reflecting the changing nature of societal needs (ANA, 2003). Nurses are professionally and ethically responsible to ensure that their cosmetic surgical patient achieves the best care. Advocating for patients requires truthfulness to the patients regarding competency of physicians, safety of surgical facilities and the proficiency of nursing care. Attending to patients, such as a cosmetic surgical patient, can be a challenge at times. It is for this reason that high standards of practice are an expectation.

Nursing education programs can greatly benefit from research obtained from studies based on cosmetic surgical procedures, namely breast augmentation. Advanced knowledge acquired on this patient population regarding the psychological and or sociological changes which occur following surgery, can greatly enhance patient outcomes following their procedure (Sarwer, 2001). As research on cosmetic surgery advances, so should the development of nursing program content. It is important for all nurses to anticipate what psychological and or sociological changes occur following breast augmentation procedures. This awareness is learned only through educational programs that are knowledgeable regarding the field of cosmetic surgery and thereby

provide instruction within this specialty. In addition to the formulation of new curriculum in nursing programs to include cosmetic surgery as part of their curricula, further research must continue so that the current nursing population can anticipate the probable results which may occur following cosmetic surgery. The advancement of nursing knowledge to improve clinical surgical nursing practice is identified as a priority for the American Society of Plastic and Reconstructive Surgical Nurses (ASPRSN) (Rankin, Borah & Kosa, 1998).

The knowledge gained from this research will inform nurses regarding the breast augmentation patient, in order to facilitate the best care for this patient population. As advocates for patients, this advanced knowledge regarding the postoperative breast augmentation patient, and their behavior towards the affects of the surgery, can then be practiced and further researched with the intention of promoting advanced education and public policy to facilitate protection to the public.

Cosmetic surgical nursing care practices expand in conjunction with the growing number of aesthetic surgical procedures. Understanding the psychological incentive of aesthetic surgical patients is essential in helping nurses prepare individuals for optimal experiences and outcomes (Maksud & Anderson, 1995). Nurses' social roles as outlined by ANA (2003) provide standards of practices and responsibilities within the United States. It is the nurses' social contract between the nursing profession and society, thereby, professionally and ethically ensuring that all classification of patients obtain optimal care. It is imperative that nurses deliver quality care to their patients. As breast augmentation procedures continue to escalate, specialized nursing care will be required to facilitate adequate patient outcomes. Nurse's appropriate anticipated responses to

cosmetic patients' needs, will provide an optimal standard of care for this specialized population of patients.

### *Conceptual Model*

There is no single framework that exists for the study concepts. Self-esteem has been conceptualized as an outcome, motive, and buffer, but there is no overall theory of self-esteem (Cast & Burke, 2002). Self-esteem is considered by many scientific scholars to be the evaluative aspect of the self-concept defined as all aspects of the self, including roles and identities (Cast & Burke, 2002; Coopersmith, 1967). Self-esteem is “a favorable or unfavorable attitude toward the self” (Rosenberg, 1965, p.15). There are many multifaceted factors that influence women to seek breast augmentation. These factors, such as self-esteem, and sexuality are interrelated and have an affect on the self. According to Campbell (2000) self-esteem is the evaluative aspect of the self.

The concept of self-esteem first arose in psychology by scientist William James. James was the first social scientist to develop a clear professional definition of the self (Turner, 1998). His description of the social self, recognized that people's feelings about themselves arose from interaction with others. He recognized that humans have the capacity to view themselves as objects and to develop self-feelings and attitudes toward themselves (Turner, 1998). According to James, (1890):

self is determined by the ratio of our actualities to our supposed potentialities; a fraction of which our pretensions are the denominator and the numerator our success: thus, Self-Esteem = Success/Pretension. Such a fraction may be increased as well by diminishing the denominator as by increasing the numerator (p.296).

This ratio represents our behavior or successes as the numerator and our values and goals or pretensions, as the denominator. He adds, “The concept of self-esteem is dynamic thus, the outcome can be manipulated” (Mruk, 1995, p.12).

Self-esteem has been described as the feelings resulting from self-appraisal (Katz & Tello, 2003). Others view self-esteem as a positive regard for the self (Kling, Hyde, Showers, & Buswell, 1999). Oxley (2001) described self-esteem as the judgment people make about themselves and their personal worth. Similarly, self-esteem was defined as the extent to which one prizes, values, approves, or likes themselves or the “overall evaluation of the self” (Twenge & Campbell, 2002, p. 59).

Social comparisons emphasize that self-esteem is a consequence of individuals comparing themselves with others and making positive or negative self-evaluations. Reflected appraisals signify that a person’s self-esteem is a product of how that person believes others see her or him (Hughes & Demo, 1989). Therefore, one may propose that people, especially those with negative self-views, are motivated to improve their self-view. According to Baumeister (1998), people with high self-esteem are directed toward self-enhancement. They tend to take steps to make their positive qualities stand out. However, people with low self-esteem tend to be geared toward self-protection. As a result, they tend to correct what they see as defects in themselves in order to avoid having their negative self-aspects noticed by others (Baumeister, 1998).

Theories supporting ideas that self-esteem varies across the life span were conducted by Trzesniewski, Donnellan, and Robins (2003). Results from this study supported the belief that stability in self-esteem increased from adolescence to early adulthood, and remained stable throughout adulthood, and then decreased from middle adulthood to

older age. One explanation for this fluctuation was proposed by Twenge and Campbell (2002) whose meta-analysis of self-esteem and socioeconomic status included a sample of 446 samples (total participant n= 312,940) to investigate the relationship between self-esteem and socioeconomic status. Effect sizes for the relationship increased at every stage of development, peaked at middle age, but then declined in adults over age 60. These findings signify the importance of including age as a variable when examining self-esteem.

Self-esteem implies overall self acceptance and or individual self-respect. With self-esteem, there is an expectation for growth and improvement. An individual with high self-esteem believes that she or he is “good enough” (Rosenberg, 1965, p.31). Self-esteem is a positive or negative orientation toward oneself; an overall evaluation of one's worth or value (Rosenberg, 1965). In this study, global self-esteem, as measured using Rosenberg's Self-Esteem Scale (1965), was conceptualized as developmental in nature and relatively stable, but influenced by contextual factors such as breast augmentation procedures.

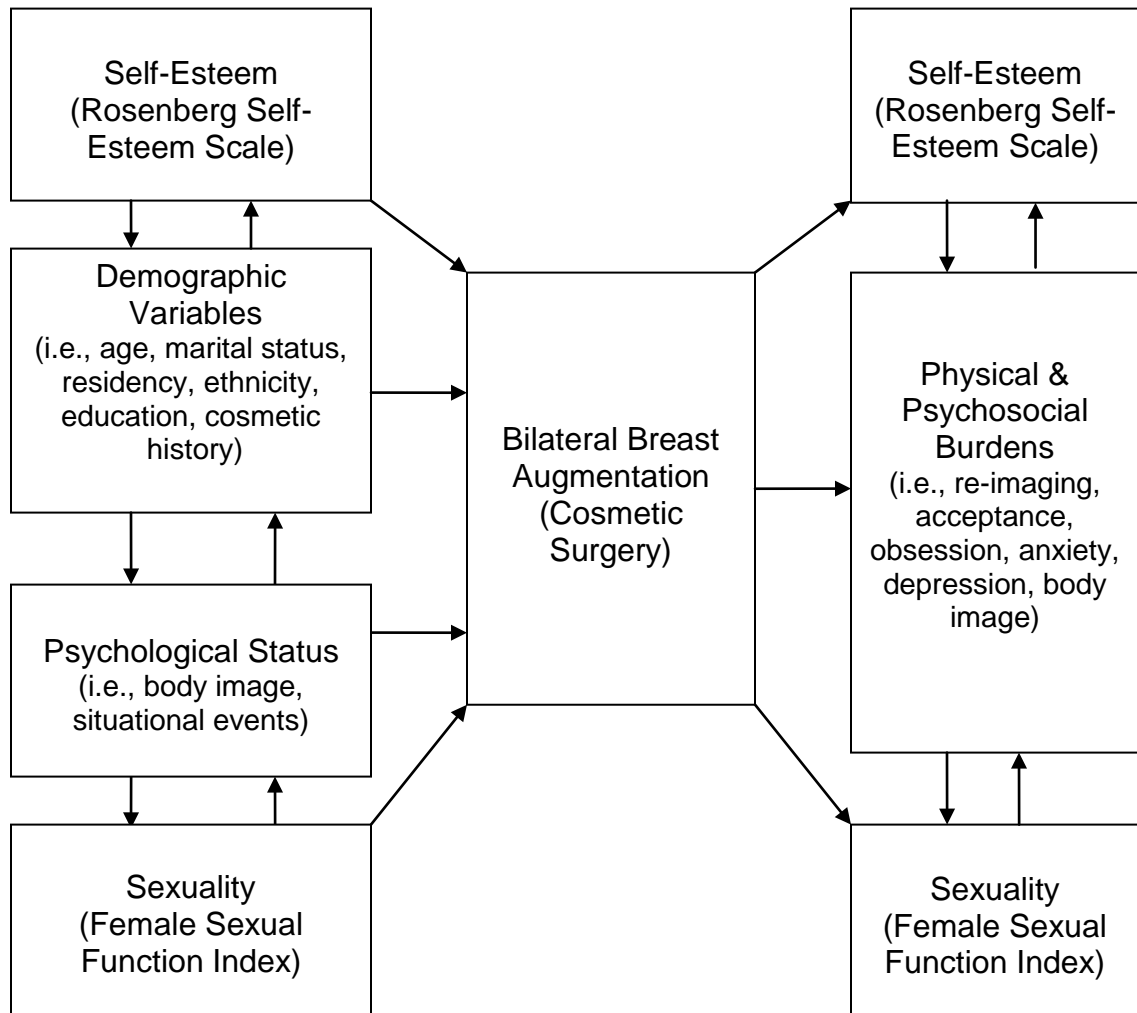
Sexuality is a broad concept and is much more than 'having sex'. It is a potent force in the development for women and can contribute significantly to their quality of life, personal fulfillment, and emotional and physical health. Sexuality continues to play an important role in the health and wellbeing of women at midlife and across the entire life span (Michelmore, 2005).

For centuries, sexuality has been studied in various cultures. Sander (2004) adds, throughout the ages, the female breast has been a symbol of sexuality regardless of culture. Hall (2005) outlines the history of the scientific study of sexuality. As in any area

of science, particularly relatively new and sensitive areas such as sex research, these studies have been criticized on the basis of their findings and methodologies, but each study brings us closer to a fuller understanding of human sexuality (Hall, 2005).

This study investigated the relationship between breast augmentation procedures and the patient's levels of self-esteem and sexuality. In addition, the relationship between self-esteem and sexuality was explored following breast augmentation. In reality, there is not one framework that encompasses all of the study concepts. However, the proposed schematic model (Figuroa-Haas, © 2005) presented in figure 2 was utilized for this study. This model has four variables, self-esteem, demographic variables, psychological status, and sexuality. The literature review and the results obtained from this study following breast augmentation procedures revealed changes in the following concepts; self-esteem, physical and psychosocial burdens (i.e., re-imaging, acceptance, obsession, anxiety, depression, and body image) and sexuality. These concepts influence the effect of the surgical procedure, breast augmentation, which in turn influences the levels of self-esteem, and sexuality. The findings indicated that breast augmentation procedures produced positive psychological benefits by significantly improving quality of life. Thus, it is understood that the concepts influence each other. Therefore, for the purpose of this study, these interrelated concepts were studied using this model. The physical and psychosocial burdens although not studied in this research, were supported in the literature review, however those concepts may need to be explored further in future studies.

Figure 2. Schematic Model. (Figueroa-Haas, © 2005)



#### *Assumptions*

The following assumptions have been identified for this study:

1. Science has advanced, with additional focus on the emotional, mental and physical aspects of women's health.
2. Cosmetic surgery has become more acceptable in American society.
3. The researcher is independent of those who are being researched and the findings are not influenced by the researcher.
4. Values and biases were held in avoidance as objectivity was sought.

5. Women who participate in this study will have adequate literacy levels and understandings of the questions.
6. Participants will devote adequate time and effort to their responses.
7. Participants will answer survey items truthfully.

### *Definitions*

#### *Bilateral Breast Augmentation*

*Conceptual definition.* *Bilateral Augmentation Mammoplasty* procedure is defined as a surgical procedure in which breast implants, saline or gel filled, are inserted over the chest muscle or under the chest muscle, in order to enhance or enlarge small breasts, underdeveloped breasts, or breasts that have decreased in size after a women has had children (American Society of Plastic Surgeons, 2004).

*Operational definition.* For this study, *bilateral breast augmentation* is defined as a surgical procedure obtained in a outpatient ambulatory setting which surgically augments woman's breast by placing bilateral breast implants (silicone or saline) directly under or on top of the pectoral muscle.

#### *Outpatient Surgical Center*

*Conceptual definition.* *Outpatient surgical center* is defined as and applies to those surgical centers that are licensed to surgically operate with the assistance of an anesthesiologist or anesthesiologist, under the direct supervision of a qualified, licensed plastic surgeon.

*Operational definition.* *In this study, outpatient surgical center* is described as a surgical facility that is managed and owned by board certified plastic surgeons. These facilities have surgical suites, which accommodate equipment in which to manage



patients who are obtaining all types of anesthesia. The anesthesia is administered by a licensed anesthesiologist or licensed nurse anesthetist qualified to administer anesthesia in an outpatient setting much like these centers. All patients in this facility are monitored continuously by a registered nurse.

### *Self-Esteem*

*Conceptual definition.* *Self-esteem* is defined as a positive or negative attitude toward the self, or an individual's sense of self worth. Self-esteem is an attitude which reflects an individual's evaluation of herself (Rosenberg, 1965).

*Operational definition.* For this study, self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965). The Rosenberg Self-Esteem Scale measures an individual's self-esteem from a global or overall perspective. Both positive and negative self-evaluations are included in the scale. Negative items are reversed coded so that higher scores indicate higher self-esteem.

### *Sexuality*

*Conceptual definition.* For this study, sexuality will refer to a woman's level of sexual attractiveness and responsiveness.

*Operational definition.* *Sexuality* was measured using the Female Sexual Function Index (FSFI). This 19-item questionnaire was used to measure sexual functioning in women for the specific purpose of assessing domains of sexual function, for example, sexual desire, arousal, lubrication, orgasm, satisfaction, and pain. It measures sexual experience, knowledge, attitudes and interpersonal relationships in women.

### *Research Hypotheses*

- H1. There will be a significant increase on the levels of self-esteem in mean scores, as measured by the Rosenberg Self-Esteem Scale (RSES), following breast augmentation surgery.
- H2. There will be a significant increase on the levels of sexuality in mean scores, as measured by the Female Sexual Function Index (FSFI), following breast augmentation surgery.
- H3. There will be a significant increase in the FSFI sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after receiving breast augmentation surgery.
- H4. There will be a positive correlation between self-esteem, sexuality, and breast augmentation.
- H5. There will be a correlation between demographic variables and levels of self-esteem and sexuality before and after receiving bilateral breast augmentation.

### *Limitations of the Study*

Limitations of this study were as follows:

1. Participants may have discomfort completing the sexuality survey.
2. Participants may not be able to complete the surveys due to limited time.
3. Convenience sampling may cause sampling bias due to limiting generally.
4. There is no one encompassing theory for breast augmentation, self-esteem and sexuality framework; however, the hypotheses test select theoretical associations.
5. Missing data or inaccuracies in completing self report survey may affect findings.

### *Summary*

Historically, women's breasts have been the primary focus that portrays their femininity, attractiveness, love, and sexuality (Ronan, 2004). In today's American culture, women are inundated by the media and advertisements that determine what the ideal, sexually attractive body shape is. When this ultimate "ideal" model is not naturally attained, then subsequently, the goal is to attain it. Consequently, some women lack the ideal body, or breast size and shape, which may attribute to the rise in breast augmentation procedures (Flentje, 2001). Although not extensively researched, psychological factors have attributed to the growing number of performed breast augmentation procedures. Some of these factors include the perception of self-esteem, and sexuality (Sarwer, et. al., 2003; Flentje, 2001). Mac Pherson (2005) review of literature revealed limited information and comprehension of the psychological effects that occur to women following breast augmentation, namely, self-esteem and sexuality. "Personal appearance and physical beauty are becoming increasingly important in our society and as a consequence; enter into the realm of healthcare" (p. 5).

Health care providers, namely nurses, are increasingly exposed to elective cosmetic patients. According to ASPS (2004), one of the more common cosmetic procedures being performed at this time is breast augmentation. Additional research is needed in order to provide nurses with further knowledge on the specific standard of care norms for the cosmetic surgical patient population. These added guidelines anticipate perceptiveness to the healthcare provider by recognizing the psychosocial implications which may occur prior to and/or following breast augmentation. This study reveals the outcome of breast augmentation as it relates to a patient's level of self-esteem, and sexuality. Thus, by

exploring this phenomenon further and revealing the results, nurses will be better prepared to provide optimal health care for the cosmetic surgical patient. This chapter provided a statement of the problem, discussed the context and social relevance and significance of the issue to nursing, offered a conceptual model, provided definition of terms, identified the hypotheses, offered philosophical assumptions and lastly, addressed study limitations.

## *Chapter II*

### *Literature Review*

#### *Overview*

A literature search across disciplines was conducted using the key words: breast augmentation, self-esteem, sexuality, cosmetic surgery, Body Dysmorphic Disorder, psychological and psychosocial characteristics of the cosmetic surgical patient, socio-cultural impact on appearance, and cosmetic surgery statistical analysis. The author searched the indexes of the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Health and Psychosocial Instruments (HAPI), Ovid, Dissertation Abstracts, PubMed, American Society of Plastic Surgeons Statistical Trends, International Council of Nurses, and the American Nurses Association. Citations were limited to the English language. The literature reviewed for this study spanned the years 1890 through 2005 and included information about the cosmetic surgical patient as it related to self-esteem and sexuality in relation to the patient and healthcare provider.

#### *Self-Esteem*

For many women, breast size is an important part of feeling good, desirable and normal. Most women compare themselves to a cultural idea of beauty. The psychological status of breast augmentation patients is a critical issue that has yet to be explored by researchers. Surprisingly, very little is known about either the psychological characteristics of cosmetic surgery patients or the psychological impact of the surgical procedures.

Sarwer et. al. (2000) conducted a review, total number unspecified, designed to provide an overview of the medical and psychological literature on cosmetic breast

augmentation. The researcher's question was, "Do some women, in response to socio-cultural pressures and extensive advertisements, seek a surgical solution to what are actually psychological issues" (p. 848). In an attempt to organize the studies, they grouped the studies into three categories namely: demographic characteristics, preoperative, and postoperative investigations. Demographically, the typical breast augmentation patient was Caucasian, middle to upper middle socioeconomic status, in her 20s or 30s, with an average age of 31 years. She is typically married and has children. Sarwer et. al. (2000) noted that the demographic characteristics obtained from the evaluation of the research studies were inconsistent and unclear. For example, some of the studies described the breast augmentation patients as intelligent, charming, attractive, and socially graceful. On the other hand, Sarwer et. al. (2000) noted that other studies characterized the patients with a less flattering portrayal, describing them as immature and having poor marital and familial relationships.

Sarwer et. al. (2000) claimed that studies that investigated the preoperative psychological status of breast augmentation patients were divided between those that used clinical interviews and those that used formal psychometric assessments. Different conclusions resulted from the two research methods. The researchers, using clinical interview investigations, described augmentation patients as experiencing increased symptoms of depression, anxiety, guilt, and low self-esteem. These studies, consistent with interview-based investigations of other cosmetic surgery populations, suggested a high degree of psychopathology in breast augmentation patients. In contrast, studies that used standardized psychometric tests generally reported less psychological disturbances. Although the psychometric studies present a more favorable picture than the interview-

based investigations, the previous studies also had limitations. Several failed to use control or comparison groups. Investigations that compared patients with normative samples frequently failed to describe the demographic characteristics of the two groups. Consequently, the prevalence of psychopathology in women seeking breast augmentation, as compared with similar women not seeking surgery, is unknown (Sarwer et. al., 2000).

Additionally, the postoperative investigations of breast augmentation patients proved to be subjective in nature. For instance, there were reports from surgeons regarding their patients' satisfaction with breast augmentation surgery. According to Sarwer et. al. (2000) review, these reports suggest that typically 70% or more of patients report satisfaction with their surgical outcome. Such investigations have been filled with demand characteristics; for example, how many patients are going to tell their surgeon, face to face, that they were not satisfied with their postoperative results? Likewise, how many surgeons are going to report to other colleagues that their patients were not satisfied with their surgical results?

Postoperatively reported psychological results were as well in question. For example, the two studies reviewed by Sarwer et. al. (2000), of breast augmentation patients that used psychometric measures postoperatively, found mixed results (unobtainable patient totals). One study found a decrease in symptoms of depression from preoperative status, whereas the other reported increased symptoms of depression in 30% of patients in the immediate postoperative period. As with many of the pre-operative investigation, these postoperative investigations also had methodological deficiencies, such as failure to use

control or comparison groups, which made it difficult to draw a firm conclusion from them.

Finally, conclusions drawn by the researchers from this review, suggested that the outcomes of all the studies reviewed were questionable in value. This was due primarily to the unstructured interviews and unreliable reports obtained by the previous researchers. Therefore, the authors highly support additional research regarding breast augmentation procedures and the psychological effects on patients (Sarwer et. al., 2000).

A meta-analysis literature review of 10 studies performed by Figueroa (2003), indicated positive, direct correlation between self-esteem levels and cosmetic surgery. The results of the review implied that self-esteem and self-worth increased and decreased proportionally and were similarly altered with situational events. The research review identified an increased level of self-esteem correlated with improved levels of depression, improved healing processes, and the ability to cope with changes in body image (positive or negative interpretations by the patients). Additionally, the literature review performed revealed that patients' improved body image was found to decrease appearance-related burdens, have positive psychological benefits, and improve quality of life outcomes. The conceptual model developed for this study also substantiates how women's psychological status (i.e., body image and situational events) affect the levels of self-esteem and sexuality following breast augmentation.

Cash, Duel and Perkins, (2002) prospective study found improvements in body image following breast augmentation. This study examined the psychosocial outcome experiences of 360 women, with an average age of 32, receiving bilateral breast augmentation with Dow Corning's Silastic MSI (textured) or Silastic II (smooth) gel-filled mammary



implants. At six, 12, and 24 months postoperatively, the women rated their satisfaction with surgery and its specific psychosocial outcomes, their concerns, and benefits-to-risk appraisal of the augmentation. During the three intervals, the women completed a two-page questionnaire designed to assess their reasons or expectations for the surgery and their concerns about perceived risks of both the surgery and the implants. The women reported very high levels of satisfaction with the procedure and its psychosocial outcomes, which did not change over time ( $r = 0.31, 0.22, \text{ and } 0.33; p < 0.001$ ), followed by improved self-image ( $r = 0.33, 0.27, \text{ and } 0.39; p < 0.001$ ) and sexual satisfaction ( $r = 0.31, 0.22, \text{ and } 0.30; p < 0.001$ ). Cash et. al. (2000) added;

The principal aim of cosmetic surgery is to facilitate body image change via bodily change. Other safe and effective treatments of body image dissatisfaction emphasize cognitive and behavioral changes through psychotherapeutic interventions. Although surgery can be a catalyst for body image change, it will not necessarily alter well engrained patterns of self critical and self defeating body image thoughts, feelings, and behaviors. An integration of surgical and psychological approaches may offer optimal benefits for some individuals who are unhappy with their appearance (p. 2120).

Sarwer, Wadden, and Whitaker (2002) evaluated 45 out of 100 potential cosmetic patients, six of whom underwent breast augmentation. This study was undertaken to explore changes in body image following cosmetic surgery. Potential participants were 100 women who were seen for a cosmetic surgery consultation during a six month period with one of five plastic surgeons. Approximately two weeks before their appointment the

women were mailed a packet of questionnaires that they completed and brought to their consultation. Approximately six months postoperatively, the women were mailed a second packet of questionnaires that they were asked to complete and return in a postage-paid envelope. Sarwer et. al. (2002) included in the package a patient questionnaire, Multidimensional Body-Self Relations Questionnaire (Brown, Cash & Mikulka, 1990; Cash, Winstead & Janda, 1986) and Body Dysmorphic Disorder Examination Self-Report (Rosen & Reiter, 1996).

Comparisons between patients who did and did not undergo surgery were made using t-test for independent groups. Comparisons between the preoperative and postoperative assessments were made using a series of paired t-tests. To control for increased experimental error rate attributable to repeated t-test on subscales of the Multidimensional Body-Self Relations Questionnaire, a Bonferroni correction was used ( $p < 0.005$ ). This correction was not used for the Body Dysmorphic Disorder Examination Self-Report, as it yields a single total score. Only 57 of the 100 women initially seen for a consultation elected to undergo surgery. Women who did and did not undergo surgery did not differ on any of the variables of interest at the preoperative assessment. In addition, 12 women out of the 57 who elected to undergo the surgery, did not complete the questionnaires. There were no differences at the preoperative assessment between women who did ( $n=45$ ) or did not ( $n=12$ ) complete the postoperative questionnaires.

The patient information questionnaire obtained descriptive information. Prior to surgery the prospective patients were asked what feature they were considering for surgery, how long they had been considering surgery, if they had experienced any major life changes, stress, anxiety, or depression with the past year, and if they had sought

mental health treatment for these problems. Post operatively, the patients were asked how satisfied they were with the surgical results, whether people had commented on their appearance since surgery, and whether these comments were positive or negative. They were also asked to rate their overall appearance and appearance of the feature altered by surgery. Lastly, they were asked if they would have the surgery again, and if they would recommend the surgery to others.

The Multidimensional Body-Self Relations Questionnaire measured several aspects of body image. It has 10 subscales that assess both individual investment in as well as satisfaction with appearance, fitness, health and illness, and weight. Patients responded to questions on a scale of one (definitely disagree) to five (definitely agree). The Body Dysmorphic Disorder Examination Self-Report is a measure of body image dissatisfaction focused on a specific physical feature. This measure is also an operational diagnostic criterion for body dysmorphic disorder. Answers are rated from one to six, with higher scores reflecting greater dissatisfaction with the specific feature. At the preoperative assessment, the majority of patients rated highest in dissatisfaction the feature for which they were considering surgery. There were no differences between the preoperative and postoperative assessments on any of the subscales of the Multidimensional Body-Self Relations Questionnaire. Patients did score higher on the Appearance Evaluation subscale postoperatively, suggesting an improvement in the overall evaluation of appearance. This difference, however, did not reach statistical significance ( $p = 0.063$ ). Postoperatively, patients scored an average of  $32.42 \pm 20.73$  on the Body Dysmorphic Disorder Examination Self-Report, a score that was

significantly lower than the preoperative score, which was an average of 48.96 +/- 25.73;  $t(44) = 5.10, p < 0.0001$ .

Thus, cosmetic surgery patients, six of whom had breast augmentation performed, reported significant improvement in the degree of satisfaction with the specific body feature altered by cosmetic surgery. The study indicated global increase of one's evaluation of personal appearance. However, because it was not statistically significant, it appeared that cosmetic surgery may not have positive effects to overall body image. The study provided additional information on the psychological factors that influence the decision to seek breast augmentation procedures, as well as information on the psychological characteristics that may change postoperatively. However, results of this study also suggest additional areas of research such as the psychological affects of self-esteem following cosmetic surgery (Sarwer et. al., 2002).

Specific aspects of self-esteem are more easily influenced by situational events, such as puberty, pregnancy, disability, illness, surgery, death, menopause and stages in the menstrual cycle that disrupt a particular substructure of the self, such as the person's roles, appearance, or functions (Body Image & Self-Esteem, 2000). Norris, Kunes-Connell and Stockard-Spelic (1998) conducted a qualitative, longitudinal, grounded theory study on self-esteem levels based on body image disruptions experiences of 28 women. Physical alterations included significant weight change, loss or paralysis of body parts, scarring from burns or trauma, or surgical reconstruction. Their definition of body image disruption encompassed individuals who realized significant alterations in appearance. The physical alterations that participants experienced were planned or unplanned, desirable or undesirable. A few were planned reconstructive procedures; most

were unplanned conditions because of illness, treatments, or accidents. Undesirable changes, such as burn scars, or desirable changes, such as weight loss following gastric surgery of morbid obesity, required re-imaging. Re-imaging emerged as the basic social process that occurred in response to significant alteration in the physical appearance of the body. Participants were interviewed at three, six, 12, and 18 months following the physical alteration. Their findings indicated that grief and loss were the patients' primary emotions which lasted for up to a year. Younger female participants were more distressed by obvious alterations of appearance than were older men and women, who were more likely to place greater value on their abilities to perform at the work place or function domestically. Self-esteem was a factor mentioned by many participants as influential in determining the degree of individual interpretation, acceptance, and integration of these changes into a realistic concept of the self.

Health educators play an important part in helping young people develop optimal self-esteem and healthy behaviors. Hence, how children feel about themselves represents a crucial component in child growth and development, thereby cultivating healthy self-esteem levels in adults. Continued research is encouraged regarding self-esteem levels and its effect on healthy behaviors within the adolescent population (King, 1997). Body image and self-esteem are closely connected and directly influence a person's belief and attitudes as well as ideals in society (Body Image & Self-Esteem, 2000).

Simis, Hovius, deBeaufort, Verhulst, and Koot, (2002), Netherlands' researchers in conjunction with the Adolescence Plastic Surgical Research Group, found a positive correlation between body image and decreased burden level. The sample of adolescent reconstruction plastic surgery patients was randomly selected and was studied at two-

time points within a six month interval. They were studied pre-surgically and post-surgically, using fully structured telephone interviews and questionnaires that were mailed to the subjects. They were rated on their appearance, bodily satisfaction and attitudes, and appearance-related burdens. Researchers utilized the Body Cathexis Scale (Secord & Jourard, 1953; Jourard & Secord, 1955) to measure dissatisfaction or satisfaction with one's body. Additionally, body attitudes were measured with the Body Attitudes Scale (Baardman, 1989), including three scales regarding appraisal, projection, and attribution. This scale contained 53 five-point Likert items (one = very dissatisfied, five = very satisfied). Eight appearance-related burden questions were asked during the telephone interviews. "Respondents were asked to what extent they experienced burdens on the items "sports," "joining clubs," "leisure time," "making friends," "romantic relationships," "mood," "self-confidence," and "future plans" such as building a career or finding a mate"(p.13).

"Repeated measures multivariate analyses of variance, with patient/comparison group and gender as factors, and age as covariate to adjust for age differences in these groups, were used to analyze group-wise T1 to T2 changes in mean appearance ratings, the Body Cathexis Scale scores, and the Bodily Attitude Scale scores" (p.13). The researchers concluded from their findings that following cosmetic surgery, patients gained bodily satisfaction and were relieved of many appearance-related burdens. Across patient and comparison groups, adolescent-reported severity (T1: mean = 2.81, SD = 1.01; T2: mean = 2.29, SD = 0.71;  $p=0.04$ ).

Physical, social, and psychological burdens related to appearance satisfaction improved considerably in both corrective and reconstructive adolescent patients. More

specifically, the breast group benefited most from the operation, indicating that breast corrections are rewarding interventions (Simis, et. al., 2002). Therefore, cosmetic surgery, specifically breast augmentation procedures, may prove to diminish physical, social, and psychological burdens as well.

Cosmetic surgery, including breast augmentation procedures, has been performed on many breast cancer patients. Al-Ghazal, Fallowfield and Blamey (1999) sought to determine the relationship in 254 breast cancer women between cosmetic result, exclusive of additional breast augmentation procedures, and psychological morbidity, including anxiety, depression, body image, sexuality, self-esteem and patient satisfaction. Patients completed questionnaires assessing satisfaction with the outcome and assessing other psychosocial morbidity using the Hospital Anxiety Depression scale (Zigmond & Snaith, 1983), the Body Image questionnaire (Hopewood, 1999; Hopewood, 1993) and the Rosenberg Self-esteem scale (Rosenberg, 1965). Results indicated high satisfaction (90.5% of the patients were very satisfied with the surgery). “There was a positive correlation between cosmetics and levels of anxiety ( $r = -0.81$ ,  $p < 0.001$ ) and depression ( $r = -0.7$ ,  $p < 0.001$ ) and between cosmetics and body image ( $r = -0.4$ ,  $p < 0.001$ ), sexuality ( $\chi^2 = 22$ ,  $p = 0.001$ ) and self-esteem ( $r = -0.64$ ,  $p < 0.001$ )” (p.571). Results of this study indicated that the cosmetic results achieved had a noticeable bearing on the subsequent development of psychological outcome. Consequently, improving the levels of self-esteem in breast cancer patients, following conserving cosmetic surgery procedures, indicated that this clinical intervention increased self-esteem and sexuality levels, perhaps mimicking identical outcomes in patients who have underlined low self-esteem or sexuality levels following breast augmentation.

### *Summary of Self-Esteem Literature Review*

Self-esteem continues to be one of the most commonly researched concepts in social psychology (Baumeister, 1998). Sarwer et. al. (2000) literature review revealed vast differences in outcomes regarding medical and psychological characteristics of women who sought breast augmentation. The unstructured interviews and unreliable reports obtained by the previous researchers may account for the substantial differences found in the research study results. Because of the discrepancies in results, Sarwer et. al. (2000) strongly support additional research regarding breast augmentation procedures and the psychological effects on patients, namely the effects on self-esteem levels.

The level of self-esteem may easily be applied to breast augmentation patients, as researchers have contended that cosmetic surgery patients attain a great deal of their self-esteem from their physical appearance, and when this self-esteem decreases, they may pursue a surgical change in appearance (Sarwer, 2001). Figueroa's (2003) literature review established a positive correlation between self-esteem levels and cosmetic surgery. Body image and self-esteem are closely linked and directly influence a person's belief and attitudes as well as ideals in society (Body Image & Self-Esteem, 2000). According to Cash et. al. (2002), body image improved following breast augmentation as did levels of sexual satisfaction. The researchers proposed, although surgery can be a means of body image change, it will not necessarily alter patterns of self-defeating body image thoughts, feelings, and behaviors. Nevertheless, they add, a combination of surgical and psychological approaches may offer optimal benefits for some patients who are unhappy with their appearance.



The literature review obtained for this study ascertained vast differences in psychological and sociological outcomes following breast augmentation procedures. However, there is limited research presently available which has studied breast augmentation procedures and patients' levels of self-esteem preoperatively and postoperatively using a pretest-posttest design. Because optimal self-esteem is an essential concept in human growth and development, continuous study into its meaning in relation to specific psychological and social theories is vital. In light of this, further research is needed to ascertain the degree to which self-esteem changes in relation to breast augmentation procedures.

### *Sexuality*

Another important psychological factor associated with body image and or appearance-related burdens is the sexuality component (Brumberg, 1997). For centuries, sexuality has been studied in various cultures. Sander (2004) adds, throughout the ages, the female breast has been a symbol of sexuality regardless of culture. Hall (2005) outlines the history of the scientific study of sexuality. For example, in Europe and the United States, the scientific study of human sexuality began in the late 19th century during the Victorian Age, a time of repressive sexual norms. German psychiatrist Richard von Krafft-Ebing focused on what he considered to be the psychopathological problems of sex. Viennese physician Sigmund Freud, founder of psychoanalysis, considered sexuality central to his psychoanalytic theory. Havelock Ellis, an English physician, collected a wealth of information on sexuality from case histories, medical research, and anthropological reports. The first work in his series *Studies in the Psychology of Sex* was published in 1896. His scientific objectivity laid the ground work for modern sexology.

Early in the 20th century, German physician Magnus Hirshfeld founded the first sex-research institute in Germany. He conducted the first large-scale sex survey, collecting data from 10,000 men and women. He also initiated the first journal for publishing the results of sex studies, and started a marriage-counseling service. Most of his materials were destroyed by the Nazis during World War II between 1939 and 1945.

The most noted scientific studies of sexuality in the 20th century are those of American biologist Alfred Charles Kinsey and his colleagues and those of William H. Masters and Virginia Johnson. Kinsey began interviewing people about their sexual histories in 1938, and with his colleagues he published *Sexual Behavior in the Human Male in 1948 and Sexual Behavior in the Human Female in 1953*, based mostly on interviews with 5300 white men and 5940 white women. As in any area of science, particularly relatively new and sensitive areas such as sex research, these studies have been criticized on the basis of their findings and methodologies, but Hall (2005) asserts each study brings us closer to a fuller understanding of human sexuality.

The Society for the Scientific Study of Sexuality (SSSS), founded in 1957, is an international organization dedicated to the advancement of knowledge about sexuality. It is the oldest organization of professionals interested in the study of sexuality in the United States. SSSS brings together an interdisciplinary group of professionals who believe in the importance of the production of quality research and the clinical, educational, and social applications of research related to all aspects of sexuality. The early 20th century produced phenomenal growth in scientific understanding; however, similar gains were not being made in understanding sexuality. Knowledge concerning sexuality has often been accompanied with misunderstanding and confusion (The Society

for the Scientific Study of Sexuality, 2002). As healthcare providers, it is essential that these sexual aspects of human life, such as a woman's level of sexual attractiveness and responsiveness, be further understood in order to provide optimal patient care. To date there has been limited research investigating the relationship between sexuality and breast augmentation.

Rowland, Desmond, Meyerowitz, Belin, Wyatt and Ganz (2000) found that cosmetic surgery studies rarely examined quality of life and sexual functioning. Their study examined the role of reconstructive surgery on physical and emotional outcomes among breast cancer survivors. A total of 1957 breast cancer survivors from two metropolitan areas were assessed with the use of a self-report questionnaire that included a number of standardized measures of health related quality of life, body image, and physical and sexual function.

Instruments used included the RAND (Hays, Sherbourne & Mazel, 1992), a 36-item health survey that assesses physical functioning, role function, bodily pain, and social function. Each score was scored from zero to 100, with higher scores reflecting better functioning. Rowland et. al. (2000) additionally used the Medical Outcomes Study Social Support Survey (Sherbourne & Stewart, 1991), which has 19-items and was scored from 0 to 100, with 100 indicating better social support. The Center for Epidemiologic Studies Depression Scale (Radkiff, 1977) is a 20-item self-report scale designed to determine the presence of depression. Responses on each item are rated on a four-point scale from zero to three, resulting in a range from zero to 60 on the total score. Higher scores are associated with more symptoms of depression. The Revised Dyadic Adjustment Scale (Busby, Crane, Larson & Christensen, 1995) assesses marital or partnership adjustment.

This 14-item instrument provides four factor subscales; dyadic consensus, satisfaction, cohesion, and affectional expression, which are added to generate a total adjustment score. The ranges are from zero to 69, with lower scores reflecting more distressed dyadic relationships. The developers of the shortened scale report mean values of 48.0 (SD = 9.0). Watts Sexual Function Questionnaire (Watts, 1982) is a 17- item instrument that assesses the primary components of sexual function. This five-point Likert type scale ranged from one (never), to five (always). The total sexual function score ranges from 17 to 85, with high scores associated with positive sexual functioning. The last instrument used was the Cancer Rehabilitation Evaluation System (Schag, Heinrich & Ganz, 1983). This is a comprehensive survey designed to assess the quality of life and rehabilitation needs of cancer survivors. Scores range from zero to four, with higher scores indicating worse conditions.

The breast cancer survivor groups studied were lumpectomy (57%), mastectomy alone (26%), and mastectomy with reconstruction (17%) patients. The groups did not differ in emotional, social, or role function. Women in the mastectomy with reconstruction group were most likely to report that breast cancer had a negative impact on their sex lives (45.4 %, versus 29.8% for lumpectomy, and 41.3% for mastectomy alone;  $p = .0001$ ). As expected, women in the lumpectomy group reported statistically significantly fewer problems with their body image and feelings of sexual attractiveness than women in either the mastectomy with reconstruction or the mastectomy-alone groups. The findings from this study substantiate the importance of woman's breast size, and shape, and how the breast can impact feelings of sexual attractiveness following breast surgery (Rowland et. al., 2000).

The literature suggests significant psychological, social and sexual morbidity may follow mastectomy for treatment of breast cancer. This morbidity is caused by the realization that the patient has a life threatening disease together with body image disturbance following mastectomy. Al-Ghazal, Sully, Fallowfield and Blamey (2000) also found that patients' self-perceived sexual attractiveness increased significantly following immediate post-mastectomy-breast reconstruction surgery (IR) verses delayed reconstruction (DR). Those patients who delayed their reconstructive procedures had lower levels of return to sexual functioning which, to the researchers, corresponded with feelings of sexual attractiveness. Patients who had immediate reconstruction recalled less distress and reported better psychosocial well-being than those who had delayed reconstruction. A total of 121 patients participated in the study. Thirty-eight patients had immediate reconstruction and 83 chose to have delayed reconstruction. The follow up time since surgery ranged from six to 226 months.

All patients were given questionnaires to measure anxiety, depression, body image and self-esteem. Tools used by Al-Ghazal et. al. (2000) included the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), Body Image Scale (Hopwood, 1993) and the Rosenberg Self-Esteem Scale (Rosenberg, 1965). They were asked to answer questions about their satisfaction with cosmetic and sexual attractiveness. Ninety-five percent of the patients who had IR stated that they would still prefer IR and 76% of the patients who had DR stated that they would have preferred IR. Ninety-four percent of the IR patients stated that they were very satisfied while only 73% of the DR patients stated they were satisfied ( $p = < 0.001$ ,  $\chi^2 = 32.13$ ). In the DR group, there was no relationship between the time elapsed before reconstruction and patient satisfaction. Only eight

percent of the IR group compared with 32% of the DR felt an obvious impairment of their sexual attractiveness ( $p < 0.0001$ ,  $\chi^2 = 32.13$ ). Anxiety ( $p = 0.0052$ ,  $\chi^2 = 7.8$ ) and depression ( $p = 0.05$ ,  $\chi^2 = 3.01$ ) were less in the IR group than the DR group. Body image ( $p = 0.0001$ ,  $\chi^2 = 22.65$ ) and self-esteem ( $p < 0.0001$ ,  $\chi^2 = 23.4$ ) were superior in the IR group.

Davis and Vernon (2002) conducted a study to determine the relationship between cosmetic surgery and efforts (attachment anxiety) to attract or retain romantic partners and neuroticism. They stated that mate value, or desirability to potential romantic partners, was known to depend in large part on physical attractiveness, particularly for women. For this reason, men and women report use of various procedures for enhancing physical attractiveness as strategies for attracting and retaining mates. This study consisted of 681 men, and 1157 women. Experiences in Close Relationships Tool (Brennan, Clark & Shaver, 1998) were used for this study. A survey questionnaire was posted on the Internet with the title The Dating Survey IV: Sex in Our Relationships. Findings concluded that attachment anxiety was strongly associated with neuroticism,  $r(1802) = .56$ ,  $p < .0001$ , as was attachment avoidance to a lesser degree,  $r(1846) = .19$ ,  $p < .0001$ . Anxiety was related to cosmetic procedures primarily among women. Clearly, attachment anxiety had thus far been empirically related to both cosmetic procedures, as well as more extreme attempts to control appearance, such as the use of steroids or eating disorders. Therefore, as this study indicates, physical attractiveness, attachment anxieties, as well as other methods associated in developing sexuality are motivating factors for women to seek breast augmentation.

### *Summary of Sexuality Literature Review*

Sexuality has been studied for centuries in various cultures (Sanders, 2004). As the knowledge base increases in regards to human's sexuality, so does the awareness of its importance and influence with respect to women's health. Knowledge concerning sexuality has often been accompanied with misunderstanding and confusion (The Society for the Scientific Study of Sexuality, 2002). There are limited studies related to levels of sexuality as they affect breast augmentation surgical patients. However, some studies have shown that breast cancer patients with breast reconstruction had significantly improved levels of sexual attractiveness (Rowland et. al., 2000). Additionally, other studies indicated that immediate post-mastectomy reconstruction procedures greatly increased patients' self-perceived sexual attractiveness (Al-Ghazal, et. al., 2000). Several clinical reports have described breast augmentation patients as having poor interpersonal and romantic relationships. Additional studies have reported that breast augmentation patients have a high rate of divorce and sexual dysfunction (Didie & Sarwer, 2003).

Other factors interrelated to sexuality include interpersonal issues, which relate to the importance of the breast in social and romantic relationships, may play an important role in the decision to seek surgery. As health care providers, acknowledgment of potential sexual dysfunctions in the cosmetic surgical patient, namely the breast augmentation patient, will offer a better understanding of the underlined issues associated with women who desire to obtain larger and shapelier breast. Additionally, this study will add to the body of literature, by connecting the association of human sexuality and cosmetic surgery, and its relation to patients' psychological and sociological wellbeing. Furthermore, this knowledge will enlighten cosmetic surgical healthcare providers,

regarding expected postoperative patient outcomes, with the intention that they may anticipate and respond accordingly to them.

### *Breast Augmentation*

Clearly, breast and chest sizes have a significant impact on individuals' shapes, and may therefore play an important role in body image. According to Tantleff-Dunn (2002), the popularity of breast augmentation procedures has suggested that for decades. Additionally, documentation has implied that American women have been experiencing dissatisfaction with their breast size and shape in addition to the more general body image dissatisfaction.

Tantleff-Dunn (2002) investigated the degree to which breast/chest size preferences and stereotypes have changed over the past decade in order to identify any subsequent trends in the stereotypes associated with different sizes. Additionally, the study sought insight into the motivations which influence participants to seek breast augmentation. The sample consisted of 511 women and 275 men. Participants completed the Breast/Chest Rating Scale (Thompson & Tantleff, 1992), which consisted of five schematic drawings of women or men, ordered by increasing breast/chest size. Two mixed ANOVAs were conducted to assess gender differences in breast and chest size ideals, and perceptions of men and women's ideals. Because multiple comparison error rates were accounted for in the ANOVAs, significant main effects and interactions were further investigated with Fisher Protected T- Test. A two (gender: male, female) by five (time: 1990, 1992, 1994, 1996, 1998) by three (rating: ideal, preferred by men, preferred by women) ANOVA was conducted on breast size ratings. Results indicated a significant rating by gender interaction,  $F(2, 1528) = 15.05, p = .000$ , and a significant main effect of rating,  $F(2,$



1528) = 493.34,  $p = .000$ . There were no significant main effects on time or time by rating or gender interactions.

Motivational factors tested included; intelligence, popularity, successfulness, and sexually activeness. For breast size associated with being the most intelligent, there was a main effect of time [ $F(1, 434) = 32.12, p = .000$ ] with participants in 1998 associating a significantly larger breast size with intelligence (mean = 2.68, SD = 0.89) than with participants in 1990 (mean = 2.13, SD = 0.92). In addition, there were significant main effects of time for ratings of the breast size associated with being popular [ $F(1, 434) = 9.60, p = .002$ ], successful [ $F(1, 434) = 8.51, p = .004$ ], and sexually active [ $F(1, 434) = 9.24, p = .003$ ].

Summarized, the mean scores indicated that a significantly larger breast size was associated with increased intelligence, popularity, successfulness and sexual activity by the 1998 group than the 1990 group. Findings suggest that personal perceptions of the ideal breast size have not changed, however an increase in breast size is associated with various positive characteristics, including intelligence, successfulness, and popularity. The results of this study indicate that upper torso images (breast size) commonly portrayed in the media may not be accurate portrayals of what men and women prefer. Nevertheless, breast augmentation procedures continue to rise annually, likely due to the association between positive characteristics and a large breast size (Tantleff-Dunn, 2002).

Patients seeking cosmetic surgery typically are motivated by a desire to reduce self-consciousness about negative thoughts and feelings about oneself or the evaluation of the self by others (Koff and Benavage, 1998). Koff et. al. (1998) additionally reported that breast augmentation seeking patients, often experience anxious preoccupation about their

physical appearance, and report feelings of low self-esteem. Their study examined relationships among breast size perception, breast size satisfaction, body image, and several aspects of psychological functioning that have been associated with breast dissatisfaction. One hundred and sixty six women were studied, 94 Caucasian and 72 Asian American.

Instruments used included; Beliefs and Attitudes about Breast/Chest Size (Thompson & Tantleff, 1992), Perception of Breast Size (Thompson & Altabe, 1991) (one = smallest, five = largest), Satisfaction with Breast Size (zero – four, higher scores indicating greater disagreement between perceived and ideal size), Body Satisfaction Scale (Multidimensional Body-Self Relations Questionnaire (MBSRQ); Brown, Cash & Mikulka, 1990; Cash, 1990) (five-point Likert scale, ranging from one being very satisfied to five being very dissatisfied), seven-item Appearance Evaluation subscale, Overweight Preoccupation Scale (Cash, Wood, Phelps & Boyd, 1991), Rosenberg Self-Esteem Scale (Rosenberg, 1965), Self-Consciousness Scale (Fenigstein, Scheier & Buss, 1975), and Appearance Orientation Subscale of the MBSRQ.

Results indicated that larger breast size was associated with more positive attributes, including being popular, sexually active, assertive, and confident. On the other hand, smaller breast size was associated with more negative attributes, such as being depressed and lonely. Additionally, smaller breast size was associated with intelligence and athleticism. There was agreement that men preferred larger breast than women preferred or that participants themselves considered ideal. There was no difference between the size believed to be preferred by other women and participants' ideal [ $t(163) = -.73, p = .47$ ] or perceived size [ $t(163) = .65, p = .52$ ]. Lower breast size satisfaction was

associated with lower body satisfaction ( $r = .34, p < .001$ ), lower generalized appearance satisfaction ( $r = .36, p < .001$ ), and higher weight preoccupation ( $r = -.25, p = < .001$ ).

Lower breast size satisfaction was also correlated with lower self-esteem ( $r = -.33, p < .001$ ) and with higher public self-consciousness ( $r = -.22, p = .005$ ).

Banbury, Yetman, Lucas, Papay, Graves and Zins (2004) expressed that while plastic surgery literature is replete with reports regarding techniques and complications following breast augmentation operations, there are significantly fewer reports measuring breast augmentation outcomes on other psychological and physiological effects resulting from the surgery. Banbury et. al. (2004) evaluated outcomes following breast augmentation to evaluate sensory changes of the breast, pectoral muscle function, and body image. Sensation was evaluated by two means: vibration and pressure, using Semmes-Weinstein monofilaments. Pectoral muscle function was determined by measuring maximal voluntary isometric force. This force was measured with an electronic strain gauge tensiometer. This was connected to a Macintosh computerized data system. The Multidimensional Body-Self Relations Questionnaire (Cash, Winstead & Janda, 1986) was used to measure aspects of body image. It has ten subscales that assess individuals' investment in and satisfaction with their appearance, fitness, health, and weight. It is a sixty nine item, self report inventory for the assessment of self-attitudinal aspects of the body-image construct. Forty seven women were evaluated preoperatively and at three and six months postoperatively. Repeated-measures analysis of variance was used to compare the three visits on the body image scores. Pair wise comparisons were performed using repeated measures ANOVA. The significance level

was 0.05 for each hypothesis. Body vibration and pressure had significant mean changes from preoperatively to postoperatively (mean = 2.45 to 2.77,  $p < 0.001$ ).

Vibration demonstrated significant differences both at the three month and six month measurements, whereas pressure demonstrated a significant alteration at the three months but not the six month period (mean = 0.39 to 0.98,  $p = 0.13$ ). There was no detected change in muscle function preoperatively or postoperatively following breast augmentation (mean = -1.12 to 2.25,  $p = 0.12$ ). The mean scores for body area satisfaction improved significantly (mean = 0.30 to 0.50,  $p = < 0.001$ ). Researchers support further evaluation of these patients at one, two and five year periods, because they state, there is no certainty that the early positive changes in body image will be maintained.

Didie and Sarwer (2003) studied factors that influenced patients to undergo cosmetic breast augmentation surgery. They point out that in 2001, breast augmentation surgery was the most popular cosmetic surgery performed by American plastic surgeons. A variety of factors motivate women to seek cosmetic surgery. They identify however, that such factors have received little theoretical discussion and empirical study. Their study included 25 women, with a mean age of 32, who were scheduled for breast augmentation procedures. Demographic questionnaire, Multidimensional Body Self Relations Questionnaire (Brown, Cash & Mikulka, 1990; Cash, Winstead & Janda, 1986), Appearance Schemas Inventory (Cash & Labarge, 1996), Socio-cultural Attitudes Towards Appearance Questionnaire (Heinberg, Thompson & Stormer, 1995), Body Dysmorphic Disorder Examination Self- Report (Rosen & Reiter, 1996), Breast Chest Rating Scale, Physical Appearance-Related Teasing Scale (Thompson, Fabian, Moulton,

Dunn & Altabe, 1991), Quality of Life Inventory (Frisch, 1994), Derogatis Interview for Sexual Functioning-Self Report (Derogatis, 1978), Dyadic Adjustment Scale (Spanier, 1976), Motivation for Augmentation Questionnaire, Source of Knowledge Questionnaire, and Breast Implant Questionnaire were the tools used in this study.

Comparisons between the group of prospective breast augmentation patients and controls were made using a series of t-tests. Frequencies and differences between groups were examined by using chi-square analyses. Breast augmentation candidates reported a larger ideal bra cup size,  $t(53) = 3.78, p < 0.001$ . The augmentation candidates reported more positive sexual functioning overall,  $t(23) = 3.08, p < 0.005$ . They reported greater sexual drive,  $t(30) = 6.63, p < 0.01$  and becoming sexually aroused more easily,  $t(28) = 4.03, p < 0.001$ . The authors concluded that breast augmentation results in improved body image with negligible effects on muscle or nerve function of the breast. Additionally, breast augmentation patients appeared motivated by their feelings about their breasts rather than direct /indirect influence from external sources, such as romantic partners or socio-cultural representations of beauty.

Statistics revealed by the American Society of Plastic Surgeons (2004), cosmetic surgery, including breast augmentation, has become an increasingly common medical procedure. The benefit to patients has not been quantified objectively. Rankin, Borah, Perry and Way (1998) examined prospectively long-term quality of life outcomes for patients undergoing elective cosmetic surgery. A correlation study of 105 patients, using the parameters of the quality of life index, depression, social support, and coping was conducted preoperatively, and at one and six month intervals postoperatively. The 105 cosmetic surgery patients were recruited preoperatively through three plastic surgery

practices. Ten percent were male and 90% were female. Sixty-four percent were between the ages of 31 to 50 years with a range of 19 to 70 years. Subject criteria for participation in the study included the ICD-9 Code C-M V50.1, defined as persons seeking surgical alteration of structurally normal body parts to improve appearance. Instruments used included four self-report questionnaires, Health Measurement Questionnaire, Personal Resources Questionnaire, Center for Epidemiologic Studies Depression Scale (Radkiff, 1977), and the Ways of Coping Scale (Folkman & Lazarus, 2004). The findings indicated that cosmetic surgery produced positive psychological benefits by significantly improving quality of life. The highly significant result ( $p < 0.0001$ ) indicated considerable positive effects on the overall quality of life measures from cosmetic surgery in general.

Sarwer et. al. (1998) conducted a study on the effects of breast augmentation versus breast reduction and its relationship to body image dissatisfaction. Thirty women seeking breast augmentation and 30 seeking breast reduction procedures completed two body image measures preoperatively. Instruments used included a patient information questionnaire, Multidimensional Body-Self Relations Questionnaire (MBSRQ) (Brown, Cash & Mikulka, 1990; Cash, 1990) and the Body Dysmorphic Disorder Examination-Self-Report (BDDE-SR) (Rosen & Reiter, 1996). Both groups of patients reported engaging in substantial behavioral change in response to their feelings about their breast. The results of this study suggest that breast reduction and augmentation patients present for surgery with different body image concerns. As compared with the breast augmentation patients, breast reduction patients reported greater dissatisfaction with their overall body image [ $t(58) = 2.24, p < .03$ ].

Sarwer et. al. (1998) summarized that there are substantial numbers of individuals who are significantly distressed about their appearance, to the point of social embarrassment and avoidance. He additionally encouraged further research in regards to the psychological phenomenon that occurs to the cosmetic patient. “Understanding changes which occur following cosmetic surgery is critical to our understanding of the psychological benefits of cosmetic surgery” (p. 1960).

A study was performed to examine the efficacy of breast augmentation on 112 women. The researchers, Young, Nemecek and Nemecek (1995), asked a series of questions to determine the psychological effects of breast augmentation on body image, self-confidence and interpersonal relationships. Tools used included a demographic questionnaire, various questions relating to satisfaction with the surgical results (Likert scale: agree, disagree or neutral), questions pertaining to the surgery’s psychological impact, some of which were taken from the Multidimensional Body Self Relations Questionnaire (Brown, Cash & Mikulka, 1990; Cash, 1990), and finally, interviewees were asked to rate their satisfaction with various areas of their bodies. Percent values were reported on all of the result obtained from this study. Eighty six percent of the group reported decreased self-consciousness and 88% reported heightened self-confidence. Ninety five percent felt better about themselves after surgery, 86% reported being completely or mostly satisfied with the results, 86% felt the operation was a success and 95% said that the breast augmentation met their expectations. In this group, a two, three, and five year postoperative follow up survey revealed that the level of satisfaction remained unchanged.

Breast augmentation patients may have underlying psychological issues which may be altered following breast augmentation. The psychological effects on cosmetic surgery patients have also been noted by other authors such as Davis (1997) who asserts, “A woman who focuses obsessively on a perceived (or real) flaw and resorts to excessive plastic surgery may be avoiding other unhappy things in herself that require more than a nip and a tuck to fix. The person can fill her day researching different surgeries and planning who will do it, which fills time so she’s not thinking about the real problems that exist within herself” (p. 220). Researchers explore and statistically support findings, that the influence of self-esteem, and sexuality, has a direct effect on how one perceives herself as perfect, following breast augmentation, a procedure that inherently corrects, and improves the appearance of one’s breasts.

#### *Summary of Breast Augmentation Literature Review*

The number of breast augmentation procedures has increased steadily over the past years. Its popularity has brought about a variety of questions regarding the reasons associated with the steady increase in numbers of procedures. Studies have attempted to analyze various psychosocial and psychological factors that may contribute to this popularity. Patients seeking cosmetic surgery typically are motivated by a desire to reduce self-consciousness about negative thoughts and feeling about themselves or impressions of others about themselves. Additionally, societal influence, of what constitutes beautiful breast or perfect breast shape motivates women to seek breast augmentation surgery (Koff & Benavage, 1998).

This chapter has reviewed the literature on self-esteem, sexuality and breast augmentation and reveals gaps on results obtained from the various data collected. There



are a variety of results obtained during this review which signify the importance of continuing research in this area. Cosmetic surgery has psychological and sociological impacts on patients postoperatively. However, the diverse study results obtained during this literature review suggest diverse outcomes. It is apparent that these studies continue, alternatively utilizing similar variables in an attempt to further understand the psychological and psychosocial dynamics that occur following cosmetic surgery, namely breast augmentation procedures.

The study will address two very important psychological issues to the breast augmentation patient, self-esteem and sexuality. Additionally, as a result of the limited research performed in this specific population of patients related to levels of self-esteem and sexuality following breast augmentation, this study will further add to the body of knowledge needed to provide appropriate nursing care. It is imperative that nurses and other healthcare providers prepare themselves to deal with issues pertaining to patients' levels of self-esteem and/or sexuality. Furthermore, providing desirable appropriate care to this specific population of patients, such as the breast augmentation patient, is essential when attempting to provide high standards of care with resulting optimal outcomes. Understanding breast augmentation, and its effects on a patients' self-esteem and sexuality levels may likely promote optimal recovery and psychological benefits to the patient.

### *Chapter III*

#### *Methodology*

##### *Introduction*

In this chapter, the methods which were used to conduct this research are presented. The research design, sampling techniques (i.e., inclusion and exclusion criteria, sample size and power analysis, data collection procedures, and protection of human subjects), research instruments used to measure the variables and their appropriateness to this study, and data analysis techniques are described and justified.

##### *Research Design*

This descriptive study used a pretest-posttest design, convenience sample group. This design was selected because the study contains subjects, incorporates a treatment modality, and is nonrandomized. The main objective of descriptive research studies is to accurately portray characteristics of individuals, situations, or groups and the frequency with which certain phenomena occur. Pre-post design is the collection of data from research subjects both before and after the introduction of an intervention (Polit, Beck & Hungler, 2001; Salkind, 2000). Furthermore, this design was used to investigate the relative contributions of the predictor or independent variable, breast augmentation procedure, to the two criterion or dependent variables, self-esteem and sexuality. The independent variable, bilateral breast augmentation procedure, is a surgical breast enhancement technique which augments the breast by placing breast implants (saline or silicone filled) directly under the existing breast tissue (American Society of Plastic Surgeons, 2004). The two dependent variables are levels of self-esteem and sexuality.

Self-esteem levels were measured by using the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965). This scale measures an individual's self-esteem from a global or overall perspective. For this study, sexuality will refer to sexual attractiveness and responsiveness, and was measured using the Female Sexual Function Index (FSFI). Daker-White (2002) found this instrument to be a reliable and valid female sexuality index tool. The questionnaire has a high level of internal consistency (Cronbach's  $\alpha = .81-.97$ ) and is also highly reliable (test-retest of  $.61 < r < .92$ ). Institutional Review Board (IRB) approval was obtained from Barry University prior to the initiation of the study.

Preoperatively, participants signed the consent form, and completed the demographic questionnaire and the two research instruments. One to two months postoperatively, the patients again completed the two research instruments. This time frame was selected because, on an average, final results obtained following breast augmentation, can occur as early as one month. Most patients take from one to three months to recover, however, are able to return to work one to two weeks postoperatively. The breast will begin looking more natural and softer within the first three to four weeks (American Society of Plastic Surgeons, 2004).

### *Setting*

Participants were obtained from privately owned cosmetic surgical centers in South and North Central Florida. Florida is third in regions which rank highest in populations of individuals who obtain breast augmentation in the United States. An estimated 49,755 women obtained breast augmentation in 2003 from this region (American Society of Plastic Surgeons, 2004). Because of this large population of women who seek breast

augmentation, Florida was chosen as the state in which to collect data for this study. All cosmetic surgical facilities were accredited and the facilities and surgeons met Florida's surgical ambulatory standards. The outpatient facilities accommodate various types of cosmetic surgical procedures, including breast augmentation, and in addition administer appropriate anesthesia by a licensed anesthesiologist or nurse anesthetist.

### *Participants*

#### *Inclusion and Exclusion Criteria*

For patients to meet acceptable criterion and prior to completing the questionnaires, they had to be previously scheduled for the surgical procedure (breast augmentation only) approximately one to two weeks prior to the scheduled surgery. They had to be female, at least 21 years old, having only one same day surgical procedure (breast augmentation). During 2003, the 19-34 age groups had nearly 2 million cosmetic procedures, and 24 percent of all procedures (surgical and non-surgical). The most popular surgical procedure in this age group was breast augmentation (150,208 and 54 percent of the breast augmentation total) (American Society of Plastic Surgeons, 2004). Patients may or may have been given general anesthesia, but at all times had intravenous sedation during their breast augmentation procedures.

Participants excluded from this study included men, women younger than 21 years of age, and those who were undergoing additional cosmetic surgery during their scheduled breast augmentation procedure. Other exclusions included reconstruction breast augmentations following mastopexies, breast reductions, mastectomies and/or other related reconstructive procedures due to pathological medical conditions.

### *Sample Size and Power Analysis*

In order to determine an adequate and appropriate sample size for the number of variables and statistical analysis techniques, a priori power analysis was conducted using the G\*POWER 2.0i software package (Erdfelder, Faul & Bruchner, 1996; 2001). G\*Power is a general power analysis program capable of performing high-precision statistical power analysis for the most common statistical tests in behavioral research. This software has received positive ratings for accuracy and is available free of charge on the Internet (Goldstein, 1989).

To confirm accuracy for this study, select computerized sample size estimates were compared with values listed in tables in Cohen (1988). For this study alpha ( $\alpha$ ) was set at the level of .05, and beta-1 ( $\beta$ ) was set at .95. Thus the desired power of .95 with a large effect size was used (0.8 for paired t –test, repeated measures ANOVA, SAS Proc GLM and Pearson r). When the effect size is large, or a pattern of moderate effect sizes exists, it is likely that the quality of the result represented by the survey's questions are appreciably different and, therefore, may be of practical as well as statistical significance (Cohen, 1988). In this study the measure of strength in the relationships between the variables (i.e., breast augmentation, self-esteem and sexuality) was confirmed in the literature (Sarwer, et. al., 2003; Flentje, 2001). The literature supports the notion that the independent and dependent variables were strongly interrelated. A smaller sample size is adequate to demonstrate the relationship statistically (Polit & Hungler, 1995).

Based on the standard normal tabled value for alpha level of .05 (confidence level of 95% indicating the probability of rejecting the statistical hypothesis tested when, in fact, that hypothesis is true), 84 subjects would be acceptable to participate in the study. A

confidence level of 95% is the customary norm acceptable in social science research (Munro, 2001; Polit, Beck & Hungler, 2001).

### *Data Collection Procedures*

Prior to commencement of the study, written consents were obtained from each of the cosmetic surgical centers (Appendix J), which had agreed to post a recruitment flyer in their waiting rooms (Appendix M). Patients who were interested in participating in the study contacted the researcher by phone. During the initial phone call, the candidate was screened by the researcher for inclusion criteria. Inclusion criteria denoted that the patient had to be presently scheduled for surgery, approximately one to two weeks following the initial contact with the researcher, over the age of 21, and only having a breast augmentation procedure. If eligible, a packet was mailed which included introduction to research study (Appendix A), consent form (Appendix B), demographic questionnaire (Appendix C), Rosenberg Self-Esteem Scale (Appendix D) Survey, Female Sexual Function Index (Appendix F) questionnaire, and a self-addressed, stamped return envelope. A letter of introduction was provided and the research goal was clarified. The information obtained from the demographic questionnaire determined eligibility prior to commencement of the study. This form included patients' age, marital status, present residency, ethnicities, educational levels, past cosmetic procedure histories and if consulting for other cosmetic procedures in conjunction with the breast augmentation procedure.

Once eligibility requirements were met and the participant agreed to participate, they were asked to sign the appropriate patient consent form that was mailed to them along with the initial preoperative questionnaires and instruments. Once packets were mailed

out, a routine phone call was made by the researcher to verify that the participant did receive the packet, and that there were no further questions about the study. If the participant chose not to proceed to the study after explanation of the research and following reading the cover letter, they were politely thanked (by phone call) for their time and consideration. For those who agreed to participate, it was stated that they could withdraw at anytime from the study without consequence. Participants completed the initial preoperative forms, and then mailed the forms back to the researcher in the provided self-addressed stamped envelope. Approximately one to two months following the participants' breast augmentation procedures, another packet, which included the Rosenberg Self-Esteem Scale questionnaire and the Female Sexual Function Index questionnaire, was mailed to participants, along with another self-addressed return envelope. When participants completed the postoperative questionnaires, they once again mailed them back to the researcher in the self-addressed, stamped envelope provided.

Questionnaires, including demographic data, were collected on a TELE-form survey form (Appendix K & L), with easy to read, simple instructions on how to complete each questionnaire. The questionnaire results were scanned into a Teleform database, and an identifier was added to each record, flagging it as either preoperative or postoperative. The data were then transferred into Microsoft Excel Solver Statistical Package for data review, quality control, and preliminary analysis of descriptive statistics. For the more advanced analyses, the data were further transferred to the SAS statistical package (SAS, 1999 – 2004). Both questionnaires took approximately 20 to 30 minutes to complete. Throughout the data collection process, patient confidentiality was maintained at all times by the researcher. All patient information and completed questionnaires were kept in a

sealed envelope prior to being scanned through the Tele-form automated scanning processor. The signed consents were stored separately from the demographic questionnaire and two survey questionnaires.

The researcher worked with a statistician to scan the forms onto a secure Teleform database. Patient number identifiers were obtained, delineating the preoperative questionnaire from the postoperative questionnaire. This method was used to maintain participant confidentiality, and served as a way of organizing data collection. It also insured accurate linkage between pre and post data collection. No personal identifiable information was present at any time in the files used for the data analysis. All confidential information has been stored in a locked cabinet in the researcher's office. The data will be kept for a period of five years and then destroyed. A prior notice was given that the study results in aggregate form were made available to those individuals requesting them.

#### *Protection of Human Subjects*

Approval from Barry University's Institutional Review Board (IRB) was obtained prior to initiation of this study (Appendix N, O & P). All protocols set forward by the IRB were strictly followed. The researcher had no personal association with any of the surgical facilities where the research study was conducted. Confidentiality of the participants was maintained by the inability to place any personal identifiers on the questionnaires. Once 84 completed questionnaires were collected pre-operatively and post-operatively, the data collection ceased. All information provided by participants was voluntary and remained confidential. Only the researcher and dissertation committee had access to the data. Prior to initiation of the study, all participants were made aware of the study's purpose and participation requirements via a cover letter attached to the survey



instruments. The risks involved in participation in this study were minimal. There was the possibility that some of the participants could encounter psychological distress from an awareness of their feelings of lowered self-esteem or sexuality. If this occurred they were made aware that they were not obligated to complete the questionnaires and could, at anytime, skip a question or stop the participation of the study. Although there may not have been direct patient benefits from participation of this study, the results of this study could perhaps provide a greater understanding of the psychological changes that occur in women following breast augmentation procedures. Particular reference of concern included self-esteem levels and changes in sexuality.

#### *Instrumentation*

##### *Demographic Questionnaire*

The demographic questionnaire consisted of 7-items. These demographic variables were: age, marital status, residency, ethnicity, level of education, and whether the participant had obtained previous cosmetic surgery. Lastly, the patient was asked if they were having other surgical procedures in addition to the breast augmentation procedure. This question was pertinent to the research study because it placed a deciding factor on whether this participant qualified for the study.

##### *Rosenberg Self-Esteem Inventory*

Self-esteem was measured in this study by using the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965). The Rosenberg Self-Esteem Scale measures an individual's self-esteem from a global or overall perspective. The items are rated on a scale ranging from strongly disagree (1) to strongly agree (4). Reversing the five positive items and summing them with the five negative items derives a cumulative score. Higher score

results indicate higher self-esteem levels. This measure has been used extensively in a variety of populations. In previous self-esteem research, the scale showed excellent reliability and validity (Schaumber, Patsdaughter, Selder & Napholz, 1995). Schaumber, et. al., observed internal reliability coefficients for the total sample of this study (n=40) were 0.85 at pretest and 0.86 at posttest. According to the researchers, these estimates were consistent with published reliability coefficients from studies in which the RSES has been used with comparable samples and are quite favorable for a 10-item paper and pencil self-report instrument. In addition, Peden et al. study (2000) with a sample of women ages 18 to 45 years, reported that Cronbach's alpha for the Rosenberg Scale exceeded 0.70. Cronbach's alpha in this sample was 0.89.

The Rosenberg Self-Esteem Scale is a widely accepted unidimensional measure of self-esteem which has been used in diverse populations, including women (Anderson, 2000; Cheng & Furnham, 2002) and for psychological and sociological studies related to women who seek breast augmentation (Sarwer et. al., 2002). Therefore, it was believed the best choice for use in this study.

#### *Female Sexual Function Index*

Sexuality was measured using the Female Sexual Function Index (FSFI) (Bayer AG & Zonagen, Inc.). This 19-item questionnaire was used to measure sexual functioning in women for the specific purpose of assessing domains of sexual function, for example, sexual arousal, orgasm, satisfaction, and pain. It measures sexual experience, knowledge, attitudes and interpersonal relationships in women.

The psychometric (i.e., desire, subjective arousal, lubrication, orgasm, satisfaction, and pain) validation of the FSFI was conducted by investigators, with funding from two

corporate sponsors (Bayer AG & Zonagen, Inc.) (Female Sexual Function Index Website, 2000). Test-retest reliability and validity of the FSFI tool ( $r = 0.79 - 0.86$ ) and for total scale ( $r = 0.88$ ) had been determined by Rosen, Brown, Heiman, Leiblum, Meston, Shabsigh, Ferguson and D'Agostino (2000). Additionally, a high degree of internal consistency was observed (Cronbach's alpha values of 0.82 and higher). Good construct validity was demonstrated by highly significant mean difference scores between the Female Sexual Arousal Disorder and control groups for each of the domains ( $p \leq 0.001$ ). Additionally, conflicting validity with a scale of marital satisfaction was observed. These results support the reliability and psychometric (as well as clinical) validity of the FSFI in the assessment of key dimensions of female sexual function in clinical and non-clinical samples. Rosen et. al., (2000) findings suggest important gender differences in the patterning of female sexual function in comparison with similar questionnaire studies in males.

Meston (2003) conducted a study to extend the validation of the FSFI to include women with a primary clinical diagnosis of female orgasmic disorder (FOD;  $n = 71$ ) or hypoactive sexual desire disorder (HSDD;  $n = 44$ ). Internal consistency and divergent validity of the FSFI were within the acceptable range for these populations of women. Significant differences between women with FOD and controls, and between women with HSDD and controls were noted for each of the FSFI domain and total scores. The findings from this study indicate that the FSFI is a reliable and valid measure to sexual functioning for women with FOD and HSDD. Meston (2003) determined internal consistency using Cronbach's alpha values of .91 and higher for each of the 6 FSFI domains and the total FSFI score separately for women with FOD, HSDD, and controls.

This was the first study to validate a measure of sexual functioning on a sample of women with a primary clinical diagnosis of FOD and on a sample of women with a primary diagnosis of HSDD. Meston (2003) adds, “Future research is needed to examine the sensitivity of the FSFI for detecting treatment-induced changes among these populations of women” (p. 46). Therefore, application of this tool was deemed appropriate for this study.

A study performed by Wiegel, Meston, and Rosen (2005) was designed to cross-validate the FSFI in several samples of women with mixed sexual dysfunction (n = 568) and to develop diagnostic cut-off scores for potential classification of women’s sexual dysfunction. The combined data set consisted of multiple samples of women with sexual dysfunction diagnoses, including female sexual arousal disorder, hypoactive desire disorder, female sexual orgasm disorder, dyspareunia/vaginismus (pain), and multiple sexual dysfunctions, in addition to a large sample of non-dysfunctional controls. Researchers assessed Cronbach’s alpha (internal reliability) and inter-domain correlations and tested discriminate validity by means of a MANOVA (multivariate analysis of variance; dysfunction diagnosis x FSFI domain), with Bonferroni-corrected post hoc comparisons. Wiegel et. al.,(2005) found the internal reliability for the total FSFI and six domain scores to be good to excellent, with Cronbach’s alpha >0.9 for the combined sample and above 0.8 for the sexuality dysfunctional and non-dysfunctional samples, independently. Again, because of the strengths derived from the above studies regarding the affirmation to FSFI reliability and validity results, it is believed that this index is the best choice for this study.

The scoring system of the FSFI is outlined in Appendices G and H. The individual domain scores and full scale score of the FSFI are derived by computational formula. Individual domain scores are obtained by adding the scores of the individual items that comprise the domain and multiplying the sum by the domain factor. The full scale score is obtained by adding the six domain scores. It should be noted that within the individual domains, a domain score of zero indicates that no sexual activity was reported during the past month.

### *Data Analysis*

The quantitative data analysis was performed using a combination of Excel Solver Statistical Package and the SAS statistical system (SAS, 1999 - 2004). The hypotheses for this study contained one predictor variable for the value criterion variable and two predictor variables for the levels of self-esteem and sexuality. Due to the relative seriousness consequences of Type I and Type II errors in the context of this study, alpha ( $\alpha$ ) was set at the conventional level of .05 for the behavior sciences, and beta-1 ( $\beta$ ) set at the level of .95.

Descriptive statistics, including mean, median, standard deviation, and percentages were used to describe the population. Paired difference t-tests were used to analyze relationships amongst post-operative breast augmentation patients in relation to their levels of self-esteem and sexuality. Experiments in which the observations are paired and the differences are analyzed are called paired difference experiments. This experiment set-up can often provide more information about the differences between population means than conventional independent samples, because the differencing significantly reduces other (non-measured) sources of variability. In experiments such as this, the

“control” for each post-intervention (breast augmentation surgery) patient is the same patient pre-surgery. Because there is a time element involved, some unknown/uncontrolled external factors other than the direct affects of the procedure could still influence post-surgery scores, but clearly the major demographics etcetera, are by and large relatively constant over such relatively short periods of time. T-test is a parametric statistical test used for analyzing the difference between two means (Polit, Beck & Hungler, 2001). An alpha level was set at 0.05 significance for all analyses.

Repeated measures ANOVA, SAS’s Proc GLM tested differences in the sexuality six subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after the patients received breast augmentation. This statistical method is used to determine differences among the means of two or more groups on a single variable. Like the t-test, ANOVA is a parametric procedure used to test the significance of differences between means. However, ANOVA is not restricted to two-group situations: The means of three or more groups can be compared with ANOVA (Polit, Beck & Hungler, 2001).

Pearson Product-Moment Correlation Coefficients ( $r$ ), measured the differences in the relationship of sexuality and self-esteem following breast augmentation. This statistical analysis measures the degree of relationship between pairs of interval variables in a sample. The most widely used correlation coefficient, designating the magnitude of relationship between two variables measured on at least an interval scale; also referred to as product-moment correlation. This coefficient is computed when the variables being correlated have been measured on either an interval or ratio scale (Polit, Beck & Hungler, 2001). Following the study results, demographic questions one through six were statistically studied using ANOVA, SAS’s Proc GLM to determine the marginal means

and correlations between participants' demographic profiles and their levels of self-esteem and sexuality.

### *Summary*

Prior to data collection, approval was obtained from Barry University's, IRB committee. Data from this study were obtained from same day cosmetic surgical centers in South and North Central Florida. Participants entered their responses from the questionnaires onto a Teleform-flow form. The questionnaire results were scanned into a Teleform database, and an identifier was added to each record, flagging it as either preoperative or postoperative. The data were then transferred into Microsoft Excel Solver Statistical Package for data review, quality control, and preliminary analysis of descriptive statistics. For the more advanced analyses, the data were further transferred to the statistical package (SAS, 1999 - 2004). All data were stored on a secure hard drive until adequate participants were obtained. Patient confidentiality was maintained throughout the research process. A priori power analysis computed using the G\*Power software package was conducted to determine an appropriate sample size. Eighty-four participants were deemed adequate for this study. The surveys consisted of (a) the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965); (b) the 19-item Female Sexual Function Index; and (c) a 7-item demographic questionnaire. Data analysis was performed using Excel Solver Statistical Package for quantitative data analysis. Experimental design paired difference t-tests were used to analyze relationships amongst post-operative breast augmentation patients in relation to their levels of self-esteem and sexuality. Repeated measures ANOVA, SAS's Proc GLM measured differences in the six sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after

receiving breast augmentation. Additionally, Pearson Product-Moment Correlation Coefficients ( $r$ ), measured the differences in the relationship of sexuality and self-esteem following breast augmentation. Demographic questions one through six were statistically studied using ANOVA, SAS's Proc GLM to determine the marginal means and correlations between participants' demographic profiles and their levels of self-esteem and sexuality.



## *Chapter IV*

### *Analysis of Findings*

#### *Introduction*

The purpose of this research was to gain an understanding of the changes that occurred in the levels of self-esteem, measured by the Rosenberg Self-Esteem Scale (1965) and sexuality, as measured by the Female Sexual Function Index (2000), following breast augmentation procedures. A descriptive study was used in this research, with a pretest-posttest design using a convenience sample group. Eighty four participants were obtained from privately owned cosmetic surgical centers in South and North Central Florida. A 7-item demographic questionnaire was used to address personal history and determine eligibility. Data were maintained on a secure hard drive until adequate participants were obtained.

This chapter presents the results of this study. It covers the description of the sample, analyses of frequency distributions, data analysis, measurement scales, hypotheses testing, and conclusions.

#### Description of the Sample

##### *Sample Size Adequacy*

The experimental design included an up-front assessment of the sample size sufficient and necessary to allow the hypothesized effects to be detected. In all survey-based research, there are logistical and cost issues associated with administering the surveys, and thus it is prudent and desirable to collect a sample that is sufficient for the desired measurements, but not excessive. Based on a target alpha ( $\alpha$ ) of .05, a beta-1 ( $\beta$ )

of .95, a desired power of .95, and an anticipated large effect size (i.e., .8), calculations showed that a sample size of 84 participants was appropriate (methodology modeled after Cohen, 1988). In this study the measure of strength in the relationships between the variables (i.e., breast augmentation, self-esteem, and sexuality) was confirmed in the literature (Sarwer, et. al., 2003; Flentje, 2001). The literature supported the notion that the independent and dependent variables were strongly interrelated (Polit & Hungler, 1995). Therefore, the sample size obtained was adequate to support the data analysis conducted and minimized the possibility of a Type I error.

Under semi-continuous enrollment, 114 participants responded in some degree to the study. Enrollment was stopped when 84 complete questionnaires were received. One participant who returned the initial questionnaire did not qualify for the study; six returned the surveys incomplete; nine declined to participate in the study after learning more details; and 14 who initially agreed to participate did not respond to follow-up calls or return the original mailed questionnaires.

#### *Demographic Characteristics of the Sample*

Table 1 presents a frequency distribution of the participants' demographic characteristics. Consistent with the demographic composition of the average age represented in the statistic obtained from the American Society of Plastic Surgery (2005), 75% (N=63, SD=9.5) of the participants were between the ages of 21 and 40, and almost half were married (N=39, 47%). The majority of the participants lived in the United States (N=73, 87%), were Caucasian (N=46, 55%), had under-graduate degrees (N=41, 49%), and had no previous cosmetic surgical procedures in the past (N=68, 81%). The standard deviation is one of several indices of variability used to characterize the

dispersion among the measures in a given population; therefore, for this study age was the only demographic characteristic that required a scale of measurement (SD) (Polit, Beck & Hungler, 2001). For purposes of further analysis, demographic questions one through six were statistically studied using ANOVA, SAS's Proc GLM to determine the marginal means and correlations between participants' demographic profiles and their levels of self-esteem and sexuality.

Table 1

*Frequency Distribution of Participants' Demographics (N=84)*

Variable	(mean scores)	n	%
Age	21-30	35	42
	31-40	28	33
	41-50	20	23
	51-60	2	2
Marital Status	Married	39	47
	Single	28	33
	Widowed	1	1
	Divorced	7	8
	Separated	5	6
	Living with s/o	4	5

*(table continues)*

Table 1 (continued)

*Frequency Distribution of Participants' Demographics (N=84)*

Variable	n	%
Residency		
USA	73	87
Caribbean Islands	11	13
Ethnicity		
Hispanic	34	41
Caucasian	46	55
African American	2	2
European	2	2
Educational Level		
High School	20	24
Under-graduate	41	49
Graduate	22	26
Doctorate	1	1

*(table continues)*

Table 1 (continued)

*Frequency Distribution of Participants' Demographics (N=84)*

Variable	n	%
History of Previous Cosmetic Surgery		
Yes	16	19
No	68	81

Table 2 gives the means and standard deviations for the continuous demographic variable, age. The age of the participants ranged from 21 to 57 years with a mean age of 33 (SD = 9.5).

Table 2

*Descriptive Statistics for Participants' Demographics*

Variable	N	Range	M	SD
Age	84	21-57	33	9.5

## Measurement Instruments

### Item Descriptive Statistics

In the 10-item Rosenberg Self-Esteem Scale (RSES), the mean preoperative score was 20.7 (SD 6.3), with a range of five to 30, and a median score of 21. Nine participants (10.7%), preoperatively, had the maximum possible score of 30 for self-esteem. Scores obtained from the postoperative Rosenberg Self-Esteem Scale, indicated a slightly higher mean score of 24.9 (SD 4.6), with a range of four to 30, and a median score of 26. Fifteen participants (17.9%), postoperatively, had the maximum possible score of 30 for self-esteem. The cumulative percent of participants who did not have score changes or scored lower in the postoperative RSES questionnaire following surgery was 17.4% (N=15). The number of participants that scored greater than their preoperative score was 82.2% (N=69). The higher the score the greater the self-esteem level (see table 3).

Table 3

#### *Descriptive Statistics for the 10-Item Rosenberg Self-Esteem Scale Scores*

Pre-RSES Mean	Range	Median	SD
20.7	5 - 30	21	6.3
Post-RSES Mean	Range	Median	SD
24.9	4 - 30	26	4.6

In the 19-Item Female Sexual Function Index (FSFI), the mean preoperative score was 27.2 (SD=7.97) with a range of one to 36, and a median score of 30. Three

participants (3.6%), preoperatively, had the maximum possible score of 36 for sexuality. Scores obtained from the postoperative FSFI, indicated a slightly higher mean score of 31.4 (SD=5.09), with a range of two to 36, and a median score of 33. Seven participants (8.3%), postoperatively, had the maximum possible score of 36 for sexuality. The cumulative percent of participants who did not have score changes or scored lower in the postoperative FSFI questionnaire, following surgery was 16.7% (N=14). The number of participants that scored greater than their preoperative score was 83.3% (N= 70). The higher the score the greater the sexuality level (see table 4 and figure 3).

Table 4

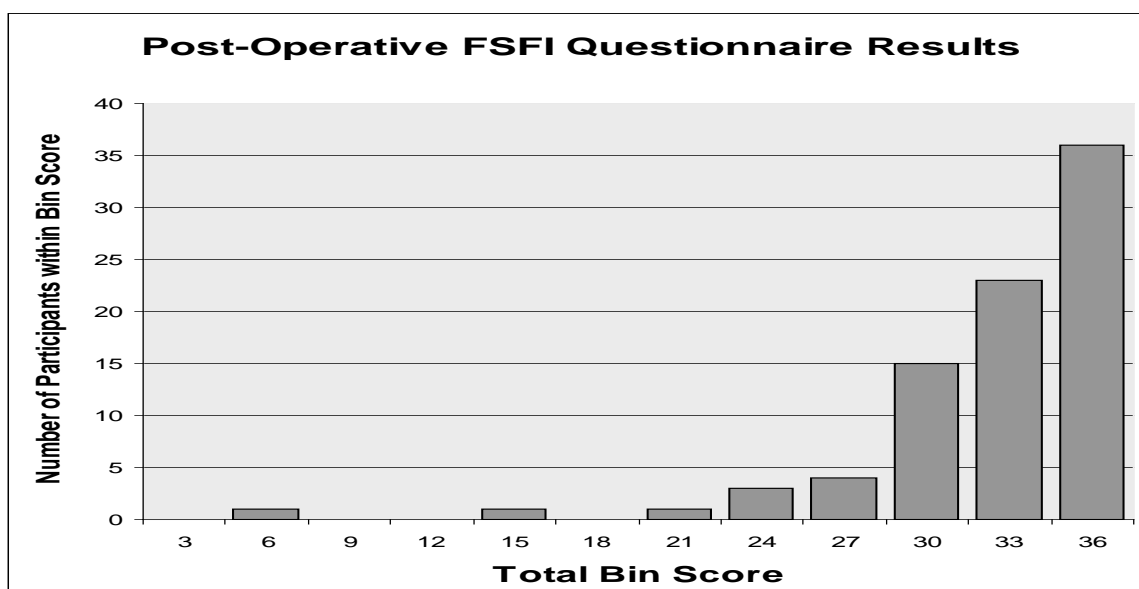
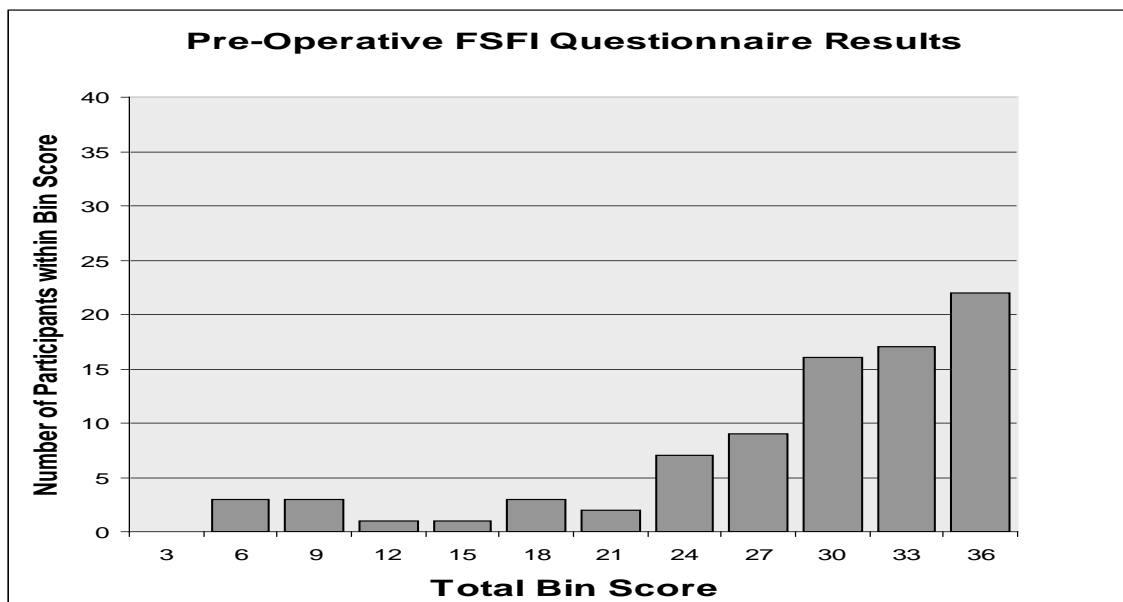
*Descriptive Statistics for the 19-Item Female Sexual Function Index Scores*

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Pre-FSFI Mean	Range	Median	SD
27.2	1 - 36	30	7.97
Post-FSFI Mean	Range	Median	SD
31.4	2 - 36	33	5.09

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Figure 3

*Descriptive Statistic for the 19-Item Female Sexual Function Index Scores**Descriptive Statistics for the 19-Item Female Sexual Function Index Scores*

In the 19-Item Female Sexual Function Index, the mean preoperative score for the desire subscale score was 4.1 (SD 1.2) with a range of six to 23, and a median score of



four. Nine participants (10.7%), preoperatively, had the maximum possible score of six for the subscale score desire. Scores obtained from the postoperative FSFI desire subscale score, indicated a higher mean score of 4.9 (SD 1), with a range of six to 27, and a median score of five. Participants that obtained the maximal score of six postoperatively were 28 (33.3%). There were no declines in the desire subscale FSFI score postoperatively. There was a 78.6% increase in the desire subscale FSFI score postoperatively (see table 5).

The statistical mean preoperative score for the arousal subscale score was 4.4 (SD 1.4), with a range of six to seven, and a median score of five. Ten participants (11.9%), preoperatively, had the maximum possible score of six for the subscale score arousal. Scores obtained from the postoperative FSFI arousal subscale score, indicated a higher mean score of 5.2 (SD 1.3), with a range of six to 11, and a median score of six. Participants that obtained the maximal score of six postoperatively were 36 (42.9%). There was an 81% increase in the arousal subscale FSFI score postoperatively (see table 5).

The statistical mean preoperative score for the FSFI lubrication subscale score was 5.0 (SD 1.5), with a range of six to nine, and a median score of five. Thirty three participants (39.3%), preoperatively, had the maximum possible score of six for the FSFI subscale score for lubrication. Scores obtained from the postoperative FSFI lubrication subscale score, indicated a higher mean score of 5.4 (SD 1.2), with a range of six to 11, and a median score of six. Participants that obtained the maximal score of six postoperatively were 49 (58.3%). There was a 50% increase in the lubrication subscale FSFI score postoperatively (see table 5).

The statistical mean preoperative score for the FSFI orgasm subscale score was 4.5 (SD 1.5), with a range of six to eight, and a median score of five. Seventeen participants (20.3%), preoperatively, had the maximum possible score of six for the FSFI subscale score for orgasm. Scores obtained from the postoperative FSFI orgasm subscale score, indicated a higher mean score of 5.3 (SD 1.2), with a range of six to 12, and a median score of six. Participants that obtained the maximal score of six postoperatively were 43 (51.2%). There was a 63.1% increase in the orgasm subscale FSFI score postoperatively (see table 5).

The statistical mean preoperative score for the FSFI satisfaction subscale score was 4.5 (SD 1.6), with a range of six to 20, and a median score of five. Twenty-two participants (26.2%), preoperatively, had the maximum possible score of six for the FSFI subscale score for satisfaction. Scores obtained from the postoperative FSFI satisfaction subscale score, indicated a higher mean score of 5.2 (SD 1.2), with a range of six to nine, and a median score of six. Participants that obtained the maximal score of six postoperatively were 42 (50%). There was a 57.1% increase in the satisfaction subscale FSFI score postoperatively (see table 5).

The statistical mean preoperative score for the FSFI pain subscale score was 4.9 (SD 1.8), with a range of four to six, and a median score of six. Forty-two participants (50%), preoperatively, had the maximum possible score of six for the FSFI subscale score for pain. Scores obtained from the postoperative FSFI pain subscale score, indicated a higher mean score of 5.4 (SD 1.4), with a range of six to nine, and a median score of six. Participants that obtained the maximal score of six postoperatively were 55

(65.5%). There was a 36.9% increase in the pain subscale FSFI score postoperatively (see table 5).

Table 5

*Descriptive Statistics for the Sexuality Subscale Scores Pre and Post Operative Breast Augmentation*

Sexual Subscale	Preoperative		Postoperative		Post-Op % Increase
	Score	SD	Score	SD	
Desire	4.1	1.2	4.9	1.0	78.6%
Arousal	4.4	1.4	5.2	1.3	81.0%
Lubrication	5.0	1.5	5.4	1.2	50.0%
Orgasm	4.5	1.5	5.3	1.2	63.1%
Satisfaction	4.5	1.6	5.2	1.2	57.1%
Pain	4.9	1.8	5.4	1.4	36.9%

#### Reliability of Instruments

Internal consistency reliability was assessed for all instruments used in this study. Table 6 shows that the Cronbach's alpha reliability of the Rosenberg Self-Esteem Scale estimates ranged from .86 to .92 indicating highly favorable reliability (see table 6). The internal reliability was consistent with the previously reported alpha reliability coefficients of 0.85 at pretest and 0.86 at posttest (Schaumber, Patsdaughter, Selder & Napholz, 1995). Consistency with reliability estimates was also found with the previously

reported 0.89 Cronbach's alpha coefficient for the RSES total sample (Sarwer et. al., 2002).

The Cronbach's alpha reliability of the Female Sexual Function Index ranged from .84 to .98 also indicating highly favorable reliability (see table 6). The internal reliability was consistent with the previously reported alpha reliability coefficients of 0.79 to 0.86 (Rosen et. al., 2000). In addition, consistency with reliability estimates was found with the previously reported 0.82 and higher Cronbach's alpha coefficient for the FSFI (Rosen et. al., 2000).

Table 6

*Reliability Estimates: Internal Consistency (Cronbach's Alpha Coefficients) for Instrument Measures (N=84)*

Instrument	Number of Items	Cronbach's Alpha Coefficient
Rosenberg Self-Esteem Scale	10	Pre.Op. = .86 Post.Op. = .92
Female Sexual Function Index	19	Pre.Op. = .84 Post.Op. = .98

## Hypothesis Testing

### Hypothesis 1

Hypothesis one stated that there would be a significant increase on the levels of self-esteem in mean scores, as measured by the RSES, following breast augmentation surgery. The null hypothesis was rejected (probability is very low that the observed

results could have happened by chance alone). The implication for the relevant statistical test (paired t-test) for H1 reported a statistical significance in the levels of self-esteem following breast augmentation surgery ( $p < .0001$ ),  $t(84)$  value of 9.83. This significance thereby, accepts the hypothesis, stating that there was a significant increase in the levels of self-esteem in mean scores following breast augmentation surgery.  $H_1: (\mu_2 - \mu_1) > 0$ , therefore,  $H_0: (\mu_2 - \mu_1) = 0$

### Hypothesis 2

Hypothesis two stated that there would be a significant increase on the levels of sexuality in mean scores, as measured by the FSFI, following breast augmentation surgery. The implication for the relevant statistical test, paired t-test, for H2 reported a statistical significance in the levels of sexuality following breast augmentation ( $p < .0001$ ),  $t(84)$  value of 6.46. This significance thereby, accepts the hypothesis, stating that there was a significant increase in the levels of sexuality in mean scores following breast augmentation surgery.

### Hypothesis 3

Hypothesis three stated that there would be a significant increase in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after receiving breast augmentation. The implication for the relevant statistical difference (repeated measures ANOVA, SAS's Proc GLM) in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain), H3, indicated that the null hypothesis was rejected. Therefore, the hypothesis that there was a positive significant increase in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after receiving breast augmentation was accepted.

A repeated measures analysis of variance (ANOVA, SAS's Proc GLM) was performed to assess the impact of breast augmentation on the FSFI subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain). However, classic straight-forward ANOVA (as in the original agricultural model) requires a balanced experimental design, not present here, and also the satisfaction of several assumptions, which were questionable, since the FSFI values are synthetic numeric representations of abstract concepts, and may have properties unlike normal numbers (an aspect of FSFI not discussed in the literature). Hence the ANOVA in SAS was done using Proc GLM (General Linear Model), which is robust in regards to those considerations, rather than Proc ANOVA, which is not suitable for unbalanced designs. In a model that also included AGE and AGE-squared (to allow for curvature), the results for the FSFI subscale domains were as follows (see table 7):

Table 7

*FSFI Subscale Domain Scores*

Subscale	Type III Sum of Squares	F value	P > F
Desire	32.4192959	32.6	<.0001
Arousal	23.4005526	13.09	0.0004
Lubrication	9.1934025	5.03	0.0262
Orgasm	27.2009680	14.48	0.0002
Satisfaction	24.0771518	12.79	0.0005
Pain	11.9466749	4.62	0.0330

As seen in table 7, the results are significant at the .05 level for every subscale domain, thus refuting the null hypothesis that there would be no change due to the surgery and confirming the hypotheses of improved scores. Even Pain, which to some degree could be a manifestation of pre-existing physical issues that this type of surgery was not intended to address, showed a statistically significant result ( $P= 0.0330$ ).

The Least-Square Means (LS Means), in other words, the pre and post-means for each of these subscales, after accounting for all the factors in the model (age in this case), are shown in table 8. The table demonstrates that not only are these effects statistically significant, they seem to be relatively large in a practical sense as well.

The theoretical model developed to this study investigated the relationship between breast augmentation procedures and patient's levels of sexuality, including investigation of the six FSFI subscale domains (desire, arousal, lubrication, orgasm, satisfaction, pain). As shown in table 7 and 8, the subscale scores significance, at the .05 level and the postoperative mean score changes, supported the conceptual model developed to this study and demonstrated how the concepts influenced each other.

*Table 8*

*FSFI Subscale Least-Square Mean Scores*

Description	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain
Pre-Subscale Scores	4.049999	4.417856	4.957142	4.476190	4.452380	4.871428
Post-Subscale Scores	4.928571	5.164285	5.424999	5.280952	5.209523	5.404761
Change	0.878572	0.746429	0.467857	0.804762	0.757143	0.533334

#### Hypothesis 4

Hypothesis 4 stated that there would be a positive correlation between self-esteem, sexuality and breast augmentation. The evidence rejected the null hypothesis, that there would be no relationships between self-esteem, sexuality, and breast augmentation. The implication for the relevant statistical test H4, Pearson Correlation Coefficients,  $N=168$ , indicated a strong correlation between self-esteem and breast augmentation ( $p < .0001$ ), self-esteem and sexuality ( $p < .0001$ ), and sexuality and breast augmentation ( $p < .0001$ ). This significance thereby, accepts H4.

#### Hypothesis 5

Hypothesis 5 stated that there would be a correlation between demographic variables and levels of self-esteem and sexuality before and after receiving breast augmentation. The implication for relevant statistical tests (ANOVA, SAS Proc GLM) to determine the marginal means and correlation between breast augmentation, self-esteem, and the demographic variables rejected the null hypothesis. There was strong correlation associated with the participant's educational level ( $p = 0.0036$ ), and history of previous cosmetic surgery ( $p = 0.0005$ ). However, there were no significant contributions to the model from the other demographic variables, age, marital status, residency, or ethnicity.

There was no correlation between breast augmentation, sexuality associated with the demographic variables; age, marital status, residency, ethnicity, educational level, or history of previous cosmetic surgery. The evidence is insufficiently strong to reject the null hypothesis (there is a relatively high likelihood that the observed results could have happened by chance alone), and thus the hypothesis remains unproven. It is possible that



the premise of the hypothesis was just wrong, or it may be that there is not enough data for this particular analysis to make the case.

### Summary

This chapter has presented the results of this research study. The target population for this study consisted of 84 preoperative and postoperative breast augmentation surgical patients. Under semi-continuous enrollment, 114 participants responded in some degree to the study. Enrollment was stopped when 84 complete questionnaires were received. One participant who returned the initial questionnaire did not qualify for the study; six returned the surveys incomplete; nine declined to participate in the study after learning more details; and 14 who initially agreed to participate did not respond to follow-up calls or return the original mailed questionnaires.

Consistent with the demographic composition of the average age represented in the statistic obtained from the American Society of Plastic Surgery (2005), 75% (N=63) of the participants were between the ages of 21 and 40, and were married (N=39, 47%). The majority of the participants lived in the United States (N=73, 87%), were Caucasian (N=46, 55%), had under-graduate degrees (N=41, 49%), and had no previous cosmetic surgical procedures in the past (N=68, 81%). Internal reliability was assessed for all instruments used in this study with Cronbach's alpha reliability estimates indicating highly favorable reliability.

Hypothesis testing was conducted (a) to specify the relative statistical difference in the level of self-esteem and sexuality before and after receiving breast augmentation; (b) the relative statistical differences in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) before and after breast augmentation; (c) the

relative positive correlation between self-esteem, sexuality, and breast augmentation; and (d) the relative correlation between demographic variables and levels of self-esteem and sexuality before and after receiving breast augmentation.

It was concluded that the null hypotheses for H1, H2, H3 and H4 were rejected. Therefore, the hypotheses were accepted and positively significant for the variables; breast augmentation, self-esteem and sexuality. The implication for relevant statistical tests (ANOVA, SAS Proc GLM) to determine the marginal means and correlation between breast augmentation, self-esteem and the demographic variables rejected the null hypothesis, thus accepting the hypothesis as being true regarding the strong correlation associated with the participants educational level ( $p= 0.0036$ ), and history of previous cosmetic surgery ( $p= 0.0005$ ). However, there were no significant correlations between the other demographic variables, age, marital status, residency, or ethnicity. Additionally, there were no correlations between breast augmentation, and sexuality associated with the demographic variables; age, marital status, residency, ethnicity, educational level, or history of previous cosmetic surgery. Therefore, H5 was rejected, and remains unproven.

## *Chapter V*

### *Discussion, Conclusion, and Recommendations*

#### *Introduction*

This chapter presents a summary of the study and discussion of the findings related to demographic background characteristics of the participants; significant and non-significant statistical differences and correlations between the variables: self-esteem, sexuality and breast augmentation procedures; significant and non-significant difference in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) before and after receiving breast augmentation; significant and non-significant statistical correlations between demographic variables and levels of self-esteem and sexuality before and after breast augmentation; limitations of the study; and implications for nursing, education, practice, and future research.

#### *Discussion of Findings and Conclusions*

##### *Significant and Non-Significant Differences and Correlations between Variables*

The implication for the relevant statistical test, paired t-test, for H1 which stated that there would be a significant increase on the levels of self-esteem in mean scores, as measured by the RSES, following breast augmentation surgery, reported a significance in the levels of self-esteem following breast augmentation surgery ( $p < .0001$ ),  $t(84)$  value of 9.83. This finding results in acceptance of the hypothesis stating that there is a significant increase in the levels of self-esteem in mean scores following breast augmentation surgery. The meta-analysis literature review performed by Figueroa (2003) also indicated a positive, direct correlation between self-esteem levels and cosmetic surgery. This review identified an increased level of self-esteem correlated with improved

levels of depression, improved healing processes, and the ability to cope with changes in body image (positive or negative interpretations by the patients). The model used for this study supports the findings both in the literature review and in the results obtained from the study.

The implication for the relevant statistical test, paired t-test, for H2 stating that there would be a significant increase on the levels of sexuality in mean scores, as measured by the FSFI, following breast augmentation surgery, reported a significance in the levels of sexuality following breast augmentation ( $p < .0001$ ),  $t(84)$  value of 6.46. This finding results in acceptance of the hypothesis stating that there is a significant increase in the levels of sexuality in mean scores following breast augmentation surgery. There has been limited research investigating the relationship between sexuality and breast augmentation. However, associations within the concepts exist and can be utilized to make connections to the model used in this study. Rowland et. al., (2000) examined the role of reconstructive surgery on physical and emotional outcomes among breast cancer survivors. The findings from their study substantiated the importance of woman's breast size, and shape, and how the breast can impact feelings of sexual attractiveness following breast surgery. Other studies indicated that immediate post-mastectomy reconstruction procedures greatly increased patient's self-perceived sexual attractiveness (Al-Ghazal, et. al., 2000). As revealed in this research study, the increase in sexuality scores following breast augmentation procedures is supported by the related concepts associated with sexuality which were studied in the literature review, in addition, connected to the conceptual model which was used for this study.

The implication for the relevant statistical test, Pearson Correlation Coefficients (N=168), for H4 stating that there would be a positive correlation between self-esteem, sexuality and breast augmentation, indicated a strong correlation between self-esteem and breast augmentation ( $p < .0001$ ), self-esteem and sexuality ( $p < .0001$ ), and sexuality and breast augmentation ( $p < .0001$ ). This finding results in acceptance of the H4. The literature reviewed has also supported the results. The psychological effects on cosmetic surgery patients have also been noted by Davis (1997). Davis adds, obsession on a real or perceived flaw, thereby resorting to cosmetic surgery, may indicate other hidden psychological and or social issues. Researchers Young et. al., (1995) performed a study examining the efficacy of breast augmentation on 112 women. Eighty six percent of the group reported decreased self-consciousness and 88% reported heightened self-confidence. In this group, a two, three, and five year postoperative follow up survey revealed that the level of satisfaction remained unchanged. Physical, social and psychological burdens have direct affects on the motivational factors that influence women to obtain breast augmentation procedures. In addition to the results of the literature reviewed, this significant outcome is moreover grounded back to the conceptual framework developed for this study. The study reveals that all of the variables examined are interrelated.

#### *Significant and Non-Significant Difference in Sexuality Subscale Scores*

The implication for the relevant statistical difference ( repeated measures ANOVA, SAS's Proc GLM) in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) for H3 stated that there would be a significant increase in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after

receiving breast augmentation, indicated that the null hypothesis was rejected therefore accepting the hypothesis stating that there is a positive significant increase in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after receiving breast augmentation. A repeated measures analysis of variance (ANOVA, SAS's Proc GLM) was performed to assess the impact of breast augmentation on the FSFI subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain). However, classic straight-forward ANOVA (as in the original agricultural model) requires a balanced experimental design not present here. This also requires the satisfaction of several assumptions, which were questionable, since the FSFI values are synthetic numeric representations of abstract concepts and may have properties unlike normal numbers (an aspect of FSFI not discussed in the literature). Hence the ANOVA in SAS was done using Proc GLM (General Linear Model), which is robust in regards to those considerations, rather than Proc ANOVA, which is not suitable for unbalanced designs.

The results are significant at the .05 level for every subscale domain (desire, arousal, lubrication, orgasm, satisfaction, pain), thus refuting the null hypothesis, no change due to the surgery and confirming the hypotheses of improved scores. Even pain, which to some degree could be a manifestation of pre-existing physical issues that this type of surgery was not intended to address, showed a statistically significant results ( $P=0.0330$ ). Table 5 presents the percent increases from all six subscale domains (desire, arousal, lubrication, orgasm, satisfaction, pain). The highest percent increase occurred from the arousal subscale score. There was an 81% increase in arousal scores following the breast augmentation procedures. The percent increase from the desire subscale score was 78.6% following surgery. There was a 63.1% increase in the orgasm subscale score,

a 57.1% increase in the satisfaction subscale score, and 50% increase in the lubrication subscale score and a 36.9% increase in the pain subscale score following breast augmentation procedures. Therefore, all of the subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) were increased significantly after receiving breast augmentation.

The literature review additionally supports the statistical findings for H3. Sander (2004) comments, that throughout the ages, the female breast has been a symbol of sexuality regardless of culture. The multidimensional influences i.e., desire, arousal, lubrication, orgasm, satisfaction and pain, that affect levels of sexuality are therefore apparent. The findings from a study performed by Rowland et. al. (2000) also substantiates the importance of woman's breast size, and shape, and how the breast can impact feelings of sexual attractiveness following breast surgery. Therefore, the sexuality subscale score results were supported by the model which was used to develop this study stating that sexuality levels are interrelated with other variables (desire, arousal, lubrication, orgasm, satisfaction, pain) that were tested using the FSFI questionnaire.

During the development of this study, there were no studies found that utilized the Female Sexual Function Index questionnaire which correlated its use with cosmetic surgery patients, namely, breast augmentation procedures. However, the subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) have been validated and determined to be reliable when used to test women's sexuality (Bayer AG & Zonagen, Inc; Rosen et. al., 2000; Meston, 2003; & Wiegel et. al., 2005). The interrelatedness of the six sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain)

supports the developed theory and model, indicating how the concepts influence each other and are interrelated.

*Significant and Non-Significant Statistical Correlations between Demographic Variables and Levels of Self-Esteem and Sexuality*

The implication for relevant statistical tests (ANOVA, SAS Proc GLM) to determine the marginal means and correlation between breast augmentation, self-esteem and the demographic variables rejected the null hypothesis, thus accepting the hypothesis H5 as being true regarding the strong correlation associated with participants' educational levels ( $p= 0.0036$ ), and history of previous cosmetic surgery ( $p= 0.0005$ ). However, there were no significant correlations between the other demographic variables, age, marital status, residency, or ethnicity.

This study is unique in that it does not mimic previous research studies. There have been no documented studies investigating the correlations between breast augmentation, self-esteem, sexuality, or demographic variables. However, Sarwer et. al. (2000), conducted a review designed to provide an overview of the medical and psychological literature on cosmetic breast augmentation. Researchers found that the typical breast augmentation patient was Caucasian, in her 20s or 30s, with an average age of 31 years. The positive correlation between the history of previous cosmetic surgery and breast augmentation was also revealed by Sultan (2005). This study noted that more than one-third of cosmetic surgery individuals already had at least one prior procedure. The model used in this study correlates breast augmentation with history of previous surgery, and is additionally supported by the reviewed literature.



However, this study found no correlation between breast augmentation, sexuality associated with the demographic variables; age, marital status, residency, ethnicity, educational level, or history of previous cosmetic surgery. The evidence is insufficiently strong to reject the null hypothesis (there is a relatively high likelihood that the observed results could have happened by chance alone), and thus the hypothesis remains unproven. It is possible that the premise of the hypothesis was just wrong, or it may be that there is not enough data for this particular analysis to make the case.

#### *Demographic, Educational, and Background Characteristics of Participants*

The demographic composition of the study sample was consistent with the latest statistics obtained from the American Society of Plastic Surgeons (2005). According to the ASPS, persons aged 35-50 accounted for the most cosmetic procedures in 2003 (45% of the total). Twenty four percent of the population was between the ages of 19-34, 23% were aged 51-64, and ages 65 and above accounted for five percent. Less than three percent of the population who had cosmetic surgery were 18 years old or younger. The mean age of this study was 33 (46%), and the majority of the participants were married (N=39, 47%), with only 8% (N=7) in the divorced category. ASPS 2005 statistics indicated that Hispanics ranked highest (eight percent) in the racial and ethnic minority group that obtained cosmetic surgery. In this study, results concluded that the majority of the population were from the United States (N=73, 87%), and that the Caucasian group ranked highest (55 %, N=46). The highest ranked education level was under-graduate (49%, N=41), and 19% (N=16) had already undergone previous cosmetic surgery. In a recent 12-month period, 6,600,000 people underwent cosmetic procedures. More than

one-third of cosmetic surgery individuals already had at least one prior procedure (Sultan, 2005).

### *Limitations of the Study*

Findings from this study have provided insight regarding the major study variables and gained understanding of the changes that occur in the levels of self-esteem and sexuality following breast augmentation procedures. However, there were limitations to this study, which are as follows:

1. The sampling plan was limited to a gender specific cosmetic surgery, limiting the number of responses from a more diverse sample.
2. Missing data and inaccuracies in completing the self report surveys limited the number of responses.
3. The cosmetic surgery procedure was of an elective nature.
4. Some of the participants were uncomfortable completing the sexuality survey, therefore declined to participate, limiting the number of responses.
5. The psycho-social limitations, i.e., acceptance, re-imaging and obsession were not measured in this study, preventing the analysis of these effects on the study variables, particularly on self-esteem and sexuality.
6. There was no one encompassing theory for self-esteem, and theoretical linkages were not tested.
7. The results of the study are limited by the reliability of the instruments; however, the instruments had highly favorable reliability estimates.

8. Convenience sampling caused sampling bias due to limiting generality.
9. Participants' responses to the surveys were voluntary and participants were self-selected.
10. Limiting the geographical area to Florida may have caused sampling bias due to limiting generality.

### *Implications for Nursing Education and Practice*

The cosmetic surgical nurse who can identify the various responses that routinely occur with their patients is better prepared to normalize their experiences and implement the necessary interventions toward overall rehabilitation (Grunert & Maksud-Sagrillo, 1998). The number of people having cosmetic surgery has tripled since 1992. This surge in cosmetic surgery illustrates the increased willingness of individuals to incorporate cosmetic surgery into their health and beauty regimens. One of the most dramatic increases this decade has been in breast augmentation. As the increase in cosmetic procedures escalate with men and baby boomers, it is most likely that patients will talk to their nurse about their desires for and possibly their concerns about cosmetic surgery. To respond appropriately, nurses must be aware of the psychological issues that accompany cosmetic procedures (Metules, 2005). The need to maximize immediate and long-term augmentation mammoplasty results with skilled perioperative nursing intervention has never been greater (Gladfelter, 2003).

As health care continues to evolve and take on new shapes, nursing education must prepare nurses at all levels to provide quality and meaningful preoperative and postoperative care. As research on cosmetic surgery advances, so should the development

of nursing programs. The International Council of Nurses (1998) supports the inclusion of health care issues, and the nurse's role in all levels of nursing education and programs. This knowledge can be gained through nursing educators who can ensure that the nursing curriculum at the undergraduate, graduate, and continuing education levels are regularly updated and included in clinical practice. Dewey (1916) in 1889 viewed education as a tool to facilitate the abilities of the student to usefully incorporate his or her culture. He claimed that schools should reflect society and felt that there was an intimate connection between education and social action (Dewey, 1916). Nursing education and nurse educators of the future must certainly listen to the words of the past scholars and prepare curricula to reflect societal change.

When preparing nursing students for clinical experiences, nurse educators should address the populations on the periphery, which should include the cosmetic surgical patient, whether undergoing an elective surgical intervention or one that is reconstructive. In nursing education, professors are challenged to think out of the box to develop unique classroom and clinical activities. Nurse educators are weavers and possess a power for connectedness and can take the fabric of the classroom and weave it throughout the fabric of clinical excellence (Palmer, 1998). The nurse educator's responsibility is to be a role model for students, and there are many creative and innovative ways to incorporate caring for the cosmetic surgical patient, namely the breast augmentation patient. Gladfelter (2003) discovered that heightening her level of awareness through use of the Internet resources, educated her on methods of caring for the cosmetic surgical patient and understanding psychological implications which occur prior to and following surgery. Nursing educators can also instruct nursing students in this manner and can

further expand their roles as patient educators in various capacities in corporate industries that are lacking the medical knowledge possessed by specialized nurses (Gladfelter, 2003). Therefore, by exploring the results of this research study and this phenomenon further, nurses will be better prepared to provide optimal health care for the cosmetic surgical patient.

#### *Implications for Further Research*

Although findings from this study added to the awareness of nurses' regarding the psychological, and sociological effects to women following breast augmentation, and added to the body of nursing knowledge, it has opened just a small window in understanding the importance for nurses to predict outcomes in this specialized population. With this knowledge, nurses may better be prepared to normalize their experiences and implement the necessary interventions toward overall acceptance (Grunert & Maksud-Sagrillo, 1998).

This study additionally provided motivation for future studies related to the effects of breast augmentation and the psychological and or sociological factors that can alter following the procedure. Because of the sensitivity of the subject matter, it may behoove the researcher to obtain similar data via an Internet website linked to cosmetic surgery in general. Additionally, expanding the variable, breast augmentation procedure, to cosmetic breast surgery, excluding reconstructive surgery, may also increase the sample size with greater ease. To meet the specific needs of the psychological concepts that women may be predisposed to seeking cosmetic surgery, a suggestion to explicitly select subjects seeking improvements in the specific life dimensions being measured would be beneficial. Testing for the variables (i.e., acceptance, re-imaging, obsession,

anxiety, depression or body image) was not addressed in this study although supported by the literature review, requires additional study.

In addition, other areas of interest for further research associated with breast augmentation procedures should include demographic variables, such as age, marital status, gender, residency, ethnicity, level of education, and history of prior cosmetic surgery. Results obtained from this study, indicated a strong correlation associated with the participants' educational levels, and history of previous cosmetic surgeries in relation to self-esteem levels. In light of this association, it would be beneficial to expand on those related concepts and attempt to identify and explore their relationship to each other. Therefore, it would be strongly suggested that this area of interest continue to be researched and conceptually explored.

Women's studies must continue to develop. The lack of responses, perhaps related to participants' experiencing unpleasant emotional experience, suggest the barrier that is still apparent, that our society does not discuss openly topics such as self-esteem and sexuality. Women's self-esteem and sexuality are key components to their overall wellbeing. Ignoring either one would be detrimental, and avoiding sensitive subjects, such as sexuality levels, would compromise the advancement of woman's research. Researchers, nurse advocates, and nurse specialists must insist that these concepts be further explored and investigated, so that this population of patients can benefit and have maximum positive outcomes from their surgery.

Ethnicity and age differences are issues or concepts that were not addressed in this study but should be addressed in the future. The limitations to this study offer guidelines for future studies. By providing an expanded range of study there may be

significant changes of the study results, namely the demographic variables that had no correlations to the studies variables. Examples of these studied variables are: increasing the participant numbers, or including other types of cosmetic breast surgery (i.e., mastopexies with implants, breast reduction with implants, breast reconstruction following mastectomies or male cosmetic and/or reconstructive surgery). Additionally, reconsidering the demographic resident living area of study may have had an alternate affect on the outcome of the ethnic population. Other considerations may include opinions from men, and their views on how they perceive women who undergo breast augmentation. This inquiry may constitute their impressions of women in relation to their levels of self-esteem and or sexuality levels following their surgery.

#### *Summary*

The purpose of this study was to gain an understanding of the changes that occurred in the levels of self-esteem, and sexuality, following breast augmentation procedures. This study indicated the degree to which self-esteem and sexuality are affected by breast augmentation. The data analysis revealed a positive increase in both levels of self-esteem and sexuality subsequent to the surgery.

The model developed for this study investigated the relationship between breast augmentation procedures and the patient's levels of self-esteem and sexuality. In addition, the relationship between self-esteem and sexuality was explored following breast augmentation. Although the model supports the literature review and the findings of this study, it needs further testing and refinement. Many of the relationships were supported in this study, but others need further exploration.

The concepts derived from this literature review, support apparent physical, social and psychological burdens that occur prior to and following breast augmentation: Re-imaging, acceptance, obsession, anxiety, depression & body image. This study did not test for all concepts derived from the literature review; nevertheless, future research into the meaning and the association with the cosmetic surgical patient would be beneficial.

Nurses need to ensure quality care to the cosmetic surgical patient, understand an individual's reasons for seeking such care, and be able to display compassion in the provision of these services that promote self-esteem and improved levels of sexuality, as well as other psychological benefits that may accrue following cosmetic surgery. Cosmetic surgery can provide genuine improvement to a patient's self-esteem, self-confidence, interpersonal relationships, productivity, energy level and happiness (Sultan, 2005). With the arrival of same day and short-stay surgery, nurse educators will use such surgical experiences for student learning with patients preoperatively and postoperatively. This study provides the impetus for future studies related to self-esteem, human sexuality, and cosmetic surgery. Nurses can have a major impact on caring for this population of patients, thereby, expectantly pledging optimal outcomes following their patient's cosmetic surgery.



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## Appendix A

### Letter of Introduction

Dear Participant,

I am a nurse researcher in the doctoral program at Barry University, School of Nursing, studying the effects of breast augmentation mammoplasty procedures on a woman's self-esteem, and sexuality.

The research project was approved by the research subjects Internal Review Board (IRB), and involves about 20 to 30 minutes of your time, to answer the questions. Your consent to be a research subject is strictly voluntary. If you agree to participate in this study, you will be asked to sign a consent form that has been provided for you. If agreed, you will then complete the demographic questionnaire, the Rosenberg Self-Esteem Scale and the Female Sexual Function Index questionnaires. The later two questionnaires will be completed once again, approximately one to two months following your surgery.

Approximately 84 subjects are needed to complete this study, which involves no anticipated risk to you. You may choose not to participate in the study, without jeopardizing the delivery of your healthcare. All of the results of this study will be kept confidential, and the results will only be used in scientific papers, and presentations. Any published results of the research will refer to group averages only and no names will be used in the study. Data will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after five years. Should you choose to withdraw from this research, your study material will be destroyed, and the results will not be included in the study.

This research will help Advanced Practice Nurses and Researchers understand the importance of patient's choice to seek cosmetic surgery. In addition, this scientific understanding will enlighten other healthcare providers to the extent to which surgical modifiers effect the self-esteem and sexuality of an individual. I urge you to consider participating in this needed research.

Please read the attached consent form and feel free to contact me, Cynthia Figueroa-Haas at 305-467-6749, my supervisor, Dr. J. Colin, at 305-899-8030, or the Institutional Review Board (IRB) point of contact, Ms. Avril Brenner, @ 305-899-3020, for further clarification of the research study.

Sincerely,

Cynthia Figueroa-Haas MSN, ARNP  
Doctoral student at Barry University

## Appendix B

### Barry University

#### Informed Consent Form

You are being asked to participate in a research study. The title of the study is Effect of Breast Augmentation Mammoplasty on Self-Esteem and Sexuality: A Quantitative Analysis. The research is being conducted by Cynthia Figueroa-Haas, a student in the Nursing department at Barry University, and is seeking information that will be useful in the field of Nursing. The purpose of this study is to evaluate the effects of breast augmentation procedures on woman's self-esteem and sexuality.

If you agree to participate in the study, you will be asked to complete the study instruments, the Rosenberg Self-Esteem Scale (RSES), the Female Sexual Function Index (FSFI), and the researchers designed demographic questionnaire. The amount of your time needed for this project is about 20 to 30 minutes. Your consent to be a research subject is strictly voluntary. Should you decline to participate, or should you choose to drop out at any time during the study, there will be no adverse effects on the delivery of your healthcare in the present healthcare facility where you receive healthcare benefits.

Upon completion of the research project, at your request, you will be notified of the study results. Data will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after five years. Approximately 84 subjects are needed to complete this study, which involves no anticipated risk to you. Benefits from this research include the opportunity to articulate your views about the benefits of research in the field of plastic surgery. A copy of this consent form will be available to you. To protect your privacy, information you provide will be held in confidence, to the extent permitted by law. The code, and information gained from the data, will be kept in a locked file. Results of the study will be used only in scientific papers, and presentations, where anonymity is fully protected. By signing this form, you are freely agreeing to participate in this study.

Please feel free to ask any questions concerning this study. Phone numbers of the researcher, and supervisor, are provided below. If you are satisfied with the information provided, and are willing to participate in this research, please signify your consent by signing this consent form.

Researcher: Cynthia Figueroa-Haas MSN, ARNP 305-467-6749. Supervisor: Dr. Jessie Colin 305-899-8030, and available Institutional Review Board point of contact, Ms. Avril Brenner, at 305-899-3020.

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix C

Socio-Demographic Questionnaire (Place an X in the appropriate box)

1. What is your age? \_\_\_\_\_
2. What is your marital status?
  1. Married:
  2. Single:
  3. Widowed:
  4. Divorced:
  5. Separated:
  6. Living with s/o:
3. Where do you live?
  1. USA:
  2. Middle East:
  3. Caribbean Islands:
4. What is your ethnicity?
  1. Hispanic:
  2. Caucasian:
  3. African American:
  4. Asian:
  5. Jamaican:
  6. Bahamian:
  7. European:
  8. Haitian:
5. What is your educational level?
  1. High School:
  2. Under-graduate:
  3. Graduate:
  4. Doctorate:
6. Have you had other cosmetic surgical procedures in the past?
 

Yes:

No:
7. Are you having other surgical procedures in addition to breast augmentation?
 

Yes:  No:



## Appendix D

## Rosenberg Self-Esteem Scale and Author Permission

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statements, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

		1. STRONGLY AGREE	2 AGREE	3. DISAGREE	4. STRONGLY DISAGREE
1.	I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
2.	I feel that I have a number of good qualities.	SA	A	D	SD
3.	All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
4.	I am able to do things as well as most other people.	SA	A	D	SD
5.	I feel I do not have much to be proud of.	SA	A	D	SD
6.	I take a positive attitude toward myself.	SA	A	D	SD
7.	On the whole, I am satisfied with myself.	SA	A	D	SD
8.	I wish I could have more respect for myself.	SA	A	D	SD
9.	I certainly feel useless at times.	SA	A	D	SD
10.	At times I think I am no good at all.	SA	A	D	SD

The scale may be used without explicit permission. The author's family, however, would like to be kept informed of its use:

The Morris Rosenberg Foundation c/o Dept. Of Sociology  
University of Maryland 2112 Art/Soc Building College Park, MD 20742-1315

- To score the items, assign a value to each of the 10 items as follows:
  - For items 1, 2, 4, 6, 7: Strongly Agree=3, Agree=2, Disagree=1, and Strongly Disagree=0.
  - For items 3, 5, 8, 9, 10 (which are reversed in valence, and noted with the asterisks\*\* below):  
Strongly Agree=0, Agree=1, Disagree=2, and Strongly Disagree=3.
- The scale ranges from 0-30, with 30 indicating the highest score possible. Other scoring options are possible. For example, you can assign values 1-4 rather than 0-3; then scores will range from 10-40. Some researchers use 5- or 7-point Likert scales, and again, scale ranges would vary based on the addition of "middle" categories of agreement.

## Appendix E

Permission email letter allowing usage of FSFI Tool.

-----Original Message-----

**From:** Figueroa, Cynthia (Forward)

**Sent:** Wed 5/29/2002 9:31 PM

**To:** info@fsfi-questionnaire.com

**Cc:**

**Subject:** FSFI Tool

**Good afternoon,**

**I am a doctorate student at Barry University in Miami Shores, Florida.**

**I would be very interested in using your FSFI Tool in my dissertation research study. Please advice regarding processes involved in doing so.**

**Thank you for your assistance in this matter.**

**Cynthia Firpi Figueroa MSN, ARNP**

Response:

You may use it and download it from the web. Jules T. Mitchel At 01:31 AM  
5/30/02

## Appendix F

### Female Sexual Function Index (FSFI)

**INSTRUCTIONS:** These questions ask about your sexual feelings and responses during the past 4 weeks. Please answer the following questions as honestly and clearly as possible. Your responses will be kept completely confidential. In answering these questions the following definitions apply:

Sexual activity can include caressing, foreplay, masturbation and vaginal intercourse.

Sexual intercourse is defined as penile penetration (entry) of the vagina.

Sexual stimulation includes situations like foreplay with a partner, self-stimulation (masturbation), or sexual fantasy.

#### **CHECK ONLY ONE BOX PER QUESTION.**

Sexual desire or interest is a feeling that includes wanting to have a sexual experience, feeling receptive to a partner's sexual initiation, and thinking or fantasizing about having sex.

1. Over the past 4 weeks, how **often** did you feel sexual desire or interest

- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

2. Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?

- Very high
- High
- Moderate
- Low
- Very low or none at all

Sexual arousal is a feeling that includes both physical and mental aspects of sexual excitement. It may include feelings of warmth or tingling in the genitals, lubrication (wetness), or muscle contractions.

3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on") during sexual activity or intercourse?

- No sexual activity
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on") during sexual activity or intercourse?

- No sexual activity
- Very high
- High
- Moderate

- Low
  - Very low or none at all
5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?
- No sexual activity
  - Very high confidence
  - High confidence
  - Moderate confidence
  - Low confidence
  - Very low or no confidence
6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?
- No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
7. Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?
- No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?
- No sexual activity
  - Extremely difficult or impossible
  - Very difficult
  - Difficult
  - Slightly difficult
  - Not difficult
9. Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?
- No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
10. Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?
- No sexual activity

- Extremely difficult or impossible
- Very difficult
- Difficult
- Slightly difficult
- Not difficult

11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?

- No sexual activity
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?

- No sexual activity
- Extremely difficult or impossible
- Very difficult
- Difficult
- Slightly difficult
- Not difficult

13. Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?

- No sexual activity
- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?

- No sexual activity
- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?

- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?

- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Moderately dissatisfied
- Very dissatisfied

17. Over the past 4 weeks, how **often** did you experience discomfort or pain during vaginal penetration?

- Did not attempt intercourse
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

18. Over the past 4 weeks, how **often** did you experience discomfort or pain following vaginal penetration?

- Did not attempt intercourse
- Almost always or always
- Most times (more than half the time)
- Sometimes (about half the time)
- A few times (less than half the time)
- Almost never or never

19. Over the past 4 weeks, how would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?

- Did not attempt intercourse
- Very high
- High
- Moderate
- Low
- Very low or none at all

## Appendix G

## Female Sexual Function Index Scoring Tool

**Question Response Options**

1. Over the past 4 weeks, how **often** did you feel sexual desire or interest?

5 = Almost always or always

4 = Most times (more than half the time)

3 = Sometimes (about half the time)

2 = A few times (less than half the time)

1 = Almost never or never

2. Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?

5 = Very high

4 = High

3 = Moderate

2 = Low

1 = Very low or none at all

3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on") during sexual activity or intercourse?

0 = No sexual activity

5 = Almost always or always

4 = Most times (more than half the time)

3 = Sometimes (about half the time)

2 = A few times (less than half the time)

1 = Almost never or never

4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on") during sexual activity or intercourse?

0 = No sexual activity

5 = Very high

4 = High

3 = Moderate

2 = Low

1 = Very low or none at all

5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?

0 = No sexual activity

5 = Very high confidence

4 = High confidence

3 = Moderate confidence

2 = Low confidence

1 = Very low or no confidence

6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?

0 = No sexual activity

5 = Almost always or always

4 = Most times (more than half the time)

3 = Sometimes (about half the time)

2 = A few times (less than half the time)

1 = Almost never or never

7. Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?

0 = No sexual activity

5 = Almost always or always

4 = Most times (more than half the time)

3 = Sometimes (about half the time)

2 = A few times (less than half the time)

1 = Almost never or never

8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?

0 = No sexual activity

1 = Extremely difficult or impossible

2 = Very difficult

3 = Difficult

4 = Slightly difficult

5 = Not difficult

9. Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?

0 = No sexual activity

5 = Almost always or always

4 = Most times (more than half the time)

3 = Sometimes (about half the time)

2 = A few times (less than half the time)

1 = Almost never or never

10. Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

0 = No sexual activity

1 = Extremely difficult or impossible

2 = Very difficult

3 = Difficult

4 = Slightly difficult

5 = Not difficult



11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?

0 = No sexual activity

5 = Almost always or always

4 = Most times (more than half the time)

3 = Sometimes (about half the time)

2 = A few times (less than half the time)

1 = Almost never or never

12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?

0 = No sexual activity

1 = Extremely difficult or impossible

2 = Very difficult

3 = Difficult

4 = Slightly difficult

5 = Not difficult

13. Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?

0 = No sexual activity

5 = Very satisfied

4 = Moderately satisfied

3 = About equally satisfied and dissatisfied

2 = Moderately dissatisfied

1 = Very dissatisfied

14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?

0 = No sexual activity

5 = Very satisfied

4 = Moderately satisfied

3 = About equally satisfied and dissatisfied

2 = Moderately dissatisfied

1 = Very dissatisfied

15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?

5 = Very satisfied

4 = Moderately satisfied

3 = About equally satisfied and dissatisfied

2 = Moderately dissatisfied

1 = Very dissatisfied

16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?

- 5 = Very satisfied
- 4 = Moderately satisfied
- 3 = About equally satisfied and dissatisfied
- 2 = Moderately dissatisfied
- 1 = Very dissatisfied

17. Over the past 4 weeks, how **often** did you experience discomfort or pain during vaginal penetration?

- 0 = Did not attempt intercourse
- 1 = Almost always or always
- 2 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 4 = A few times (less than half the time)
- 5 = Almost never or never

18. Over the past 4 weeks, how **often** did you experience discomfort or pain following vaginal penetration?

- 0 = Did not attempt intercourse
- 1 = Almost always or always
- 2 = Most times (more than half the time)
- 3 = Sometimes (about half the time)
- 4 = A few times (less than half the time)
- 5 = Almost never or never

19. Over the past 4 weeks, how would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?

- 0 = Did not attempt intercourse
- 1 = Very high
- 2 = High
- 3 = Moderate
- 4 = Low
- 5 = Very low or none at all

## Appendix H

**FSFI DOMAIN SCORES AND FULL SCALE SCORE**

The individual domain scores and full scale (overall) score of the FSFI can be derived from the computational formula outlined in the table below. For individual domain scores, add the scores of the individual items that comprise the domain and multiply the sum by the domain factor (see below). Add the six domain scores to obtain the full scale score. It should be noted that within the individual domains, a domain score of zero indicates that the subject reported having no sexual activity during the past month. Subject scores can be entered in the right-hand column.

Domain	Questions	Score Range	Factor	Minimum Score	Maximum Score	Score
Desire	1, 2	1 – 5	0.6	1.2	6.0	
Arousal	3, 4, 5, 6	0 – 5	0.3	0	6.0	
Lubrication	7, 8, 9, 10	0 – 5	0.3	0	6.0	
Orgasm	11, 12, 13	0 – 5	0.4	0	6.0	
Satisfaction	14, 15, 16	0 (or 1) – 5	0.4	0.8	6.0	
Pain	17, 18, 19	0 – 5	0.4	0	6.0	
Full Scale Score Range				2.0	36.0	

## Appendix I

	Research Question	Hypothesis	Instrument	Statistical Test	Result
1	Is there a statistical difference in the level of self-esteem before and after receiving breast augmentation?	There will be a significant increase on the levels of self-esteem in mean scores, as measured by the RSES, following breast augmentation surgery.	Rosenberg Self-Esteem Inventory	Paired t – test	The implication for the relevant statistical test (paired t-test) for H1 reported a statistical significance in the levels of self-esteem following breast augmentation surgery ( $p < .0001$ ), $t(84)$ value of 9.83.
2	Is there a statistical difference in the level of sexuality before and after receiving breast augmentation?	There will be a significant increase on the levels of sexuality in mean scores, as measured by the FSFI, following breast augmentation surgery.	Female Sexual Function Index	Paired t – test	The implication for the relevant statistical test, paired t-test, for H2 reported a statistical significance in the levels of sexuality following breast augmentation ( $p < .0001$ ), $t(84)$ value of 6.46.
3	Is there a statistical difference in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) before and after receiving breast augmentation?	There will be a significant increase in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) after receiving breast augmentation.	Female Sexual Function Index	Repeated Measures ANOVA using Proc GLM (General Linear Model)	The implication for the relevant statistical difference (repeated measures ANOVA, SAS's Proc GLM) in the sexuality subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain), for H3, indicated that the null hypothesis was rejected. Therefore, the hypothesis that there was a positive significant increase in the sexuality subscale scores after receiving breast augmentation was accepted.
4	Is there a positive correlation between self-esteem, sexuality, and breast augmentation?	There will be a positive correlation between self-esteem, sexuality and breast augmentation.	Demographic Survey  Rosenberg Self-Esteem Inventory  Female Sexual Function Index	Pearson r	The implication for the relevant statistical test H4, Pearson Correlation Coefficients, $N=168$ , indicated a strong correlation between self-esteem and breast augmentation ( $p < .0001$ ), self-esteem and sexuality ( $p < .0001$ ), and sexuality and breast augmentation ( $p < .0001$ ).
5	Is there a correlation between demographic variables and levels of self-esteem and sexuality before and after receiving breast augmentation?	There will be a correlation between demographic variables and levels of self-esteem and sexuality before and after receiving breast augmentation.	Demographic Survey  Rosenberg Self-Esteem Inventory  Female Sexual Function Index	Repeated Measures ANOVA using Proc GLM	The implication for relevant statistical tests (ANOVA, SAS Proc GLM) to determine the marginal means and correlation between breast augmentation, self-esteem, and the demographic variables rejected the null hypothesis. There was strong correlation associated with the participant's educational level ( $p = 0.0036$ ), and history of previous cosmetic surgery ( $p = 0.0005$ ).  There was no correlation between breast augmentation, sexuality associated with the demographic variables; age, marital status, residency, ethnicity, educational level, or history of previous cosmetic surgery.

## Appendix J

## Surgical Facility Permission Form

I, Dr. \_\_\_\_\_ (print), do hereby give,  
Cynthia Figueroa-Haas MSN, ARNP, Barry University Doctoral Nursing student,  
permission to conduct her study, Effect of Breast Augmentation Mammoplasty on Self-  
Esteem and Sexuality: A Quantitative Analysis, on my cosmetic center patients, upon  
their consent. This study on eligible breast augmentation patients and the effect on their  
self-esteem and sexuality is welcomed.

---

Signature/Date

## Appendix K

## Rosenberg Self-Esteem Scale Teleform Form ©



12468

Subject Identifier #



Date








**The Rosenberg Self-Esteem Scale Teleform**

Below is a list of statements dealing with your general feelings about yourself. Please fill in the circle that indicates whether you Strongly Agree (1), Agree (2), Disagree (3), or Strongly Disagree (4).

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I feel that I'm a person of worth, at least on an equal plane with others.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
2. I feel that I have a number of good qualities.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
3. All in all, I am inclined to feel that I am a failure.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
4. I am able to do things as well as most other people.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
5. I feel I do not have much to be proud of.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
6. I take a positive attitude toward myself.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
7. On the whole, I am satisfied with myself.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
8. I wish I could have more respect for myself.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
9. I certainly feel useless at times.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4
10. At times I think I am no good at all.	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4

## Appendix L



27527

Subject Identifier #

Date   /   /

### Female Sexual Function Index Teleform

**INSTRUCTIONS:** These questions ask about your sexual feelings and responses during the past 4 weeks. Please answer the following questions as honestly and clearly as possible. Your responses will be kept completely confidential. In answering these questions the following definitions apply:

Sexual activity can include caressing, foreplay, masturbation and vaginal intercourse.

Sexual intercourse is defined as penile penetration (entry) of the vagina.

Sexual stimulation includes situations like foreplay with a partner, self-stimulation (masturbation), or sexual fantasy.

#### CHECK ONLY ONE BOX PER QUESTION

Sexual desire or interest is a feeling that includes wanting to have a sexual experience, feeling receptive to a partner's sexual initiation, and thinking or fantasizing about having sex.

1. Over the past 4 weeks, how **often** did you feel sexual desire or interest
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
2. Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?
  - Very high
  - High
  - Moderate
  - Low
  - Very low or none at all

Sexual arousal is a feeling that includes both physical and mental aspects of sexual excitement. It may include feelings of warmth or tingling in the genitals, lubrication (wetness), or muscle contractions.

3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on") during sexual activity or intercourse?
  - No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on") during sexual activity or intercourse?
  - No sexual activity
  - Very high
  - High
  - Moderate
  - Low
  - Very low or none at all



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Subject Identifier #

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5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?
- No sexual activity
  - Very high confidence
  - High confidence
  - Moderate confidence
  - Low confidence
  - Very low or no confidence
6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?
- No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
7. Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?
- No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?
- No sexual activity
  - Extremely difficult or impossible
  - Very difficult
  - Difficult
  - Slightly difficult
  - Not difficult
9. Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?
- No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
10. Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?
- No sexual activity
  - Extremely difficult or impossible
  - Very difficult
  - Difficult
  - Slightly difficult
  - Not difficult





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11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?
- No sexual activity
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?
- No sexual activity
  - Extremely difficult or impossible
  - Very difficult
  - Difficult
  - Slightly difficult
  - Not difficult
13. Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?
- No sexual activity
  - Very satisfied
  - Moderately satisfied
  - About equally satisfied and dissatisfied
  - Moderately dissatisfied
  - Very dissatisfied
14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?
- No sexual activity
  - Very satisfied
  - Moderately satisfied
  - About equally satisfied and dissatisfied
  - Moderately dissatisfied
  - Very dissatisfied
15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?
- Very satisfied
  - Moderately satisfied
  - About equally satisfied and dissatisfied
  - Moderately dissatisfied
  - Very dissatisfied
16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?
- Very satisfied
  - Moderately satisfied
  - About equally satisfied and dissatisfied
  - Moderately dissatisfied
  - Very dissatisfied



27527

Subject Identifier #

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17. Over the past 4 weeks, how **often** did you experience discomfort or pain during vaginal penetration?
- Did not attempt intercourse
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
18. Over the past 4 weeks, how **often** did you experience discomfort or pain following vaginal penetration?
- Did not attempt intercourse
  - Almost always or always
  - Most times (more than half the time)
  - Sometimes (about half the time)
  - A few times (less than half the time)
  - Almost never or never
19. Over the past 4 weeks, how would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?
- Did not attempt intercourse
  - Very high
  - High
  - Moderate
  - Low
  - Very low or none at all

## Appendix M

Flyer for Research Study

# Seeking Participants

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# For Doctoral Research

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**\*Must be 21 Years or Older \*First Time Breast Augmentation**

Women are needed to complete two questionnaires measuring self-esteem & sexuality; prior to surgery and approximately 1-2 months after surgery. This research study is being conducted as partial fulfillment for a nursing doctoral program.

**Contact Cindi Figueroa-Haas today!** IRB Approved 6/22/2005

**352-379-5557/305-467-6749**

Cindi Figueroa-Haas  
352-379-5557/305-467-6749  
Breast Augmentation Study

Cindi Figueroa-Haas  
352-379-5557/305-467-6749  
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Breast Augmentation Study

Cindi Figueroa-Haas  
352-379-5557/ 305-467-6749  
Breast Augmentation Study

## Appendix N

## IRB Barry University Letter of Introduction Approval Form

## Appendix A

## Letter of Introduction

Dear Participant,

I am a nurse researcher in the doctoral program at Barry University, School of Nursing, studying the effects of breast augmentation mammoplasty procedures on a woman's self-esteem, and sexuality.

The research project was approved by the research subjects Internal Review Board (IRB), and involves about 20 to 30 minutes of your time, to answer the questions. Your consent to be a research subject is strictly voluntary. If you agree to participate in this study, you will be asked to sign a consent form that has been provided for you. If agreed, you will then complete the demographic questionnaire, the Rosenberg Self-Esteem Scale and the Female Sexual Function Index questionnaires. The later two questionnaires will be completed once again, approximately one to two months following your surgery.

Approximately 84 subjects are needed to complete this study, which involves no anticipated risk to you. You may choose not to participate in the study, without jeopardizing the delivery of your healthcare. All of the results of this study will be kept confidential, and the results will only be used in scientific papers, and presentations. Any published results of the research will refer to group averages only and no names will be used in the study. Data will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after five years. Should you choose to withdraw from this research, your study material will be destroyed, and the results will not be included in the study.

This research will help Advanced Practice Nurses and Researchers understand the importance of patient's choice to seek cosmetic surgery. In addition, this scientific understanding will enlighten other healthcare providers to the extent to which surgical modifiers effect the self-esteem and sexuality of an individual. I urge you to consider participating in this needed research.

Please read the attached consent form and feel free to contact me, Cynthia Figueroa-Haas at 305-467-6749, my supervisor, Dr. J. Colin, at 305-899-8030, or the Institutional Review Board (IRB) point of contact, Ms. Avril Brenner, @ 305-899-3020, for further clarification of the research study.

Sincerely,

Cynthia Figueroa-Haas MSN, ARNP  
Doctoral student at Barry University

**IRB**

Date: JUN 22 2005

Signature: JAC

## Appendix O

## IRB - Barry University Approval for Informed Consent Form

## Appendix B

## Barry University

## Informed Consent Form

You are being asked to participate in a research study. The title of the study is Effect of Breast Augmentation Mammoplasty on Self-Esteem and Sexuality: A Quantitative Analysis. The research is being conducted by Cynthia Figueroa-Haas, a student in the Nursing department at Barry University, and is seeking information that will be useful in the field of Nursing. The purpose of this study is to evaluate the effects of breast augmentation procedures on woman's self-esteem and sexuality.

If you agree to participate in the study, you will be asked to complete the study instruments, the Rosenberg Self-Esteem Scale (RSES), the Female Sexual Function Index (FSFI), and the researchers designed demographic questionnaire. The amount of your time needed for this project is about 20 to 30 minutes. Your consent to be a research subject is strictly voluntary. Should you decline to participate, or should you choose to drop out at any time during the study, there will be no adverse effects on the delivery of your healthcare in the present healthcare facility where you receive healthcare benefits.

Upon completion of the research project, at your request, you will be notified of the study results. Data will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after five years. Approximately 84 subjects are needed to complete this study, which involves no anticipated risk to you. Benefits from this research include the opportunity to articulate your views about the benefits of research in the field of plastic surgery. A copy of this consent form will be available to you. To protect your privacy, information you provide will be held in confidence, to the extent permitted by law. The code, and information gained from the data, will be kept in a locked file. Results of the study will be used only in scientific papers, and presentations, where anonymity is fully protected. By signing this form, you are freely agreeing to participate in this study.

Please feel free to ask any questions concerning this study. Phone numbers of the researcher, and supervisor, are provided below. If you are satisfied with the information provided, and are willing to participate in this research, please signify your consent by signing this consent form.

Researcher: Cynthia Figueroa-Haas MSN, ARNP 305-467-6749. Supervisor: Dr. Jessie Colin 305-899-8030 and available Institutional Review Board point of contact, Ms. Avril Brenner, at 305-899-3020.

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

**IRB**

Date: JUN 22 2005

Signature: CH

## Appendix P

## IRB Barry University Approval Letter

JUN-27-2005 10:14 From: ACADEMIC AFFAIRS

3058993026

To: 352 265 7982

P. 1/3



## Barry University

Institutional Review Board  
Office of the Provost and Senior Vice President  
for Academic Affairs

11300 NORTHEAST SECOND AVENUE  
MIAMI SHORES, FLORIDA 33161-6695  
Direct (305) 899-3020  
Fax (305) 899-3026

### Research with Human Subjects Protocol Review

To: Cynthia Figueroa-Haas  
4720 SW 103 Way  
Gainesville FL 32608

From: Marcia Hacker, Ph.D., Chair

Date: June 22, 2005

Protocol Number: 05-06-053

Protocol Title: Effect of breast augmentation mammoplasty on self-esteem  
and sexuality: A quantitative analysis

Dear Ms. Figueroa-Haas:

The Board has received and reviewed the revisions you submitted in reply to the concerns expressed at the IRB meeting on June 15<sup>th</sup>, and you may proceed with the collection of data.

Please advise the Board in writing of any changes you may have to your proposal in the future and refer to #05-06-053. Thank you.

Regards,

*M. Marcia Hacker*  
Marcia Hacker, Ph.D.  
School of Nursing  
Barry University  
11300 NE 2<sup>nd</sup> Avenue  
Miami Shores, FL 33161  
[mhacker@mail.barry.edu](mailto:mhacker@mail.barry.edu)

If you have any questions, please contact the Chair at 305-899-4895

\*\*\*\*\*  
Note: The investigator will be solely responsible and strictly accountable for any deviation from or failure to follow the research protocol as approved and will hold Barry University harmless from all claims against it arising from said deviation or failure.