PRIVATE PLACES – PRIVATE SHAME: WOMEN'S GENITAL BODY IMAGE AND SEXUAL HEALTH

by

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Dedication

For reasons obvious to anyone who knows us,

this dissertation

is dedicated to my husband Ray

Acknowledgements

I owe a great debt of gratitude to the members of my dissertation committee. You gave me the encouragement I needed to believe that I could do this and what I was doing would somehow make a difference.

Thank you to the women who participated in this dissertation, answering honestly despite the sensitive nature of the questions. Without their willingness to share there would be no dissertation.

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List of Acronyms

BES……..……..Body Esteem Scale

FGCS……..…….....Female Genital Cosmetic Surgery

FSFI……Female Sexual Functioning Index

GSIS……...Genital Self Image Scale

PFD…….Pelvic Floor Disorders

TFGC……..…Traditional Female Genital Cutting

TVT……..…….Tension free Vaginal Tape procedure

WHO……World Health Organization

Glossary

Assisted vaginal birth….use of forceps or vacuum to assist during a vaginal birth

Cystocele…..herniation or bulging of the urinary bladder into the vagina

Episiotomy…..surgical enlargement of the vulva and perineum during vaginal delivery

Fecal incontinence…..inability to hold feces in the rectum

Infibulation…..type of TFGC that involves suturing shut the vaginal orifice

Introitus….opening to the vagina

Labiaplasty…..surgical reshaping or trimming of the labia

Levator ani muscle……muscle that is attached in a sheet to both sides of the inner surface of the pelvis and descends to form the floor of the pelvic cavity

Nulliparous…..used to describe a woman who has never given birth

Overactive bladder…..urgency, with or without urinary incontinence

Pelvic organ prolapse (prolapse)…. descent of one or more pelvic structures; the uterus, cervix, vagina, or peritoneum

Perineum….. the area between the anus and the posterior part of the external genitalia

Perineal laceration (3rd degree)……tear or laceration extending into the rectal mucosa but not through the rectum

Perineal laceration (4th degree)…..tear or laceration extending through the rectum

Pessary…..device used as a non surgical way to add pelvic support for prolapse

Placenta previa….. implantation of the placenta near the cervix so that it may precede the child at birth causing severe maternal hemorrhage

Postpartum (puerperium)…..the time period following childbirth

Primiparous…..First full term (37 weeks or greater) birth

Rectocele…..herniation or bulging of the rectum into the vagina

Sacrocolpopexy…..abdominal surgery for pelvic organ prolapse

Stress incontinence….. urinary incontinence accompanied by physical activity (as in laughing, coughing, sneezing, or physical exercise)

Ureters….. ducts that carry urine from a kidney to the bladder

Uterine rupture…..separation of the uterine wall during labor, usually occurring at the site of uterine incision from a previous cesarean delivery

Urinary incontinence….. involuntary leakage of urine from the bladder

Vaginoplasty (or vaginal rejuvenation)…..surgical reshaping or tightening of the vagina

Abstract

Body image dissatisfaction is prevalent among women, affecting many components of their sexual health. The increase in female genital cosmetic surgery indicates that women may be experiencing dissatisfaction with even those parts of their body considered to be private – their genitals.

Research has been constrained by lack of a reliable and valid instrument to measure genital body image. The purpose of this study was to explore the relationship between genital body image, global body image, and sexual health while psychometrically testing a previously developed instrument – The Genital Self Image Scale (GSIS). Lower scores on the GSIS indicate more genital body image dissatisfaction. Four diverse groups were utilized: young, nulliparous women (N = 192), women post childbirth (N = 56), women with pelvic organ prolapse (N = 47) and older women without prolapse (N = 45).

Content validity was determined using a panel of five experts (three gynecologic surgeons and two sex therapists) resulting in a Content Validity Index of .79. Through item reduction and content validity testing the GSIS was reduced to 20 items and renamed the GSIS-20. Factor analysis was performed using principal component analysis with oblique rotation revealing four factors, identified as Genital Confidence, Appeal, Function and Comfort. Internal consistency for the GSIS-20 was satisfactory across samples (.79 - .89) as was test-retest reliability (r = .883). There was a positive correlation between the GSIS-20 and sexual function (r = .330 - .416) for all groups except women post childbirth (r = .050). In all groups there was a positive correlation between GSIS-20 scores and global body image (.412 - .503). Women with prolapse

had significantly lower GSIS-20 scores ($t = 2.34$, $p < .05$) than women in the control group. Women who indicated an interest in genital cosmetic surgery had significantly lower GSIS-20 scores than women who did not ($t = 5.53$, $p < .01$).

Reliability and validity of the GSIS-20 was supported across diverse samples of women. In this study pelvic organ prolapse negatively affected genital body image and genital body image dissatisfaction negatively affected women's sexual health. Implications for clinicians and researchers are discussed.

Chapter 1

Introduction

Women are more dissatisfied with their bodies than ever before (Sanchez & Kiefer, 2007). Women consistently experience more body image concerns than men, and the gap between the genders may be increasing (Feingold & Mazella, 1998). Body image is more than just how one views her physical body; it encompasses a person's feeling of "wholeness, functionality, and ability to relate to others" (Anderson & LeGrand, 1991, p. 458). Body image dissatisfaction has the capacity to affect all parts of a person's life *including* their sexual health. Sexual health issues are also more prevalent in women; 43% of women versus 31% of men report having a sexual health problem (Laumann, Paik, & Rosen, 1999). Body image concerns can diminish sexual pleasure (Sanchez & Kiefer). Women across the lifespan who are dissatisfied with their bodies have sex less often and experience less sexual pleasure (Koch, Mansfield, Thurau, & Carey, 2005; Sanchez & Kiefer). Women who are less comfortable with their bodies may take more sexual risks such as having unprotected intercourse (Schooler, Ward, Merriwether, & Caruthers, 2005).

Images portrayed in the media influence how women feel about their bodies; for example, as models have gotten thinner women have become increasingly dissatisfied with their weight (Englen–Maddox, 2005). Women compare themselves with media portrayals of an ideal body causing them to be dissatisfied when they feel that their own bodies do not compare favorably to these ideals. Greater media exposure increases

the likelihood that women will internalize these ideal images, leading to greater body image dissatisfaction (Dittmar & Howard, 2004). Despite the considerable amount of research in the area of body image and sexual health, little is known about women's body image in relationship to their genitals and how this may influence sexual health. Because genitals were not often portrayed or talked about, the issue of media's influence on women's genital body image has not been explored. Lately, images of women's genitals have become more prevalent in the media; pornography is increasingly explicit, digitally enhanced, and easy to access via the internet (Weil-Davis, 2002). Approximately 40 million Americans regularly visit pornographic websites at a cost of 13 billion dollars a year (Ropelato, 2008). Nine out of ten young men and three out of ten young women report viewing pornography (Carroll, 2008).

At the same time, there has been increasing media attention to female genital cosmetic surgery (FGCS), with articles in popular women's magazines such as Cosmopolitan (Havranek, 1998), Marie Clare (Cohen, 2008), and Women's E News (Kobrin, 2004). Television shows like "The Doctors" feature genital cosmetic procedures in their topics of conversation (www.thedoctorstv.com). Websites advertising genital plastic surgery have proliferated; a Google search for "vaginoplasty" in 2006 yielded 86,400 results – in 2008 215,000 results. Links to these websites can be found on other, more mainstream websites, and often cosmetic surgery websites have names that give little indication of the content (such as americanhealthandbeauty.com). These articles, television programs and websites describe the "ideal" female genitals. For example, "there is an ideal relationship between the outer lips and the inner lips" (retrieved from http://www.thedoctorstv.com/main/show_synopsis/260%3Fsection%3Dsynopsis July 25, 2009), and "vaginoplasty reduces the amount of excess vaginal mucosa, the vaginal lining" (retrieved from http://www.worthwhilemag.com/ps/vaginoplasty.html July 25,

2009). Is this portrayal of what the "ideal" should look like narrowing the socio-cultural perception of what is "normal" for female genitals? Although genitals are an area almost always hidden from view, is the increasing media attention to genital cosmetic surgery giving women reason to be self conscious about their own genitals during intimate encounters?

Additionally, in recent years women's healthcare providers have noticed an increase in women from all demographics who trim or remove their pubic hair (Johnson, 2003). This trend in hair removal may be leading to an increased awareness of genital "imperfections." Women's genitals "normally" come in all shapes and sizes (Lloyd, Crouch, Minto, Liao, & Creighton, 2005), but if women do not have realistic comparisons they may feel that their genitals are "abnormal".

Significance

Although there is little data on the actual number of procedures performed, there is evidence that an increasing number of women are undergoing vaginoplasty, labiaplasty and other genital cosmetic surgeries. There has been a doubling of labial reduction procedures done in the United Kingdom in the last five years (Liao & Creighton, 2007). The American Society of Plastic Surgeons (ASPS) reported that in 2005 (the first year data was collected) 793 vaginal rejuvenation procedures were done in the United States, and by 2006 the number increased to 1,030 (American Society of Plastic Surgeons, 2007). Of note, for 2007 and 2008 vaginal rejuvenation was removed from the list of reported procedures (American Society of Plastic Surgeons, 2009). To date there is no evidence that these surgeries improve women's sexual health. In fact, surgery in this area of the body may decrease women's sexual pleasure (Minto, Liao, Woodhouse, Ransley, & Creighton, 2003). Genital surgery has been shown to decrease clitoral sensitivity, decrease enjoyment of being caressed and to cause difficulty

achieving orgasm (Minto et al.). The long term effects of cosmetic genital procedures on sensation, orgasm and overall sexual function are not known.

Plastic surgery websites emphasize the perceived link between vaginal birth and sexual function, mediated by genital changes such as vaginal stretching, looseness, gaping and labial tearing (Braun, 2005). At the same time that these websites have been proliferating, the number of cesarean deliveries in the United States has increased, by 50% over the last decade to an all time high of 31.1% in 2006 (Hamilton, Martin, & Ventura, 2007). Whether or not significant numbers of women are opting for a surgical birth to avoid the purported genital changes associated with vaginal birth has not been established but a link has been hypothesized (DeVries, Low, Bodgan-Lovis, 2008).

What is also unclear is if the media attention to celebrities who opt for cesarean delivery influences women's perceptions of giving birth vaginally. Pop star Britney Spears was quoted as saying she hoped for a cesarean delivery because she "couldn't bear the thought of natural childbirth" (Wulff, Fleeman, Naff, & Singh, 2005, p, 68). Entertainer Christina Aguilera stated that she opted for an elective cesarean delivery to prevent her "vagina from tearing" (Wilhborg, 2008, p. 86). "There's no doubt in my mind that the current interest in elective cesarean births has been ignited by the fact that in our pop culture many celebrity deliveries have been elected cesareans," says Manuel Porto, MD, chairman of the department of obstetrics and gynecology at the University of California, Irvine (retrieved from http://www.foxnews.com/story/0,2933,214578,00.html, August 10, 2008).

Genital body image dissatisfaction may also affect women with pelvic floor disorders. The National Center for Health Statistics estimates that over 300,000 procedures are performed each year to relieve symptoms of disorders such as pelvic organ prolapse and urinary incontinence (Boyles, Weber, & Meyn, 2003). The reasons why women choose to undergo surgery to correct these problems are not well

understood and severity is not well correlated with symptoms (Ellerkmann , Cundiff, Melick, Nihira, Leffler, Bent, 2001). While for some women issues such as urinary incontinence or pelvic pain may be the primary reason for undergoing surgery, for some genital body image and sexual health may be the issue. Research has not consistently shown an improvement in sexual *function* following surgery (Weber, Walters, & Piedmonte, 2000); whether or not there is an improvement in *genital body image* following surgery is unknown. Pelvic organ prolapse can result in body image dissatisfaction (Jelovsek & Barber, 2006), but whether or not women seek surgery as a result of body image dissatisfaction related to the prolapse is not known.

I propose that genital body image is becoming increasingly important to some women and that genital body image dissatisfaction may influence decisions regarding surgical procedures that are both costly and not free from risk. The costs for female genital cosmetic procedures range from $3500 to $10,500 depending on type of procedure (retrieved from http://www.labiaplastysurgeon.com/dr-stern.html#pricing on July 25, 2009). Cesarean delivery results in an average length of stay that is 40% greater and costs, on average, $2500 more than a vaginal birth (Druzin & El-Sayed, 2006). Women who have a cesarean delivery are more likely to experience infection, greater blood loss, venous clots, readmission to hospital and a longer recovery time (ACNM, 2006). Cesarean delivery adds risks to subsequent pregnancies such as placenta previa, placenta acreta and miscarriage (Gilliam, 2006). Moreover, infants delivered by elective cesarean delivery have a greater risk of respiratory ailments (Minkoff & Chervenak, 2003) and a higher rate of admission to the newborn intensive care (Fogelson, Hulsey, & Ebeliing, 2005). In 1997 the direct cost of pelvic organ prolapse operations in the United States was over 1 billion dollars (Subak, 2001). Risk associated with prolapse surgery includes ureteral injury, urinary incontinence, bowel

adhesions, hemorrhage, wound infection, pain with intercourse and re-occurrence of the prolapse (ACOG, 2007).

In some cases there are clear medical indications for procedures such as primary cesarean delivery as well as prolapse repair. However there may be other, less clear, and more complex reasons women pursue these procedures. With other procedures such as female genital cosmetic surgery the indications may be solely cosmetic in nature. The increased awareness of an "ideal" for women's genitals may be contributing to an increase in surgical procedures designed to prevent or repair changes that would be perceived as negative when compared with the "ideal" for female genital appearance and function. In short, I argue that we are currently experiencing a conflation between the medical indications and the cosmetic reasons for surgery that is creating a higher rate of women both desiring and believing it even medically necessary to pursue genital cosmetic surgery. This is despite the risks and limited evidence to support the value of such procedures for enhancing sexual pleasure or improving sexual function.

Purpose

The purpose of this dissertation is as follows: first is to review the research pertinent to the concepts related to genital body image and sexual health, particularly within the context of childbirth, pelvic floor disorders and female genital cosmetic surgery. These concepts will be situated within a socio-cultural framework that privileges *women's* perceptions of normalcy regarding their genitals rather than what is defined as normal within a biomedical model of sexuality. The gaps in the literature will be identified and will provide the basis for the specific aims of this study. Because there is currently no measures of genital body image that have been subject to adequate validity and reliability testing, the primary purpose of the dissertation is to determine the reliability and validity of the Genital Self Image Scale. At the same time the relationship

between genital body image and sexual health will be explored using participants from a variety of life experiences.

Chapter 2

Review of the Literature

Female Genital Anatomy

> *"anatomy has been naturalized and normalized in the Foucaldian sense. It has become a taken for granted idiom within discourses of difference, not only in the biomedical senses but also in society much more generally" (Moore & Clarke, 1995, p. 292).*

There is inherent difficulty in defining and describing "normal" female genitalia. By describing "normal" we automatically imply that there is an "abnormal". This implies a binary distinction between the two when, in fact, there is a wide range in "normal" female genitals (Lloyd, Crouch, Minto, Liao, & Creighton, 2005). What defines normality and abnormality can be influenced by socio-cultural representations whereby narrowing the definition of "normal" expands the category of "abnormal". The effect of narrowing the definition of "normal" female genitals emerges in the increasing demand for genital cosmetic surgery. Large or irregular labia, a loose or gaping vagina, are all descriptions of "abnormality" that can be found on internet sites as well as in medical texts. While this chapter includes definitions and descriptions of genital anatomy and physiology, these are not meant to define "normal", but rather to expose assumptions inherent in these definitions and descriptions. In this way we can better understand and appreciate the complexity and adaptability of the female genitalia.

Female genitals have long been described in terms of their relationship to male genitals; these descriptions are commonplace in anatomy textbooks. The labia majora

are described as homologous to the scrotum in the male, the labia minora as homologous to the penile urethra, the clitoris as homologous to the penis, the Skene's glands as homologous to the prostate (Krantz, 2007). By "matching" female parts to their male counterparts, assumptions are made about how female genitals function and inevitably –"female to male homologies….present the normal human body as male" (Lawrence & Bendixen, 1992, p.933). Negative connotations of female genitalia can be derived even from the terminology used to describe the structures – "pudenda", the term used to describe the female external genital organs, was derived from the Latin "pudere" which translates as "to be ashamed" (Agnes & Laird, 2002).

The Clitoris

Located above the urethra, the clitoris is a short, cylindrical, erectile organ. The average width is less than 1cm and the average length is 1.5 to 2 cm. The clitoris is filled with sensory nerve endings from the pudendal nerve and its branches. The clitoral body contains thin-walled vascular channels that become erect with sexual excitation (Krantz, 2007).

If little is known about what constitutes normal female external genital anatomy, even less is known about innervation and sexual sensation in these areas; "scholarly focus on the clitoris appears to be minimal, relatively dwarfed by phallocentric narratives, images, and fascinations" (Moore & Clarke, 1995, p. 259). According to Schober, Meyer-Bahlburg, & Ransley (2004) women self reported that the areas on and above the clitoris were the most sensitive and achieved the strongest orgasm. While the clitoris is typically viewed as passive the penis is described as active (Moore & Clarke). Contrary to popular culture the size of the clitoris does not correlate with ability to orgasm or intensity of orgasm (Schober et al).

Cosmetic surgeries involving the clitoris include clitoral hood reductions and clitoral repositioning (Braun, 2005). Women who undergo clitoral surgery for intersex

conditions have less sexual sensation and less ability to achieve orgasm (Minto, Liao, Woodhouse, Ransley & Creighton, 2003); whether or not cosmetic surgery may result in the same issues is not known. The clitoris is rich with nerve endings; potential disruption of those nerve endings with subsequent loss of sensation is a potential risk with any clitoral surgery (Baskin, Erol, Li, Liu, Kurzrock & Cunha, 1999).

The Vagina

The vagina is a thin walled, fibro-muscular tube extending from the vulva to the uterus. During the reproductive years the vagina has numerous folds called rugae designed to distend during childbirth. The cervix (opening) of the uterus extends into the upper part of the vagina creating a space in the front (anterior fornix) and the back (posterior fornix). There are four histologic layers of the vagina: the mucosa, the lamina propria (which consists of fibrous connective tissue), a muscular layer and an outer layer of connective tissue that is filled with blood vessels. The vagina is supplied with blood from the vaginal arteries, which originate at the uterine artery. There are numerous vascular plexuses surrounding the middle and upper vagina. When these become engorged an exudate is secreted lubricating the vagina. The nerve supply of the vagina comes from the autonomic nervous system and sensory fibers come from the pudendal nerve (Krantz, 2007).

Frequently, anatomy textbooks describe the vagina as being designed to fit the penis, “the penis is a rod shaped copulatory organ which fits neatly into a suitably adapted sheath within the body of the female” (Silverstein, 1988, p. 269). Genital assignment surgery defines adequate vaginal construction as one that allows for penetration by a “normal” sized male penis. Similarly, vaginal lubrication has been described as functioning to benefit the penis during intercourse; “these secretions provide lubrication to allow easy entry of the penis into the vagina and easy movement of the penis during intercourse” (Seely, Stephens, & Tate, 1989, p. 347).

From contemporary and historic representations of the vagina, Braun & Wilkinson (2001) identified seven areas of negative vaginal depictions: the vagina as inferior to the penis, the vagina as absence, the vagina as a passive receptacle, the vagina as sexually inadequate, the vagina as disgusting, the vagina as vulnerable and abused, and the vagina as dangerous. The vagina as disgusting is prevalent in Western media; products for controlling odor, discharge, and infections are commonplace in advertising (Coutts & Berg, 1993). Braun and Wilkinson suggest that women's health care providers could be instrumental in changing these negative depictions through awareness and education.

Socio-cultural accounts of vaginal size in the West construct a tight (but not too tight) vagina as desirable and a loose vagina as undesirable (Braun & Kitzinger, 2001). This depiction makes vaginal birth problematic because it is seen as stretching or potentially tearing the vagina. Textbooks describe the vagina as "shortening" after vaginal birth (Krantz, 2007). Measurement of the association between birth and vaginal length, independent of pelvic floor disorders, has not been done. Genital hiatus, or the measurement of the opening of the vagina, has also been described as becoming a gaping opening following childbirth:

> Early in the puerperium, the vagina and its outlet form a capacious, smooth-walled passage that gradually diminishes in size but rarely returns to nulliparous dimensions….extensive lacerations of the perineum during delivery are followed by relaxation of the vaginal outlet. Even when external lacerations are not visible, stretching may lead to marked relaxation." (Krantz, 2007, p. 463).

As with vaginal length, changes in genital hiatus associated with childbirth have not been subject to research. The cultural perception of a "loose vagina" is not only associated with childbirth; a "loose vagina" can be synonymous being a "loose" (promiscuous) woman (Braun & Kitzinger, 2001). In interviews with young women this perception was pervasive; "the bigger it gets the worse it is, like you are some kind of slut or whatever" (Braun & Kitzinger, p. 268). In actuality researchers have not found a

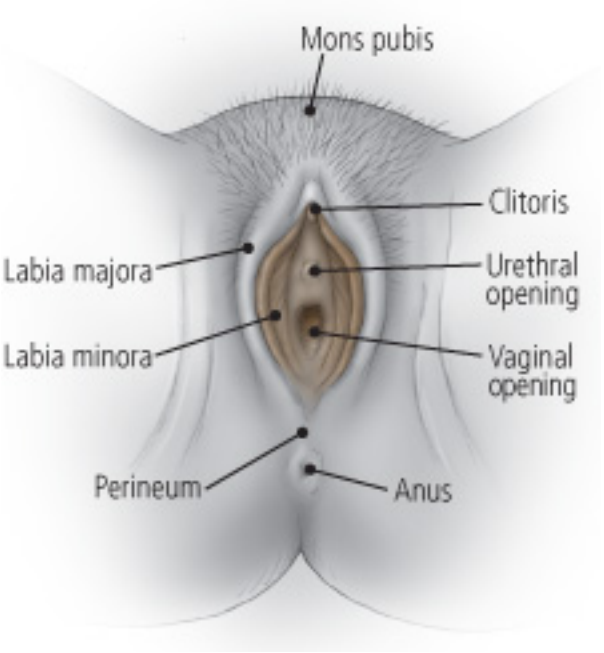
relationship between vaginal caliber (and other vaginal measurements) and amount of sexual activity (Weber, Walters, Schover, & Mitchinson, 1995).

The Labia

The labia are divided into two pairs, the labia majora and the labia minora. The labia majora, or the outer labia, are longitudinal cutaneous folds of adipose and fibrous tissue. The approximate measurements are 7-8 cm in length and 2-3 cm in width. The outside of the labia majora are pigmented and have hair follicles whereas the inner aspect of the labia majora have sweat and sebaceous glands (Krantz, 2007).

The labia minora, or inner labia, are composed of connective tissue with erectile tissue and elastic fibers. There are sebaceous glands but no hair follicles or sweat glands. The labia minora are described in textbooks as "more delicate, shorter, and thinner" (Krantz, 2007, p. 469) than the labia majora. Although the same textbook states that there can be "considerable variation in the size of the labia minora" (Krantz, p. 469) the accompanying illustrations depict small thin labia minora that are uniform in size (Figure 2-1). According to plastic surgeons, the "ideal" labia minora are "minimal, uniformly pink, non-extended, symmetrical, and not wavy" (Wiel-Davis, 2002, p. 12). The following is an example of a textbook illustration of "normal" female genitals. The perceived ideal for women's genitals is one of "neatness", with labia that are trim, small, non overlapping, and tidy.

2-1 Depiction of "Normal" Female Genitals



(Katz, 2007)

Disorders of sexual development

An extreme example of “abnormal” genitalia can be found in babies who are labeled “hermaphrodites” or “intersex” infants with “ambiguous genitalia”. Although this is a relatively rare phenomenon (2000 children born annually throughout the world) the consequences for the child and family can be devastating (Maharaj, 2005). For years parents of these children have been urged to “choose” a gender quickly so as not to cause trauma and embarrassment for the child. Traditional treatment means making a decision regarding gender in the first three days following birth and raising the child as such. Professionals maintain that it is important that all newborns receive a sex assignment, even if it is “impossible to predict to what sex any child will identify” (Nabhan & Lee, 2007, p. 442). Often this means labeling the child a girl because it is surgically less difficult to construct a vagina than a penis (Creighton, 2004). Reports of success

are often limited to cosmetic results with little regard for future psychological adjustment.

Only recently has the potential harm caused by gender assignment surgery come to light; “there is increasing evidence that surgery has a high risk of long term complications, that repeat procedures are common, and that sexual sensation and sexual function may be damaged” (Creighton, 2004, p. 202). Intersex surgery has been shown to decrease clitoral sensitivity, decrease enjoyment of being caressed and to cause difficulty achieving orgasm (Minto, Liao, Woodhouse, Ransley, & Creighton, 2003). The rate of complications or need for a second surgery is approximately 30% (Gollu et al., 2007). There is no evidence of psychological or sexual benefit from intersex surgery (Creighton). Negative psychological consequences are commonplace in intersex children and adults, making it difficult to quantify what effects can be attributed to surgery (Maharaj, 2005). Traditional female genital cutting (TFGC, also known as female circumcision or female genital mutilation) is also relevant to the topic of female genital anatomy because of the prevalence of women in the world who have undergone TFGC, altering what the West considers “normal” female genitals. TFGC also sheds light on traditional assumptions regarding the female sexual response (Lightfoot-Klein, 1989).

Traditional female genital cutting

The definition of TFGC given by the World Health Organization is “all procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs whether for cultural or other non-therapeutic reasons” (WHO, 2006, p. 1). In a joint statement, the World Health Organization, the United Children’s Fund, and the United Nations Population Fund condemned TFGC (referred to by them as female genital mutilation), stating that there was “universally unacceptable harm caused by female genital mutilation” and issued “an unqualified call for the elimination of this practice in all its forms” (WHO, 1997, p. 1).

The exact origins of TFGC are unknown although it reportedly dates back to ancient Egypt (Lightfoot-Klein, 1989). It is estimated that there are over 100 million women worldwide who have undergone TFGC (WHO, 2006). Although the majority of TFGC is performed in 28 African countries, it is not limited to Africa, nor is it, per se, a "Muslim" tradition (WHO). There are various reasons given for TFGC, one of which is to promote health and hygiene; uncut women's genitals are ugly and dirty (Lightfoot-Klein & Shaw, 1991). Traditional TFGC may be viewed as a rite of passage, part of becoming a woman (Gruenbaum, 2001). It may be used as a way to insure virginity and decrease the likelihood of infidelity by decreasing female sexual pleasure (Lightfoot-Klein; Gruenbaum). TFGC may be performed to insure adequate gender distinction between men and women; if the clitoris is not cut cultural lore warns that it may grow to the length of a penis. (Lightfoot-Klein)

There are a wide range of procedures that fall under the term TFGC. Procedures range from removal of a small portion of the clitoris – to complete removal of the clitoris, inner labia and suturing shut the orifice (infibulation); leaving only a small opening for urine and menstrual blood (Gruenbaum,2001). The more extensive the procedure the more risk it carries. The potential for severe and lifelong physical and psychological damage, particularly from the more extreme procedures, should not be understated. Because TFGC is usually performed outside the "medical establishment", wound infections can occur that can lead to infertility and death. The genital area is very vascular making the risk of hemorrhage, and even death, possible. The most severe procedures which involve infibulation carry risk of obstructing menstrual flow which can cause infertility. Urinary tract infections are more common after infibulation because of urine back-flow. Given that the vaginal opening has been sutured closed, cutting by a family member or midwife prior to first intercourse is often necessary. A large WHO multi-center study in six African countries found that women with TFGC were more likely

to have a cesarean delivery, postpartum hemorrhage, stillbirth, extended hospital stay or a low birth weight infant (WHO, 2006).

One concern regarding TFGC is that removal of the clitoris will result in lack of ability to experience orgasm or enjoy one's sexuality. This was not found to always be the case in a study involving Sudanese women who had undergone the most extreme form of TFGC (Lightfoot-Klein, 1989). The majority of the women in her study were able to experience sexual desire, pleasure and orgasm despite removal of their clitoris and labia minora (Lightfoot-Klein).

The complexities of the female external genitalia make it difficult to fully understand the effect that surgery may have on women's sexual health, including sensation, pleasure and orgasm. As we seek to gain understanding of how genital body image may influence women's sexual health it is important to understand that perceptions of "normal" and "abnormality" are, in part, social constructions. There are likely many factors that influence women's decisions regarding genital surgery, including women's individual and cultural perceptions of what "normal" female genitals look like. Within the Western construction of "normal" genitals, infants with ambiguous genitalia or women who have undergone TFGC are "abnormal". The purported changes to women's genitals during vaginal birth may create perceived deviations from "normal". Further research is needed to quantify genital changes associated with vaginal birth, to either confirm or refute these long held presumptions.

Body Image and Sexual Health

Genital Body Image and Sexual Health

A review of the literature related specifically to genital body image and sexual health reveals that little research has been done to date that contains both of these variables. The search terms "genital body image", "sexuality", "sexual health" in Pub Med, CINAHL, Psych Info, resulted in nine articles retrieved relevant to female genital

body image and sexual health. An additional two relevant articles were hand collected from referenced studies cited in those articles. The original search was conducted in March 2008 with an additional search conducted in May 2009 for articles published in the interim. Articles were included if they were published in the last 20 years, however older research that was frequently cited in other articles was also included.

The earliest article found in the literature was an opinion piece (Waltner, 1986) advocating for genital identity to be considered a "dimension of the self". Waltner defines genital identity as "those self-definitions, self-attitudes, and subsequent feelings which arise from specific interactions and experiences which either indirectly or directly involve the genitals" (p. 400). To elaborate on the concept of *female* genital identity Waltner states "as erection and ejaculation are often seen as synonymous with masculinity, orgasm is often seen as synonymous with femininity" (p.401). This depiction of genital identity focuses more on how genitals *function* rather than how an individual may think their genitals appear to others. For the purpose of this dissertation the term "genital identity" does not adequately convey the concepts of genital body image and body image dissatisfaction.

There have been three studies of genital body image and sexual health using college students as participants. A 1995 study of 160 male and 160 female university students used a non-validated (220 "self statement") questionnaire developed using qualitative pilot study data (Reinholtz & Muehlenhard, 1995). Mean age of the participants was 19 and the majority (81%) were White. Dependent variables included penile-vaginal intercourse, performing and receiving oral sex, and masturbation. The researchers found that although there were generally positive attitudes about one's genitals, women expressed more negative perceptions of their genitals (on all variables; $p<.001$) and were more concerned about partner's reactions to their genitals (on all variables; $p<.001$) than were men. Women's perceptions of female genitals were more

negative than men's perceptions of female genitals (p<.001). There was a significant positive correlation between genital perceptions and sexual activity (r = .24).

A summary of three studies conducted with Canadian graduate students (N = 312, 584, &176) found that favorable genital perceptions correlated positively with sexual esteem and negatively with body-image self consciousness and sexual anxiety (for women, r = -.24, P < .01; Morrison, Bearden, Ellis, & Harriman, 2005). All participants were self identified heterosexual, mean age was 23.2, however no further demographic information was collected. The researchers used a Female Genital Image Scale they developed that included 12 items that measured how women perceive their genitals (i.e. color of vulva, texture of pubic hair). The scale has not been published and no information was available regarding validity and reliability. As in the previous study, male participants consistently had more favorable genital perceptions than their female counterparts (t = 3.15, p<.001). Morrison et al. suggest that qualitative research would be useful to gain a deeper understanding of why participants answer the way they did, for example, the reasons why women may be concerned about the smell of their genitals. Again, the generalizability of these results is limited by the sample – young, heterosexual college students.

In a separate study the same researchers did not find a correlation between exposure to sexually explicit material and genital self image (Morrison, Bearden, Harriman, Morrison, & Ellis, 2004). The study participants were college students (N = 369), mean age 19.8, with no further demographics reported, limiting the generalizability of the results. For male participants exposure to sexually explicit material correlated with higher sexual esteem (r = .20, p < .005). Sexual esteem is defined as "the value one places on oneself as a sexual being, including sexual identity and perceptions of sexual acceptability" (Snell & Papini, 1989). The researchers also found that men had greater exposure to sexually explicit material (t = 27.65), had less sexual anxiety (t = - 6.34), as

well as higher levels of sexual esteem (t = 5.15) than did women (Morrison et al.) These findings may be limited by the fact that participants were college students who volunteered to be part of this study, indicating a level of comfort with sexually explicit material. Also, only intentional exposure to sexually explicit material was measured; unintentional exposure to sexually explicit media was not included in the study design.

Berman, Berman, Miles, Pollets and Powell (2003) used the term "genital self-image" (the way individuals feel or think about their genitals) in their study of women seeking treatment for sexual dysfunction. Women (N = 31) were asked to complete a Genital Self Image Scale developed by the researchers (tested for face validity and reliability in a sample of 20 resulting in a Cronbach's alpha of r = .86). The Genital Self Image Scale includes questions such as "I feel comfortable/positive about my partner seeing my genitals". Participants also completed The Sexual Distress Scale (Derogatis, 2001) and the Female Sexual Function Index (Rosen et al., 2000) as well as measures of depression and marital state. The researchers found that there was a negative correlation between genital self image and sexual distress (r = -.502, p = .01) and genital self image and depression (r = -.378, p = .05) and a positive correlation between genital self image and desire (r = .390, p = .05). Correlations between genital self image and arousal (r = .315), lubrication (r = .303), orgasm (r = .215), satisfaction (r = .241), or pain (r = .168) were not significant although the study may have been underpowered. A further limitation of this study was that all participants were women seeking treatment for sexual dysfunction, limiting the generalizability of the results.

In an analysis of menstrual product advertisements Coutts and Berg (1993) found that cultural representations of menstruation are primarily negative; menstrual periods are something to hide and be ashamed of. Women who have a more sexually objectified view of themselves have more negative attitudes (disgust and shame) toward their menstrual cycles (Roberts, 2004). Because menstruation is closely related to

women's genitals two studies exploring the correlations between menstrual attitudes and sexual health are included in the review of the literature.

In a study of 114 female college students (age range 18 to 49 years with 90% between 18 and 23, over 80% White) researchers used a 19 item (shortened from the original 43 item) Menstrual Attitudes Questionnaire, as well as measures of "comfort with personal sexuality", a sexual arousal and disgust scale, and a values survey (Rempel & Baumgartner, 2003). Participants who were more comfortable with menstruation were also more comfortable with their own sexuality ($r = .35$, $p < .01$; Rempel & Baumgartner). Participants who were comfortable with menstruation were also more likely to have sex during that phase of their cycle ($\beta = .89$, $p = .02$). Again, study results may have limited generalizability beyond women who are young, White, college students.

Schooler, Ward, Merriwether, and Carruthers (2005) explored the relationship between menstrual shame, sexual decision making, and body shame in female college students (n=199, mean age = 19.7 years). This sample was more ethnically diverse, with 19% of the sample self reporting as Asian, 7% as multi-ethnic, 5% as Black, 3% as Latina, and 67% as White. To measure menstrual attitudes they used the Adolescent Menstrual Attitude Questionnaire. Body shame was measured by the Body Comfort/Body Modesty Measure; sexual assertiveness, body image self consciousness, lifetime sexual experience and sexual risk-taking and religiosity were also measured. Using structural equation modeling they found that participants who had more open attitudes about menstruation had higher levels of sexual assertiveness ($r = .26$, $p < .001$) and greater condom use self efficacy ($r = .17$, $p < .05$). Women with more negative attitudes toward menstruation experienced more body image self consciousness ($r = -.34$, $p = .001$) and less body comfort ($r = -41$, $p = .001$). As the authors point out "when the choice to reduce or eliminate menstruation via contraceptive use is growing more popular the stigma placed on menstruation is as strong as ever" (p. 332). They suggest

that encouraging positive messages about menstruation to girls starting at a young age may contribute to better sexual health and less sexual risk taking later.

In order to better understand the effect genital body image may have on sexual health, the literature related to global body image and its relationship to sexual health was also explored. Body image is defined as "general and enduring positive or negative feelings about the body (Anderson & LeGrand, 1991). Generally body image is measured as a global concept – how one feels about their overall body.

Global Body Image and Sexual Health

Body image dissatisfaction is prevalent in US culture; women in particular are consistently dissatisfied with their bodies (Koch, Mansfield, Thurau, & Carey, 2005). Less than half of young women of *normal* weight are at all satisfied with their bodies and a majority of women are self conscious about their appearance (Ackard, Kearney-Cooke, & Peterson, 2000). There is consistent evidence that body dissatisfaction negatively affects sexual health. I conducted a search including the terms body image, sexual health, sexuality, using Pub Med, CINAHL, Psych Info. Due to the extensiveness of the available literature and potential for confounding variables, I excluded articles where body image disruption was related to illness, disability, or surgery; leaving ten relevant articles published in the last 20 years that were included in the following review.

The role of "spectatoring" was explored by Faith and Schare (1993) using college aged participants (108 male and 140 female, no other demographic information was provided). Spectatoring refers to "cognitive self-absorption wherein individuals fixate on and carefully monitor personal body parts and/or the adequacy of personal sexual functioning" (p, 345). The female college students were more likely to have negative attitudes toward their bodies than were the males ($t = 4.56$, $p < .001$). Results also indicated that body image significantly predicted frequency of sexual activity for both

groups ($t = 2.11$, $p < .05$ for men, $t = 2.69$, $p < .01$ for women). Generalizability of the findings are limited by the sample – college students of unknown age and ethnicity.

Correlation between actual-ideal self discrepancy (the difference between the way people perceive their actual and ideal selves) and sexual esteem/depression was explored using college aged participants (94 women and 84 men, mean age 19.7 years, 80% White) by Garcia and Hoskins (2001). There was a difference between participants ideal and self rated actual attractiveness to others (men, $d = 1.44$, $p < .05$; women, $d = 1.36$, $p < .05$). Also of note, the discrepancy scores between the actual and ideal sexual self was associated with lower sexual esteem (men, $r = -.46$, $p < .01$; women, $r = -.48$, $p < .01$) and higher sexual depression (men, $r = .47$, $p < .01$; women, $r = .35$, $p < .01$). The authors conclude that "there is a substantial difference between what we think of ourselves and what we would like to be" (p. 58) and according to their research results this difference has a negative effect on sexual health.

Two separate studies ($N = 198$ & $N = 209$) were conducted to develop an instrument (Body Image Self Consciousness Scale) using (89.9% White) heterosexual college aged women as participants (Wiederman, 2000). Participants with less body image self consciousness were significantly more likely to date ($F = 33.3$), more likely to have had intercourse ($F = 44.0$), more likely to receive ($F = 72.1$) and perform ($F = 48.6$) oral sex. Of note, while 35.4% of women scored higher than 30 (indicating self consciousness during intimacy), less than 10% of the sample could be categorized as obese according to BMI, indicating a discrepancy between actual body size and body perceptions. As in similar studies these results were based on young, White, college students and limiting generalizability to other populations.

A study not limited to college aged students was conducted by Ackard, Kearney-Cooke, and Peterson (2000) in which a total of 3627 women responded to a survey in Shape magazine. Mean age of the sample was 28.5 years (range = 14 - 74), mean

body mass index (BMI) was 23.9; and 94% of the sample were heterosexual. The only ethnicity data reported was that 81% of the sample was White. Despite the normal BMI and the relatively young age of the sample, only 39.8% of the women were even somewhat satisfied with their appearance. Survey respondents with higher levels of body dissatisfaction had sex significantly less often ($X^2 = 97$), initiated sex less frequently ($X^2 = 167$), were less comfortable trying new sexual activities ($X^2 = 309$), less comfortable with having sex with the lights on ($X^2 = 683$), had less confidence that they could satisfy a sexual partner ($X^2 = 245$), had less orgasms ($X^2 = 100$), and faked orgasm more frequently ($X^2 = 35$). In fact, body image dissatisfaction was statistically significant in every measure of sexual health in this study. Despite the limitations of this study (sampling from readers of Shape magazine, non validated questionnaire), these results indicate that the relationship between body image and sexual health is significant at a variety of ages.

Body image dissatisfaction can also affect sexual health in middle aged women. Data from a survey of midlife, heterosexual women (N = 307) explored the prevalence of body dissatisfaction and the relationship between body dissatisfaction and sexual response and sexual satisfaction (Koch, Mansfield, Thurau, & Carey, 2005). The women ranged in age from 39 to 56 (M = 50); 99.2% were White and 99% were college educated. The study showed that 52% of responders felt less attractive and only 18% felt more attractive than they had ten years earlier. The less attractive they felt, the less sexual desire they felt ($t = 3.08$, $p = .002$) and less sexual activity they had ($t = 2.03$, $p = .043$). The study also included participant's comments which indicated that weight gain and breast changes may be factors that decrease some midlife women's sexual desire.

Other studies have consistently shown that body size concerns affect sexual health. In a study of obesity and sexual quality of life, Kolotkin, Gress, Banks, Crosby & Adams (2006) included 500 participants (BMI = 41.3, over 90% White, age range, 18 -

84) who were in a residential treatment program for obesity. The researchers found that there was a high frequency of sexual difficulties attributed to weight, lack of sexual enjoyment ($F = 11.4$, $p < .001$), difficulty with sexual performance ($F = 17.7$, $p < .001$), and avoidance of sexual encounters ($F = 6.1$, $p = .002$). The women ($N = 800$) in the study were younger and had lower BMI than the men ($N = 358$), yet more reported impairment in their sexual quality of life (33% versus 15%).

Body image dissatisfaction also influences measures of sexual health such as sexual risk taking. In a study of 522 African American adolescent girls (mean age = 16 years), those who were more dissatisfied with their bodies were less likely to negotiate condom use ($PR = 1.2$, $p = .03$) and were more likely to perceive themselves as having limited control in their sexual relationships ($PR = 1.6$, $p < .001$; Wingood, DiClemente, Harrington, & Davies, 2002). Although generalizability of these findings are limited due to study population (African American adolescents), women from all demographics who are less satisfied with their bodies may take more sexual risks and consequently be at higher risk for sexually transmitted diseases and unintended pregnancies.

In summary, the research to date indicates that body image dissatisfaction significantly affects many aspects of sexual health, including sexual desire, satisfaction and even sexual risk taking. However, the generalizability of these results is often limited by the homogeneity of the participants in the studies. The effect of women's genital body image and its effect on sexual health has, to date, not been adequately researched. Body image and sexual health issues specific to women after childbirth, women experiencing pelvic floor disorders and those women undergoing female genital cosmetic surgery will be explored in the following portions of this chapter.

Sexual Health After Childbirth

Body image dissatisfaction is associated with a decline in sexual health, yet there is very little research regarding sexual health after childbirth that includes variables

associated with body image and none have included changes specific to the genital area. As previously stated, there is increasing media attention to female genitals, yet little is known about how real or perceived genital changes associated with birth may influence women's body image or sexual health.

Childbirth is a time of dramatic change for women – physically, psychologically and emotionally. Therefore, it is not surprising that women's sexual health is affected by the changes associated with the birth of a baby. Although there is a substantial body of literature associated with childbirth and sexual health, the factors associated with, and predictors of sexual health problems that many women experience following the birth of a baby are complex, inter-related, and not well understood.

The following section is a review of the literature pertinent to sexual health following childbirth. Searches were performed using CIHNAHL, PubMed, PsychINFO and the search terms postpartum, puerperium, sexual activity, sexuality, sexual function, & childbirth. The search was limited to studies that addressed issues related to sexual health after childbirth, although some of the studies also included data related to sexual health in pregnancy. Some studies that did not appear in the databases were hand collected resulting in a total of 18 quantitative studies, three qualitative, and two meta-analyses. The original search was conducted in February 2006 with an additional search conducted in June 2009 for articles published in the interim. Articles were included if they were published in the last 20 years, however older research that was frequently cited was also included. Table 2-1 (at the end of Chapter 2) provides a display of the quantitative studies, highlighting the study populations, design and outcome measures used.

Return to sexual intercourse

In studies of post partum sexuality return to sexual intercourse was the most commonly reported primary outcome of interest. There have long been cultural rules

and taboos associated with childbirth and sex. According to the old testament of the Bible (or Torah), women are to abstain from sex for 80 days after the birth of a girl and 40 days after the birth of a boy (Leviticus chapter 12, verse 3). Other religions also have rules regarding return to intercourse following birth. Although medical professionals typically advise women to abstain from intercourse until after the six week pelvic examination there is no evidence to support this time parameter.

At first glance the research seems to show that women follow this advice; there is a six to eight week average time for resumption of intercourse in studies across different countries (vonSydow, 1999). In actuality, there is a wide variation in the time when women resume intercourse. In a study of 570 women in the United States, 19% of couples had resumed intercourse within the first month while 9% had not resumed intercourse at four months postpartum (Hyde, DeLamater, Plant, & Byrd, 1996). A study in the United Kingdom showed similar results (Barrett et al, 1999). In a multi country study the resumption of intercourse ranged from less than one month to 30 months (Visness & Kennedy, 1997).

Why is there such a variation in the time women resume intercourse following the birth of a child? One reason is perineal pain which will be discussed in more detail later in this section. Women who have an assisted vaginal birth (forceps or vacuum) return to sexual activity later than women with spontaneous vaginal births or cesarean delivery (Hicks, Goodall, Quattrone, & Lyndon-Rochelle, 2004). According to most studies women who breastfeed return to intercourse slightly later than women who bottle feed (LaMarre, Paterson, Gorzalka, 2003).

Frequency of sexual intercourse

Most studies find that frequency of sexual intercourse is reduced in women postpartum (Barrett et al., 1999; DeJudicibus & McCabe, 2002; Visness & Kennedy, 1997; vonSydow, 1999). An exception was found in a study of Kuwaiti women which

reported an increase in sexual frequency compared to pre-pregnancy levels (Al Bustan, Tomi, Faiwalla, & Manav, 1995). The reason for this contradictory finding is not apparent; the authors speculate that because in Kuwaiti culture mothers get constant help for at least six weeks post birth they may be better rested than women from other cultures (Al Bustan et al). However, their study did not include statistical analyses other than "increased" or "decreased", limiting the study validity (Al Bustan et al.) For some couples frequency remains at lower levels, with 60% reporting having sex less frequently than pre pregnancy levels at one year post partum (Kumar, Brant & Robson, 1981). In a longitudinal study of sexuality after childbirth, 84% of women reported a decrease in frequency from pre-pregnancy rates at four months and at 12 months 60% were still reporting a decrease in frequency of sexual intercourse (Fischman, Rankin, Soeken, & Lenz, 1986). Women (or in some instances couples) cite lack of desire, fatigue, and being too busy as reasons for the decrease in frequency (Ahlborg, Dahlof, & Hallberg, 2005, Avery, Duckett, & Frantzich, 2000).

Postpartum Sexual Desire

The majority of studies related to post partum sexuality have reported a decrease in sexual desire following childbirth (Ahlborg, Dahlof, & Hallberg, 2005; Barrett et al., 1999; DeJudicibus & McCabe, 2002; Fischman, Rankin, Soeken, & Lenz, 1986; Hyde, DeLamater, Plant, & Byrd, 1996; Kumar, Brant, & Robson, 1981; Rowland, Foxcroft, Hopman, & Patel, 2005). Lack of sexual desire was the most commonly cited sexual problem in a study of postpartum women in the United Kingdom (Barrett et al). Sexual desire has been shown to be reduced in most cases at three to four months following childbirth, and return of sexual desire after that time is extremely variable (vonSydow, 1999). In one study most women had a gradual resumption of sexual desire following childbirth, although 35% of women were still experiencing a lack of sexual desire at seven months postpartum (Barrett et al.). A decrease in sexual desire is common in the

postpartum period, yet in women surveyed during pregnancy a majority felt it was important that their sexual interest return rapidly indicating there may be a discrepancy in women's expectations and the reality of sexual desire postpartum (Avery, Duckett, & Frantzich, 2000).

Childbirth, depression, and sexual health

As at other times in a woman's life, depression in the post partum period negatively influences women's sexual desire (DeJudicibus & McCabe, 2002; Glazener, 1997). Post partum depression is a common phenomenon, affecting as many as 21% of women (Glazener). Resumption of sexual activity occurs later in women with postpartum depression (Morof, Barrett, Peacock, Victor, & Manyonda, 2003). Women who experience post partum depression report lower frequency of sexual intercourse (Glazener) and more sexual problems (Morof et al.). The relationship between post partum depression and sexual health is complex and remains understudied.

Childbirth, fatigue, and sexual health

In studies of women across the lifespan fatigue has also been associated with a decrease in sexual desire and a reason for not having sex (Cain et al, 2003; Graham, Sanders, Milhausen, & McBride, 2004). Comments written by post childbirth study participants frequently included fatigue as a major deterrent to desire and frequency of intercourse (Ahlborg, Dahlof, & Hallberg, 2005; Avery, Duckett, & Frantzich, 2000). When fatigue was included as a variable in the studies of sexual health after childbirth it affected both sexual desire and sexual satisfaction (Ahlborg et al.; DeJudicibus, & McCabe, 2000; Kumar, Brant & Robson, 1981).

Childbirth, breastfeeding, and sexual health

The early studies of postpartum sexuality showed breast feeding to have a positive effect on sexual health, with earlier resumption of sexual intercourse in breast feeders vs. bottle feeders (Masters & Johnson, 1966). However, the breastfeeding

population in this study was highly self selected (White, educated, married couples) and no information regarding amount of breast feeding is given (Masters & Johnson). In subsequent studies breastfeeding has consistently been shown to have a negative effect on measures of sexual health (Avery, Duckett, & Frantzich, 2000; Connolly, Thorp, & Pahel, 2005; DeJudicibus & McCabe, 2002; Hyde, DeLamater, Plant, & Byrd, 1996; Kumar, Brant, & Robson, 1981; LaMarre, Paterson, Gorzalka, 2003; Rowland, Foxcroft, Hopman, & Patel, 2005; Trutnovsky, Haas, Lang, & Petru, 2006). Although some medical textbooks (Lipscomb and Novy, 2007) still cite the Masters and Johnson literature indicating a positive effect from breastfeeding on sexual health, there is overwhelming evidence to the contrary.

A meta-analysis of literature regarding breastfeeding and postpartum maternal sexuality indicated that women who breastfeed resume sexual intercourse an average of one to two weeks later than women who bottle feed, experience more fatigue, less sexual desire, and more pain with intercourse than women who bottle feed (LaMarre, Paterson, & Gorzalka, 2003). It is important to note, however, that the influence of breastfeeding on sexuality is usually transient, resolving at about three to four months after childbirth (Connolly, Thorp, & Pahel, 2005; Fischman, Rankin, Soeken, & Lenz, 1986).

Childbirth, Partners, and Sexual Health

Little is known about the effect of childbirth on the sexual health of women's partners. They are seldom included as participants in studies of post partum sexual health. One study that did include male partners (768 couples) found that at six months post birth men had more desire for sex and less sexual satisfaction than did women (Ahlborg, Dahlof, & Hallberg, 2005). Similarly, men who completed sexual health questionnaires at four and six months post partum had significantly greater desire for sex than did their partners (Fischman, Rankin, Soeken, & Lenz, 1986), indicating a

discrepancy in desire. The body image dissatisfaction experienced by women post partum may negatively affect their partner's sexual health (Pastore, Owens, Raymond, 2007). Research of sexual health after childbirth using lesbian couples as participants has not been done.

Perineal pain and sexual health

Particularly in the early stages following childbirth, pain with intercourse related to perineal trauma can be a significant sexual health issue; up to 50% of women experience pain with intercourse the first time after birth (Avery, Duckett, & Frantzich, 2000; Barrett et al., 1999; DeJudicibus & McCabe, 2002; Fischman, Rankin, Soeken, & Lenz, 1984; Glazener, 1997; Kumar, Brant, & Robson, 1981; Trutnovsky, Haas, Lang, & Petru, 2006). A study specifically addressing perineal trauma and postpartum sexual functioning found that at 41% of women at three months and 22% of women at six months had pain with intercourse (Signorello, Harlow, Chekos, & Repke, 2001). Pain with intercourse can persist at 12 months post birth and can decrease frequency and satisfaction with intercourse (Paterson, Davis, Khalife, Amsel, & Binik, 2008). The risk of pain is correlated with the extent of the perineal trauma; women with third degree perineal lacerations were 270% more likely to have pain than women who had an intact perineum (Signorello et al.). Another study found that women who sustained third or fourth degree lacerations were five times less likely to be sexually active at a year post partum (vanBrummen, Bruinse, vandePol, Heintz, & vanderVaart, 2006). Assisted vaginal birth (vacuum or forceps) contributes to pain with intercourse after childbirth (Buhling et al., 2006; Hicks, Goodall, Quattrone, & Lydon-Rochelle, 2004). Once considered protective for women's sexual health, episiotomy (cutting the perineal tissue prior to the birth) increases pain with intercourse after birth as well as causing a decrease in lubrication (Ejegard, Ryding, Sjoren, 2008). Post partum genital pain is not

limited to vaginal birth; one study showed no difference in the incidence of pain according to mode of birth (Paterson et al.).

Childbirth, body image, and sexual health

Women's body image significantly affects their sexual desire (Graham, Sanders, Milhausen, & McBride, 2004; Koch, Mansfield, Thurau, & Carey, 2005). Although the body changes associated with pregnancy and childbirth (weight gain, stretch marks, decreased muscle tone) may be distressing to many women, most studies of post partum sexual health did not include body image as a variable. Women tend to feel less attractive during pregnancy, however few studies have addressed post partum physical attractiveness (vonSydow, 1999). The one study of sexual health after childbirth that did include a measure of body image found that 70% of women were not satisfied with their bodily appearance at four months and 39% were still dissatisfied at 12 months (Fischman, Rankin, Soeken, & Lenz, 1986). Although there were no measures of sexual health included, one study that followed women for a year after childbirth (N = 79) found that women consistently felt fatter, less strong and fit, and reported a greater discrepancy between their current size and their ideal size than they remembered from prior to pregnancy (Rallis, Skouteris, Wertheim, & Paxton, 2007). Women who experience post partum depression have more body image dissatisfaction following the birth of a baby (Morof, Barrett, Peacock, Victor, & Manyonda, 2003). In a society where physical attractiveness is so important to women, body image after childbirth (particularly as it relates to sexual health) is understudied.

Little research has been done regarding genital changes associated with childbirth and how they may influence women's body image and sexual health. Perceived changes in the genital area, particularly if there is perineal trauma, may be viewed negatively by a woman or her partner. Two qualitative studies were found that

included a reference to women's body image associated with the genital area following birth.

A focus group study of women following childbirth (N = 22, 23 - 39 years, all White, mostly university educated, all with partners) found that body image related to the genital area resonated with some of the women, particularly those who had perineal tears or episiotomies (Olsson, Lundqvist, Faxelid, & Nissen, 2005). Women experienced body image changes in their genital area "women were anxious about the vagina, which seemed to be big and loose" (p. 383). On a positive note, some women felt that they could " more easily find their muscles and learned how to reach sexual satisfaction" and "women accepted the changes and regarded them as being true life conditions" (p 383).

The second focus group study included participants (N = 10, median age 32, all White) who had sustained third and fourth degree lacerations (Williams, Lavender, Richmond & Tincello, 2005). Williams et al. found that some of the women experienced an alteration in their body image as a result of the tears. Women were worried about urinary incontinence if they attempted intercourse, having sex hurt, and they expressed concern about what their perineum looked like. Women also worried about not having sexual sensation and some avoided sex because of fear of pain.

Cesarean delivery and sexual health after childbirth

Sexual well being is cited as a reason for elective cesarean delivery (Belizan, Althabe, Barros, & Alexander, 1999). A survey of female obstetricians in Britain found that 31% would personally prefer an elective cesarean delivery primarily for sexual health reasons (Al-Mufti, McCarthy, & Fisk, 1996). This is despite the fact that research does not support improved sexual health following elective cesarean delivery versus spontaneous vaginal birth (Barrett, Peacock, Victor, and Manyonda, 2005; Connolly, Thorp, & Pahel, 2005; Hicks, Goodall, Quattrone, & Lydon-Rochelle, 2004).

Elective cesarean delivery is defined as one performed for non-health reasons (McFarlin, 2004). Despite the goal set by the U.S. Department of Health and Human Services in Healthy People 2010 to decrease the cesarean delivery rate to 15%, it has continued to increase. In the last decade the number of cesarean deliveries performed in the United States has increased by 50% to an all time high of 31.1% in 2006 (Hamilton, Martin, & Ventura, 2007). It is estimated that between 3% and 7% of primary cesarean deliveries are done with no medical or obstetrical indications (Menacher, Declercq, & Macdorman, 2006). Whether these primary cesarean deliveries are due to maternal request is unknown. Since the repeat cesarean delivery rate is now above 90% these primary cesarean deliveries essentially ensure that the secondary cesarean delivery rate will continue to climb. Subsequent cesarean deliveries carry additional risk such as placenta previa, uterine rupture, and stillbirth (Visco et al., 2006).

Whether or not cesarean delivery on maternal request is ethical is an area of controversy; some frame it as a woman's right to choose, or respecting women's autonomy (Bewley & Cockburn, 2002). Others argue that the risks of cesarean delivery to both mother and baby outweigh the potential benefits (ACNM, 2006). In 2006 the National Institute of Child Health and Human Development (NIHD) convened a State of the Science Conference to review the available literature related to cesarean delivery, and from that published a statement that summarized their findings (NIH, 2006). In summary, they concluded that there was weak epidemiological evidence both in favor of and not in favor of elective cesarean delivery as an alternative to vaginal birth (NIH). They concluded that the incidence of primary cesarean delivery without medical indications is rising in the United States and that a component of this is due to maternal request (NIH). They went on to state that the actual number of elective cesarean deliveries attributable to maternal request was difficult to quantify; "it is problematic in

many cases to determine whether or not a specific cesarean delivery is due to maternal request" (NIH, p.7).

The association between vaginal birth and pelvic floor defects (pelvic organ prolapse and urinary incontinence) has led to discussions regarding elective cesarean delivery on the premise of preserving the pelvic floor (Hale & Haner, 2005). Although there has been a focus on cesarean delivery to preserve the pelvic floor and prevent urinary incontinence "the duration of this effect is not clear, particularly in older populations and in women who had multiple deliveries" (NIH, 2006, p, 10). In order to potentially allay the effects associated with vaginal birth, 10 women would have to undergo an elective cesarean delivery (with the associated surgical risks) in order for one woman to benefit (Patel et al., 2006).

In summary, alterations in sexual health following childbirth may have far reaching implications as is evidenced by studies that show a marked decrease in marital happiness following childbirth (Belsky, 1985). Men do not experience the same decrease in desire as women and are more bothered by the decrease in sexual frequency (Ahlborg, Dahlof, & Hallberg, 2005; Hyde, DeLamater, Plant, & Byrd, 1996). Whether or not this is a factor that correlates with a decrease in marital satisfaction is not known. Education regarding sexual health after childbirth has been sorely lacking for both health care providers and pregnant women and their partners. Often medical textbooks provide information only on contraceptive methods after childbirth and disregard the implications of childbirth on sexual health (Gabbe, Niebyl, & Simpson, 2007).

Women's sexual health is a complex concept; studies to date have shown this to be particularly true after childbirth. Very little is known about whether or not genital changes after childbirth, whether real or perceived, affect women's body image and sexual health. There is a need for additional research with women after childbirth that

includes measures of genital body image and sexual health. The results of further research may inform issues such as cesarean delivery on maternal request as well as women's sexual health following childbirth.

Pelvic Floor Disorders and Sexual Health

Pelvic floor disorders (PFDs) which may result in prolapse of the pelvic structures and/or urinary or fecal incontinence affect a large number of women throughout the world, causing discomfort and influencing quality of life. Pelvic organ prolapse (prolapse) is defined by the American College of Obstetricians and Gynecologist as "descent of one or more pelvic structures: the uterine cervix or vaginal apex, anterior vagina (usually with bladder, cystocele), posterior vagina (usually with rectum, rectocele), or peritoneum of the cul-de-sac (usually with small intestine, enterocele)" (2007). Studies of women undergoing routine gynecologic exams found that between 37% and 50% of women had prolapse that extended at least to the introitus (Swift, 2000; Swift et al, 2005). Urinary incontinence affects 35% of adult women, 50% in women over 70 years of age (MacLellan, Taylor, Wilson & Wilson, 2000). In comparison, the same study showed that the incidence of urinary incontinence for men was less than 5% (MacLellan et al). Fecal incontinence, while less common, affects 3-4% of women (MacLellan et al).

The *exact* number of women who are affected by PFDs is unknown because many women do not obtain regular gynecologic exams and some women may be embarrassed to discuss it with their health care provider. It is estimated that of women who seek health care services, 11.1% are at risk of undergoing surgery for the problems associated with these conditions at some point in their lifetime (Olsen, Smith, Bergstrom, Colling, & Clark, 1997). In the next 30 years, as the population in the United States grows older, it is estimated that the number of women seeking treatment for PFDs will double (Luber, Boero, & Choe, 2001).

Risk Factors for PFDs

PFDs are essentially women's health issues. The pelvic floor anatomy of men and women is different, making childbirth possible, but at the same time predisposing women to problems such as prolapse and incontinence later in life. Other risk factors for PFDs include aging, prolonged standing and lifting, genetic predisposition and previous pelvic surgery (Swift, et al, 2005). As the incidence of obesity rises so too will the incidence of PFDs because added weight increases the intra-abdominal pressure, increasing a woman's risk of PFDs. Childbirth significantly contributes to the risk of PFDs, and there may be an increased risk associated specifically with vaginal birth, although the association is complex and not well understood (Patel, Xu, Thomason, Ransom, Ivy, & DeLancey, 2006). The time between when women give birth and when they experience symptoms of PFDs may be decades apart, making it uniquely difficult to determine the relationship between the two events. There appear to be risk factors within vaginal birth that may contribute to the increased risk of PFDs later in life. Operative vaginal delivery (forceps in particular), long second stage of labor, episiotomy or extensive tears, and advanced maternal age are all associated with levator ani muscle injury following childbirth (Kearney, Miller, Ashton-Miller, DeLancey, 2006). These same injury patterns are seen in women experiencing PFDs (DeLancey et al, 2007) indicating that there may be a link between these unique vaginal births and PFDs later in life. Most likely there is not one specific causal factor but rather "it is more probable that combinations of anatomical, physiological, genetic, lifestyle, and reproductive factors interact throughout a woman's life span to contribute to PFDs" (DeLancey, Kane-Low, Miller, Patel, & Tumbarello, 2008, p. 1.e1). As discussed earlier, the benefit of elective cesarean delivery as a method for preserving the pelvic floor is unclear.

Signs and Symptoms of PFDs

Symptoms specific to pelvic organ prolapse are related to the type of prolapse, although a feeling of pressure or "falling out" is common to all types (Ellerkmann et al, 2001; Thakar & Stanton, 2002). Women may notice that they can no longer use tampons (Weber & Richter, 2005) or they may notice a bulge at the vaginal introitus (ACOG, 2007). Urinary symptoms are more often associated with anterior pelvic organ prolapse and include incontinence, prolonged or intermittent flow, and inability to empty the bladder fully (Ellerkmann et all; Thakar & Stanton). Bowel symptoms such as constipation and incomplete evacuation are usually associated with posterior prolapse (Ellerkmann et. all; Thakar & Stanton). It is important to note that many women with prolapse do not experience any symptoms and severity of symptoms does not seem to be strongly correlated with the degree of prolapse (Ellerkmann et al.).

Despite the fact that PFDs such as prolapse and urinary incontinence are ultimately conditions that affect quality of life, their effect on women's daily activities, body image, and sexual health is understudied. Because PFDs are not life threatening, decision making regarding surgery to correct the problem is considered more of an individual choice, although the reasons women choose surgery and the influence of provider/client interaction on that decision is unclear.

The following is a review of the literature related to sexual health and PFDs. Searches were performed using CIHNAHL, PubMed, PsychINFO and the search terms pelvic organ prolapse, cystocele, rectocele, PFDs, sexuality, sexual, health, sexual dysfunction. Some studies that did not appear in the databases were hand collected from the reference section of journal articles already collected resulting in a total of 27 published studies. The original search was conducted in December 2006 with an additional search conducted in June 2009 for articles published in the interim. Articles were included if they were published in the last 20 years.

PFDs and Sexual Health

Sexuality in PFD research has most often been measured in terms of sexual function: i.e. frequency, incontinence with intercourse, desire, or pain. The most commonly used validated questionnaire is the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ), that includes 31 questions (Rogers, Kammerer-Doak, Villarreal, Coates, & Qualls, 2001) or the modified PISQ-12, a shorter form that includes 12 questions (Rogers, Coates, Kammerer-Doak, Khalsa, & Qualls, 2003). The three domains of the PISQ include Behavioral-Emotive, Physical, and Partner-Related. Both have undergone tests of validity and reliability and include 5 point Likert-scale questions related to desire, orgasm, satisfaction, pain, incontinence during intercourse, questions related to prolapse and partner specific questions. The PISQ scores range from 0 to 155 while the PISQ scores range from 0 to 48 with higher scores indicating better sexual function.

A study utilizing the PISQ was done with participants experiencing PFDs (N = 83. mean age = 50, 53% White, 35% Hispanic) as well as 56 controls (mean age = 39, 53% White, 30% Hispanic); only heterosexual, sexually active women were included (Rogers, Villarreal, Kammer-Doak, & Qualls, 2001). If the women answered yes to the question "do you have any symptoms of urine leaking, pressure in your vagina, or the feeling that things are falling out?" they were assigned to the PFDs group. Participants with PFDs scored significantly lower on the PISQ than the controls (92.6 vs. 100.1, $p = .003$) and had significantly less frequent intercourse ($p = .04$) although desired frequency was similar. Women with PFDs reported more frequent loss of urine with intercourse (45% vs. 14%, $p < .001$), had more pain with intercourse ($p=.03$) as well as more vaginal dryness (57% vs. 25%, $p = .002$). The 11 year age discrepancy between groups may have been a confounding factor in the results.

In a study of 343 women (mean age = 62, > 90% White) with either urinary incontinence or prolapse, participants completed a sexual function questionnaire at baseline and after they received estrogen therapy, behavioral therapy, or surgical therapy (Barber, Visco, Wyman, Fantl, & Bump, 2002). Patients with prolapse were more likely to report that their condition "moderately" or "greatly" affected their ability to have sex (38% vs. 30%, p = .02). Women were less likely to report worry of incontinence during intercourse after both surgery (29% to 9%, p = .02) and behavioral therapy (22% to 11%, p = .001), although no other variables changed significantly and no variables changed in the estrogen therapy group.

An investigation of sexual function compared women with urinary incontinence (N = 109, 67% married, mean age = 57) to age matched controls (Pauls, Segal, Silva, Kleeman, & Karram, 2006). The authors used the Female Sexual Function Index (Rosen et al., 2000). The women with urinary incontinence scored significantly lower on all variables (desire, arousal, lubrication, orgasm, satisfaction, and pain) than the controls (Mean total score = 18.5 vs. 29, p = .001; Pauls et al.). Of interest to patient care providers, although 64% of women in the study met the criteria for sexual dysfunction only seven had presented to the clinic with those problems.

Yip et al. (2003) conducted a study involving women with stress incontinence (N = 36, mean age = 49), overactive bladder (N = 29, mean age = 43) plus a control group (N = 26, mean age = 50), exploring quality of life, marital relationship, and sexual function. The authors used the Sexual Drive and Sexual Satisfaction subgroups of the Derogatis Sexual Functioning Index (Derogatis, Rosen, Leiblum, Burnett, & Heiman, 2002). They found no difference in sexual drive scores, but did find that the overactive bladder group had lower scores on sexual satisfaction (M = 6) than the urinary incontinence group (M = 8) and the control group (M = 9, p < .001; Yip et al.).

Symptoms, including those associated with sexual health, were the focus of a study that included 237 women (mean age = 57) with pelvic organ prolapse (Ellerkmann et al., 2001). All of the participants underwent clinical exam to determine type and severity of prolapse and the researchers used the Pelvic Floor Dysfunction Questionnaire, (adapted from other validated instruments) that included a sub-scale of sexual dysfunction. One hundred and five women were sexually active, of those, 69% reported pain with intercourse. Of the women who reported pain with intercourse, 57% reported that the pain had interfered with frequency of intercourse. Fifteen percent of the sexually active women reported fecal incontinence with intercourse and 27% reported urinary incontinence. Severity of prolapse was moderately associated with sexual dysfunction (.300 for anterior prolapse, .432 for apical, and .276 for posterior, all $p < .05$).

Whether or not sexual function was associated with degree of prolapse or severity of other symptoms was the focus of a study of sexually active women seeking gynecologic care (N = 310; Handa, Cundiff, Chang, & Helzouer, 2008). To measure sexual function the authors used the Personal Experiences Questionnaire, a validated nine question instrument designed for peri-menopausal women. PFDs were assessed by clinical exam and the Pelvic Floor Distress Inventory (PDFI; Handa et al.). Women with prolapse were less likely to be sexually active than women without (65% vs. 73%, $p < .01$), were more likely to have low libido (18% vs. 12%, $p = .02$), have vaginal dryness (23% vs. 13%) and pain with intercourse (34% vs. 26%, $p < .01$).

The use of pessaries in sexually active women was the purpose of one study related to prolapse and sexual health (Brincat, Kenton, Fitzgerald, & Brubaker, 2004). Pessaries are devices that can be used as a non-surgical way to add pelvic support for women experiencing prolapse. According to the authors, clinicians often avoid offering pessaries to women who are sexually active. Chart review was performed for 136

women (median age = 65 years, no ethnicity reported) who were given pessaries and women who were sexually active were more likely to continue pessary use (Brinkat et al.; $\beta = 2.2$, $p = .021$). For this reason the authors suggest clinicians offer pessaries as a treatment more often, particularly with women who are sexually active.

Preliminary research indicates that sexual health issues may influence women's decision making regarding PFD surgery (Kapoor, Thakar, Sultan, & Oliver, 2009). Women who are sexually active are more likely to opt for surgery vs. conservative management of their prolapse. Women opting for surgery are more likely to perceive prolapse as interfering with their sexual satisfaction and more likely to avoid sex because of their prolapse. The implications for health care costs of PFD surgery are significant, thus the effect of prolapse on women's sexual health and how surgery may improve or worsen women's sexual health are important topics of research.

In summary, PFDs negatively influence sexual health, decreasing sexual desire, decreasing lubrication, as well as increasing potential for pain with intercourse and fear of urinary or fecal incontinence. Because women who are sexually active may be more likely to opt for surgical treatment, the effect of surgery for PFDs on sexual health is an important topic of research.

PFD Surgery and Sexual health

Studies related to sexual health before and after PFD surgery have yielded conflicting results. The following is a synopsis of those studies; Table 2-2 at the end of this chapter provides details of each study including participant information, type of surgical procedure, as well as statistical results.

Change in sexual function following surgery may be somewhat related to type of procedure. Sacrocolpopexy (an abdominal surgery for pelvic organ prolapse) was found to improve PFD symptoms that interfered with sex (Handa et al., 2007). In one study, 10% of women who were not sexually active before sacrocolpopexy resumed sexual

activity after surgery (Handa et al.) However, *why* they were not sexually active prior to surgery is not clear. Two studies found that women who underwent posterior prolapse repair had more post-operative pain with intercourse than those who underwent other PFD procedures, although the difference did not reach statistical significance (Handa et al., Komesu, Rogers, Kammerer-Doak, Barber, & Olsen, 2007). Worsening of pain with intercourse may result following the tension free vaginal tape (TVT) procedure (tape is used to suspend the urethra in order to treat incontinence), however the questionnaire in this study was administered at 6 weeks post procedure (Mazouni et al., 2004). For women whose sexual impairment is significant, surgical removal of the tape may improve their sexual symptoms (Kuhn, Burkhard, Eggemann, & Mueller, 2009). A study of graft material placement during surgery for PFDs and sexual health yielded mixed results; sexual function improved following surgery for the women who received grafts versus those who did not, however they also had more urinary incontinence (Novi, Bradley, Mahmoud, Morgan & Arya, 2007) In three studies that included women who had undergone a variety of procedures, pain with intercourse increased significantly following surgery (Helstrom & Nilsson, 2005; Mazouni et al., 2004; Weber, Walters, & Piedmonte, 2000).

Reduction in the risk of incontinence during intercourse following surgery was significant in many studies (Glavind & Tesche, 2004; Komesu, Rogers, Kammerer-Doak, Barber, & Olsen, 2007; Weber, Walters, & Piedmonte, 2000). In a comparative study, women who underwent surgery strictly for prolapse showed less improvement in sexual health than those who had surgery for urinary incontinence (Rogers et al. 2006). Surgery not only may improve incontinence but also may improve sexual health by decreasing the *fear* of incontinence during sexual activity (Brubaker et al., 2009).

Several studies that used the PISQ showed improvement in total scores following surgery (Rogers et al., 2006; Thakar, Chawla, Scheer, Barrett, & Sultan, 2008). These

studies often included women who had undergone a wide variety of procedures making it difficult to identify the cause of the improvement (Thakar et al.). One study reported "excellent" sexual function outcomes following surgery however there were no pre-surgery scores for comparison and there was a decrease in the percentage of women who were sexually active (49% pre-surgery vs. 36% 15 months post surgery; Jeffery, Doumouchtsis, Franco, & Fynes, 2009).

Consistent to all studies was a lack of improvement in: ability to achieve orgasm, sexual satisfaction, or libido following surgery (Brubaker et al., 2009; Mazouni, 2004; Pauls et al., 2007; Weber, Walters, & Piedmonte, 2000). Frequency of intercourse may be decreased from pre-surgery levels even at one year post-surgery (Helstrom & Nilsson, 2005).

One study included participant comments; those who had an improvement in sexual health made statements such as "not embarrassed any more about the prolapse" and "it's nice that the prolapse is gone" (Pauls et al. 2007, p. 622.e5). Negative comments were related to post operative pain "it's very painful to have penetration" and "penetration hasn't even been completed due to extreme pain" (Pauls et al., p. 622.e5).

In summary, whether or not PFD surgery improves sexual health for women is unclear. Until more is known, providers should counsel women that sexual health may improve, stay the same, or worsen, that urinary incontinence during intercourse is likely to improve, but that they may experience more pain with intercourse. Measures of sexual health included in these studies are related to frequency and function; what is not clear is whether or not body image changes associated with PFDs may influence women's sexual health and whether or not these changes would be improved by surgery.

PFDs, Body Image, and Sexual Health

PFDs, or more specifically prolapse, can cause physical changes that could be very distressing to women, particularly during intimacy. Women may experience a visible bulge at the perineum, the genital hiatus (vaginal opening) can gape and the vagina can be shortened. For women who are interested in finding a new sexual partner these changes may be particularly distressing.

Only recently has attention been given to body image changes associated with pelvic organ prolapse. In a case control study, Jelovsek and Barber (2006) compared women with advanced prolapse (N = 47, mean age = 66) with case controls (N = 51, mean age = 50). Participants completed a body image scale that the authors modified from one originally developed and validated for women with breast cancer (Hopwood , Fletcher, Lee, & Ghazal, 2001). The scale consists of ten questions that they modified to be more pertinent to women with prolapse and two questions related to treatment were removed (Jelovsek & Barber). For the controls the questions were modified to read “over the last week” instead of “as a result of your prolapse”. Jelovsek and Barber found that women with prolapse were more likely to feel self-conscious (62% vs. 55%, $p = .02$), feel less feminine (53% vs. 26%, $p < .03$), and feel less sexually attractive (61% vs. 38%, $p = .02$) than the controls. There was no difference between groups in dissatisfaction with appearance when dressed, difficulty looking at themselves naked, avoiding people because of appearance, and overall dissatisfaction with their body. Of note, mean age of the control group was 16 years younger than the group with prolapse, a potential confounding variable.

Recently Lowenstein et al. (2009) published a study in which the relationship between body image and sexual function was explored in 384 women with prolapse. These women completed the PISQ-12, a Modified Body Image Perception Scale (MBIS), the Pelvic Floor Distress Inventory (POPDI-6) as well as clinical exam including POP-Q.

The MBIS is a scale that measures overall body image non-specific to the genital area or the changes associated with prolapse. An example of a question included in the scale was "Have you felt dissatisfied with your body?" They found that PISQ-12 scores were negatively correlated with MBIS scores (r = -.39) and with the POPDI scores (r = -.34). They did not find a correlation between PISQ-12 scores and severity of prolapse. Sexual function was negatively influenced by body image dissatisfaction and bother from prolapse but not the severity or "degree" of prolapse.

To summarize, as the population ages the incidence of PFDs will most certainly increase. Although there has been extensive research in the area of PFDs, surgery, and sexual health, there is not clear evidence that surgery benefits sexual health. Surgery is costly, carries risk and the failure rate is high (Olsen, Smith, Bergstrom, Colling, & Clark, 1997). Very little is known about women's body image particularly as it relates to sexual health in women experiencing PFDs. More research is needed in the area of PFDs to provide a better understanding of the quality of life issues including body image and sexual health and how these factors may influence women's decision making regarding surgery.

Female Genital Cosmetic Surgery

> *"porn stars, playboy bunnies, sex stars are all well known figures admired by young women who compare their body parts and looks with them… cosmetic gynecology can help…helping in the area where women were neglected for centuries"* (www.kovacsmd.com retrieved August 8, 2008)

There has been a trend gaining popularity in the United States and other developed countries – female genital cosmetic surgery (FGCS). There are many types of procedures, the most common being labiaplasty (trimming or reshaping the labia). While a variety of surgical techniques for labiaplasty have been advocated, the common goal is reducing the size of the labia minora and eliminating variation in size between the labia (Figure 2-2).

Figure 2-2 Labiaplasty: Before and After

(retrieved from www.centerforvaginalsurgery.com)

Vaginoplasty (reshaping or tightening the vagina) is another common procedure that also goes by the trade name “vaginal rejuvenation” (Figure 2-3). While the types of procedures vary by surgeon, the goal of the procedures is to tighten the vagina or “restore it to more like a pre-childbirth form” (americanhealthcandbeauty.com).

Figure 2-3 Vaginal rejuvenation: Before and After

(retrieved from www.centerforvaginalsurgery.com)

Less common FGCS procedures include clitoral reduction or repositioning, labial plumping (with collagen injections), liposuction (of the mons pubis or labia majora), G-

spot amplification (with collagen injections) and hymen reconstruction. Although the exact number of procedures performed each year is unknown there is evidence that women in increasing numbers are opting for FGCS (Braun, 2005). There has been a doubling in the number of labial reductions within the last five years in the United Kingdom (Liao & Creighton, 2007). The American Society of Plastic Surgeons reported that in 2005 (the first year data was collected) 793 vaginal rejuvenation procedures were done in the United States and by 2006 the number increased to 1,030 (as cited in Lewis, 2008).

The trend in FGCS procedures seems to be mirroring what happened with breast augmentation surgery over the past fifteen years. Once considered something that only pornography stars or exotic dancers would consider (Davis, 1995), breast augmentation is now commonplace. There has been a 533% increase in the number of breast augmentations done yearly since 1992 (ASPS, 2002).

So why are increasing numbers of women opting for FGCS procedures? Some argue that it's about better sexual pleasure, likening it to men having their penis lengthened (Gagnon, 2006). "It's not just cosmetic and psychological. It is anatomical. Women often find that after they have had children, they no longer experience the same sensitivity and pleasure in sex. It is not a pathology per se that they have" (Dr. Stubbs as quoted in Gagnon, ¶, 2). Surgeons performing labiaplasty indicate that some women's motivation for seeking the procedure is discomfort, with wearing tight clothes, with certain sports and with intercourse (Rouzier, Louis-Sylvestre, Paniel, & Haddad, 2000).

Popular culture has been drawing attention to FGCS through web sites, women's magazines and television shows (Navaro, 2004); perhaps the increase in popularity is due, in part, to increased awareness of these procedures. There is speculation that an increase in explicit pornography which is increasingly airbrushed to assumed perfection

has caused women to feel their own genitals are “abnormal” (Weil-Davis, 2002). The increase in FGCS could also be a symptom of long standing negative connotations of women’s genitals as proposed in the following quote by Virginia Braun:

> The contexts of women’s ongoing, widespread, and increasingly specific, body dissatisfactions (Bordo, 1993), ongoing negative meanings around women’s genitalia (Braun & Wilkinson, 2001, 2003), and women’s engagement in a wide range of body modification practices—such as hair removal (Toerien, Wilkinson, & Choi 2005)—cohere to render women’s genitalia a viable site for surgical enhancement (2005, p. 408).

Some argue that the reason for the increase in FGCS is that women are more self-aware and that it’s really all about empowering women to be able to reshape their bodies in any way they desire:

> Breast augmentation used to be criticized harshly, too, with critics saying that doctors were exploiting women’s insecurities about their bodies, and that has changed…people came to see that it is understandable why women want to improve their bodies and that they have the choice to do so. This is no different. (Alter, as quoted in the Plastic Surgery Advisor 2007, p. 82).

The following is a review of available literature regarding FGCS procedures from both the surgeons that perform it and the social researchers interested in this phenomenon. The search was undertaken using CIHNAHL, PubMed, PsychINFO and the search terms; female genital cosmetic surgery, labiaplasty, vaginoplasty, and labioplasty. A total of 18 articles were found with an additional six articles hand collected from the reference section of journal articles. Because this is a relatively new phenomenon, all articles were published the last 10 years. The relevant articles can be loosely categorized as technical reports, qualitative research results, those comparing FGCS and traditional female genital cutting and those considered consciousness raising or opinion pieces.

FGCS Technical Reports

The majority of published articles in medical journals could be classified as “how to articles”. These articles, all written by the surgeons performing the procedures, have

been published in such journals as Plastic and Reconstructive Surgery, the Journal of Sexual Medicine and the American Journal of Obstetrics and Gynecology. Chart review was the method used for all of the reports (Choi & Kim, 2000; Giraldo, Gonzalez, & deHaro, 2004; Maas & Hage, 2000; Miklos & Moore, 2008; Pardo, Sola, Ricci, & Guilloff, 2006; Rouzier, Louis-Sylvestre, Paniel, & Haddad, 2000) with one (Rouzier et al.) also reporting results of a satisfaction questionnaire mailed to patients post-operatively and another (Miklos & Moore) reporting results from a pre-operative questionnaire. Each article describes the technique the surgeons used for labiaplasty; more information regarding individual reports can be found in Table 2-3 at the end of Chapter 2.

Patient numbers included in the reports ranged from six (Choi & Kim, 2000) to 151 (Rouzier, Lois-Sylvestre, Panieal, & Haddad, 2000). Mean patient age ranged from 26 years (Rouzier et al.) to 35.7 years (Pardo, Sola, Ricci, & Guilloff, 2006). Only Miklos & Moore (2008) reported other demographic information such as racial group (95% of their patients [N = 131] were White, 3% were African American, and 2% were Asian) and parity (number of children; M = 1.7, range 0 - 6).

All studies reported the range of ages; with a patient as young as 10 reported from Chile (Pardo, Sola, Ricci, & Guilloff, 2006), age 12 in France (Rouzier, Lois-Sylvestre, Panieal, & Haddad, 2000) and age 13 in Korea (Choi & Kim, 2000). These authors did not elaborate on issues of informed consent regarding cosmetic surgery at these ages nor did they indicate reasons why girls this young were seeking labiaplasty. The Journal of Pediatric Adolescent Gynecology recently published a report of six adolescents, ages 11 to 16, who underwent labial reduction (Jothilakshmi, Salvi, Hayden, & Bose-Haider, 2009). Two of these adolescents were under the care of a psychiatrist and two others were in foster care (Jothilakshmi et al.). The authors make the argument that the adolescents are capable of informed consent based on a decision made in an English court which stated “a person below the age of 16 is capable of

consent to contraception therapy provided she is of sufficient mental maturity to understand the implications (Jothilakshmi et al. p. 54).

Rouzier, Louis-Sylvestre, Paniel and Haddad (2000) reported their criteria for patients who were referred to them for labiaplasty, stating that they did not agree to perform the surgery unless the maximal distance between base and edge of the labia was >4cm. They stated this to be the size likely to cause physical discomfort; although they did not report how many women seeking surgery did not meet criteria and were turned away (Rouzier et al.). This criteria was then quoted in another article as the *definition* of "labia minora hypertrophy" (Pardo, Sola, Ricci, & Guilloff, 2006, p. 38). These authors went on to indicate that 11% of their patients (N = 55) "lacked true hypertrophy" (Pardo et al., p. 39) however they did not counsel those patients against the procedure for two reasons: first, because all 11 patients felt there was asymmetry and second, because the authors felt that the condition "often lowers women's self esteem and impairs couple's relationships" (Pardo et al., p. 39).

All articles included reasons cited by patients for wanting the surgery although only two reported descriptive statistics in the form of percentages (Miklos & Moore, 2008; Rouzier, Louis-Sylvestre, Paniel & Haddad, 2000). There were essentially two categories of reasons given, aesthetic and functional. Only one report elaborated on aesthetics, indicating that patients felt their labia were unequal in size or that labial size was increasing (Choi & Kim, 2000). Functional indications included pain or interference with sex and difficulty wearing tight clothes (Choi & Kim, Miklos & Moore; Pardo, Sola, Ricci & Guilloff, 2006; Rouzier et al), with two also reporting discomfort with sports (Miklos & Moore; Rouzier et al.).

As with any surgery, there is potential for complications with FGCS such as infection, pain, or wound opening. Choi and Kim (2000) reported there were no complications and Miklos & Moore (2008) did not report on complications as the purpose

of their study was patient's indications for desiring surgery. Rate of dehiscence (wound opening) was reported in four studies ranging from 5% (Pardo, Sola, Ricci, & Guilloff, 2006) to 13% (Giraldo, Gonzalez, & deHaro, 2004). Pardo et al. reported that two of their patients experienced pain "which subsided…with oral analgesia" (2006, p. 41). None of the authors reported whether patients experienced a decrease in labial sensation post-operatively; a risk associated with other surgeries in the labial area (Minto, Liao, Woodhouse, Ransley, & Creighton, 2003).

Regarding patient satisfaction, of the seven studies four reported that 100% of patients were satisfied (Choi & Kim, 2000; Giraldo, Gonzales, & deHaro, 2004; Maas & Hage, 2000; Pardo, Sola, Ricci & Guilloff, 2006). Choi and Kim also stated that all patients "recovered their self esteem and had no difficulty wearing tight pants" (p. 421) while Maas and Hage reported that all patients were "pleased with the appearance of their genitalia and the resolution of their original problems" (p. 145). Of the patients that completed the post-operative questionnaire (n = 98) sent by Rouzier, Louis-Sylvester, Paniel & Haddad, 91% were satisfied with the aesthetic results.

None of the above mentioned articles used validated questionnaires related to body image, sexual health or any psychological measures. While the reported reasons given for desiring surgery and reports of high patient satisfaction are of interest, they do not provide an adequate understanding of why some women are so dissatisfied with their labia that they will seek these surgical procedures. Only one group of authors reported asking patients if there was outside influence from partners or spouses regarding the decision (Miklos & Moore, 2008). Their pre-operative questionnaire included a yes/no question "I am considering labia reduction surgery and have had outside influence, i.e., (husband, partner, boyfriend, girlfriend, other)." (p. 1495); the authors reported that 6.9% of their patients admitted to having had outside influence (Miklos & Moore).

Moreover, the effect of these surgeries on women's sexual sensation and pleasure is not known. Women who underwent feminizing surgery for intersex conditions had significant impairment to the sensitivity of the clitoris (Crouch, Liao, Woodhouse, Conway, & Creighton, 2008). The authors assessed sensitivity using a GenitoSensory Analyzer (Medoc – Ramat, Israel). Similar methods of assessment have not been employed to assess the effects of genital cosmetic surgery on genital sensitivity post procedure.

Phenomenological FGCS Studies

Virginia Braun (2005) conducted a study of FGCS utilizing media and surgeons as data sources. She specifically explored the role of "sexual pleasure" used in descriptions of FGCS situated within a social constructionist framework. Braun's media sources consisted of 106 English-language media items (newspaper, magazine, television, radio, and Internet) and 15 surgeons (out of 24 contacted) who agreed to participate in semi-structured interviews. Braun found that frequently women's sex lives were reported to be impeded by their "pre-operative genitalia" (p. 410) and that "although physical pain was often discussed, the *psychological* response to genital morphology was frequently highlighted as the crux of the problem which 'hampered' or 'ruined' their sex life" (p. 411). Secondly, Braun notes that FGCS is often credited as *improving* women's sexual life; "All procedures, even ostensibly cosmetic ones such as labiaplasty, were frequently framed as being 'successful' in terms of increased sexual pleasure" (p. 413). Women reported being able to engage in sexual activities they could not enjoy before the surgery to which Braun responds;

> Such reports continue to situate heterosex within the bounds of normative heterosexuality, through the suggestion that certain sexual acts (cunnilingus) can only be engaged in, and enjoyed, by either or both partners, within a very limited range of female genital aesthetics." (p. 413).

Braun observes that female sexual pleasure was the focus throughout the data sources with very little emphasis placed on male sexual pleasure. In her conclusion she cautions that:

> If media coverage can contribute to the nature of, and legitimate, a 'new' problem for women, with a ready-made surgical solution, we need to continue to act as 'cultural critics' (Bordo, 1993) and question the assumptions on which such surgery rests, and the models of sexuality, bodies, and practices it promotes. (p. 420).

Bramwell, Morland and Garden (2007) conducted a phenomenological study that included women in the United Kingdom who had undergone labiaplasty (N = 6, ages 16 to 45 years with no further demographics reported). The objective of the research was to "understand women's reasons for undergoing labial reduction surgery, their expectations and experiences" (p. 1493). Bramwell et al. used a phenomenological, open ended interview approach. By reviewing medical records from a British National Health Service hospital they identified 17 women who had undergone labial reduction surgery, six of whom (aged 16 to 45 years) agreed to be interviewed. The authors report that the transcripts were read several times until categories emerged from which they derived three major themes. The first theme was "normality and defect…feeling as if their genital appearance prior to surgery was 'odd' 'weird' or made them 'freaks'…". (p.1495). The second theme was "sex lives"; the women's dislike of their genitals affected their sex lives because they were anxious about their partners seeing or touching their genitals. The "sex lives" influence was primarily body image related, although one participant described physical discomfort with intercourse prior to surgery. The final theme was "the process of accessing surgery"; the majority of women found out about the surgery through health care providers at the National Health Service while some found out about the surgery through women's magazines . The authors suggest that further qualitative research could provide additional information to form a better understanding of women's experiences regarding labiaplasty. This research, while

clearly informative, was limited in that it only included women who underwent labiaplasty (and did not include other FGCS procedures), and no demographic information other than age was reported.

Commentaries and Viewpoints

Lih Liao (psychologist) and Sarah Creighton (gynecologist) wrote a cautionary analysis for the British Medical Journal in 2007 “prompted by the increased numbers of women asking for labial reduction and the concerns of clinicians about the rising number of referrals for cosmetic genital surgery” (p. 1090). For the analysis the authors interviewed women who had undergone labiaplasty, however methods and analysis were not specified and reported results were limited to transcript extracts (Liao & Creighton). They also cite a case study of one woman (age 17) who had her labia reduced to “stop her feeling anxious” (p. 1091). However she was still sexually anxious and avoided sex, so she was now “seeking excision of her remaining labia” (p. 1092). Citing their own research regarding variety in normal female genitals (Lloyd, Crouch, Minto, Liao, & Creighton, 2005) they caution that “the increased demand for cosmetic genitoplasty may reflect a narrow social definition of normal, or a confusion of what is normal and what is idealized” (Liao & Creighton, p. 1091). The authors suggest that more research is needed to better understand the social and psychological pressures that have led to the increase in demand for these procedures.

The Plastic Surgery Practice Advisor (2007) reacted to the Liao and Creighton article by cautioning plastic surgeons to consider “how it could affect their practice if they offer genitoplasty" (p. 82), stating that “the public perception will be driven more by sensational reports in the media than by any real education about the procedures” (p. 82). Anne Cohen, (of A. Cohen Marketing and Public Relations) is quoted as saying “unfortunately, the general public is fairly uneducated about these issues” (p. 82). She suggests that surgeons post information on Web sites and institute “viral marketing

tactics to get the word out, such as informing local family doctors gynecologists, the local Planned Parenthood Clinic" (p. 82).

Cosmetic Surgery Times published an overview of a lecture given at the annual meeting of the Canadian Society for Aesthetic Plastic Surgery by Dr. Stubbs (Gagnon, 2006). Dr. Stubbs, a plastic surgeon certified in Canada and the United States, was quoted as saying "reducing the size of the labia minora results in heightened sexual sensation and some women just don't like how they look down there" (p. 36). Dr Stubbs also performs vaginal tightening (making the vaginal opening smaller) as well as "the 'Toronto trim, a combination labiaplasty or labia trim and clitoral hood reduction designed to heighten sensation" (p. 36). Stubbs argues that these procedures are not just cosmetic but also anatomical; "women often find that after they have children they no longer experience the same sensitivity and pleasure in sex" (p. 36).

In an article published in Plastic Surgery Products, the motivations for female genital cosmetic surgery are explored (Lewis, 2008). However no data is provided, leaving the reader to wonder where this information was obtained. Lewis lists changes associated with childbirth as reasons, including stretching, sagging labia, weakened vaginal walls, enlarged clitoris and less pleasure with intercourse. Lewis quotes genital cosmetic surgeon Dr. David Matlock as saying "our mission is to empower women with knowledge, choices, and alternatives. If a man is pushing the woman we won't do the surgery…one thing is for certain—youth is in. Women want to feel like 16, 18, or as if they did not have children" (p. 33).

After FGCS was "the topic of a heated discussion on the list-serve of the International Society for the Study of Women's Sexual Medicine…six people with expertise and/or strong opinions in the area of vulvar health…were invited to submit evidence-based opinions" to be published in the Journal of Sexual Medicine (Goodman et al., 2007). Dr. Goodman states his opinion as "THIS IS THEIR DECISION TO MAKE,

NOT MINE…my responsibility is to make sure the person is….doing it for the right reasons" (p. 269). Dr. Gloria Bachmann states that "for women who wish to have cosmetic reconstruction of the external genitalia there is no valid reason to deny them this right" (p. 270), she then goes on to add "I firmly believe that preoperatively the women should be clearly told that excessive labial tissue or prominent labia minora are variations of normal" (p. 271). Dr. Jean Fourcroy states "I cannot deny the right of a woman (or perhaps the couple) to seek what is thought to be in that culture a perfect body" (p. 271). Dr. Crista Johnson focuses primarily on the issue of traditional female genital cutting and recommends that "future efforts must aim to further classify and/or distinguish traditional female genital cutting from genital cosmetic surgery (p. 272). Dr. Susan Sklar ends the discussion with a cautionary note:

> Thus, patient autonomy and technological advancement have been linked together in a business proposition where the patient is able to choose a procedure and if she has the money obtain it there is a physician willing to provide the technology. Does this reflect the true nature of the practice of medicine and of the physician patient relationship? I would argue no. (p. 275)

The American College of Obstetricians and Gynecologists issued a statement advising against FGCS stating "it is deceptive to give the impression that any of these procedures are accepted and routine surgical practices" (ACOG, 2007, p. 737), recommending that women be counseled about the lack of data and the risk of complications. ACOG also expresses concern "about the ethical issues associated with the marketing and national franchising of cosmetic vaginal procedures" (p.738). The statement calls for additional studies regarding these procedures and cautions against performing any procedures when women are wanting to improve sexual function or response. ACOG does not directly advise physicians against ever performing these procedures; rather that they give informed consent, that they not attempt to keep the surgical methods proprietary, and that they participate in studies of the procedures.

Simone Weil Davis critiques the popular media's portrayal of female genital anatomy and FGCS in a piece provocatively titled "LOOSE LIPS SINK SHIPS" (2002). Weil-Davis maintains that "before people will spend money on something as expensive and uncomfortable as cosmetic surgery, they need to be motivated not only by desire but by concern or self-doubt…the latest realm to be scoured for 'abnormalities' is the vagina" (pp. 10 – 11). Weil-Davis describes the change in pornography from the early days of Hustler where you would "see a wide variety in the female genitalia—wide enough to evoke the 'snowflake uniqueness' analogy" (p. 12), to "when the vagina finally came to the pages of *Penthouse*, by contrast, it was as flaw-free and glossy as the rest of the model's figures" (p. 11). Weil-Davis also broaches the topic of traditional female genital cutting (TFGC); FGCS is framed as women desiring to reshape their bodies to Western ideals of beauty while at the same time there is such outrage regarding TFGC. "Among the key motivating factors raised by African women who favor female genital surgeries are beautification, transcendence of shame, and the desire to conform; these clearly matter to American women seeking cosmetic surgery on their labia as well." (pp. 23 – 24).

Essen and Johnsdotter (2004) question why, when there is legislation specifically forbidding female genital circumcision, FGCS is not considered illegal under this law. Citing a portion of the Norwegian law; "any person who intentionally performs an intervention on a woman's sexual organs, thereby damaging those organs or causing them to undergo permanent changes, shall be convicted of sexual mutilation" (p. 83) they contend that:

> Many of these operations [FGCS], which permanently change the external genitals, are probably performed in the lack of physical or psychiatric motives and should therefore be regarded as violations of the laws on FGM [aka TFGC]. The aim of this article is not to argue that traditional female circumcision ought to be legalized, but to highlight the double standard of morality in this field (Essen & Johnsdotter, p. 613).

Sheldon and Wilkinson (1998) cite similar laws in the United Kingdom, where female genital mutilation is "unlawful, not only when performed on minors, but also when performed on adult women" (p. 269). Defining a surgery as "cosmetic if and only if its primary aim is to change the appearance of the patient" (p. 268), Sheldon and Wilkinson review the law and conclude that *many* types of cosmetic surgery, not only FGCS , would be included in the ban under these laws. They respond to three claims, first, "that no woman could validly consent to female genital mutilation" (p. 271) to which they respond "in societies where this is an important rite of passage, a sign of belonging or a perceived rendering of the female genitals more aesthetic, might the decision to undergo female genital mutilation not be a rational, considered choice? (p. 272). Second, to the claim that female genital mutilation is an oppressive and sexist practice (p. 271) – "feminist writers have argued that a variety of widely accepted practices—such as marriage, current arrangements regarding childcare, employment practices, prostitution and pornography—are oppressive towards women" (p. 274). To the third claim, that "female genital mutilation should be banned because it involves the intentional infliction of injury" (p. 271):

> A supporter of the current legislative *status quo* might argue that female genital mutilation is more serious than cosmetic surgery, but this is untenable if one opposes the least serious forms of the former against the most painful and risky forms of the latter. So again, there seems to be no relevant difference between all those practices prohibited together under the label of female genital mutilation and all those broadly tolerated as cosmetic surgery. (Sheldon & Wilkinson, p. 274).

Outrage from the West toward TFGC when there is silence regarding FGCS could be seen as imperialistic and culturally insensitive; "the people of the countries where female genital mutilation is practiced resent references to barbaric practices imposed on women by male-dominated primitive societies especially when they look at the Western world and see women undergoing…..cosmetic plastic surgery" (Nahid Toubia as quoted in Sheldon & Wilkinson, 1998, p. p. 263).

As the rate of FGCS procedures increases there is a need for further research to better understand this phenomenon from the perspective of the women living the experience. It is also important not to forget that even when FGCS is framed as an issue of women's choice there are issues of economic inequality. If genital body image dissatisfaction is viewed as an issue of sexual health that can be remedied by surgery, what about the substantial number of women who cannot afford the surgeries?; "the surgical refashioning of the body is not an option that is equally available to everyone but requires considerable economic means" (Negrin, 2002, p. 39). The lack of evidence that these surgeries actually benefit women's sexual health results in women *with* economic means undergoing surgeries that are of questionable benefit. Demand side strategy, or the idea that "you should need this", creates a need for these surgeries driven by an idealized image of the female genitals.

The increase in FGCS procedures raises many questions and concerns for feminist researchers and health care providers alike. When women feel more comfortable with their bodies they are more likely to have control over their sexuality (Crooks & Baur, 1999; Schooler et al., 2005). "Knowledge is important in distinguishing what is normal and healthy for the genitals, and what is not normal and thus what constitutes a potential health risk" (Crooks & Baur). While women are seeking FGCS in increasing numbers, little is known about *who* these women are, their demographic information and the motivating factors for seeking these procedures. There has been speculation that an increase in explicit pornography and increasing awareness of these procedures may be factors, however the research has yet to be done.

In summary, while childbirth, pelvic floor defects, and female genital cosmetic surgery are distinct topics of research, they carry a common thread. The theme linking these topics together is the influence of body image specific to the genital area on women's sexual health. While the evidence shows that childbirth affects women's

sexual health, little is known about the effect of genital changes associated with childbirth on sexual health. This is becoming increasingly important as the genital changes associated with childbirth are being linked to sexual dysfunction and body image dissatisfaction by the media and cosmetic surgery industry. Similar links are being made regarding pelvic organ prolapse and negative genital changes creating the need for a better understanding of how prolapse may affect women's genital body image. Given the limited evidence that surgery improves women's sexual health and the significant economic resources needed for these surgeries, there is a need to understand how genital body image dissatisfaction may influence women's sexual health in a variety of life situations.

The following chapter will provide a conceptual framework that will be used to view sexual health within the broader context of women's lives. This framework will afford an enhanced way of understanding the links between the concepts of sexual health and women's genital body image. This conceptual framework will provide a foundation from which to undertake research that proposes to address the gaps in our knowledge of genital body image. This will be accomplished by using a broader population of women than used in previous studies and utilizing a scale designed to specifically measure *genital* body image.

Table 2-1 Childbirth and Sexual Health Study Findings

Author	Participants	Methods	Resumption & Frequency	Results
Ahlborg & Dahlof 2005 Sweden	N = 820 co-habiting first time parents Age, M = 31.3	Dyadic Adjustment Scale admin. at 6m post birth	Resumption M = 2.6 months, frequency M = 1.9/m	Male partners had more desire for sex (p = <.001) and less sexual contentment (p = <.001)
AlBustan et al. 1995 Kuwait	N = 160 women post childbirth, 55% 20-24, 27.5% 25-29, 17% 30-34	Monthly interviews, during, and 6 months after pregnancy (satisfaction, frequency, orgasm, pain)	Resumption; all but 8 had resumed at 8w	Episiotomy decreased sexuality at 8w & 12w, increased at 16 weeks with breastfeeding
Barrett et al. 2000 UK	N = 796 primips	Questionnaires at 6 months (resumption, problems, frequency, satisfaction)	89% resumed at 6m	More dyspareunia, pain, tightness, looseness, loss of desire (all p < .0001). More dyspareunia at 12w with vaginal birth (p = .01) but NS at 6m. More dyspareunia with breastfeeding (p = .0006)
Buhling et al. 2005 Germany	N = 655 primips	Questionnaires regarding pain with intercourse	47% of women resumed intercourse at 8w (no difference with mode of delivery)	69% had pain with first intercourse, significantly different for vaginal birth with no laceration or c-section (55% & 54%) than those with episiotomy or operative vaginal birth (7% & 74%; p = .007)

Author	Participants	Methods	Resumption & Frequency	Results
Connolly et al. 2005 USA	N = 150 primips Age, M = 25, 27% AA, 57% White	Questionnaires re. sexual function at enrollment (recall data) 3rd trimester, 2, 6, 12, & 24w PP	57% resumed by 6w, 82% by 12w, 90% by 24w.	30% had pain with intercourse at 12w. More pain at 12w with breastfeeding (RR = 3.36)
DeJudicibus & Mc Cabe 2002 Australia	N = 70 (who completed all time points) primips Age, M = 30	Questionnaire re. women's sexuality during pregnancy, 12w & 6m PP	No data	Desire was decreased at 12w and 6m PP ($P < .001$), frequency was decreased at 12 w ($P < .001$) but not 6m, and satisfaction was decreased at 12w ($P < .001$) but not as 6m
Dixon et al. 2000 UK	N = 78 primip & 53 multip couples	Questionnaire at 8 m PP	No data	Quality of life, quality of sex life and frequency of intercourse was decreased significantly for both men and women ($p < .001$)
Fischman et al. 1986 USA	N = 68 women and 56 men at 4m N = 126 women and 109 men at 12m 98% White Age, M = 27 for women, 29 for men	Questionnaires re. intimacy and sexuality at 4m and 12m PP	Time of resumption M = 6 w, 7.5w for women with pain with intercourse ($t=1.7$, $p < .025$) 43% resumed before 6w. BF not associated with resumption	62% of women had pain with sex at 4m, 16% at 12m ($x^2 = 42$ $P < .001$). Frequency was decreased at 4m and 12m ($P < .001$). Men had more desire than women at 4m ($x^2 = 10.5$, $P < .005$) and at 12m ($x^2 = 19.4$, $P < .001$). 39% of women were still dissatisfied with appearance at 12m

Author	Participants	Methods	Resumption & Frequency	Results
Glazener 1997 UK	N = 1075 at 8w, 435 at 12m, primips and multips	Questionnaire re. resumption, contraception & problems at 8w and 12-18m PP	71% had resumed by 8w, (M = 5w), 90% had returned by 10w	42% had pain with intercourse 10% at 12m. Fatigue & depression, not breastfeeding related to lack of interest
Gungor et al. 2007 Turkey	Primiparous women N = 90 vaginal birth (with m/l episiotomy) N = 45 c-section	Colombock-Rust Inventory of Sexual Satisfaction 12m – 4y post birth	No data reported on resumption	Non statistically significant difference in sexual dissatisfaction between groups (4.4% in vaginal birth group vs. 14.4% in c-section group)
Hyde et al 1996 USA	N = 570 women and 550 women PP, multips and primips	Questionnaire re. frequency, sex practices, satisfaction at 2nd trimester, 1m, 4m, & 12m PP	Time of resumption M = 7.3w, 19% had resumed by 4w, 19% had not resumed at 4m. Later resumption for breastfeeding (X^2 = 14.5, P < .001) earlier with CS (x^2 = 4.1, P < .05	Less desire for breast feeding moms at 1m and 4m (t = 4.6 & t = 2.6, P < .001). No significant difference in satisfaction or desire by mode of birth
Kumar et al. 1981 UK	119 primips Age, M = 28	Interviews re. sexual functioning at 12w, 24w, & 36w of pregnancy& 1w, 12w, 26w, & 52w PP	33% had resumed by 6w "nearly all" by 12w	Decrease in frequency of intercourse was greatest at 12w pp, still decreased at 12m. Less satisfaction at 12w (P < .001), 57% had less desire at 12w

Author	Participants	Methods	Resumption & Frequency	Results
Pastore, Owens, & Raymond. 2007 USA	N = 132 women N = 75 male partners Primips	Questionnaires mailed to women and partners – some received at 4m, others 12m	Median time of resumption was 1.9m (range; 2w to 11m)	Both women and partners reported women's body image affected sexual health Desire discrepancy between women and their partners
Paterson et al. 2008 Canada	N = 114 women primips and multips Age, M = 32.7	36 item questionnaire mailed to women 12m pp.	No data on resumption Pain influenced frequency	Post partum pain did not differ by mode of delivery 70% of women had pain with vaginal intercourse Pain affected frequency, desire, satisfaction, and arousal
Radestad et al. 2007 Sweden	2926 primiparous women Age, M = 30	Questionnaires at 3, 6, and 12m	Mean time of resumption was 2.0m (25% had not resumed at 3m)	Episiotomy, 3rd and 4thdegree tears were less likely to resume intercourse at 3m
Rowland et al. 2005 Canada	N = 316 primips & multips Age, M = 29, 73% married	Questionnaire at 2-12w PP re. breastfeeding, resumption, contraception, & problems	50% of women had not resumed intercourse (time point varied), less likely if breastfeeding (58% vs. 39%, P = .001)	Difference in resumption r/t mode of delivery (71% vaginal/no tears, 39% vaginal/tear, 47% C/S, P = .001). Reasons for not resuming; tired, pain, still bleeding, not interested.

Author	Participants	Methods	Resumption & Frequency	Results
Signorello et al. 2001 USA	Primips: Group 1 - N = 211 no tears, Group 2 N = 336 2nd degree tear, Group 3 N = 68, 3rd or 4th degree tear	Questionnaire at 6m PP re. resumption, pain, sensation, satisfaction & orgasm	Resumption M = 7.1w for no tear group, 9.3w for 3rd & 4th degree group (P < .001)	In 1st group 58% had pain with intercourse, 74% for 2nd and 3rd group, Decreased sensation, satisfaction and orgasm in all groups but less likely in 1st group.
van Brummen et al. 2006 Netherlands	Primiparous heterosexual women Mean age = 30.3	The Maudsley Marital Questionnaire Resumption and frequency of sexual intercourse 12 & 36w gestation, 3 & 12m post birth	81.4 % had resumed intercourse at 3m 93.9% had resumed at 12m	There was a positive relationship between maternal age and sexual dissatisfaction
Visness & Kennedy 1997 UK, Australia, Canada & Philippines	N = 73 in 1st study N = 485 in 2nd study All breastfeeding	A secondary analysis – Parent study was of Natural Family Planning. Variables were resumption and frequency (monthly)	Median resumption was 8 wks, by 12 wks 76% had resumed	Frequency of intercourse = 2.4/m at all time points

Table 2-2 PFD Surgery and Sexual Health Study Findings

Authors	Participants	Measures	Surgical Procedure	Results
Brubaker et al. 2009 USA	655 women Age: Mean 49.5 (sexually active) Mean 57.4 (not sexually active)	PISQ-12 as baseline and 2 years post surgery	Randomized to Burch colposuspension or sling surgery	Significantly less pain with intercourse, incontinence during intercourse, fear of incontinence during sexual activity, less avoidance of sexual activity ($p < .001$) No difference in frequency of desire, orgasm, excitement or satisfaction
Glavind & Tetsche 2004 Denmark	N = 67 Age: M = 54 (range = 38-74)	Questions related to sexual functioning	Trans vaginal tape and/or intravaginal slingplasty	79% of patients were sexually active prior to surgery 23 patients with incontinence during intercourse prior to surgery, 4 after surgery. 7 stated their sex life was improved, 2 had less libido after surgery
Handa et al. 2007 USA	N = 224 Sexually active Age: M = 58, 95% White Not sexually active Age: M = 64, 91% White	Incontinent? yes/no Sexually active? yes/no PISQ-12	Sacrocolpopexy with/without Birch colpo-suspension	Before / After / P value Sexually active: 66% / 76% / <.001 Symptoms interfere: 30% / 7% / <.0001 Fears of incontinence: 10% / 3% / .0003 Avoid sex due to bulge: 48% / 5% / <.0001 Pain with intercourse: 39% / 21% / <.0001
Helstrom & Nilsson 2005 Sweden	N = 118, 41 with incontinence, 77 with prolapse Age: M = 58 88% married	McCoy sexual behavior questionnaire	Intravaginal sling plasty (incontinent group). Manchester technique (prolapse group)	Before / After / P value Sexually active Measures score: 33.2 / 28 / <.05 Frequency: 3.4 / 3.3 / <.001 Pain with intercourse: 1.7 / 1.8 / NS

Authors	Participants	Measures	Surgical Procedure	Results			
Jeffery et al. 2009 United Kingdom	N = 53 Prolapse Grade 2 or greater Age: M = 63 36% sexually active	PISQ-31	High uterosacral ligament vault suspension and vaginal hysterectomy		Before	After	
				Sexually active No PISQ scores before surgery for comparison	49%	36%	
Komesu et al. 2007 USA	N = 73 Age: M = 43.8 & 51.3 White = 47% Hispanic = 32% Other = 19%	PISQ	Incontinence and/or prolapse surgery with or without posterior repair		Before	After	P value
				Fears of incontinence			
				No PR	40%	10%	.003
				PR	28%	0	.005
				Avoid sex due to bulge			
				No PR	33%	12%	.029
				PR	52%	7%	<.001
				Pain with intercourse			
				No PR	7%	26%	.029
				PR	7%	37%	.003
Kuhn et a. 2009 USA	N = 18 women complaining of sexual impairment post TVT procedure Age: M = 53 Median BMI = 28	FSFI and physical exam including POP-Q prior to TVT removal and 3 months after surgical removal	TVT removal using median colpotomy	Significant improvement in desire, satisfaction, lubrication, and pain domains of FSFI post TVT removal			

Authors	Participants	Measures	Surgical Procedure	Results			
Lemack & Zimmern 2000 USA	N = 56 Age, M = 52, 41, 49, 50	Anterior vaginal wall suspension with/without posterior repair	Non-validated questionnaire 1 or more years after surgery	 Sexually active Intercourse better Intercourse worse Intercourse pleasurable	No PR 37% 20% 20% 50%	With PR 41% 25% 17% 50%	
Mazouni et al. 2004 France	N = 55 Age, M = 58	Variety of incontinence and prolapse surgeries	Non-specified questionnaire	 Normal Not satisfactory Dyspareunia Loss of libido	Before 100% 0 0 0	After 58% 20% 15% 5%	P value NS <.01 <.01 NS
Novi et al. 2007 USA	N = 100 Age, M = 55 Ethnicity data Incorrect	Rectocele repair with and without porcine graft	PISQ	 Total PISQ scores Behavioral subset Physical Partner-related	With graft 101 48 37.7 19.5	No graft 89,7 45 26.1 18.4	P value .01 NS .01 NS
Rogers et al. 2006 USA	N = 102 Age, M = 47, BMI, M = 30.1, 47% White, 33% Hispanic, 20% Black	Variety of incontinence and prolapse surgeries	PISQ	 Total PISQ scores Behavioral subset Physical Partner-related Incontinence	Before 89.4 39.7 31.0 18.6 52.3	After 94.9 40.2 35.5 19.3 12.7	P value <.001 NS <.001 .004 <.001

Authors	Participants	Measures	Surgical Procedure	Results			
Thakar et al. 2008 UK	N = 35 Age, M = 50.6 91% White, 9% Asian	Variety of incontinence and prolapse surgeries	PISQ		Before	After	P value
				PISQ Total	84.1	92.3	<.001
				Behavioral subset	37.8	38.2	NS
				Physical	29.3	34.7	<.001
				Partner-related	18.0	19.4	.004
Weber et al. 2000 USA	N = 165 Age, M = 54	Variety of incontinence and prolapse surgeries	Non-validated questionnaire		Before	After	P value
				Freq. of intercourse	1.48	1.52	NS
				Incontinence	22%	3%	<.001
				Pain with intercourse	8&	19%	.04

Table 2-3 Reports of Labiaplasty

Author	Country	Participants	Indications	Results
Alter **Year** **2008**	USA	N = 407 Age M = 32.4 yrs. Range: 13-63 N = 166 (41%) responded to questionnaire	85.5% had aesthetic plus functional reasons (discomfort with clothing, exercise or sexual intercourse) 13.3% - aesthetics only 1.2% functional only	2.9% needed re-operation 4.2% had stretching of the labial scar 93% had improved self esteem 22.9% claimed increased sexual sensation
Choi & Kim **Year** **2000**	Korea	N = 6 Age M = 26.5 yrs. Range:13-40	Could not wear tight pants, unequal in size, increasing size, interference with sex	No complications Satisfaction Aesthetic – 100% Function – 100%
Giraldo, Gonzalez & deHaro **Year** **2004**	Spain	N = 15 Age M = 34 yrs Range: 22-45	Psychological reasons	Dehiscence = 2 Satisfaction Aesthetic – 100% Function – 100%
Jothilakshmi et al. **2009**	United Kingdom	N = 6 Age Range 11-16 yrs	Functional reasons (caught in underwear, irritation) Aesthetic (prominent under swimwear, embarrassment, being teased)	"All patients were satisfied with the outcome"
Maas & Hage **Year** **2000**	Netherlands	N = 13 Age M = 30 yrs Range: 19-42	All had functional problems Most dissatisfied with appearance	Hematoma = 1 Dehiscence = 1 Satisfaction Aesthetic – 100% Function – 100%

Author	Country	Participants	Indications	Results
Miklos & Moore **Year** **2000**	United States	N = 131 Age M = 36 yrs Range: 14-57	Aesthetic reasons-37% Functional reasons-32% Both – 32%	Not reported
Pardo, Sola Ricci, & Guilloff **Year** **2006**	Chile	N = 55 Age M = not reported Range: 10-55	Aesthetic reasons, pain, tight fitting clothes uncomfortable, mood disorders, impairment of intimate relationships	Pain = 2 Dehiscence = 3 Satisfaction Aesthetic 100% Functional 100%
Rouzier, Louis-Sylvestre, Paniel, & Haddad **Year** **2000**	France	N = 151 Age Median = 26 Range:12-67	Aesthetics – 87% Discomfort with: clothes – 64% sports – 26% sex – 43%	Dehiscence = 11 Satisfied Aesthetic – 87% Functional – 93% 4 would not undergo again

Chapter 3

Conceptual Framework

Theorizing Sexual Health

In the context of medicine, health is often defined as the absence of disease. Within this narrow definition health and wellness can be described as successful treatment of a disease. For individuals facing life after disease or injury the reality can be much different; despite being "cured" or "fixed" they do not feel healthy or whole. Challenges to this narrow definition have come more recently from both within and external to those who provide health care services. An expanded definition of health that more comprehensively represents the full complexity of what health means on both an individual and on a social scale has been proposed. The World Health Organization (WHO, 2000) defines health as, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, p. 7).

Similarly, sexual health is often narrowly defined as freedom from sexually transmitted disease and avoidance of unplanned pregnancies. Within this biomedical approach a "*normal"* is assumed, thus implying that an "*abnormality"* can be diagnosed, by means of a disease or disorder. The disease or disorder can then be treated, the goal of treatment being return to the predefined "*normal"*. A more comprehensive definition of sexual health is required to be consistent with the framework offered by the WHO's definition of health. Consequently, sexual health defined by the WHO provides a more holistic and comprehensive definition of sexual health.

> A state of physical, emotional, mental, and social well being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained the sexual rights of all persons must be respected, protected and fulfilled. (WHO, p. 5)

Similarly, the authors of a sexual health model designed for use in HIV research and treatment (Robinson, Bockting, Rosser, Miner, & Coleman, 2002) emphasized the potential for one's sexual health to enhance or worsen other aspects of the human experience. They also identify the need to acknowledge *differences* as normal variations. Their definition of sexual health is:

> An approach to sexuality founded in accurate knowledge, personal awareness, and self-acceptance, where one's behavior, values, and emotions are congruent and integrated within a person's wider personality structure and self-definition. Sexual health involves an ability to be intimate with a partner, to communicate explicitly about sexual needs and desires…Sexual health has a communal aspect, reflecting not only self acceptance and respect, but also respect and appreciation for individual differences and diversity, as well as a feeling of belonging to and involvement in one's sexual culture(s)….Sexual health affirms sexuality as a positive force, enhancing other dimensions of one's life (Robinson et al., p. 45).

It is important when conducting research associated with sexuality and sexual health to establish *a priori* the theoretical lens through which the research will be conducted. More positivist approaches study sexual behavior and determine the motivation or rationale for those behaviors. Norms or rules can be established from which *normality* and *abnormality* can be derived. The following is a brief overview of evolutionary models of sexuality followed by biomedical approaches to sexuality. I propose that the limited scope of these models of sexuality and sexual health are insufficient in light of the complexities of sexual health within the context of women's lives, particularly the relationship between genital body image and sexual health that is explored in this dissertation.

Evolutionary Models of Sexuality

Theories of sexuality have "evolved" from an evolutionary perspective that are rooted in the premise that "mating" is driven by desire for offspring (Buss & Schmitt, 1993; Gangestad & Simpson, 2000; Schmitt, 2003; Trivers, 1972; Young, Critelli, & Keith, 2005). Men and women have developed different "mating" strategies based on the sexes' differing needs associated with conception, gestation, birth, and survival of offspring.

Buss and Schmitt (1993) hypothesized a sexual strategies theory which identifies distinct short term and long term mating patterns for both males and females. Buss and Schmitt stress that these are not conscious "choices" humans make but rather that they are innate preferences that will drive sexual selection. Within this theory are specific strategies for both short term and long term mating that differ for men and women—again, all motivated by the innate drive to produce offspring. The authors argue that women will pursue more long term strategies for mating that will benefit their offspring by way of resources provided by a man. According to Buss and Schmitt men will "devote a larger proportion of their total mating effort to short term mating" (p. 205) to maximize potential for producing offspring. Buss and Schmitt assert empirical evidence for this theory in a study of college students (75 men and 73 women) where men express more desire for short term mating than do women ($t = 5.37$, $p<.001$).

Whether pursuing long term or short term mating strategies, men face the problem of identifying which potential mates are fertile so as to not waste their mating efforts with women who cannot produce offspring (Buss & Schmitt, 1993). To this end men will choose women who are young and healthy looking. Men should prefer women with…

> …full lips, clear skin, smooth skin, clear eyes, lustrous hair, symmetry, good muscle tone, and absence of lesions (p. 208)…Men, more than women, should

> value relative youth and physical attractiveness in potential mates because of their powerful links with fertility and reproductive value (Buss & Schmitt, p. 209).

Schmitt (2003) extends this theory by conducting international research with college students in 52 countries. This study surveyed men and women (N = 16,288) and found that men, regardless of geographical area, consistently indicated a desire for more short term sexual partners than did women ($p < .001$). Men also needed to know someone a shorter amount of time before consenting to sex ($p<.001$).

Young, Critelli, and Keith (2005) surveyed 148 male college students to determine male preference for age of mates for both long term and short term mating. They found that the participants preferred younger females (mean age of 16.9) for long term mating while for short term mating they preferred "older" females (mean age 17.8, $p < .01$). Of note—the mean age of the study participants was 19.8 (range 17-29), two years older than their preferred age for short term mates and three years older than their preferred age for long term mates.

While the evidence that men in present-day society desire more short term mates and younger, more attractive mates than do women is compelling, it does not necessarily support the evolutionary basis for the differences. Desire for short term mating may be influenced by cultural norms such as the sexual double standard, where it is more culturally acceptable for men to be sexually promiscuous than women (Milhausen & Herold, 2001). Eagly and Wood (1999) assert in their essay "The Origins of Sex Differences in Human Behavior" that "the products of evolution must be distinguished from the products of cultural change" (p. 411). Regarding men's preferences for younger women to maximize their potential for offspring, again it may only be that it is more acceptable for men to "mate" with younger women; cultural norms and mores cannot be ruled out.

Biomedical Models of Sexual Health

Women's sexuality is still "primarily conceptualized from a medical model/disease focused perspective" (Amaro, Raj, & Reed, 2001, p. 325). The American Psychiatric Association (1994) in its Diagnostic and Statistical Manual of Disorders (DSM) divides women (and men's) sexual problems into four dysfunction categories. These categories are: sexual desire disorders, sexual arousal disorders, orgasmic disorders and sexual pain disorders. These disorders follow the sexual response cycle first proposed by Masters and Johnson (1966): desire, arousal, orgasm and resolution. Utilizing these DSM codes presumes that there is a "normal" when it comes to sexual health; "if the sexual parts work there is no problem; and if the parts don't work, there is a problem." (Kaschak & Tiefer, 2001, p. 3)

Using these dysfunction categories Laumann, Paik, and Rosen (1999) surveyed 1749 women and 1410 men (ages 18 to 59) in the United States. They found that sexual health disorders are very common in women, with 43% of women reporting some type of sexual dysfunction (compared to 31% of men reporting sexual dysfunction). Despite women having greater potential for sexual dysfunction it appears that men's sexual dysfunction has generated more interest with the pharmaceutical companies as anyone who has seen the television commercials for Viagra® and Cialis® will attest.

For women, pharmaceutical treatment thus far has been disappointing (Basson, McInnes, Smith, & Hodges, 2002; Dennerstein, Dudley, Hopper, & Burger, 1997; Laan, Lunsen, Evaraerd, Riley, Scott, & Boolell, 2002; Shifren et al., 2000). Hormone replacement therapy has been utilized in the treatment of female sexual dysfunction on the premise that low levels of hormones (estrogen and testosterone in particular) can cause sexual dysfunction (Katz, 2007). However hormone replacement therapy has not been shown to alleviate women's sexual dysfunction (Dennerstein et al.). In an analysis of 201 women aged 48- 58 years, hormonal levels (including estrogen and testosterone)

did not show any significant association with sexual function factors such as sexual responsivity, sexual frequency, libido, or vaginal dryness (Dennerstein et al.). Women who undergo oophorectomy (surgical removal of the ovaries) experience a dramatic decrease in estrogen and testosterone levels (Katz). Using oophorectomized women as their own controls (N = 75), Shifren et al. determined the effect of transdermal testosterone on sexual function. Only when testosterone was administered at doses higher than premenopausal physiologic levels was there a significant increase in sexual function versus the placebo group (Shifren et al.).

Sildenafil (better known by its trade name Viagra®), has been on the market for ten years and is used to treat men's erectile dysfunction. Sildenafil has been trialed in women and not been shown to be of benefit to their sexual health (Basson, McInnes, Smith, Hodgson, & Koppiker, 2002; Laan, Van Lunsen, Everaerd, Riley, Scott, & Boolell, 2002). In a randomized, double blind, placebo-controlled study (N = 12) participants without sexual dysfunction were given 50 mg of Sildenafil or placebo and the alternate in a second session (Laan et al.). Vaginal congestion increased with sildenafil although not significantly ($p = .084$); more importantly there was no difference in subjective sexual arousal (Laan et al.). Premenopausal women (N = 577) and postmenopausal women (N = 204) with sexual dysfunction were participants in another study of sildenafil (Basson et al.). Women were randomized to receive sildenafil or placebo one hour before sexual activity (Basson et al.). On none of the measures of sexual function (vaginal lubrication, clitoral sensitivity, improved physical response during sexual activity) was there a difference between the groups (Basson et al.).

As shown in the previous chapters related to PFDs, childbirth and female genital cosmetic surgery (FGCS), surgical procedures have also been utilized as a solution to women's sexual health issues. Pelvic floor surgery improves sexual health for some, but not all women (Pauls et al.; 2007); some women may actually have a decrease in sexual

health following PFD surgery (Helstrom & Nilsson, 2005). Elective cesarean delivery has not proven to have long term sexual health benefits for women (Barrett, Peacock, Victor, and Manyonda, 2005). Although surgeons have cited sexual health issues as reasons women elect to have FGCS procedures (Rouzier, Louis-Sylvestre, Paniel, & Haddad, 2000), the research has not been done proving sexual health benefits following FGCS.

In summary, sexual health in women does not seem to be strongly linked to biological factors amenable to pharmaceutical therapy; "the interface between psychological processes and physiological response is not well understood…we have for female sexuality a very long, well-documented and quite extraordinary history of medicalization" (Bancroft, 2002, p. 451). Nor are surgical approaches to fixing women's sexual health issues of clear benefit.

Sexual Health from a Socio-Cultural Perspective

When striving for a better understanding of women's sexual health issues it is important for researchers and health care providers to consider the biologic and physiologic factors that may be causing distress. "Women who see themselves as suffering from sexual dysfunction argue, understandably, that the opportunity for biochemical treatment has provided a lifeline for them" (Nicolson & Burr, 2003, p. 37). However for many women who perceive themselves as having a sexual "dysfunction" there is no magic pill or surgery that will correct the problem.

> Sexual activity between partners is about expressing and receiving sexual pleasure, yet heterosexist ideas of appropriate female response have existed for centuries and women still feel abnormal or deviant if their responses do not fit these concepts (Drew, 2003, p. 90).

According to the traditional medical model of sexual health, women's sexuality is in response to heterosexual intercourse; "good sex always culminates in sexual

intercourse; if, for whatever reason, it does not happen, sex has not taken place" (Drew, p. 91).

A social constructionist perspective requires that sexual health be viewed within the context of women's lived experiences. In addition to biological factors, women's sexual experiences, relationships and body image must be taken into account. This perspective emphasizes "the person's active role, guided by his or her culture, in structuring the reality that affects his or her own values and behavior" (Tiefer, 2001, p. 49). Although the body is comprised of physical and biological properties, "experiences of the biological body are constructed by social/cultural/historical context and the interpretation of bodies needs to be considered within context" (Braun & Wilkinson, 2001, p. 18). For the purpose of this dissertation this means acknowledging not only the physical changes to the genitals associated with life events such as childbirth, but also how these changes may be perceived both by sexual partners and societal norms.

A "New View" of Women's Sexual Health

Frustrated by the medicalization of sexual problems, in 2001 a group of sex therapists and researchers organized to form "The Working Group" and have proposed their "New View" of women's sexuality (Kaschak & Tiefer, 2001). They argue that the prevailing medical model promotes a standard of "normal" sexual activity based on heterosexual penile-vaginal intercourse. In the prevailing medical model the necessary and sufficient ingredients for successful sexual experience are: "desire, genital arousal, a timely orgasm, and the ability to enjoy vaginal penetration" (Tiefer, 2001 p. 25). The emphasis on vaginal penetration creates a clear message of heteronormative sexuality. From a biomedical view women's sexual health is seen as responsive to men's sexuality and heterosexual intercourse.

The "New View" of women's sexuality provides an alternative to viewing sexuality from the traditional biomedical model (Kaschak & Tiefer, 2001). The authors identified

three problems associated with a biomedical model of women's sexual health. First, because there are physiologic *similarities* there is an assumption that men and women are sexually *equivalent,* therefore their disorders must be the same. Emphasizing similarities ignores the "implications of inequalities related to gender, social class, ethnicity, sexual orientation, etc." (p. 3). Second, the individualistic approach of the DSM codes for sexual dysfunction and the reduction of sexual dysfunction to physiology means that "one can measure and treat genital and physical difficulties without regard to the relationship in which sex occurs" (p. 3). Lastly, assuming similarity among women when women "differ in their values, approaches to sexuality, social and cultural backgrounds, and current situations" (p.3) is problematic. Women's sexual health issues are not amenable to a "one size fits all" approach. In the "New View" of sexual health women would identify their own sexual problems, which are defined as "discontent or dissatisfaction with any emotional, physical, or relational aspect of sexual experience" (p. 1). This definition of sexual problems avoids specifying any one particular pattern of sexual experience as normal—an important strategy in any de-medicalization effort.

An important difference in the "New View of Women's Sexual Problems" is that rather than viewing women's sexual health from a medical/physical standpoint first, sexual problems related to socio-cultural factors are considered first and foremost (Kaschak & Tiefer, 2001). Examples of these factors include lack of information and "anxiety or shame about one's body, sexual attractiveness or sexual responses" (p. 5). Sexual problems relating to partner and relationship are considered next. An example from this category of problems is, "Inhibition, avoidance, or distress arising from…partner's negative patterns of communication" (p. 6). The third category of sexual problems are those due to psychological factors such as past experiences of physical, sexual or emotional abuse. Lastly, biomedical factors such as pain or lack of physical

response are included in the model. The entire "New View" model is included as Appendix A.

The "New View of Women's Sexual Problems" provides a social constructionist view of women's sexual health that acknowledges the role that "others" and culture play in women's lives. Within Western culture women's bodies are objectified, meaning that their bodies, body parts, or sexual functions are separated from the whole individual (Fredrickson & Roberts, 1997). Sexual objectification can influence many aspects of women's lives, including their sexual health.

Body Image and Objectification Theory

Objectification theory was developed by Fredrickson and Roberts (1997) as a way to understand how cultural perceptions of women as sexual objects affect women's perspectives of themselves. A critical part of Objectification theory is the concept of *self* objectification:

> A critical repercussion of being viewed by others in sexually objectifying ways is that, over time, individuals may be coaxed to internalize an observer's perspective on self, an effect we term *self-objectification*. Girls and women, according to our analysis, may to some degree come to view themselves as objects or "sights" to be appreciated by others." (Fredrickson and Roberts, p. 179).

According to Objectification theory, exposure to cultural cues such as media content can cause women to self-objectify (Fredrickson & Roberts, 1997). When women self-objectify they value themselves in terms of how they look, but more specifically, how they perceive others to view them. "The common thread running through all forms of sexual objectification is the experience of being treated *as a body* (or collection of body parts) valued predominantly for its use to (or consumption by) others." (p. 174).

According to Fredrickson and Roberts (1997) one of the consequences of sexual objectification for women is shame. When women perceive that their body does not meet society's standards for beauty and thinness it can create feelings of shame and a

need to conform one's own body or to hide it from the gaze of others. "Women's ongoing efforts to change body and appearance through diet, exercise, fashion, beauty products, and perhaps most dangerously, surgery and eating disorders, reveal what may be a perpetual and hardly adaptive body-based shame" (p. 182).

Anxiety can also be experienced by women who are subjected to objectification (Fredrickson & Roberts, 1997). The authors argue that when women are aware that their appearance may be evaluated this can create tension and anxiety which can lead to habitual body monitoring, particularly if women have had previous experiences such as negative comments related to their appearance. Anxiety can also be related to personal safety; while attending to being attractive, women need to be careful that they are not too sexually attractive which could be construed as "asking for" trouble, or sexual assault.

> A culture that objectifies the female body presents women with a continuous stream of anxiety-provoking experiences, requiring them to maintain an almost chronic vigilance both to their physical appearance and to their physical safety" (Fredrickson & Roberts, p. 183).

The increasing emphasis on women's appearance in Western culture is prevalent in all forms of media and advertisement; women are supposed to stay young, be thin, and look sexy; but not *too* sexy (Dittmar & Howard, 2004). Women don't even need to actually encounter the male gaze to experience the anxiety associated with objectification theory; "the mere anticipation of being the object of an observers gaze triggers the negative consequences associated with self objectification" (Calogero, 2004, p. 16).

The shame and anxieties that many women have about their bodies may influence women's sexual experiences, creating potential for sexual health problems (Fredrickson & Roberts, 1997).

> Objectification theory offers alternative explanations for women's sexual difficulties, focusing not simply on women's enactment of feminine roles, but

> rather on their self-conscious body monitoring, body-based shame and anxiety, and relative inattention to internal bodily states…chronic attentiveness to one's own visual image may consume mental energy that might otherwise be spent on more satisfying and rewarding activity (Fredrickson & Roberts, p.190).

Sanchez and Keifer (2007) utilized Objectification theory to explore whether or not body shame was linked to sexual problems and sexual pleasure, for not only women, but also for men. Participants were recruited over the internet yielding a total of 122 men and 198 women (mean age 31, primarily White, only heterosexual non-virgins used for analysis); variables used in the theoretical model were body shame, sexual self-consciousness, sexual arousability, difficulty reaching orgasm and sexual pleasure. As predicted by the authors, women reported significantly more body shame (Cohen's *d* = .65, p = < .001) and sexual self-consciousness (Cohen's *d* = .83, p = < .001) than men. Women also had more difficulty with arousability (Cohen's *d* = .54, p = < .001), orgasm (Cohen's *d* = 1.06, p = < .001), and less sexual pleasure (Cohen's *d* = .50, p = < .001) than men. There was a strong correlation between body shame and sexual self-consciousness (β = .59), and moderate, negative correlations between sexual self-consciousness and sexual arousability (β= -.43) and sexual pleasure (β = -.45). The authors conclude:

> Appearance concerns arise from real societal pressures to conform to virtually unattainable physical ideals…..these concerns are linked to impaired sexual arousability and pleasure for both men and women, which may in turn reduce their ability to forge and maintain healthy, enjoyable sexual relationships. Thus, clinical interventions aimed at the alleviation of body shame, which could decrease sexual self-consciousness, could increase pleasure and sexual arousability for men and women alike (Sanchez & Keifer, p., 818).

Ward, Merriwether and Carruthers (2006) utilized Objectification theory to explore the influence of media images on men's beliefs related to breastfeeding and childbirth. Ward, Merriwether and Carruthers hypothesized that media use would contribute to more traditional masculine gender ideologies (framing women's bodies as sexual objects) which would in turn contribute to negative views about breastfeeding and

childbirth. Study participants were undergraduate college students (n = 656) and the variables explored included media exposure, media involvement, gender ideologies, and attitudes toward breastfeeding and childbirth. The results of their research supported an association between media use (most significantly, reading men's magazines [β = .22] and realism of media portrayals [β = .18]) and more traditional masculine ideologies. Also supported was the idea that more traditional masculine ideologies are associated with more negative attitudes toward childbirth (β= .37) and breastfeeding (breastfeeding as fuss [β = .27], breastfeeding as private [β = .15], breasts as sexual [β = .33]) and a negative association between more traditional masculine ideologies and support for breastfeeding (β = .18). In conclusion they note:

> The media's rigid portrayals of women and of femininity also affect how men view and interact with women as partners and parents. Until there is a change in the media's sexual objectification of women's breasts and bodies, it is unlikely that these perceptions will change (Ward et al. p., 713).

Expanding on this research, Ward and Merriwether (2007) explored the relationship between media use, gender ideologies, and women's beliefs about their bodies using undergraduate female students (n=1100) as participants. Exposure levels to media, six dimensions of traditional gender ideologies and variables measuring attitudes toward body functions (childbirth, breastfeeding, and comfort with own body) were assessed. The research results showed that traditional gender ideologies were correlated with negative attitudes toward birth (β = .35) and breast feeding (β= .29) and that media use (in particular music videos, teen and women's magazines) were associated with traditional gender ideologies.

Roberts (2004) explored the influence of self-objectification and women's attitudes toward their menstrual cycles (shame and disgust). Women (N = 200; ranging in age from 12 to 61) completed a survey measuring self-objectification and menstrual attitudes and emotions. Self-objectification was significantly correlated with negative

attitudes toward menstruation (bothersome, $r = .24$, $p < .001$; disgust/shame $r = .20$, $p < .05$). Roberts concludes "although the effect sizes were fairly small, the results of this study suggest that women's practices of self-objectification involve a kind of psychic distancing from their physical bodies" (p. 20).

Andrist (2008) has hypothesized that the objectification of women as sexual objects has contributed to the increase in both rates of menstrual suppression and elective cesarean delivery. She argues that:

> Patriarchal Western societies, in particular, have aligned women's reproductive functions with nature so that disinterest in reproductive health issues becomes another way for women to separate themselves from their 'earthly nature' and transform or maintain their bodies as idealized cultural symbols (Andrist, p. 551).

A Conceptual Framework for Genital Body Image and Sexual Health

The purpose of this conceptual framework is to provide an epistemological foundation from which to explore the concept of genital body image and how it may influence sexual health. This framework is grounded in a social constructionist/feminist perspective. "A New View" as a model for sexual health is helpful in this undertaking because it incorporates the physical and biological within the socio-cultural context of women's lives. For example, included in "Sexual problems due to socio-cultural factors" is "lack of information about human sexual biology and life-stage changes" (Kaschak & Tiefer, p. 5). For some women, lack of knowledge regarding "normal" variations in female genitals may influence their sexual health via body image dissatisfaction. "Sexual problems relating to partner and relationship" could for some women include negative comments made by partners regarding female genitals.

Objectification theory provides the theoretical underpinnings from which to understand women's genital body image and how it may affect women's sexual health (Fredrickson & Roberts, 1997). The concept of genital body image must take into account the socio-cultural influences and norms; "it is not only women's individual

experiences of their bodies and the things they do with them" (Braun & Wilkinson, 2001, p. 27). Historically, cultural representations of the vagina have been predominantly negative (Braun & Wilkinson). Unlike body size, genital body image does not offer women the opportunity to make comparisons with other women's—leaving the ideal media image (pornography or cosmetic surgery websites) as the only opportunity for genital self evaluation. If women internalize the "ideal" genitals as depicted in pornography or on plastic surgery web sites, they could feel anxiety about their own genitals:

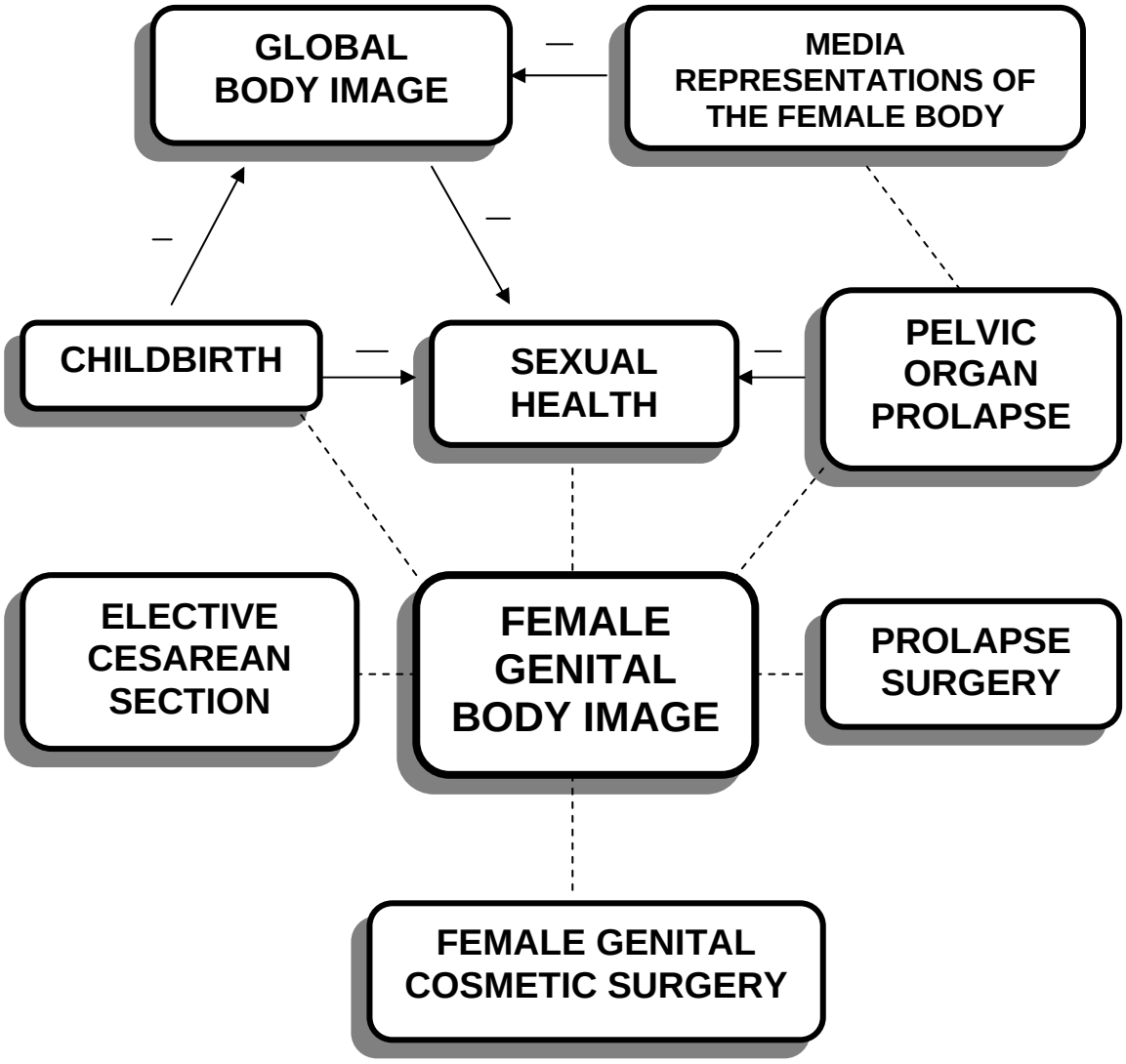
> If understandings of the vagina are developed in relation to socio-cultural and historical context then representations of the vagina exist as cultural resources for women (and men) used for making sense of the vagina and their experiences of it (Braun & Wilkinson, p. 18).

There is a perception that the primary function of women's genitals is sexual pleasure during intercourse rather than childbirth and that men's sexual pleasure takes precedence over women's own sexual pleasure (Braun, 2005). Elective cesarean delivery is perceived as a way to avoid negative changes that may occur during childbirth while FGCS is seen as a way to correct the genital changes that may occur during childbirth. "Media has the potential to construct the very nature of problems and their solutions, simultaneously. Both the problem of aesthetically 'unappealing' genitalia and the desire for better sex have a ready worked-up solution – surgery" (Braun, p. 419).

Whether increasing genital body image dissatisfaction in women is related to increasing numbers of elective surgeries remains to be explored. "Surgery not required for physical health reasons, such as aesthetic vaginal surgery, elective caesareans, and vaginal reconstructive surgery, is made possible, and plausible, by certain socio-cultural representations of women's genitals" (Braun & Wilkinson, 2001, p. 27). A conceptual model to represent the relationship between events and concepts that may influence genital body image, and the surgeries that may result from genital body image

dissatisfaction is depicted in Figure 3-1. Within this model the relationships are depicted by arrows indicating direction and whether the concepts are positively or negatively correlated. When little is known regarding the relationship between concepts this is delineated by a dotted line. From this conceptual model we can move toward a better understanding of women's genital body image so that we can ultimately promote positive genital perceptions and sexual health for women. In order to accurately measure the concepts within the model there is a need for reliable and valid measurement tools. Without a valid and reliable way to measure genital body image it will be difficult to know if we are adequately measuring the relationships between the concepts included in the model.

Figure 3-1 Conceptual Model



Measuring Genital Body Image

Although there has been preliminary work in developing an instrument to measure genital body image, these instruments have not undergone adequate psychometric testing. A literature search of genital body image and sexual health resulted in two measures of genital body image available for use in research. Of these, one measure conflates genital body image and sexuality into one concept rather than measuring them individually. An additional two instruments specific to pelvic organ prolapse are also available. Measures used in research regarding genital body image and pelvic organ prolapse assume genital changes, rendering them of limited benefit to research among women where genital changes cannot be assumed. In order to develop a meaningful program of research related to genital body image it is important that we know how to adequately and accurately measure it.

The Genital Perceptions Scale

The first instrument used to measure genital body image was the Genital Perceptions Scale, developed by Reinholtz and Muehlenhard (1995) using pilot study data obtained from 116 undergraduate respondents. Reponses to open ended questions that occurred more frequently were included in the final 66 item questionnaire. This questionnaire assessed genital perceptions (self and partners) in relationship to penile-vaginal intercourse, performing oral sex and receiving oral sex. Respondents were asked to rate their answers on a scale with the following markers: (0), not at all/never true/does not apply, (1) slightly/occasionally true, (2), moderately/sometimes true, (3) mostly/often true, (4) completely/always true. This questionnaire was then administered to 364 undergraduate students. The questionnaire took 30 to 45 minutes to complete. The authors performed a factor analysis resulting in twelve factors they grouped into three themes: genital perceptions, personal concerns, and relationship concerns. All items included in the questionnaire had a factor loading of .40 or greater.

Use of this questionnaire has several drawbacks. First, other than the factor analysis, there were no measures of reliability or validity reported. Second, the questionnaire contains 66 items along with 16 questions regarding sexual activities and demographics, which would contribute to respondent fatigue. Third, the instrument measures respondent's perceptions and feelings regarding specific sexual activities rather than genital body image, for example, "when I perform oral sex I hope it will last a long time". Finally, the only published use of this questionnaire has been studies with undergraduate student participants, potentially minimizing the validity and reliability in other populations.

The Genital Self Image Scale

The Genital Self Image Scale was developed by Berman, Berman, Miles, Pollets, and Powell (2003) to assess genital self image in patients seeking treatment at a sexual health clinic. Face validity and reliability was tested in a sample of 20 women (Cronbach's alpha coefficient r = .86). The first 17 items on the Genital Self Image Scale relate to the respondents' feelings about their genitals and are measured on a four point scale with the following markers: (always, often, sometimes, and never). The second part consists of twelve items measured on a two point scale, "applies to me and does not apply to me". The Genital Self Image scale is limited by several factors. First, there has been limited reliability and no validity testing published using the Genital Self Image Scale. Second, it has been used in a limited capacity, first by the authors in women seeking treatment for sexual disorders (n = 31) and in two unpublished doctoral dissertations. In all cases the participants were women seeking treatment for sexual dysfunction.

The Body Image Scale used for Patients with Advanced Prolapse

Two instruments have been developed to measure genital body image specific to pelvic organ prolapse. The first was adapted by Jelovsek and Barber (2006) from a

scale used for women with breast cancer. The original scale had been shown to have internal consistency, test-retest reliability and discriminant validity (Hopwood, Fletcher, Lee, & Al Ghazal, 2001); the modified version specific to prolapse has not been subject to tests of reliability or validity. The body image scale consists of eight questions measured on a scale of "not at all, a little, quite a bit, and very much" (Jelovsek & Barber). Because three of the five questions specifically relate to prolapse and others are not specific to the genitals (for example, have you been feeling self conscious about your appearance?) its usefulness would be limited to women where genital changes such as those associated with prolapse could be assumed.

The Vaginal Changes Sexual and Body Image Scale

A second instrument was adapted for use with women post childbirth or women experiencing pelvic organ prolapse from a body image and sexuality scale developed and validated for use in persons with disabilities (Zielinski, Kane-Low, Miller, & Tumbarello, 2009). The questions were changed to reflect genital body image and the instrument was renamed the "Vaginal Changes Sexual and Body Image Scale" (VSBI). The VSBI consists of ten questions with scaled responses ranging from (1) strongly agree; to (5) strongly disagree. An example of one of the items contained in the VSBI is "1) I feel that the changes to my vaginal/rectal area interfere with my sexual enjoyment". Again, because the VSBI assumes genital changes (either after childbirth or onset of prolapse), it would not be an adequate measure of genital body image for other populations.

Summary

There are two drawbacks to utilizing the Genital Perceptions Scale (Reinholtz & Muehlenhard, 1995). Whereas I propose that genital body image is a distinct concept in need of a specific measurement tool, this scale merges genital body image and sexual health into one concept. Second, the Genital Perceptions Scale is lengthy, with an

average time of 30 to 45 minutes for completion. The utility of the Vaginal Changes Sexual and Body Image Scale and body image scale developed by Jelovsek and Barber is limited to women with genital changes such as those associated with pelvic organ prolapse. For the purposes of research in women across a wider demographic a scale that does not assume genital changes is needed. A potential advantage of the Genital Self Image Scale (Berman, Berman, Miles, Pollets & Powell, 2003) is that it seeks to measure overall genital perceptions rather than those related to specific sexual activities (giving oral sex, receiving oral sex, penile/vaginal intercourse). Also, the Genital Self Image Scale does not specifically measure body image associated with genital changes, broadening the applicability of the scale to greater populations of women. The Genital Self Image Scale is an instrument that, if shown to have validity and reliability, could be a useful tool to assess women's genital body image in both research and clinical practice.

Chapter 4

Study Design and Methods

Using “A New View of Women’s Sexual Problems” and Objectification Theory as the theoretical underpinnings, the purpose of this study was to determine the reliability and validity of the Genital Self Image Scale (GSIS) while at the same time exploring the relationship between genital body image and sexual health.

This study was accomplished in two stages. The first stage involved soliciting input from participants considered to be experts in the area of female genitals/sexual health in order to determine the content validity of the GSIS. The second and larger portion of the study was descriptive and correlational. Purposeful sampling of specific groups of women was undertaken in order to both provide variance in GSIS scores and to allow between group comparisons. Women who had never given birth (nulliparous) were included as participants who had (presumably) not experienced life events that could be associated with negative genital changes. Women post childbirth who had birth events associated with significant risk for genital tract trauma were also recruited as study participants. The third study population was women known to have pelvic organ prolapse, a condition uniquely affecting women’s genitals. With the exception of test-retest validity, participants completed questionnaires at one time period. The purpose of the study was accomplished by means of the following specific aims.

Specific Aims

1. Determine whether or not the Genital Self Images Scale demonstrates content validity (does it adequately represent the concept of genital body image).
2. Explore the relationship between items and potential item reduction of the Genital Self Image Scale by means of exploratory factor analysis.
3. Determine construct validity of the Genital Self Image Scale using a variety of methods including the contrasting groups and hypothesis testing approach.

   H1 – Within each participant group there will be a significant correlation between genital body image (as evidenced by GSIS scores) and sexual health (as evidenced by Female Sexual Function Index scores).

   H2 – Because I propose that genital body image is a concept distinctly different from overall body image; within each participant group scores on the GSIS will not correlate with overall body esteem (Body Esteem Scale) scores.

   H3 – Women with pelvic organ prolapse will have significantly more genital body image dissatisfaction (as evidenced by lower GSIS scores) than age matched control participants.

   H4 – Women post childbirth with significant genital tract trauma will have significantly more genital body image dissatisfaction (as evidenced by lower GSIS scores) than the young, nulliparous participants.
4. Determine reliability of the Genital Self Images Scale using the test-retest method and Cronbach's alpha coefficient method for assessing internal consistency.

Content Validity

Participants

"Content validity is the determination of the content representativeness or content relevance of the elements/items of an instrument" (Lynn, 1986, p. 228). In order to determine the content validity of the Genital Self Image Scale, individuals considered to be experts in the field of genital body image and/or women's sexual health were recruited to participate in this portion of the psychometric analysis. Five individuals were purposefully selected because they had surgical expertise in the area of women's genitals or were considered women's sexual health experts.

Materials

Following Institutional Review Board approval, the Genital Self Image Scale (GSIS) along with a cover letter explaining the study and providing instructions (Appendix B) was sent via email to each of the participants. The experts were asked to rate the relevance of each item on the GSIS using a 4-point rating scale: (1) not relevant, (2) somewhat relevant, (3) quite relevant, and (4) very relevant. They were instructed to not make any changes to the existing scale, but were encouraged to respond to an open ended question; "are there content areas relevant to women's genital body image that are missing?" (Appendix C).

Analysis

A content validity index was derived from the results of the relevance ratings. Although a minimum of three experts is sufficient for a content validity index, five or more is considered ideal (Waltz, Strickland, & Lentz, 2005). First, individual items were assessed; if an item in the scale was rated either quite relevant or very relevant by at least four of the five participants, it was considered valid. Second, a content validity index was created for the entire scale by quantifying the extent of agreement between experts using the *alpha coefficient* with a minimum content validity index of .70 needed

to consider a scale content valid (Waltz et al.). Information obtained in response to the open ended question "are there content areas relevant to women's genital body image that are missing?" was reviewed. Content areas deemed missing by the experts were addressed by the addition of items to the GSIS or added to the demographic data collected.

Construct Validity

Construct validity of the Genital Self Image Scale was determined using a contrasting groups approach with the following four specific study populations: women who have not experienced any life events causing genital changes, women who have had a vaginal delivery with significant genital tract trauma, women with pelvic organ prolapse and age matched control participants (for the prolapse group).

Nulliparous Participants

Recruitment Strategy

Following IRB approval, this sample group was recruited from female students in the University of Michigan Women's Studies 220 course in winter 2009. Approximately 300 students were enrolled in this course, roughly 90% of whom were women. Inclusion criteria for study participation was: female, age 18 or greater and ability to read and write English. Exclusion criteria included men, age less than 18, history of vaginal birth, pelvic organ prolapse or vaginal surgery (female circumcision, hymenoplasty, vaginoplasty, vaginal rejuvenation, reconstructive surgery for ambiguous genitalia, labiaplasty), since this group was to represent women without life events causing genital changes.

Consent

Consent to participate in this study was accomplished without requiring the participants to sign a written document. Participants were informed that by completing and returning the questionnaires consent was implied. The reason for not obtaining

written consent was two-fold. First, the only record linking the participant and the research would have been the consent document and the principal risk associated with participation in this study would have been potential harm resulting from breach of confidentiality. Second, signed informed consent would have added undue burden on the research participants. No identifiers such as name, date of birth or address were linked with the study data.

Administration of materials

At the beginning of a class session the primary researcher gave a scripted introduction to the study (Appendix D) and the women in the class who were over 18 were invited to participate. The students were instructed that participation was voluntary and the students were reassured that declining to participate would not affect their grade. The participants were told they could choose not to answer any of the questions, they could withdraw at any time with no penalty, and that the data collected was anonymous, confidential, and used for study purposes only.

The questionnaire was distributed to the female students in the class with the instructions to return the questionnaire (complete or incomplete) to a box located at the classroom door at the end of the class session. For this group of participants there were no financial incentives for participating. The students were given time at the end of class to complete the questionnaires.

In order to complete test-retest reliability of the GSIS, 40 of the questionnaires distributed to the Women's Studies students included a card (containing a study ID number) asking if they would consider completing the questionnaires again in three weeks. Forty students were asked to participate in order to insure that at least 20 participants could be included in the test-retest analysis. The class was instructed that those who got a questionnaire with a 3x5 card (distributed randomly) would be asked to bring the card back to class in three weeks. At the three week interval those participants

who brought their cards back were given the questionnaire under the same test conditions as the initial administration. These students were given a five dollar bill to compensate for their additional time and burden. Inclusion of a return card that contained the study ID insured that no identifiers such as name were needed to conduct the analysis.

Study population of women following childbirth involving genital trauma

Another group of participants were those who had experienced childbirth with associated genital tract trauma. Based on published qualitative research studies these women could be expected to experience genital body image dissatisfaction resulting from the trauma (Williams, Lavender, Richmond, & Tincello, 2005).

Recruitment strategy

Following IRB approval a limited retrospective chart review was performed to identify those women who sustained significant genital tract trauma during vaginal birth at the University of Michigan Hospital during the 2008 calendar year. This time period was chosen to allow for adequate participant numbers while also recruiting women who had given birth at least 8 weeks previously. Eligibility was determined by screening for documentation of third or fourth degree perineal lacerations, multiple sites of laceration, or use of forceps or vacuum. Inclusion criteria also included age (over 18), ability to read and write English, full term birth (37 weeks or more) and discharge with a healthy baby. The only items obtained from the chart review were eligibility criteria and contact information.

An introductory letter was mailed to women identified as the “contact population” (Appendix E) describing the study (purpose, significance, and design), and that the study was completely anonymous and that participation was completely voluntary. An opt-out telephone number and email address was provided in the letter so that they could contact the researchers if they preferred to not receive the questionnaire.

Administration of materials

Unless they had opted out, the "contact population" was sent a packet including study materials, a stamped return address envelope and a two dollar bill through postal mail two weeks after the introductory letter. Materials were color coded to identify this group from other participants. The materials clearly stated that by responding to the questions and mailing the survey back the recipients agreed to participate in the research. Reminder post cards were not utilized in this study for any participant groups.

Study population with pelvic organ prolapse and age matched controls

Pelvic organ prolapse is a condition affecting women's genitals and there is preliminary evidence that this may affect their genital body image (Jelovsek & Barber, 2006; Zielinski, Low, Miller, & Tumbarello, 2009). For that reason women with pelvic organ prolapse as well as age matched controls were also recruited for the contrasting groups approach to construct validity testing of the GSIS.

Recruitment strategy

In order to expedite recruitment, women who participated in a previous study of prolapse mechanisms and treatments (IRB #1999-0395) who agreed to be contacted for future studies were the target population. Some of these women met the inclusion criteria for prolapse (Stage II or greater), while some of the women had functioned as age matched controls in the prior study. The women were mailed an introductory letter (Appendix F) that included the significance, purpose, and description of the study. The letter clearly stated that the study was completely voluntary and anonymous. The letter included contact information (cell phone number and email address) so that in the event they did not wish to participate, they could opt out.

Administration of materials

Unless they had opted out, the "contact population" was sent a packet including study materials, a stamped return address envelope and a two dollar bill through postal

mail two weeks after the introductory letter. Materials were color coded to identify this group from other participants. The materials clearly stated that by responding to the questions and mailing the survey back, the recipients agreed to participate in the research.

Risk to participants

Considering that the proposed research involved answering questions regarding sexual issues and body image related to the genital area, there was a small risk of mental stress. Participants could experience some discomfort or embarrassment in answering the questions. Several steps were taken to minimize potential discomfort.

Prior to the study, potential participants were fully informed of the goals of the research so that they could make an informed decision about whether or not to participate. It was expected that women who were not comfortable with the subject matter would decline to participate. Participants were told in advance that they may choose not to answer a particular item and could quit at any time. Participants were also informed that the study was anonymous and the data would be kept confidential and used for research purposes only.

Should one of the questions cause a participant distress they were encouraged to contact the principal investigator who would then provide guidance and counseling resources appropriate to the type of distress the participant was experiencing. Counseling resources for the students were available through the University of Michigan Counseling and Psychological Services (CAPS). Counseling services for the post childbirth women were available through the University of Michigan Perinatal Clinic in Psychiatry (Maria Muzik, MD agreed to be a resource). Sallie Foley, LMSW (University of Michigan Department of Social Work) agreed to be a resource person should counseling regarding sexuality or sexual abuse issues have been needed for any of the participants.

Measures

In addition to the GSIS, a measure of sexual health as well as a measure of global body image were included in the questionnaires. Estimated time to complete all questions in total was 15 to 20 minutes. All participant groups received the same composite questionnaire.

The Genital Self Image Scale (GSIS)

The GSIS consists of two parts, the first portion contains 17 items where participants rate their feelings about their genitals on a four point scale. The second portion includes 12 items where participants respond as "applies to me" or "does not apply to me". The GSIS is included in its entirety as Appendix G. Permission to use the scale was obtained from the authors.

The Female Sexual Function Index

The Female Sexual Function Index (FSFI, Rosen et al., 2000) was used as a measure of sexual health for this study. The FSFI was chosen because it has been used extensively and has been tested for reliability and validity in a variety of populations. The FSFI is comprised of six domains, desire, subjective arousal, lubrication, orgasm, satisfaction, and pain. In initial development the test-retest reliability coefficients were high ($r = 0.79$ to 0.86) and there was a high degree of internal consistency (Cronbach's alpha values of 0.82 and higher). Construct validity was demonstrated by significantly different mean scores between the female sexual dysfunction group and control groups. In subsequent studies the FSFI was found to have discriminate validity in women with chronic pelvic pain (Wiegel, Meston, & Rosen, 2005), in a population of Dutch women (Brauer, Laan, & Kuile, 2006), in women with vulvar intraepithelial neoplasia (Likes, Stegbauer, Hathaway, & Brown, 2005) and in Malay women (Sidi, Abdullah, Puteh, & Midin, 2007). The FSFI consists of 19 items measured on a six point scale, with the exception of the first two questions (related to

desire) which are measured on a five point scale. The FSFI was also the measure of sexual health used in the initial development of the Genital Self Image Scale (Berman, Berman, Miles, Pollets, & Powell, 2003). The FSFI has been included in its entirety as Appendix H. Permission to use the FSFI was obtained and it is available for use on the author's website *(*www.**fsfi**-questionnaire.com*).*

The Body Esteem Sale

Additionally, the Body-Esteem Scale (BES; Mendelson, Mendelson, & White, 2001) was administered as a measure of global body image. The BES asks participants to report how much (1 = "never" to 5 = "always) they experience each of 23 statements such as "I'm pretty happy about the way I look" and "My weight makes me unhappy." Higher scores indicate more body image satisfaction. The BES has been subject to psychometric evaluation in both adolescents and adults with Cronbach's alphas of .75 to .96. Test-retest correlations were high, r = .83 to .92. The BES consists of three subscales: appearance, weight, and attribution (evaluations attributed to others about one's body and appearance). The BES has been included in its entirety as Appendix I. The scale has been published and permission to use the scale in this study was obtained.

Additional variables of interest

In order to characterize the study population the following demographic information was also obtained: age, ethnicity, level of education, and income. Because these variables can influence sexual health as well as body image and be potential confounders, an additional seven questions were included: (1) Are you currently in a sexual relationship? (2) Are your sexual partner's men/women/both? (3) Have you ever given birth?—if yes, how many vaginally? by cesarean delivery? (4) Have you ever been diagnosed with pelvic organ prolapse? (5) Have you ever had genital surgery? (6) Have you ever considered having genital cosmetic surgery? (7) Have you ever been sexually

abused?—If yes, do you feel you have adequately dealt with it? Since there is an association between sexual abuse and female sexual dysfunction (Lutfey, Link, Litman, Rosen, & McKinlay, 2008) it is important to assess for it. Sexual orientation has also been found to influence sexual function (Lau, Kim, & Tsui, 2006) and needs to be considered as a potential confounder. Finally, an open ended question was included, asking participants to comment on their experience of completing the study materials. The composite questionnaire used for all groups is included as Appendix J.

Analysis

Data were entered into the SPSS statistical program. Data from the entire study population were merged into one data set with the four subgroups identified as such by creating a categorical variable (no genital changes, childbirth with genital trauma, pelvic organ prolapse, prolapse controls). Identifying information such as names or birthdates was not included anywhere in the data collected or in the SPSS data set.

Factor Analysis

The GSIS had been subject to previous factor analysis in an unpublished doctoral dissertation (Swart, 2005). Swart determined a four factor solution. However this factor analysis included the first 18 items only and data from 82 study participants. Therefore, an exploratory factor analysis where there are no predetermined hypotheses about the relationships between the items was undertaken; the goal was to identify the least amount of factors within the scale while also explaining the most shared variance. To determine strength of the relationship between variables, a correlation matrix was inspected to insure there were coefficients of .3 and above. The Kaiser-Meyer-Olkin value was assessed to determine if it was over the recommended value of .6 and Bartlett's Test of Sphericity for level of statistical significance was analyzed.

Principal component analysis was done to assess for the number of components with eigenvalues exceeding 1, and amount of variance explained. A screeplot was

generated to determine if there was a clear break between two components. Parallel analysis was performed to determine whether or not the remaining components should be included in the final factor analysis. Each item included in the scale was assessed for correlations less than .30 indicating they should be removed from the scale (Pett, Lackey, and Sullivan, 2003). Additionally, items were considered for removal if they were highly correlated with one another ($r < .75$) suggesting multicollinearity (Pett et al.).

Descriptive Statistics

To describe the characteristics of the study population as well as the subgroups of populations, descriptive statistics were analyzed. Mean, standard deviation, and ranges were collected for demographics that were continuous variables (such as age and level of education) and frequencies were analyzed for categorical descriptive variables. Mean total scores, standard deviations and ranges for the three measures (FSFI, BES, & GSIS) and the subscales for the BES (appearance, weight, and attribution) and the FSFI (desire, subjective arousal, lubrication, orgasm, satisfaction, and pain) were obtained for the study populations as well as the subgroups.

Hypothesis Testing

H1 – Within each group here will be a significant correlation between genital body image (as evidenced by GSIS scores) and sexual health (as evidenced by Female Sexual Function Index scores).

Within each participant group partial correlation was used to explore the relationship between GSIS scores and sexual health FSIS scores while controlling for global body image (Body Esteem Scores). Correlations were performed for total FSIS scores as well as the six domains (desire, subjective arousal, lubrication, orgasm, satisfaction, and pain). Preliminary analysis was performed to ensure no violation of assumptions of normality, linearity and homoscedasticity. Level of significance (2 tailed) was set at equal to or less than .05.

H2 – Because I propose that genital body image is a concept distinctly different from overall body image, I anticipate that within each participant group scores on the GSIS will not correlate with global body esteem (Body Esteem Scale) scores.

Within each participant group the relationship between GSIS scores and BES scores was investigated using Pearson product-moment correlation coefficient. Correlations were performed for total BES scores as well as the three subscales (appearance, weight, and attribution). Preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Level of significance (2 tailed) was set at equal to or less than .05.

H3 – Women with pelvic organ prolapse will have significantly more genital body image dissatisfaction (as evidenced by lower GSIS scores) than age matched control participants.

Using independent t-tests, mean GSIS scores were compared for the group of women with prolapse and the age matched control participants. Level of significance (2 tailed) was set at equal to or less than .05.

H4 – Women post vaginal birth with significant genital tract trauma will have significantly more genital body image dissatisfaction (as evidenced by lower GSIS scores) than the nulliparous participants.

To measure construct validity of the Genital Self Image Scale (GSIS), scores for groups that would be expected to differ on the measure were compared. Using independent t-tests mean GSIS scores for the women following childbirth involving genital trauma were compared with the women who had not given birth. Level of significance (2 tailed) was set at equal to or less than .05.

Internal consistency reliability

The internal consistency and reliability of the Genital Self Image Scale was determined using the Cronbach's α statistic, which represents the internal consistency-

reliability coefficient. The closer to 1.0 the result, the more internally consistent the scale, with a recommended minimum value of .7 or above (DeVellis 2003).

Test-retest reliability

A subset of 40 participants from the group of undergraduate women in the Women's Studies course were asked to repeat the questionnaire three weeks after initial administration. The questionnaire was administered under the same test conditions. The extent to which the two sets of scores are correlated was determined using the Pearson product-moment correlation coefficient (r_{xy}). Additionally, the test of repeatability described by Bland and Altman (1998) was used to calculate measurement error. This test is based on standard error of measurements between test and retest scores. Standard error of measurements is multiplied by 2.77 to get the 95% confidence interval of repeatability. This indicates the smallest amount of change between the 2 different measurements that must be observed before the change can be considered to have exceeded the measurement error (minimum detectable change). As recommended by Bland and Altman, plots were created to show scores from time one against scores from time two as well as the difference between the 2 measures plotted against zero (the ideal being no difference between scores).

Chapter 5

Results

Specific Aim 1

Content Validity

The first step in validation of the Genital Self Image Scale (GSIS) was determining content validity. Traditionally, content validity has been described as a two stage process, development and judgment quantification (Grant & Davis, 1997). However, since the GSIS is a previously developed scale only the second stage, judgment quantification, was carried out in this analysis.

Participants

Content validity judges were purposefully selected to include a variety of both clinical and research expertise in the areas of women's sexual health and/or gynecologic surgery (Table 5-1). All five experts responded to email invitations for participation and agreed to review the GSIS scale, returning their responses via email.

As previously described, the expert participants were provided with a Content Validity Index (Appendix C). These experts were also asked to share qualitative comments regarding the individual GSIS items as well as the overall questionnaire. They were encouraged to suggest additional content areas if they felt there were items missing from the questionnaire.

Table 5-1 Characteristics and Qualifications of Content Validity Experts

Expert	Position	Credentials	Specialty	Years of experience
1	Director – Center for Sexual Health Department of Social Work – Tertiary care, academic teaching hospital	Licensed Medical Social Worker	Certified sex therapist and sexuality educator	31
2	Professor, Director of Urogynecology, Director of Female Pelvic Medicine and Reconstructive Surgery Fellowship	Urogynecology	M.D.	16
3	Primary care nurse practitioner, Federally funded rural clinic & University	Women's health,menopause clinician, certificate of completion sex therapy	PhD, RN, CNP	19
4	Professor, Department of Obstetrics and Gynecology, Co-director of the Center for Vulvar Diseases	Gynecology, vulvar diseases	MD	18
5	Obstetrician/gynecologist – Tertiary care/teaching hospital	Gynecologic surgery	MD	12

The experts were asked to rate each item on the GSIS as not relevant, somewhat relevant, relevant, or very relevant. These ratings were then compiled to determine the validity rating for each item (number of experts who rate the item as relevant or very relevant). The content validity for the entire scale was then calculated by determining the ratio of valid items to the entire scale.

Results

Fourteen of the items received a relevant or very relevant rating from all five experts. Four items received a "not relevant" from one or more of the experts. The content validity index scores are included in composite form as Table 5-2. Thirteen items received a cumulative rating of 1.0 and ten received a rating of .80 resulting in a total of 23 content valid items. Two items had a cumulative rating of .60 and four items had a cumulative rating of .40. According to Wynd, Schmidt, and Schaefer (2003) those items that do not rate at .80 or better may be invalid and removing them from the scale should be considered. Because the GSIS is a previously developed scale these items were retained for the exploratory factor analysis portion of the validity testing.

The Content Validity Index for the entire instrument was assessed by determining the proportion of items judged content valid by the total number of items. Twenty three of the 29 items on the GSIS were judged content valid by the experts resulting in a total scale content validity index for the GSIS of .79. An index of .70 or better is necessary to determine a reasonable measure of validity of a scale (Wynd, Schmidtt, & Schaefer, 2003).

The next step of the instrument validity testing was to qualitatively assess the expert's comments. Using a process of content analysis, the written comments were reviewed to assess for themes, consistency and coherence of feedback. Four of the five experts included comments or suggestions, three of whom suggested the issue of sexual abuse and genital trauma be addressed. Two experts suggested that some women may not feel their genitals are "normal" when compared to other women's, and one expert suggested adding a question that addressed pleasure received from one's genitals. As a result of this process two items were added to the scale: "I enjoy my genitals" and "I feel my genitals are like other women's". Additionally, an item was added to the questionnaire to assess for perceived genital trauma; "If you have

experienced trauma or hurt to your genitals (through accident, infection, surgery, abuse, birth – please circle appropriate category) please answer the following question – “I felt better about my genitals before hurt/trauma”.

Table 5-2 Genital Self Image Scale Content Validity Index

ITEM	Not relevant	Somewhat relevant	Relevant	Very Relevant	Content validity index
I feel anxiety and worry when I think about how my genitals function.			2	3	1.0
I look at my genitals.		1	2	2	.8
I feel confident that I understand my sexual anatomy.		1	2	2	.8
When I think about my genitals, I feel ashamed or embarrassed.				5	1.0
I feel ashamed/embarrassed about the size of my genitals.		3		2	.4
I feel ashamed/embarrassed about the shape of my genitals.			3	2	1.0
I feel ashamed/embarrassed about the look of my genitals.			2	3	1.0
I feel ashamed/embarrassed about the odor of my genitals.			2	3	1.0
I feel my genitals work/function as they should.		1	2	2	.8
I am conscious of trying to hide my genitals from being seen by my partner.		2	1	2	.6
I feel that my genitals are attractive and would arouse my partner.			2	3	1.0
As a child/adolescent, I was self-conscious or embarrassed about my genitals.		3	1	1	.4
I use feminine hygiene products (douches, sprays)	2	1		2	.4
Growing up, my family/care givers gave me positive messages about my genitals.		2	2	1	.6

Growing up, I was given the message that touching my genitals was “bad” or “dirty.”			3	2	1.0
Unattractive		1	1	3	.8
Embarrassing		1	1	3	.8
Disgusting				5	1.0
Attractive			3	2	1.0
Malodorous (bad smelling)			2	3	1.0
Offensive		1		4	.8
Inadequate	1		3	1	.8
Healthy		1	1	3	.8
Functional	1		2	2	.8
Desirable			1	4	1.0
Well-shaped		1	3	1	.8
Good-sized	1	2	1	1	.4
Content Validity of Total GSIS					.76

Specific Aim 2

Item Reduction/Factor Determination

The aim of this portion of the analysis was to determine the underlying structure of the Genital Self Image Scale (GSIS), to potentially refine and reduce the number of items included in the GSIS and then to identify the number factors (subscales).

Suitability of the scale for factor analysis

The 29 original items of the Genital Self Image Scale (GSIS) along with the two additional items ("I enjoy my genitals", "I feel my genitals are like other women's") were subjected to Principal Components Analysis (PCA) using SPSS version 16. Prior to analysis, negatively worded items were reverse coded. An initial factor analysis was then undertaken for each individual participant group (undergraduates, women from a previous study of prolapse mechanisms and treatment, and women after childbirth) in order to determine if the data from the three groups could be merged into a single study sample thereby strengthening the analysis by maximizing sample size. Figure 5-1 depicts the mean scores on the GSIS for each participant group. In the initial factor analysis each group showed nine factors with eigenvalues greater than 1.0, all with nearly identical factor loadings. Because the factor analyses for the individual groups were very similar, using the combined participant groups was deemed appropriate (see Tables 5-3 and 5-4 for demographic and sexuality/health characteristics). Utilizing all three study groups yielded a total of 277 participants, exceeding the minimum of five participants per item to be factor analyzed as recommended by Tabachnick and Fidell (2007).

The full data set was then analyzed for its suitability for factor analysis. Inspection of the correlation matrix revealed the presence of 52 coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .86 exceeding the recommended value of .6

(Kaiser, 1974) and Bartletts' Test of Sphericity was highly significant ($p < .001$), supporting the factorability of the correlation matrix.

Table 5-3 Demographic Characteristics of Participants for Factor Analysis

Characteristics	Total Sample (N = 277)	
	N	%
Race/Hispanic origin		
Black	18	6.5
Hispanic	14	5.1
White	217	78.3
Asian	17	6.1
Pacific Islander	1	.4
American Indian	3	1.1
Other	7	2.5
Age	Mean = 30.8 yrs	SD = 16.4 yrs
Years of education	Mean = 14.6 yrs	SD = 1.6 yrs

Figure 5-1 Comparison of Mean GSIS Scores between Groups

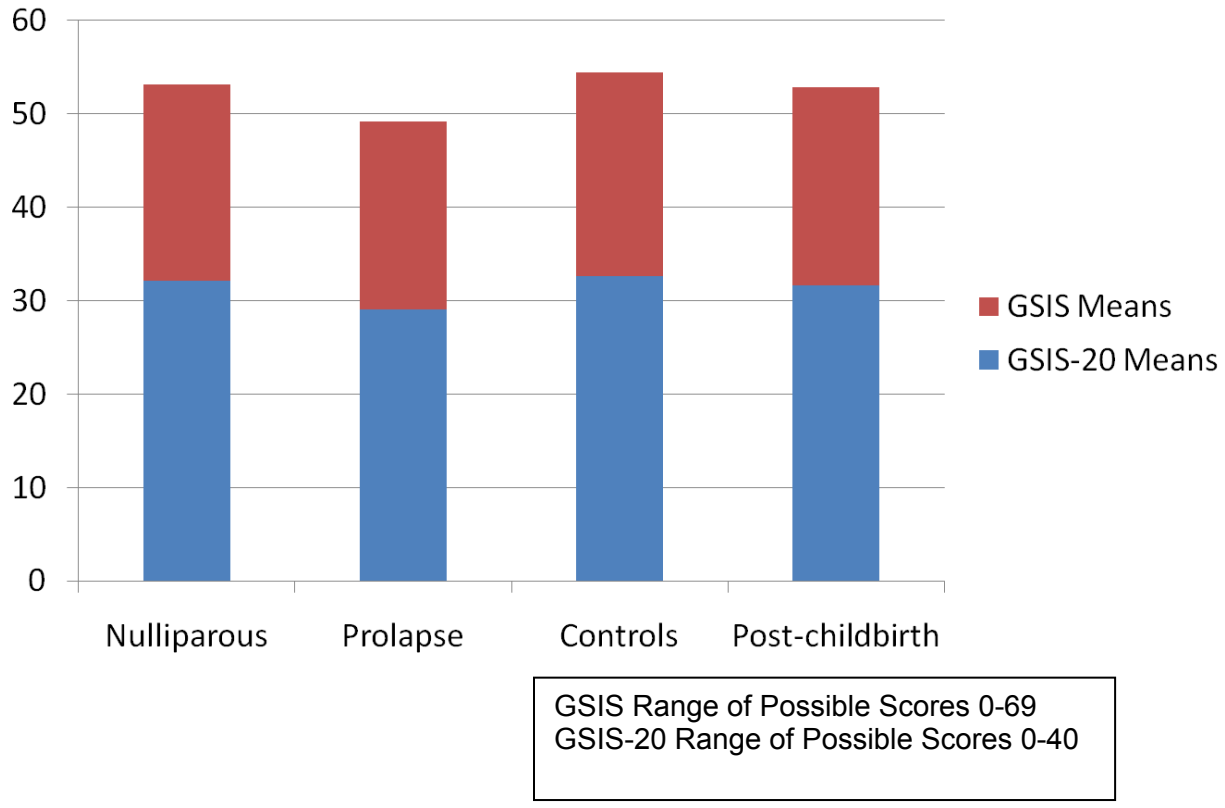


Table 5-4 Sexuality and Health Characteristics of Participants for Factor Analysis

Characteristics	Total Sample (N = 277)	
	N	%
Currently in a sexual relationship?		
Yes	185	66.8
No	89	32.1
Missing	3	1.1
Are your sexual partner/s?		
Men	251	90.6
Women	4	1.4
Both	3	1.1
Missing	14	5.1
Chose not to answer	5	1.8
Ever given birth?		
Yes	159	57.4
No	118	42.6
Ever been diagnosed with prolapse?		
Yes	34	12.3
No	243	87.7
Ever considered genital cosmetic surgery?*		
Yes	16	5.8
No	258	93.1
Missing	2	.7
Chose not to answer	1	.4
Ever been sexually abused?		
Yes	22	7.9
No	253	91.3
Choose not to answer	2	.7

* (labiaplasty, vaginoplasty, vaginal rejuvenation, hymen reconstruction)

Exploratory Factor Analysis

Principal components analysis revealed nine eigenvalues exceeding 1, explaining 64.4% of the variance. The first five factors exceeded the criterion value obtained from parallel analysis (Watkins, 2000). Inspection of the screeplot revealed a break between factors five and six, also supporting a five factor solution. Prior to further

analysis of the factors however, further steps were taken to explore each item to determine whether or not it should remain in the scale. Identification of the final number of factors to include in the scale could then be determined.

Item reduction

Removing items from the GSIS scale could potentially strengthen the validity of the instrument. Additionally, reducing the number of items on the GSIS without compromising the usefulness of the scale would decrease participant burden. The correlation matrix was examined and revealed five items whose correlations were < .30, suggesting that they should be removed (Pett, Lackey, and Sullivan, 2003). These items were: 1) "I look at my genitals" (.172), "I feel confident that I understand my sexual anatomy" (.296), 3) "Growing up my family gave me positive messages about my genitals" (.185), 4) "Growing up I was given the message that touching my genitals was bad or dirty" (.195), and 5) "I use feminine hygiene products" (.195).

Three items were highly correlated with one another (r > .75) suggesting multicollinearity, or duplication of items (Pett, Lackey, & Sullivan, 2003). These items were: 1) "I feel ashamed/embarrassed about the shape of my genitals", 2) "I feel ashamed/embarrassed about the size of my genitals", and 3) "I feel ashamed/embarrassed about the look of my genitals." The item with the highest communality "I feel ashamed/embarrassed about the shape of my genitals" (.840) was retained and the others removed. "Well shaped" and "good sized" had a correlation of .779 with "well shaped" exhibiting the most communality (.770), therefore "good sized" was removed.

Additionally, there were seven items that did not receive a content validity score of .8 or better in content validity analysis. Two of the items, 1) "Growing up my family gave me positive messages about my genitals" and 2) "I use feminine hygiene products", were also items that did not demonstrate adequate correlations. Two other items, 1) "I

feel ashamed/embarrassed about the size of my genitals" and 2) "good sized", were highly correlated with other items. The remaining two items 1)"I am conscious of trying to hide my genitals from being seen by my partner" and 2) "As a child I was self conscious or embarrassed about my genitals" were removed from the GSIS because they were both not rated as content valid and exhibited low communality (less than .30).

One item, "disgusting" met the criteria for correlation (.327 with "unattractive") however this item had a communality (how much variance this item explains) of only .217 indicating that removal of the item would further refine the scale (Pallant, 2007).

The final refined GSIS included 20 items that met criteria for content validity, were sufficiently correlated with other items without exhibiting multicollinearity, and exhibited communalities of .30 or greater. The refined GSIS will be referred to as the GSIS-20.

Factor analysis of the GSIS-20

A new factor solution with the remaining 20 items was then undertaken. The revised factor analysis had a Kaiser-Meyer-Olkin sampling adequacy value of .851 with a highly significant ($p < .001$) Bartlett's Test of Sphericity supporting the factorability of the GSIS-20. Principal Components Analysis of the GSIS-20 revealed the presence of five factors with eigenvalues exceeding 1, explaining 29.2%, 9.4%, 7.8%, 7.1%, 5.8% (for a total of 59.4%) of the variance respectively. An inspection of the screeplot revealed a clear break between the fourth and fifth factor. Additionally, only the first four factors exceeded the criterion value obtained from Parallel Analysis (Watkins, 2000) supporting a final four factor solution.

Confirmatory factor analysis was conducted using a four factor solution and the 20 remaining items on the GSIS explaining a total of 58.9% of the variance. To aid in the interpretation of the factors an oblique (Oblimin) rotation was performed. According to Tabachnick and Fidel (2007) orthogonal rotations assume that the underlying

constructs are not correlated; therefore, an oblique rotation (Oblimin) may be more appropriate for measures of constructs such as body image that are likely to be inter-correlated. The four factor solution rotated in 11 iterations with five items loading on the first factor, six on the second, five on the third, and four on the fourth. The pattern and structure matrices showed nearly identical factor loadings (Tables 5-5 and 5-.6). Most item-to-factor loadings were .63 or greater, indicating very good or excellent shared variance (Pett, Lackey, & Sullivan, 2003). The four factor solution was interpreted and the factors were named by identifying the theme common to the items loading on those factors. The first factor included negatively worded descriptive items such as “When I think about my genitals I feel ashamed or embarrassed” describing shame, or lack of confidence therefore this factor was labeled “Genital Confidence”. The second factor, identified as “Genital Appeal”, included six items which were positive attributes such as, “I feel that my genitals are attractive and would arouse my partner”. The items loading on the third factor were functional in nature, for example, “I feel my genitals work/function as they should” therefore it was named “Genital Function”. The term most accurately describing factor four, which included items such as “malodorous” and “offensive”, was “Genital Comfort”.

Table 5-5 Pattern Matrix

Item	Factor 1 Genital Conf.	Factor 2 Genital App.	Factor 3 Genital Function	Factor 4 Genital Comf.	Communality
I feel ashamed embarrassed about the shape of my genitals	.852				.690
When I think about my genitals, I feel ashamed or embarrassed	.668				.585
Embarrassing	.620				.558
Unattractive	.615				.533
I have sad/depressed feelings when I think about my genitals	.570				.529
Desirable		.807			.639
I feel that my genitals are attractive and would arouse my partner		.784			.632
Attractive		.707			.538
I enjoy my genitals		.650			.554
I feel comfortable/positive about my partner seeing my genitals		.605			.456
Well-shaped		.575			.494
Functional			.771		.578
Healthy			.701		.496
I feel my genitals work/function as they should			.592		.395
I feel my genitals are normal, or like other women's			.511		.574
I feel anxiety and worry when I think about how my genitals function			.503		.465
Malodorous				.712	.555
Offensive				.673	.492
Inadequate				.628	.476
I feel ashamed/embarrassed about the odor of my genitals				.581	.392

.45 (20% shared variance): fair
.55 (30% shared variance): good
.63 (40% shared variance): very good
.71 (50% shared variance): excellent (Pett, Lackey, & Sullivan, 2003)

Table 5-6 Structure Matrix

Item	Factor 1 Genital Conf.	Factor 2 Genital Appeal	Factor 3 Genital Function	Factor 4 Genital Comf.
I feel ashamed/embarrassed about the shape of my genitals	.822			
When I think about my genitals, I feel ashamed or embarrassed	.734			
Embarrassing	.695			
Unattractive	.694			
I have sad/depressed feelings when I think about my genitals	.642			
I feel that my genitals are attractive and would arouse my partner		.812		
Desirable		.754		
Attractive		.708		
I enjoy my genitals		.726		
I feel comfortable/positive about my partner seeing my genitals		.689		
Functional			.744	
Healthy			.696	
I feel my genitals are normal, or like other women's			.654	
I feel my genitals work/function as they should			.623	
I feel anxiety and worry when I think about how my genitals function			.593	
Malodorous				.696
Offensive				.675
Inadequate				.655
I feel ashamed/embarrassed about the odor of my genitals				.606

.45 (20% shared variance): fair
.55 (30% shared variance): good
.63 (40% shared variance): very good
.71 (50% shared variance): excellent (Pett, Lackey, & Sullivan, 2003)

The Correlation Matrix for the four factor solution revealed correlations ranging between .198 and .302 (Table 5-7) indicating an appropriate amount of correlation and confirming the appropriate use of an oblique rotation solution (Nunnally and Bernstein 1994). Because some experts recommend applying both an orthogonal and oblique rotation, an orthogonal (Varimax) rotation was also conducted and analyzed using a four factor solution resulting in items loading identically as they did using the oblique (Oblimin) solution with negligible to no difference in the item-to-factor loadings.

Table 5-7 Factor Correlation Matrix

Factor	Genital Conf.	Genital Appeal	Genital Function	Genital Comfort
Shame	-	-.295	-.302	.241
Esteem	-	-	.250	-.198
Function	-	-	-	-.194
Disgust	-	-	-	-

Possible scores for the GSIS ranger from a low of zero to a high of forty, with lower scores indicating more genital body image dissatisfaction. Means, standard deviations and ranges for the total GSIS-20 as well as subscales in this population of women are reported in Table 5-8.

Table 5-8 GSIS-20: Means, Standard Deviations and Ranges

	N	Mean	Standard Deviation	Range (possible score)
GSIS-20 Total	290	31.9	5.8	10 – 40 (0 - 40)
Genital Appeal	293	7.3	3.1	0 – 12 (0 – 12)
Genital Confidence	332	10.2	1.5	2 – 11 (0 – 11)
Genital Function	334	9.0	1.7	1 – 11 (0 – 11)
Genital Comfort	332	5.2	1.0	1 – 6 (0 – 6)

Specific Aim 3

Construct Validity

Demographic Results

Nulliparous participant characteristics

As previously described, an undergraduate Women's Studies course was used to recruit young women who had never given birth (nulliparous). Questionnaires were distributed to all 230 female students who were in a class of 301 students in total. Out of the 230 surveys passed out to students, 201 (87.4%) were returned. Descriptive analysis revealed that nine students (3.9%) did not continue completion beyond page one of the six page questionnaire. Analysis of these non-completers was limited to comparison of demographic information with those who completed or nearly completed the questionnaires. There was no statistical difference in age between completers (19.9 years) and non completers (19.4 years, $p = .61$) and mean years of education was the same between groups (14.6 years). A Chi-square test of independence indicated no difference between completers and non-completers in ethnicity, ($\chi^2 = 1.9$, $p = .87$). Sixteen (8.4%) of the completers versus none of the non-completers indicated "yes" on the question "have you ever been sexually abused?" Whereas 54% of the completers indicated they were in a sexual relationship (n = 102), only 22% of the non- completers indicated being in a sexual relationship, a difference that approached statistical significance ($\chi^2 = 3.5$, $p = .06$). Given the nature of the questions it could be that some of the students who did not have a sexual partner did not feel that the questions pertained to them or that their answers to the questions would not be helpful to the research. The remainder of the results will include only those 192 nulliparous participants identified as completers.

The nulliparous participant sample (Table 5-9) was predominantly White (73.7%) with ages ranging from 18 to 25 (mean age of 19.9 years, sd = 1.2). Mean years of

education for the nulliparous participants by self-report was 14.6 (sd 1.2) years, ranging from 12 to 16.

Table 5-9 Demographic Characteristics of Nulliparous Participants

Characteristic	Total Sample (N = 192)	
	N	%
Race/Hispanic origin		
Black	15	7.9
Hispanic	11	5.8
White	140	73.7
Asian	17	8.0
American Indian	1	.5
Other	6	3.2
Missing	2	1.0
Age	Mean = 19.9 yrs	SD = 1.2 yrs
Years of education	Mean = 14.6 yrs	SD = 1.2 yrs

Questions regarding sexuality and health considered pertinent to the analysis were also included in the data collection (Table 5-10). Slightly over half of the participants indicated they were currently in a sexual relationship (54%) with the majority listing their sexual partners as men (85.3%). Although there were 26 nulliparous participants who were missing data for the item "are your sexual partner(s) men, women, both?" all of these also had indicated they were not currently in a sexual relationship. Only one undergraduate student had given birth; because she indicated giving birth by cesarean delivery (and not vaginally), the data were not excluded from the analysis. None of these participants indicated they had been diagnosed with pelvic organ prolapse. Three nulliparous participants indicated they had undergone genital surgery; reasons given were "removing cancerous lesions", "hematoma removal", and "hymenectomy". Sixteen of the 192 participants (8.3%) answered *yes* to the question "have you ever been sexually abused?" of which eleven (68.7%) answered *no* to "do you feel that you have adequately dealt with it?"

Table 5-10 Sexuality and Health Characteristics of Nulliparous Participants

Characteristics	Total Sample (N = 192)	
	N	%
Currently in a sexual relationship?		
Yes	103	53.7
No	86	44.7
Missing	3	1.6
Are your sexual partner/s?		
Men	164	85.3
Women	3	1.6
Both	3	1.6
Missing	20	10.4
Choose not to answer	2	1.1
Ever given birth?		
Yes (vaginally)	0	
Yes (by c-section)	1	.5
No	191	99.5
Ever considered genital cosmetic surgery?		
Yes	8	4.2
No	184	95.8
Ever been sexually abused?		
Yes	16	8.3
No	171	89.1
Choose not to answer	2	1.0
Missing	3	1.6

(labiaplasty, vaginoplasty, vaginal rejuvenation, hymen reconstruction)

Participant characteristics for prolapse participants

One hundred and thirty participants from a previous study of pelvic organ prolapse mechanisms and treatments were sent a letter introducing them to the study. Some of these women were known to have pelvic organ prolapse while others were part of an age matched control group. As described previously, this letter provided them with an option to decline participating (either via telephone or email). Three letters were returned undeliverable and four women opted to not participate, hence 123 questionnaires were sent two weeks after mailing the introductory letter. Three women declined participation by returning the questionnaire and the study incentive. A total of

92 (72%) of the women who were contacted participated. Of these, 47 (51%) indicated they had been diagnosed with prolapse and 45 (49%) that they had not. Over 80% of the women in both groups were White, and mean years of education was 14.0 for women with prolapse and 14.2 for the women in the age control group (Table 5-11). There were no statistically significant between group differences in any of the demographic information collected.

Table 5-11 Demographic Characteristics of Participants with Prolapse and Age Matched Control Participants

Characteristics	Total sample participants with prolapse		Total sample age matched control participants	
	N = 47		N = 45	
Ethnicity	N	%	N	%
Black	4	8.5	7	15.6
Hispanic	2	4.3	1	2.2
White	38	80.9	37	8.2
Asian	2	4.3	0	
Other	1	2.1	0	
	Mean	Range	Mean	Range
Age	60.3 years	35 - 82	58.1 years	38 - 77
Years of education	14.0 years	9 - 16	14.2 years	9 - 16

Data related to sexuality and health was analyzed using Chi square tests for differences between groups. There were no significant differences between groups with the exception of number of women who were considering genital cosmetic surgery; with seven (14.9%) in the prolapse group and none in the age matched control group (Table 5-12).

Table 5-12 Sexuality and Health Characteristics of Participants with Prolapse and Age Matched Control Participants

Characteristics	Total sample participants with prolapse N = 47		Total sample age matched control participants N = 45	
	N	%	N	%
Currently in a sexual relationship				
Yes	23	48.9	28	63.6
No	23	48.9	16	36.4
Missing	1	2.1	1	
Sexual partners				
Men	37	78.7	34	75.6
Women	0		3	6.7
Both	0		0	
Choose not to answer	2	4.3	1	2.2
Missing*	8	17.0	7	15.6
Considered FGCS**				
Yes	7	14.9	0	
No	40	85.1	45	100
Ever been sexually abused				
Yes	5	10.6	5	11.1
No	42	89.4	40	88.9
	Mean	Range	Mean	Range
Vaginal births	2.7	1 – 8	2.3	0 – 5

* Only missing in participants who were not sexually active
** $p < .01$

Characteristics of participants post childbirth

A limited chart review was performed using the following criteria: women age 18 or older, English speaking, vaginal delivery at 37 weeks or greater at the University of Michigan Women's Hospital in the 2008 calendar year and delivery of a healthy baby. Further screening was done to identify women who sustained significant genital tract trauma – those whose birth was assisted by vacuum or forceps, those who sustained third or fourth degree tears, or those who sustained multiple sites of laceration. This screening resulted in a total of 106 potential study participants. These women were

mailed an introductory letter (between six weeks and one year following the birth); five letters were returned undeliverable and one woman declined participation. Of the 100 questionnaires that were sent two weeks later, five were returned to sender, resulting in 95 potential research participants. A total of 56 women (58%) returned completed questionnaires.

Demographic characteristics of the sample are reported in Table 5-13. This group of participants was predominantly White (83.9%) and educated (mean years of education 15.1).

Table 5-13 Demographic Characteristics of Participants Post Childbirth

Characteristic	Total sample of participants post childbirth (N = 56)	
	N	%
Ethnicity		
Black	0	
Hispanic	2	3.6
White	47	83.9
Asian	3	5.4
Pacific-Islander	1	1.8
American Indian	2	3.6
Other	1	1.8
	Mean	Range
Age	30.0 years	20 - 47
Years of education	15.1 years	8 - 16+

All but one of the participants indicated that they were in a sexual relationship and all indicated men as their sexual partners (Table 5-14). Of interest, seven of the women indicated they had undergone genital surgery and identified that surgery as an episiotomy, mediolateral episiotomy, or an episiotomy repair. None of the women had been diagnosed with pelvic organ prolapse. Two women (3.6%) indicated that they had considered genital cosmetic surgery. Of the women post childbirth, three (5.4%) self reported a history of sexual abuse.

Table 5-14 Sexuality and Health Characteristics of Participants Post Childbirth

Characteristics	Total sample of participants post childbirth (N = 56)	
	N	%
Currently in a sexual relationship		
Yes	55	98.2
No	1	1.8
Sexual partners		
Men	56	100
Women	0	
Both	0	
Ever had genital surgery		
Yes	7	12.5
No	49	87.5
Considered FGCS		
Yes	2	3.6
No	52	92.9
Choose not to answer	1	1.8
Missing	1	1.8
Ever been sexually abused		
Yes	3	5.4
No	52	94.5
Choose not to answer	1	1.8

GSIS Scores and Demographic Correlates

Statistical analysis was performed to identify if there were differenced in GSIS scores related to demographic or sexuality/health characteristics. Within groups correlations between age and GSIS scores indicated there was not a significant correlation in the nulliparous group (r = .104 for GSIS and r = .100 for GSIS-20) the group with prolapse (r = .157 for GSIS and r = .104 for GSIS-20), the age matched control group (r = .108 for GSIS and r = .101 for GSIS-20) or the participants post-childbirth (r = .040 for GSIS and r =.033 for GSIS-20). The remaining correlations were performed using the combined sample. Correlations were not significant between years of education and GSIS scores (r = .089) and years of education and GSIS-20 scores (r =

.226) were not significant. Additionally, one way ANOVA for comparison of GSIS and GSIS-20 indicated there was not a statistically significant difference in scores by ethnicity. Independent t-tests indicated there was not a statistically significant difference in GSIS or GSIS-20 scores between women who indicated they were sexually active and those who did not, nor was there a statistically significant difference between those women who identified their partners as men only, women only, or both.

Hypothesis Testing: H1 – Within each group there will be a significant correlations between genital body image (as evidenced by GSIS scores) and sexual health (as evidenced by FSIS scores).

Correlations between GSIS and FSFI Scale in the Nulliparous Participants

Construct validity of the GSIS and GSIS-20 was determined using a hypothesis testing approach, whereby genital body image dissatisfaction (as evidenced by lower scores on the GSIS) will correlate with sexual dysfunction (as evidenced by lower Female Sexual Functioning Index scores, Table 5-15). The Female Sexual Functioning Index (FSIS, Rosen et al., 2000) is a measure of sexual function that has been used extensively in sexual health research and has been found to have reliability and validity across a variety of populations. Pearson product moment correlations were performed to explore the relationship between GSIS and FSIS scores, while controlling for overall body image (Body Esteem Scale) for the nulliparous group of women who self reported as being in a sexual relationship (N = 103). There were significant correlations between original GSIS scores and the FSFI total (r = .326) as well as the subscales Arousal (.263), Orgasm (.306), and Satisfaction (.401). There was not a significant correlation between original GSIS scores and the Lubrication and Pain subscales of the FSFI. The data was re-analyzed using the GSIS-20 with very similar results. The Genital Appeal and Genital Function subscales showed correlations with each of the FSIS subscales with the exception of Pain whereas the Genital Confidence subscale correlated with total

FSFI, Satisfaction, and Orgasm only. Genital Comfort did not show any significant correlations.

Table 5-15 Correlations between GSIS and FSFI Score in the Nulliparous Participant Group (N = 167)

Scale	Total FSFI	FSFI Desire	FSFI Lubrication	FSFI Arousal	FSFI Orgasm	FSFI Satisfaction	FSFI Pain
GSIS	.326**	.167*	.132	.263**	.306**	.401*	.088
GSIS-20	.330**	.139	.157	.264**	.285**	.425**	.108
Appeal	.274**	.169*	.184*	.288**	.291**	.399**	.110
Conf.	.203*	.042	.028	.122	.169*	.306**	.029
Function	.335**	.209**	.190*	.246**	.270**	.265**	.114
Comfort	.165	.081	.063	.073	.112	.095	.088

*p<.05 (2 tailed)
**p<.01 (2 tailed)

Correlations between GSIS and FSFI Scale in the Participants with Prolapse

As with the nulliparous participants, construct validity of the GSIS and GSIS-20 was determined in the group of participants with prolapse using a hypothesis testing approach, whereby correlations between GSIS scores and scores on the Female Sexual Function Index (FSFI) were explored (Table 5-16). Pearson product moment correlations were performed to explore the relationship between GSIS and sexual functioning, while controlling for global body image (Body Esteem Scale) in the participants who self reported as being in a sexual relationship (N = 23). As with the nulliparous participant group there were significant correlations between original GSIS scores and the FSFI total (r = .432) as well as the Orgasm (r = .389) and Satisfaction (r = .530) subscales. There was not a significant correlation between original GSIS scores and the Lubrication, Desire, Arousal or Pain subscale of the FSFI.

The data was re-analyzed using the GSIS-20 with very similar results (Table 5 – 16). The total GSIS-20 significantly correlated with the FSFI total (r = .355) as well as the Satisfaction subscale (r = .492).

Table 5-16 Correlations between GSIS and FSFI Scores in the Participants with Prolapse (N = 34)

Scale	Total FSFI	FSFI Desire	FSFI Lubrication	FSFI Arousal	FSFI Orgasm	FSFI Satisfaction	FSFI Pain
GSIS	.432*	.294	.186	.278	.389*	.530**	.121
GSIS-20	.355*	.255	.111	.208	.317	.492**	.055
Appeal	.533*	.318	.378*	.433*	.478*	.594**	.237
Conf.	.062	.103	.123	.031	.003	.332	.061
Function	.129	.169	.031	.094	.290	.370*	.044
Comfort	.481*	.433*	.060	.177	.026	.389*	.122

*p<.05 (2 tailed)
**p<.01 (2 tailed)

Data for the age matched control participants were analyzed using the same analysis methods resulting in similar correlations (see Table 5-**). There was a significant correlation between the GSIS-20 and FSFI total (r = .461) as well as the Desire, Lubrication and Pain subscales. Genital Appeal exhibited positive correlations with the FSFI total (r = .608) as well as each of the FSFI subscales. No other subscales exhibited significant correlations within this group of participants.

Table 5-17 Correlations between GSIS and FSFI Scores in Age Matched Control Participants (N = 32)

Scale	Total FSFI	FSFI Desire	FSFI Lubrication	FSFI Arousal	FSFI Orgasm	FSFI Satisfaction	FSFI Pain
GSIS	.406*	.437*	.302	.297	.215	.359	.505*
GSIS-20	.461*	.434*	.354*	.305	.229	.391*	.506*
Appeal	.608**	.501*	.515**	.451*	.363*	.484*	.627**
Conf.	.185	.107	.105	.071	.099	.176	.127
Function	.163	.091	.018	.011	.069	.249	.064
Comfort	.128	.146	.131	.132	.261	.146	.135

*p<.05 (2 tailed)
**p<.01 (2 tailed)

Correlations between GSIS and FSFI for Women Post Childbirth

As with the other participant groups Pearson product moment correlations were performed to explore the relationship between GSIS and sexual functioning, while controlling for global body image (Body Esteem Scale) in the participants who self reported that they were currently in a sexual relationship (N = 55). Unlike the undergraduate and the prolapse/control participants there were no significant correlations between the variables (Table 5-18) in this group of participants who had recently given birth.

Table 5-18 Correlations between GSIS and FSFI Scores for Participants Post Childbirth (N = 53)

Scale	Total FSFI	FSFI Desire	FSFI Lubri-cation	FSFI Arousal	FSFI Orgasm	FSFI Satisfaction	FSFI Pain
GSIS	.002	.118	-.028	.028	-.009	.118	-.045
GSIS-20	.050	.146	-.021	.022	.022	.132	-.006
Appeal	.094	.194	.013	.031	.149	.078	.094
Conf.	.000	-.110	.019	.149	.021	.029	.000
Function	.035	.105	.042	.078	.118	-.124	.035
Comfort	-.044	.067	.098	.094	-.069	.035	-.044

Hypothesis Testing: H2 – Global body image (as evidenced by Body Esteem Scale Scores) will not correlate with genital body image (as evidenced by GSIS scores).

Correlation between BES and GSIS scores in the Nulliparous Participants

Pearson's correlations were performed between the GSIS scores (original and GSIS-20), total Body Esteem Scale (BES) scores as well as the three BES subscales, Weight, Appearance, and Attributes (Table 5-19). The original hypothesis was that genital body image was a concept distinct from global body image. This hypothesis was not supported in that there *was* a significant correlation between GSIS scores and the total BES score (r = .503) as well as each of the subscales (r = .402 for Weight, r = .519 for Appearance, and r = .463 for Attributes). The GSIS-20 showed very similar correlations with the BES and its subscales as did the GSIS-20 subscales (Genital Appeal, Genital Confidence, and Genital Function) with the exception of Genital Comfort which did not significantly correlate with the Attributes subscale of the BES. Contrary to the initial hypothesis, there is a moderate to strong correlation between global body

image and genital body image indicating that genital body image as a concept is related to overall body image in this population.

Table 5-19 Correlations between BES and GSIS Scores in the Nulliparous Participants (n = 167)

Scale	Total BES	Weight	Appearance	Attribute
Original GSIS	.503**	.402**	.519**	.463**
GSIS-20	.500**	.406**	.506**	.464**
Appeal	.475**	.403**	.446**	.474**
Conf.	.363**	.287**	.371**	.357**
Function	.300**	.218**	.314**	.266**
Comfort	.242**	.193**	.270**	.140

*p<.05 (2 tailed)
**p<.01 (2 tailed)

Correlation between BES and GSIS Scores in Women with Prolapse

As with the nulliparous participants, Pearson's correlations were performed between the GSIS scores (original and GSIS-20), total Body Esteem Scale (BES) scores as well as the three BES subscales, Weight, Appearance, and Attributes for the group of participants with prolapse (Table 5-20). Again, the hypothesis that genital body image would not correlate with overall body image was not supported. There were significant correlations between GSIS scores and total BES score (r = .435) as well as two of the subscales (r = .425 for Weight and r = .583 for Appearance). The GSIS-20 showed very similar correlations with the BES and its subscales.

Table 5-20 Correlations between BES and GSIS scores in Participants with Prolapse (N = 34)

Scale	Total BES	Weight	Appearance	Attributes
Original GSIS	.435*	.425*	.583**	.314
GSIS-20	.426*	.405*	.556**	.200
Appeal	.361	.301	.489**	.409*
Conf.	.357	.517*	.474*	.089
Function	.318	.225	.436*	.066
Comfort	.516*	.299	.441*	.340

*p<.05 (2 tailed)
**p<.01 (2 tailed)

The same analysis was performed using data from the age matched control participants with similar significant correlations found between GSIS and BES scores (see Table 5-21). As in the nulliparous population, genital body image is correlated with global body image in participants with prolapse and age matched control participants.

Table 5-21 Correlations between BES and GSIS scores in Age Matched Control Participants (N = 32)

Scale	Total BES	Weight	Appearance	Attributes
Original GSIS	.441*	.317*	.545**	.412*
GSIS-20	.446*	.344	.520**	.460*
Appeal	.485*	.287	.450*	.568**
Conf	.313	.240	.364*	.198
Function	.165	.317	.399*	.015
Comfort	.120	.127	.269	.251

*p<.05 (2 tailed)
**p<.01 (2 tailed)

Correlations between BES and GSIS Scores in Women Post Childbirth

The correlations between total BES scores (weight, appearance, and attributes subscales) and the GSIS, the GSIS-20 as well as its subscales were also explored within the group of participants post childbirth (Table 5-22). As with the other groups of participants, the original hypothesis (that overall body image and genital body image) was not supported. There were significant correlations between the scales and subscales with the exception of the Attributes subscale of the BES and the Genital Function and Genital Comfort subscales of the GSIS-20 in this population of women.

Table 5-22 Correlations between BES and GSIS Scores for Participants Post Childbirth (N = 53).

Scale	Total BES	Weight	Appearance	Attributes
Original GSIS	.412**	.420**	.392**	.289
GSIS-20	.359*	.335**	.327*	.201
Appeal	.342*	.297*	.291*	.220
Conf.	.317*	.341*	.334*	.185
Function	.077	-.011	.022	.192
Comfort	-.177	.093	-.024	.031

*p<.05 (2 tailed)
**p<.01 (2 tailed)

Hypothesis Testing: H3 – Participants with pelvic organ prolapse will have significantly more genital body image dissatisfaction (as evidenced by lower GSIS scores) than age matched control participants.

Comparison of GSIS Scores for Participants with Prolapse and Age Matched Control Participants

Using the contrasting groups approach to determine construct validity of the GSIS, mean scores for women with and without prolapse were compared. Women with prolapse would be expected to have more genital body image dissatisfaction and therefore have lower scores on the GSIS. An independent samples t-test was conducted to compare the Genital Self Image Scale scores for women with pelvic organ prolapse and the age matched control participants (Table 5-23). There was a mean difference in GSIS scores of 4.17 points; a difference that approached statistical significance (p = .09). The between groups difference was statistically significant when the data was analyzed using GSIS-20 scores, with a mean GSIS-20 score for the prolapse group of 29.1 (sd = 7.7) and a mean score of 32.6 (sd = 5.9) for the control group (p = .046).

Table 5-23 Comparison of GSIS Scores for Participants with Prolapse and Age Matched Control Participants

GSIS Score	Participants with Prolapse (N = 34) Mean (SD)	Participants without Prolapse (n = 32) Mean (SD)	Group Difference
Original GSIS	49.26 (10.69)	53.44 (8.94)	4.17
GSIS-20 Total	29.15 (7.74)	32.63 (5.94)	3.48*
Genital Appeal	5.79 (3.72)	7.09 (3.88)	1.30
Genital Conf.	9.71 (2.02)	10.50 (1.078)	.79
Genital Function	8.41 (2.32)	9.31 (1.94)	.90
Genital Comfort	5.24 (1.08)	5.4 (.71)	.16

*p<.05

Hypothesis Testing: H4 – Women post vaginal birth with significant genital tract trauma will have significantly more genital body image dissatisfaction (as evidenced by lower GSIS scores) than nulliparous participants.

Comparison in GSIS scores for women post childbirth and nulliparous women

Because these women had recently given birth and were known to have undergone significant genital tract trauma, it was hypothesized that these women would have more genital body image dissatisfaction. This hypothesis was not supported; there was not a statistically significant difference between the GSIS scores for these women and the undergraduate (nulliparous) women. This lack of difference held true for the GSIS-20 and its subscales as well (Table 5-24).

Table 5-24 Comparison of GSIS scores for Nulliparous and Post Childbirth Participants

GSIS Score	Nulliparous participants (n = 167) Mean (SD)	Participants post childbirth (n = 52) Mean (SD)	Group Difference
GSIS Total	53.18 (7.91)	52.88 (6.53)	.29
GSIS-20 Total	32.26 (5.48)	31.81 (4.86)	.45
Genital Appeal	4.88 (2.22)	7.65 (2.84)	.39
Genital Conf.	10.13 (1.54)	10.16 (1.45)	-.03
Genital Function	8.96 (1.62)	9.16 (1.40)	-.20
Genital	5.10 (1.00)	5.04 (.90)	.06

Specific Aim 4

Reliability of the Genital Self Image Scale

Internal Reliability of the GSIS in the Undergraduate Sample

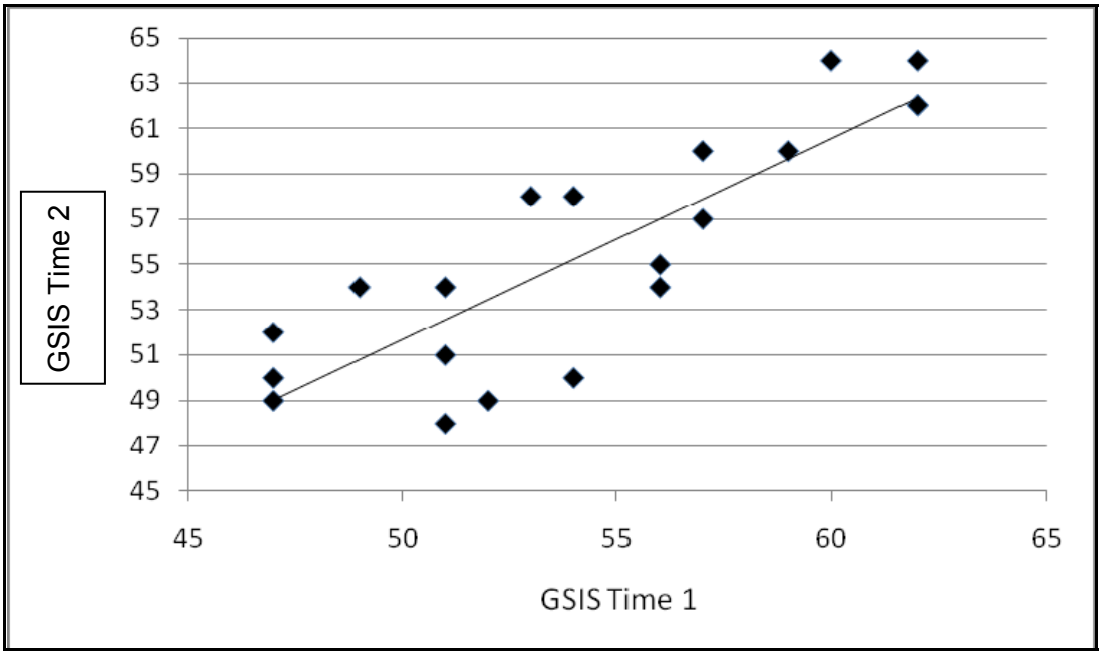
For this study the internal reliability of the GSIS was determined for each participant group individually to determine if the scale is reliable for use in the differing populations. For the undergraduate students the Cronbach's alpha coefficient was first calculated including all of the 29 original items on the GSIS. In the undergraduate population (N = 170) the Cronbach's alpha coefficient was .82 indicating good internal consistency (reliability) of the GSIS. The internal reliability for the revised GSIS-20 was

also analyzed yielding a Cronbach's alpha coefficient of .84 indicating that the GSIS-20 also has good internal consistency within the undergraduate group of participants.

Test-retest reliability

Test retest reliability was determined both by the Pearson correlation and by determining the limits of agreement between the scores for the two time periods for 20 of the undergraduate participants (Bland & Altman, 1999). A Pearson's correlation (coefficient of stability) above .70 is considered satisfactory and the closer to 1.00 the correlation is the more reliable the scale (Waltz, Strickland & Lenz, 2005). The Pearson Correlations for the scores of the original GSIS between the two time periods was .848, indicating excellent test-retest reliability. Figure 5-2 shows the scores from time one plotted against scores from time two, with the line of equality depicted (if scores were exactly the same at baseline and three weeks).

Figure 5-2 GSIS scores at Baseline and Three Weeks with the Line of Equality.

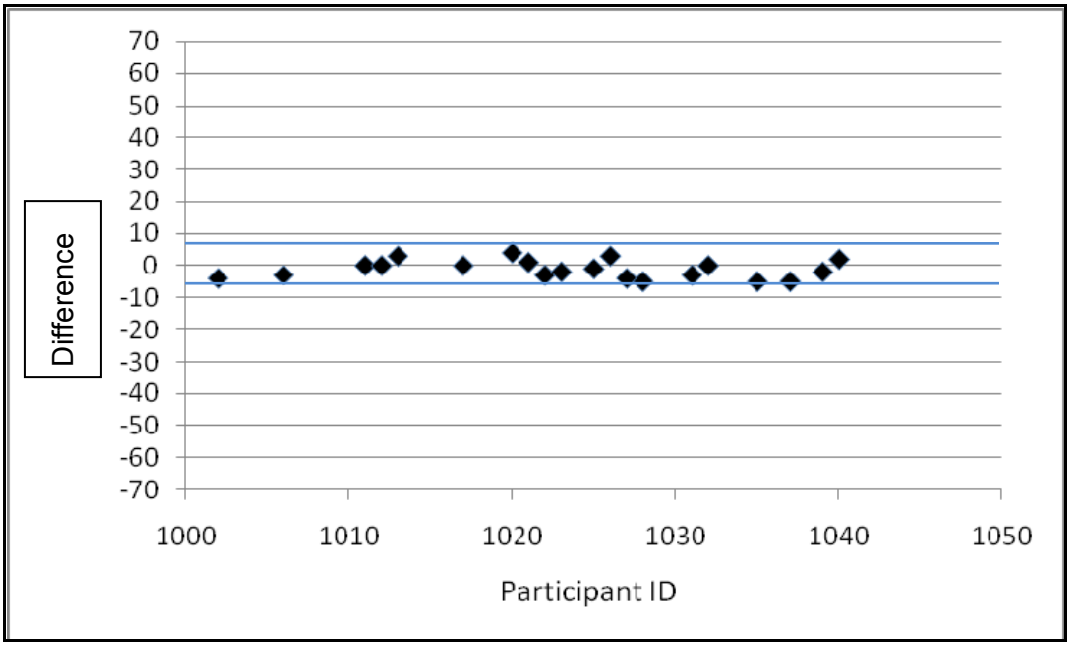


For the Bland and Altman method of analysis a paired samples t-test was conducted to determine whether or not there is a statistically significant difference

between the two scores. The standard deviation of the difference in test-retest scores is then multiplied by 2.77 to get the 95% confidence interval of the repeatability. This determines the smallest amount of change between the 2 different scores (minimum detectable change) that must be observed before the change can be considered to exceed the measurement error.

A paired samples t-test for the scores on the two time periods determined that there was not a statistically significant difference between GSIS scores (t = 1.9, p = .07). For the original GSIS the mean difference (m_d) of the scores was 1.2 and the standard deviation of the difference (s_d) between the scores for the two time periods was 2.8 which was then multiplied by 2.77 for a repeatability coefficient of 7.76. This indicates that for the original GSIS scores are repeatable within ± 3.9 points for 95% of participants. A plot was created showing the intra-individual differences in test retest scores as well as the limits of agreement (Figure 5-3).

Figure 5-3 Difference Between GSIS Scores Plotted Against Zero.



The same analysis was done for the GSIS-20. The revised GSIS-20 showed an equally strong Pearson correlation between the two time periods (r = .883). Figure 5-4 shows the scores from time one plotted against scores from time two, with the line of equality depicted (if scores were exactly the same at baseline and three weeks).

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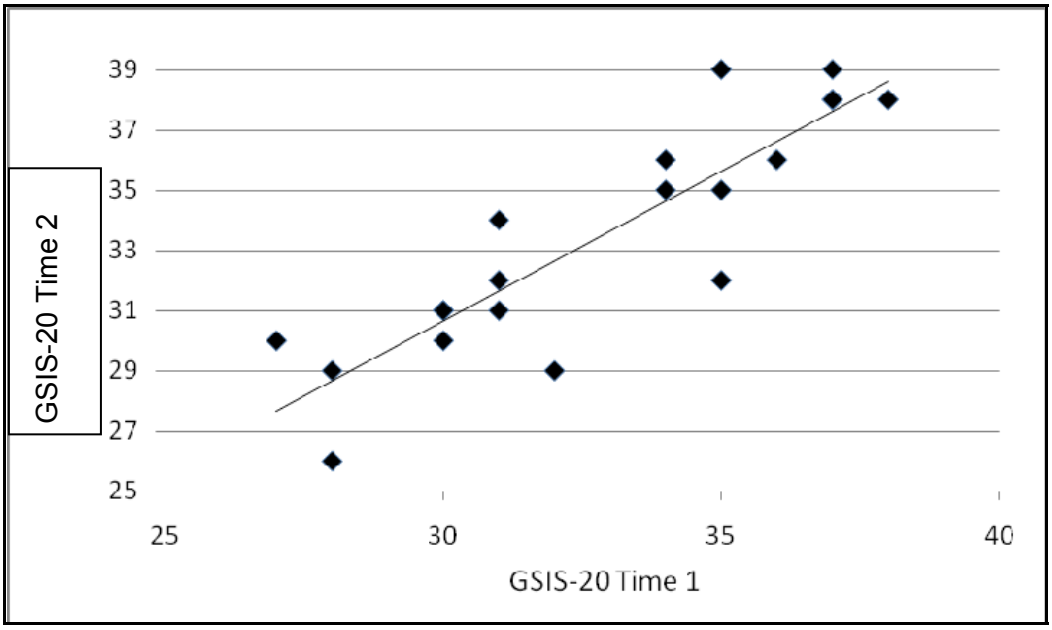
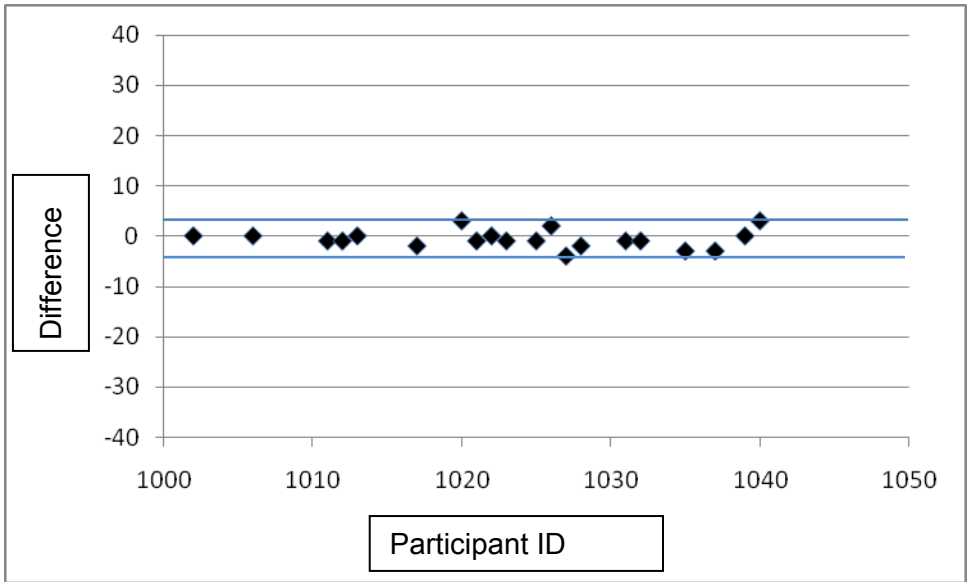
Figure 5-4 GSIS-20 scores at Baseline and Three Weeks with the Line of Equality



Similarly, a paired samples t-test for the GSIS-20 scores showed that there was not a significant difference between the two time periods (t = 1.6, p = .126). The mean difference (m_d) between the two scores was .65 and the standard deviation of the difference (s_d) between the scores from the two time periods was 1.8 which is then multiplied by 2.77 giving us a repeatability coefficient of 4.9. This indicates that scores on the GSIS will be repeatable within ± 2.5 points for 95% of participants. A plot showing the difference in scores for individuals plotted against zero with the limits of agreement is depicted in Figure 5-5.

Figure 5-5 Difference Between GSIS-20 Scores Plotted Against Zero.



The GSIS-20 was shown to be equally reliable within the three week time period; indicating that test-retest was not compromised by revising the GSIS.

Reliability of the GSIS in the participants with prolapse and without prolapse

For the prolapse and control participants the Cronbach's alpha coefficient was first calculated with the original 29 items on the GSIS included. For this group (N = 66) the item "Please check whether or not the following adjectives describe your feeling about your genitals – Offensive" was removed because there was zero variance (i.e. all participants answered "does not apply to me"). The Cronbach's alpha coefficient was .88 indicating good internal consistency (reliability) of the original GSIS in this population. The internal reliability for the revised GSIS-20 was also analyzed yielding a Cronbach's alpha coefficient of .89 indicating that the GSIS-20 also has good internal consistency within this group of participants.

Reliability of the Genital Self Image Scale in the Participants Post Childbirth

For the participants post childbirth the Cronbach's alpha coefficient was first calculated with the original 29 items included in the GSIS. In this population (N = 52) the

Cronbach's alpha coefficient was .72 indicating acceptable internal reliability of the GSIS. The internal reliability for the revised GSIS-20 was also analyzed yielding a Cronbach's alpha coefficient of .79 indicating that revision of the GSIS improved the internal consistency within this group of participants.

Post-hoc Analysis

Several items included on the questionnaire provided for a post-hoc analysis of questions not previously conceptualized. First, does a history of sexual abuse influence women's genital body image? Second, did women who have undergone genital trauma (either through birth or sexual abuse) feel better about their genitals before trauma and does this affect their genital body image? Finally, do women who have considered genital cosmetic surgery have more genital body image dissatisfaction?

History of Sexual Abuse and Genital Body Image

Included in the demographics and sexual history portion of the questionnaire was a question regarding history of sexual abuse – "Have you ever been sexually abused?" yes/no. This allowed a comparison of GSIS scores between women who indicated "yes" and those who indicated "no". The scores between the groups were not significant on any of the scales or subscales in any of the participant groups (Table 5-25).

Table 5-25 History of Sexual Abuse and GSIS Scores

GSIS	HISTORY OF SEXUAL ABUSE	NO HISTORY OF SEXUAL ABUSE
NULLIPAROUS PARTICIPANTS	N = 15	N = 144
GSIS	54.20 (9.19)	53.01 (7.80)
GSIS-20	32.73 (6.31)	32.19 (5.42)
Appeal	8.00 (3.33)	7.60 (2.80)
Conf.	10.38 (1.31)	10.11 (1.56)
Function	9.00 (1.26)	8.97 (1.65)
Comfort	4.60 (1.12)	5.14 (.98)
PROLAPSE STUDY PARTICIPANTS	N = 9	N = 80
GSIS	47.80 (11.21)	51.57 (9.97)
GSIS-20	29.00 (9.17)	31.26 (6.87)
Appeal	6.20 (4.49)	6.48 (3.38)
Conf.	10.11 (1.36)	10.21 (1.61)
Function	8.89 (1.76)	9.06 (2.15)
Comfort	5.00 (1.32)	5.39 (.85)
PARTICIPANTS POST CHILDBIRTH	N = 3	N = 49
GSIS	50.50 (6.36)	53.04 (6.64)
GSIS-20	30.50 (4.95)	31.92 (4.93)
Appeal	5.67 (2.31)	7.40 (3.00)
Conf.	10.00 (1.73)	10.19 (1.46)
Function	10.00 (1.00)	9.16 (1.42)
Comfort	5.50 (.71)	5.00 (.91)

Trauma and genital body image in the Nulliparous Participants.

Following a content validity expert's recommendation, an item was added to the questionnaire: "I felt better about my genitals before trauma". The participants were provided examples of trauma (birth, sexual abuse, surgery, accident) and were asked to circle which trauma pertained to them. This question also had the "not applicable" option. This item was either missing (n = 133) or rated as not applicable (n = 53) for the majority of the nulliparous participants. There were some (n = 15) who answered the question, although not all of them circled the cause. For those participants who answered "yes" to a history of sexual abuse who also answered the genital trauma question an assumption was made that the trauma was a result of the sexual abuse

unless another cause was indicated. Table 5-26 accounts for all nulliparous participants who indicated genital trauma and includes cause of trauma as well as mean GSIS score. There were no between group differences in GSIS scores. Of the 16 who indicated a history of sexual abuse, seven checked "not applicable" for the item "I felt better about my genitals before trauma.

Table 5-26 Genital trauma and GSIS Scores

"I felt better about my genitals before trauma"	Total	History of sexual abuse	Other cause of trauma	GSIS Total
Always	N = 5	N = 3	Not specified (N = 2)	Mean = 55.4
Often	N = 1		Genital surgery for cervical lesions (N = 1)	Mean = 51.0
Sometimes	N = 3	N = 2	Genital surgery for hematoma removal (N = 1)	Mean = 46.7
Never	N = 6	N = 3	Accident (N = 1), not specified (N = 2)	Mean = 55.4

Vaginal birth and feelings about genitals before trauma

The addition of a question "I felt better about my genitals before trauma" yes/no allowed the opportunity to explore the relationship between women who felt better about their genitals prior to birth and those who did not. It is important to keep in mind that the women in the post childbirth group all sustained significant genital tract trauma at the time of their birth, therefore the intent of this analysis is to determine women's perceptions of traumatic change and the effect it may have on genital body image. For the analysis the data were dichotomized into two groups. Participants who answered "always" or "often" were categorized as "yes" (n = 16) while "sometimes" and "never" were categorized as "no" (n = 26). An additional six women in this participant group answered "not applicable" and four left the question unanswered. Using an independent t-test to compare groups there was a significant difference in mean GSIS scores with the

"yes" group mean score being significantly lower than the "no" group. The difference was significant for the GSIS as well as the GSIS-20 and the Genital Confidence, Genital Appeal, and Genital Function subscales (Table 5-27).

Table 5-27 Genital Trauma and GSIS Scores for Participants post Childbirth

GSIS	Felt better about genitals before trauma (n = 16) Mean (SD)	Did not feel better about genitals before trauma (n = 29) Mean (SD)	Group Difference	Significance
GSIS-20	27.32 (3.77)	33.74 (5.02)	6.43	t = 5.01**
Appeal	4.88 (2.22)	7.79 (4.23)	3.38	t = 4.05**
Conf.	9.00 (1.90)	10.62 (.90)	1.62	t = 3.89**
Function	8.50 (1.63)	9.34 (1.14)	.84	t = 2.03
Comfort	4.94 (.57)	5.18 (.90)	.24	t = .96

*p<.05 **p<.001

Genital Cosmetic Surgery and Genital Body Image

Because of the increasing popularity of genital cosmetic surgery, an item on the questionnaire asked "have you ever considered genital cosmetic surgery? (such as labiaplasty, vaginoplasty, vaginal rejuvenation, hymen reconstruction) *yes/no.* This allowed the opportunity to utilize a contrasting groups approach to validity; those that answered "yes" and those who answered "no", hypothesizing that women who were considering genital cosmetic surgery would be significantly more dissatisfied with their genitals. If the GSIS is a valid measure of genital body image they should exhibit significantly lower scores.

Independent t-tests were conducted to compare mean GSIS, GSIS-20, and subscale scores between the nulliparous participants who answered "yes" and "no" to the question "have you ever considered genital cosmetic surgery?" Eight of the undergraduate women answered "*yes"* and 158 answered "*no"* to the question. Two of

the subscales (Genital Confidence and Genital Comfort) had a significant Levene's Test for equality of variances; therefore, the t-values reported for these subscales were those supplied by SPSS for "equal variances not assumed" (Table 5-28). There was a significant difference in the GSIS and GSIS-20 scores as well as the Genital Confidence and Genital Appeal subscales. The magnitude of the differences in the between groups total GSIS means was large (eta squared = .150). This demonstrates validity of the GSIS using the contrasting groups approach; women who would be predicted to have more genital body image dissatisfaction scored significantly lower than those who did not.

Table 5-28 GSIS Scores for Participants who *have* and *have not* Considered Genital Cosmetic Surgery.

GSIS	HAVE considered Genital Cosmetic surgery (n = 8) Mean (SD)	Have NOT considered Genital Cosmetic surgery (n = 158) Mean (SD)	Group Difference	Effect size
GSIS	40.0 (9.1)	53.9 (7.2)	13.9**	.15
GSIS-20	22.62 (5.78)	32.76 (5.02)	10.13**	.15
Appeal	4.88 (3.60)	7.79 (2.74)	2.91*	.06
Conf.	6.00 (2.45)	10.32 (1.20)	4.32*	.33
Function	7.88 (1.25)	9.02 (1.62)	1.14	.02
Comfort	4.13 (1.56)	5.16 (.94)	1.03	.05

*p<.01 **p<.001

Chapter 6

Discussion

Validity and Reliability of the Genital Self Image Scale

The primary purpose of this study was to determine the reliability and validity of the Genital Self Image Scale (GSIS). Prior to this study there were no measures of genital body image that had undergone sufficient psychometric testing. In order to adequately measure genital body image it is important that valid and reliable questionnaires be used. The GSIS had been previously published (Berman, Berman, Miles & Pollets, 2003), however only internal reliability in a population of women with sexual dysfunction had been determined. Additionally, the questionnaire included 29 questions, a potential burden to participants if additional concepts are also included in a study design.

First, content validity was assessed utilizing five experts in the areas of women's sexual health and/or genital surgery. Content validity is undertaken to determine whether items included in a measure "adequately represent the domain of content addressed by the instrument and the relevance of the content domain to the proposed interpretation of scores" (Waltz, Strickland, & Lenz, 2005, p. 155). When the items deemed content invalid by the experts were removed, the scale demonstrated excellent content validity, exceeding the criteria deemed necessary for content validity (Wynd, Schmidtt, & Schaefer, 2003). Based on the expert's recommendations two items were added to the scale: "I enjoy my genitals" and "I feel my genitals are normal, like other

women's". An item "I felt better about my genitals prior to trauma" was added, not to the GSIS, but to the composite questionnaire. This allowed analysis based not only on a woman's *history* of genital trauma (through sexual abuse, prolapse, or birth) but also on a woman's *perception* of how the trauma affected her genital body image.

To determine construct validity as well as reliability of the scale, three study populations were purposefully recruited. Younger women who had not given birth were recruited from a population of undergraduate students enrolled in a Women's Studies Class. Women with pelvic organ prolapse along with women who functioned as their controls were recruited from a list of previous study participants. Lastly, women who had given birth (with risk factors associated with genital tract trauma) were recruited from the population of women delivering at the University of Michigan hospital in the year 2008. Using three distinct study populations increased the opportunity for a variety of analysis methods to be undertaken while at the same time maximizing potential for variance in GSIS scores.

Using results from the total participant sample, an exploratory factor analysis was undertaken; the goal of which was to explain the most variance with the fewest number of factors and potentially reduce the number of items included in the scale. Exploratory factor analysis is an iterative process whereby the items included in the analysis can be revised at various points in the analysis. Therefore, the initial analysis was performed using all of the items that had been included in the data collection (the original 29, plus the two added from the content validity analysis).

During the factor analysis the seven items not judged content valid were removed as well as four additional items that either exhibited low correlations with the remainder of the scale or that were too highly correlated with other items on the scale. Additionally, participant comments indicated frustration with answering questions that were seen as duplicating other questions (multicollinearity). "Some questions seemed

repetitive or dancing around a previous question" and "I didn't enjoy answering the same questions over and over"

Confirmatory factor analysis of the reduced GSIS scale identified four factors explaining 58.9% of the variance. The 20 item four factor Confirmatory Factor analysis indicated that the revised model was a good fit to the data. Each factor (subscale) included between four and six items that aligned conceptually and were designated "Genital Appeal", "Genital Confidence", "Genital Function", and "Genital Comfort". The GSIS-20 essentially measures one concept; genital body image, however there may be value in utilizing the subscales in distinct populations such as women desiring genital cosmetic surgery. The final version of the GSIS included 20 items, therefore it was renamed the GSIS-20.

Psychometric scales should demonstrate both internal consistency and test-retest reliability. The GSIS-20 demonstrated good/excellent internal consistency across all four groups that comprised the study populations. Three of the four subscales (Genital Appeal, Genital Function, and Genital Confidence) all demonstrated acceptable internal consistency. The fourth subscale, Genital Comfort, did not meet the standard for acceptable internal consistency however this was most likely a result of the small number of items (four) included in the subscale. Additionally, excellent test-retest reliability was demonstrated within a subgroup of 20 undergraduates indicating that the scores for the GSIS-20 remain consistent over time.

In summary, as a result of content validity testing and factor analysis, the 29 question GSIS was revised to include 20 items that demonstrated both content and construct validity. The revised scale, (the GSIS-20), exhibited good internal consistency and test-retest reliability. Further determination of validity of the GSIS-20 was undertaken using various hypothesis testing and contrasting groups' approaches to

measuring construct validity. Both the validity and reliability of the GSIS-20 was strengthened by using multiple populations of study participants.

Genital Body Image Dissatisfaction and Sexual Functioning

Previous studies in women seeking treatment for sexual dysfunction have shown that genital body image correlated with sexual function (Berman, Berman, Miles, Pollets & Powell, 2003). Construct validity of the GSIS-20 was therefore established by determining a positive correlation between the GSIS-20 and a measure of sexual function (the Female Sexual Functioning Index). Body image not specific to the genital area is known to affect women's sexual health (Sanchez & Kiefer, 2007). Therefore partial correlations were used to explore the relationship between GSIS-20 scores and the Female Sexual Functioning Index (FSIS) scores while controlling for scores on the Body Esteem Scale (BES).

The hypothesis that genital body image dissatisfaction would result in lower sexual functioning was supported in both the undergraduate population and the previous prolapse study participants. In the undergraduate group there was a significant positive correlation between genital body image (GSIS-20 scores) and sexual function (FSIS scores). In the study participants with prolapse and the participants that functioned as their controls, there was also a significant positive correlation between GSIS-20 and FSIS scores.

The women post-childbirth did not exhibit the same correlation between GSIS and FSFI scores. This was not unexpected given the many other factors (such as fatigue, breast feeding, post partum depression, weight gain and perineal pain) that affect women's sexual health following childbirth (vonSydow, 1999).

The inclusion of women with varying ages and life experiences in this study produced findings that expand the work of Berman, Berman, Miles, Pollits, and Powell (2003) which included only women with sexual dysfunction. The study reported here

showed that genital body image dissatisfaction was correlated to most of the subscales within the FSIS, including desire, arousal, orgasm, and satisfaction. This correlation is particularly concerning in the population of women who have not experienced life events (such as prolapse or childbirth) that could be viewed as altering the genitals. This population was purposefully chosen because they were the least likely to have medical indications for genital alterations that could contribute to body image dissatisfaction. These women have presumably normal genitals and yet the dissatisfaction they experience negatively affects their sexual health. Other parts of a woman's body may be more amenable to non-surgical alteration; for example, if a woman is dissatisfied with her hair, there is the option of cutting, coloring or straightening. Short of cosmetic surgery there is little one can do to alter genital appearance. Also, while women may seek affirmation from other women regarding their appearance (does my hair look ok?), women seem less likely to seek reassurance from other women regarding their *genital* appearance.

Genital Body Image Dissatisfaction and Body Image

There was a moderate to strong correlation between genital body image and global body image, which was contrary to the initial hypothesis. This relationship was found to be consistent over all the participant groups. To my knowledge, this is the first study designed to ask the question of whether body image specific to the genitals is distinctly different than body image as a general concept. Because the relationship between global body image and genital body image had not been previously explored, the initial hypothesis was theory based; dissatisfaction with body size or facial features would not correlate with dissatisfaction with one's genitals. Unlike facial features or breast size, women's genitals do not change the outward appearance or the contours of the body. With few exceptions (explicit pornography, for example) women's genitals are viewed only by healthcare providers and intimate sexual partners. For these reasons I

theorized that genital body image would be a distinct concept, independent from global body image. That dissatisfaction with this area of the body would be so closely correlated to global body image is somewhat surprising. Is women's body image dissatisfaction so deeply ingrained that they have difficulty viewing any part of their bodies in a positive light? Or has the increased visibility of women's genitals in the media contributed to women's self objectification of this part of their bodies?

The strong, positive correlation between overall body image and genital body image found in this study indicates that women who are dissatisfied with their bodies may be dissatisfied with every aspect of it, even those parts that are almost always hidden from view. Because global body image dissatisfaction is increasing for women (Feingold & Mazella, 1998) these findings may indicate that genital body image dissatisfaction is also increasing.

Pelvic Organ Prolapse and Genital Body Image Dissatisfaction

The inclusion of women who had functioned as age matched control participants for prior studies of pelvic organ prolapse allowed comparisons of GSIS-20 scores between the two groups. Using the contrasting group approach, the GSIS-20 was successful in demonstrating a significant difference in scores between women with prolapse (who would be more likely to experience genital body image dissatisfaction) and the age matched control participants. Women with pelvic organ prolapse, regardless of whether they had undergone surgery for their prolapse or not, had significantly more genital body image dissatisfaction (as measured by the GSIS-20). One participant with prolapse added this comment: "After three births my genitals look like ground meat and not a flower". These findings are consistent with previous research that found that women seeking treatment for prolapse had decreased body image (Jelovsek & Barber, 2006) and that women with prolapse who were sexually active had

more body image dissatisfaction than those who were not (Zielinski, Kane-Low, Tumbarello, & Miller, 2009).

Vaginal Birth, Genital Tract Trauma, and Genital Body Image Dissatisfaction

Women who had given birth with significant genital tract trauma did not have significantly lower GSIS scores than the nulliparous (undergraduate) women. However in a post-hoc analysis, a between groups comparison of GSIS-20 scores was done for those women who felt better about their genitals prior to birth and those who did not. The responses to the question "I felt better about my genitals before (birth) trauma" were dichotomized into "yes" and "no". Women who indicated they felt better about their genitals prior to birth *did* have significantly lower scores compared with women who did not experience the same alteration in feelings about their genitals after birth. This finding may indicate that it is the *perception* of change associated with birth trauma rather than the actual extent of the birth trauma that affects genital body image dissatisfaction. Using clinical methods to assess genital changes associated with vaginal birth (vaginal length, diameter, laceration healing) may not be sufficient in assessing women's *perception* of the genital changes associated with birth. Consequently, women with *clinical* indications of genital changes may not have body image issues associated with those changes. At the same time, women with little visible indications of change may be experiencing distress about the changes they *perceive* to have occurred to their genitals. One post birth participant added this comment: "I was definitely more confident and sexually active/proud before I had my son. Things have never really felt the same since – that was 11 months ago".

Genital Body Image Dissatisfaction and Cosmetic Surgery

Women in increasing numbers are choosing to undergo genital cosmetic surgery (Braun, 2006). In this study there were women in three of the participant groups (undergraduates, women with prolapse and women after vaginal birth) who indicated

they had considered genital cosmetic surgery. While the percentage of women interested in cosmetic surgery was not large (4%, 15% and 3.6% respectively), these women did have significantly more genital body image dissatisfaction. Because I only asked "have you ever considered genital cosmetic surgery?" it's not possible to ascertain which surgeries these women were considering. Whether younger, nulliparous women are more likely to consider labiaplasty while older women with prolapse or those with vaginal birth trauma are more likely to consider vaginoplasty warrants further investigation. While there have been some reports of women's indications for labiaplasty (Choi & Kim, 2000; Giraldo, Gonzalez, & deHaro, 2004; Maase & Hage, 2000; Miklos & Moore, Pardo, Sola, Ricci, & Guilloff, 2006; Rouzier, Louis-Sylvestre, Paniel, & Haddad, 2000), to date, there are no published reports of women's indications for other cosmetic procedures such as vaginoplasty. The number of cosmetic surgeries performed has increased nearly every year, with a five- fold increase in breast augmentation over a ten year period (ASPS, 2002). Because a variety of surgical specialties (plastic surgeons, gynecologists, urogynecologists) perform the various genital procedures it will be difficult to ascertain if a similar increase in the number of genital cosmetic surgeries will occur over the upcoming years.

Sexual Abuse and Genital Body Image

The relationship between sexual abuse and genital body image was not part of the specific aims, however this is an area that warrants exploration. There has been speculation that sexual abuse may increase desire for genital cosmetic surgery (Paarlberg & Weijenborg, 2008) although this relationship has not been investigated to date. As a post hoc analysis, the question was asked "do women who indicate a history of sexual abuse have more genital body image dissatisfaction?" Each of the participant groups had a number of women who indicated a history of sexual abuse; 8.3% of the undergraduates, 10.9% of the previous prolapse study participants, and 5.4%

participants post childbirth. In this study, women who indicated a history of sexual abuse did not demonstrate significantly more genital body image dissatisfaction. Furthermore, women who indicated a history of sexual abuse *and* felt better about their genitals prior to the abuse were not shown in this study to have more genital body image dissatisfaction. These results should be viewed with caution however, because the issue of sexual abuse in this study was limited to two questions; "have you ever been sexually abused" and "if yes, do you feel that you have adequately dealt with it?" These questions may be insufficient to capture the wide range of experiences related to sexual abuse and may not reflect how individual women have dealt with the abuse. The question also assumes the abuse is related to genital contact but sexual abuse can take a variety of forms which may not include contact with genitals.

Study Limitations

In addition to establishing validity and reliability of the GSIS scale this study explored the relationship between genital body image and sexual health in a variety of populations. However, the limitations of these results must be kept in mind. The results of this study are limited to a predominantly White, educated, heterosexual sample of women. Because the majority of prior research regarding genital body image has been with college aged women, the inclusion of a diverse group of women with varying life experiences strengthened the design of this study and added variance in relationship to age and health history of participants. One limitation regarding diversity relates specifically to the group of women post childbirth. With the exception of one woman, all of these participants self identified as currently being in a sexual relationship. Many women giving birth do not fit this demographic and may not be in stable sexual relationships. These women may be particularly vulnerable to genital body image dissatisfaction as they face the prospect of beginning a relationship with a new sexual partner, male or female. Additionally, while a question addressing sexual orientation

was included in the survey, the results do not represent the diversity present in the general population related to sexual orientation and expression which may influence findings related to sexual health and body image.

Because participation in this study was completely voluntary it is not known whether women who opted to not participate may differ in their genital body image from those who were willing to participate. In each contact population however, the majority of women opted to participate (83% of undergraduates, 72% of previous study participants, and 59% of women post childbirth).

Chart review for the women post childbirth was limited to inclusion criteria; therefore, this study did not allow analysis of the relationship between birth variables related to genital tract trauma and genital body image. However, because of the inclusion criteria used, these participants were all known *a-priori* to have outcomes known to be associated with significant genital tract trauma (third and fourth degree lacerations, vacuum, and forceps).

An additional limitation is related to the measurement tools. The Female Sexual Function Index (FSIS) was used as a measure of sexual health for this study. The FSIS was chosen because reliability and validity are well established and because it was the measure used in other studies using the GSIS. However the FSIS is not without limitations. The FSIS presumes sexual activity in the past four weeks. Several undergraduate participants indicated in the comment section that although they were sexually active, their sexual partners were attending another college, limiting their sexual contact in the last four weeks, for example “for myself for example I am in a long distance relationship and haven’t seen my boyfriend since Christmas which was over 4 weeks, therefore some questions were difficult to answer”. Consequently, these women were unsure of the best way to answer the questions. Whether a four week time frame is critical to the assessment of sexual health can be questioned in light of this instrument

which does not account for the real life experience of an undergraduate population. Additionally, by measuring in terms of desire, arousal, lubrication, orgasm, pain, and satisfaction; the FSIS is more a measure of sexual function/dysfunction than the more holistic concept of sexual health.

Several variables of interest were not included in this dissertation. Religiosity, or how religious one view's themselves can influence sexual health (Crowden & Bradshaw, 2007). Whether or not religiosity may influence women's genital body image is not known. Additionally, measures of partner's perceptions and healthcare provider/client interaction were not included in this study. One participant post childbirth commented "I wish my OB would ask questions like this to me. I think this could help me if someone gave me answers about what I answered" indicating that for her, the lack of communication with her provider was an issue. Another participant post childbirth added a comment "My husband is extremely supportive and has not acted affected by the scarring to my genital area. In fact, he often jokes about it in a loving way. I'm pretty sure his nonchalant attitude has contributed to my acceptance of my scarring." indicating that for this participant, partner's perceptions contributed positively to her genital body image.

Implications for Women's Healthcare Providers

Providers of women's health care need to be aware of the media attention given to female genital cosmetic surgery. This has been a topic of discussion in women's magazines and talk shows such as Oprah. "Before people will spend money on something as expensive and uncomfortable as cosmetic surgery, they need to be motivated not only by desire but by concern or self-doubt" (Weil-Davis, 2002 p.10). Increasing media attention creates a space for women to doubt their own normalcy.

Genital cosmetic surgery is a relatively new industry that often frames what they do as being beneficial to women's sexual health, yet there is no evidence that these

surgeries actually improve women's sexual health. Women may have unrealistic expectations about what the surgery may accomplish. Women need to be fully informed prior to making a decision regarding genital cosmetic surgery.

How should women's health care providers respond when women express concern regarding their genitals? Women's health care providers are in a unique position of being able to provide reassurance. The gynecologic exam provides an opportunity to discuss the normal variations found in women's genitals. While providing reassurance is important in every instance, women's concerns should not be minimized regardless of the "normalcy" of the appearance of their genitals. For women post childbirth in this study, the *perception* of change rather than clinical evidence of change was more indicative of women's genital body image dissatisfaction. Conversely, appearance of clinical "abnormality" should not be reason to assume women are unhappy with their genital appearance or function.

Next Steps

Overall, most women in each participant group had GSIS-20 scores that would indicate a generally positive genital body image. However in each group there were women who had significantly lower scores, some of whom also indicated an interest in genital cosmetic surgery. While this study determined that there were women in each of the participants groups who were experiencing greater genital body image dissatisfaction, *why* this is occurring is not well understood. Qualitative research that includes women who have undergone genital cosmetic surgery (exemplars of genital body image dissatisfaction) would provide additional insight. While some reports of labiaplasty procedures included *indications,* these provided little understanding of *why* women would undergo procedures that are expensive, painful, and not without risk. For example, women indicate discomfort with riding a bike as a reason for undergoing

labiaplasty, yet men may experience similar discomfort and not consider undergoing genital surgical procedures.

Body dysmorphic disorder (BDD) is an extreme variation of body image dissatisfaction whereby an individual is excessively concerned with an area of their body that appears normal to others (Castle, Rossell, & Kyrios, 2006). Although the most common area of attention in BDD is the head, "almost any aspect of appearance can be the focus of concern" (Castle et al., p. 521). Although the incidence of BDD in the general population is low (.7%, Castle et al.), the rates in individuals seeking cosmetic surgery is much higher at 12% (Phillips, Dufresne, Wilkel, & Vittorio, 2000). Whether or not women seeking genital cosmetic surgery exhibit similarly high rates of BDD warrants further investigation. Future research will also allow an opportunity to assess whether or not genital body image dissatisfaction, like global body image dissatisfaction, is increasing in women.

Additional research should be undertaken that compares women's genital body image prior to, and after, surgery for pelvic floor disorders such as prolapse. Each year 200,000 women undergo surgery to correct prolapse (Boyles, Weber, & Meyn, 2003); whether or not body image related to the prolapse influences decision making regarding surgery is not well understood. Also, whether or not severity of prolapse correlates with genital body image dissatisfaction is a potential area of research interest. Additionally, client/provider interactions and how that influences both genital body image and decision making regarding surgery warrants consideration in future research.

How childbirth influences genital body image and women's sexual health holds several areas for future research. Subsequent research that includes variables such as extent of trauma and any post partum complications will be of added benefit. Whether or not concerns related to potential genital changes and sexual health influence women's decision to undergo elective cesarean delivery needs to be researched. Studies of

women post childbirth with repeated measures over time would contribute to a better understanding of whether “time heals all wounds” or whether for some women these changes remain problematic. In the group of women post childbirth some women indicated that they felt better about their genitals prior to birth. While these women are a minority of the overall participant population, they are the women for whom more information is needed. Qualitative research using purposeful sampling to include these women may be enlightening. Additionally, studies including women following vaginal birth that includes interventions designed to provide optimal healing and body image awareness and reassurance would be beneficial.

In this study women with a history of sexual abuse did not exhibit greater genital body image dissatisfaction. However, the questions relating to history of sexual abuse were limited and the number of women indicating a history of abuse may have been too small to detect between group differences. Further research with purposeful recruitment of participants with a history of sexual abuse and more in depth analysis of the issues would be valuable.

The GSIS was originally developed to include two scales of measurement. In the first portion the questions are scored on a 4 point (0-4) Likert scale, in the second portion a dichotomous “applies to me” or “does not apply to me” scale is used. Additionally, some participants indicated frustration with the lack of options in this section “Some questions difficult to respond “yes-no” – some gray areas for me.” The design of the questionnaire may be strengthened by using a consistent scale throughout. Administering the questionnaire to a similar group of female undergraduate students using a revised measurement scale for the GSIS would confirm the results of the initial factor analysis while also providing data using a more consistent scale of measurement.

Media portrayals have led to objectification of the female body (Fredrickson & Roberts, 1997). When women view media representations of the female body they can

feel their body does not measure up, causing them to self objectify. Self objectification can, in turn, lead to body shame. As media portrayals of an "ideal" for women's genitals become more commonplace this may lead to increasing numbers of women who feel shame about their genitals. As this study has shown, genital body image dissatisfaction affects certain women more than others. However, the influence of media exposure on women's genital body image was not specifically explored in this study. Further research is needed to better understand how media portrayals may influence women's genital body image.

Partner perception's of women's genitals was also an area of research interest not explored in the current study. Previous reports indicate that men have more positive perceptions of women's genitals than women (Reinholtz & Muehlenhard, 1995). Whether or not the increase in explicit pornography and media attention to genital cosmetic procedures has changed these perceptions warrants further investigation.

As indicated in the limitations, this study did not include measures of religiosity, a potential variable of interest that should be included in future studies of genital body image and sexual health.

This research provides insight into potential areas for research involving interventions. The reports of adolescents as young as 10 who undergo labiaplasty is alarming (Pardo, Sola, Ricci, & Guilloff, 2006). Efforts aimed at increasing adolescent's awareness of normal variations in women's genitals may serve to decrease their concern that their changing body is somehow "abnormal" in comparison to other women's.

Additional studies with purposeful sampling for participants of various ethnic groups, socio-economic status, and sexual orientation would be valuable to increase the generalizability of the results. If the answer to the issue of genital body image dissatisfaction is elective surgery, then it is a solution only for those who can afford it.

The cost for these procedures is not insignificant, rendering it a viable option to only a minority of women who have the economic means to pay. Previous studies of body image have shown differences amongst ethnic groups (Demarest & Allen, 2000). This study did not show a difference between ethnic groups in GSIS scores; however, the majority of the participants were White. Whether or not there are differences in genital body image associated with ethnicity may be evident in future studies that include a more diverse sample. Similarly, inclusion of greater numbers of participants who are lesbian or bisexual would provide insight into whether or not sexual orientation influences genital body image.

Conclusion

In summary, this study has contributed to this area of research by providing data regarding the reliability and validity of a tool to measure genital body image. The 20 question GSIS-20 has been shown to be a reliable and valid tool with which to measure genital body image. In addition to research, the GSIS-20 could be utilized by clinicians as a way to assess genital body image dissatisfaction in women seeking surgical procedures such as genital cosmetic surgery or pelvic organ prolapse repair.

In addition, this study provides a better understanding of the relationship between body image in general and women's genital body image. By including women from a variety of life experiences this study expanded the body of knowledge regarding the effect of women's genital body image on women's sexual health. Some women, regardless of their life experiences, are dissatisfied with their genitals and this dissatisfaction may compel them to seek elective surgery.

Some of the women that participated in this research indicated they felt this topic was important "I think it's an interesting topic that has never been discussed but I think it should be discussed" (participant post childbirth) and "I would be interested in seeing the

results to see how many women are not happy with themselves" (undergraduate participant).

The results of this study contributed to the conceptual model of genital body image depicted in Chapter 3 by providing a valid and reliable way to measure genital body image. Additional information was obtained regarding the relationships between the concepts in the model, specifically global body image and genital body image, genital body image and sexual health as well as prolapse and genital body image. A revised version of the model is included as Appendix K.

The results of this study are merely the beginning of an understanding of how objectification of women may cause women to self objectify even those parts of their bodies that are not routinely subject to the male gaze. As the research in this area moves forward it is important that criticism or blame is not put on women who choose these procedures but rather that we explore the possible socio-cultural influences that may influence women's decision making;

> The criticism of the practice of cosmetic surgery, then, is not directed…at the women who undergo it, but rather at the social and cultural system which engenders in women a state of permanent dissatisfaction with their physical appearance. The point is not to morally condemn those women who choose to have cosmetic surgery, but rather, to expose the inequities of a society which necessitated such a practice in the first place" (Negrin, 2002, p. 26).

Appendix A. A New View of Women's Sexual Health

I. SEXUAL PROBLEMS DUE TO SOCIO-CULTURAL, POLITICAL, OR ECONOMIC FACTORS

A. Ignorance and anxiety due to inadequate sex education, lack of access to health services, or other social constraints
    1. Lack of vocabulary to describe subjective or physical experience.
    2. Lack of information about human sexual biology and life-stage changes.
    3. Lack of information about how gender roles influence men's and women's sexual expectations, beliefs, and behaviors.
    4. Inadequate access to information and services for contraception and abortion, STD prevention and treatment, sexual trauma, and domestic violence.

B. Sexual avoidance or distress due to perceived inability to meet cultural norms regarding correct or ideal sexuality, including:
    1. Confusion or shame about one's sexual orientation or identity, or about sexual fantasies and desires.
    2. Anxiety or shame about one's body, sexual attractiveness, or sexual responses.

C. Inhibitions due to conflict between the sexual norms of one's subculture or culture of origin and those of the dominant culture.

D. Lack of interest, fatigue, or lack of time due to family and work obligations.

II. SEXUAL PROBLEMS RELATING TO PARTNER AND RELATIONSHIP

A. Inhibition, avoidance, or distress arising from betrayal, dislike, or fear of partner, partner's abuse or couple's unequal power, or arising from partner's negative patterns of communication

B. Discrepancies in desire for sexual activity or in preferences for various sexual activities.

C. Ignorance or inhibition about communicating preferences or initiating, pacing, or shaping sexual activities.

D. Loss of sexual interest and reciprocity as a result of conflicts over commonplace issues such as money, schedules, or relatives, or resulting from traumatic experiences, e.g., infertility or the death of a child.

E. Inhibitions in arousal or spontaneity due to partner's health status or sexual problems.

III. . SEXUAL PROBLEMS DUE TO PSYCHOLOGICAL FACTORS

A. Sexual aversion, mistrust, or inhibition of sexual pleasure due to:
    1. Past experiences of physical, sexual, or emotional abuse.
    2. General personality problems with attachment, rejection, co-operation, or entitlement.
    3. Depression or anxiety.

B. Sexual inhibition due to fear of sexual acts or of their possible consequences, e.g., pain during intercourse, pregnancy, sexually transmitted disease, loss of partner, loss of reputation

IV. SEXUAL PROBLEMS DUE TO MEDICAL FACTORS

Pain or lack of physical response during sexual activity despite a supportive and safe interpersonal situation, adequate sexual knowledge, and positive sexual attitudes. Such problems can arise from:

A. Numerous local or systemic medical conditions affecting neurological, neurovascular, circulatory, endocrine or other systems of the body;
B. Pregnancy, sexually transmitted diseases, or other sex-related conditions.
C. Side effects of many drugs, medications, or medical treatments.
D. Iatrogenic conditions.

(Kaschak & Tiefer, 2001).

Appendix B. Cover Letter to Content Validity Experts

Dear "Dr. Jane Doe"

I want to thank you for agreeing to participate in a portion of my dissertation research project "Determination of the Reliability and Validity of a Scale to Measure Genital Body Image in Women" To reintroduce myself, I am a doctoral student in the School of Nursing at University of Michigan and a member of the Pelvic Floor Research Group at the University of Michigan. My research focus is on understanding how a woman's genital body image may affect her desire for surgical procedures or even her decisions regarding childbirth. In order to conduct this work, I am first working to establish the psychometric elements of a reliable and valid instrument to measure genital body image. Your role in this process is very important and I appreciate your time and assistance. The remainder of this letter will explain the project and will detail what I am asking you to do.

STUDY PURPOSE

The Genital Self Image Scale (GSIS) was developed by Berman, Berman, Miles and Pollets (2003, see attached PDF) and was used in their study as well as two unpublished doctoral dissertations. However, the reliability and validity of the GSIS as a measure of genital body image has not been determined and that is the primary goal of this research study.

METHODS

The first portion of the psychometric testing is content validity (content relevance of the items included in the scale). You are being asked to participate because you have expertise in the area of genital body image and genital surgery.

Please rate the relevance of each item on the GSIS using a 4-point rating scale: (1) not relevant, (2) slightly relevant, (3) relevant, and (4) highly relevant. Please also respond to the open ended question at the end; "are there content areas relevant to women's genital body image that are missing?"

I realize this is a busy time of year. This should not take more than 20 minutes of your time. If you have any questions or are **not able to participate**, please contact me at (269) 370-1466 (you may leave a message at any time) or by email at; ruthcnm@umich.edu .

Thank you for your time; I appreciate your help in this research effort and look forward to sharing the results with you.

Sincerely,

Ruth E. Zielinski MS, CNM
Doctoral Student - University of Michigan School of Nursing
Principal Investigator

Appendix C. Content Validity Index

PLEASE RATE EACH ITEM ON HOW RELEVANT YOU FEEL IT IS TO WOMEN'S GENITAL BODY IMAGE

PARTICIPANT INSTRUCTIONS: Please read the following items and check the category that applies to YOUR feelings or thoughts about your genitals (i.e., penis, scrotum, labia, vagina, clitoris, vulva).
EACH ITEM IS MEASURED ON A FOUR POINT SCALE: (ALWAYS, OFTEN, SOMETIMES, NEVER)

	NOT RELEVANT	SOMEWHAT RELEVANT	RELEVANT	VERY RELEVANT
I feel anxiety and worry when I think about how my genitals function.				
I look at my genitals.				
I feel confident that I understand my sexual anatomy.				
When I think about my genitals, I feel ashamed or embarrassed.				
I feel comfortable/positive about my partner seeing my genitals.				
I have sad and depressed feelings when I think about my genitals.				
I feel ashamed/embarrassed about the size of my genitals.				
I feel ashamed/embarrassed about the shape of my genitals.				
I feel ashamed/embarrassed about the look of my genitals.				
I feel ashamed/embarrassed about the odor of my genitals.				
I feel my genitals work/function as they should.				
I am conscious of trying to hide my genitals from being seen by my partner.				
I feel that my genitals are attractive and would arouse my partner.				
As a child/adolescent, I was self-conscious or embarrassed about my genitals.				
I use feminine hygiene products (douches, sprays, suppositories, etc.)				
Growing up, my family/care givers gave me positive messages about my genitals.				
Growing up, I was given the message that touching my genitals was "bad" or "dirty."				

PLEASE RATE EACH ITEM ON HOW RELEVANT YOU FEEL IT IS TO GENITAL BODY IMAGE

PARTICIPANT INSTRUCTIONS Please check whether or not the following adjectives describe your feelings about your genitals. RATES AS "APPLIES TO ME" "DOES NOT APPLY TO ME"

Unattractive	NOT RELEVANT	SOMEWHAT RELEVANT	RELEVANT	VERY RELEVANT
Embarrassing				
Disgusting				
Attractive				
Malodorous (bad smelling)				
Offensive				
Inadequate				
Healthy				
Functional				
Desirable				
Well-shaped				
Good-sized				

ARE THERE CONTENT AREAS RELEVANT TO WOMEN'S GENITAL BODY IMAGE THAT ARE MISSING?

Appendix D. Oral Script for Undergraduate Student Data Collection

Increasing numbers of women are undergoing genital cosmetic surgery and little is known about their reasons for doing so. Research in the area of women's genital body image is limited by the lack of a valid and reliable questionnaire specific to this area of a woman's body. The goal of this study is to determine whether or not a questionnaire (The Genital Self Image Scale) validly and reliably measures women's genital body image. This information will help us in ongoing research in this area.
We are recruiting different groups of women,

- one group being undergraduate college students 18 years and older.

We are asking that you complete the packet of questionnaires. The questionnaires will take approximately 15 to 20 minutes to complete. We understand that because of the sensitive nature of the subject, that the questions may seem very personal. Participation is completely voluntary and you are under no obligation to participate. Also you may withdraw from the study at any point. All data from this study are anonymous and will be used for research purposes only.

Your decision to complete and return these questionnaires will be interpreted as an indication of your consent to participate. After class please place the questionnaires in the box by the classroom door regardless of whether or not you decide to complete the questionnaires. Please do not put your name anywhere on the questionnaires. In that way your anonymity will be assured. If your questionnaire has a 3X5 card attached to the back you have been randomly chosen to complete the questionnaires a second time in two weeks. If you are willing to do this please come to class five minutes early in two weeks to receive a second packet of questionnaires. It is very important that you bring the 3X5 card with you! You will receive five dollars as a token of appreciation for your added time and effort.

My contact information is on the information sheet you received; please feel free to contact me with any questions or concerns.

THANK YOU FOR YOUR INTEREST IN THIS RESEARCH – Your willingness to candidly share in such a personal and important part of your life will be greatly appreciated

Appendix E. Introductory Letter for Research Participants Post Childbirth

Ms J. Doe
1111 Main St
Any Town, MI 48197

November 6, 2008

Dear Ms. Doe,

I would like to introduce you to my research study. I am a doctoral student in the School of Nursing at University of Michigan and this study will fulfill my dissertation requirement for graduation. I am hoping to determine whether a new questionnaire reliably and validly measures women's genital body image and believe that your recent childbirth experience would make your input very valuable to this study.

I have enclosed a one page summary of the research study. I realize that this is a busy time for you, and I appreciate your taking time to review this information at your convenience.

If you have any questions or **are not interested** in participating, please contact me at (269) 370-1466 (you may leave a message at any time) or by email at; ruthcnm@umich.edu . I will be sending you a packet including the questionnaires in approximately two weeks along with a self addressed stamped envelope for you to return the completed materials. Completing the questionnaire packet should take about 15 to 20 minutes.

Thank you for your time and I appreciate your help in this research effort.

Sincerely,

Ruth E. Zielinski MS, CNM
Doctoral Student - University of Michigan School of Nursing
Principal Investigator

Appendix F. Introductory Letter to Previous Study Participants

Ms J. Doe
1111 Main St.
Any Town, MI 11111

November 6, 2008

Dear Ms.Doe,

I would like to introduce you to my research study. I am a doctoral student in the School of Nursing at University of Michigan and this study will fulfill my dissertation requirement for graduation. I am hoping to determine whether a new questionnaire reliably and validly measures women's genital body image and believe that your experience previous study participation would make your input very valuable to this study.

I have enclosed a one page summary of the research study. I appreciate your taking time to review this information at your convenience.

If you have any questions or **are not interested** in participating, please contact me at (269) 370-1466 (you may leave a message at any time) or by email at; ruthcnm@umich.edu . I will be sending you a packet including the questionnaires in approximately two weeks along with a self addressed stamped envelope for you to return the completed materials. Completing the questionnaire packet should take about 15 to 20 minutes.

Thank you for your time and I appreciate your help in this research effort.

Sincerely,

Ruth E. Zielinski MS, CNM
Doctoral Student - University of Michigan School of Nursing
Principal Investigator

Appendix G. Genital Self Image Scale

I. Please read the following items and check the category that applies to YOUR feelings or thoughts about your genitals (i.e., labia, vagina, clitoris, vulva).

	ALWAYS	OFTEN	SOMETIMES	NEVER
I feel anxiety and worry when I think about how my genitals function.				
I look at my genitals.				
I feel confident that I understand my sexual anatomy.				
When I think about my genitals, I feel ashamed or embarrassed.				
I feel comfortable/positive about my partner seeing my genitals.				
I have sad and depressed feelings when I think about my genitals.				
I feel ashamed/embarrassed about the size of my genitals.				
I feel ashamed/embarrassed about the shape of my genitals.				
I feel ashamed/embarrassed about the look of my genitals.				
I feel ashamed/embarrassed about the odor of my genitals.				
I feel my genitals work/function as they should.				
I am conscious of trying to hide my genitals from being seen by my partner.				
I feel that my genitals are attractive and would arouse my partner.				
As a child/adolescent, I was self-conscious or embarrassed about my genitals.				
I use feminine hygiene products (douches, sprays, suppositories, etc.)				
Growing up, my family/care givers gave me positive messages about my genitals.				
Growing up, I was given the message that touching my genitals was “bad” or “dirty.”				
I feel my genitals are normal, or like other women's				
I enjoy my genitals				

II. Please check whether or not the following adjectives describe your feelings about your genitals:

	APPLIES TO ME	DOES NOT APPLY TO ME
Unattractive		
Embarrassing		
Disgusting		
Attractive		
Malodorous (bad smelling)		
Offensive		
Inadequate		
Healthy		
Functional		
Desirable		
Well-shaped		
Good-sized		

Berman , Berman , Miles , Pollets , & Powell (2003)

Appendix H. Female Sexual Function Index

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 <u>during</u> 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 <u>following</u> 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

Thank you for completing this questionnaire

Rosen R. et al. (2000).

Appendix I. Body Esteem Scale

Please indicate how much you feel each of the following:

I like what I look like in pictures ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

Other people consider me good looking ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I'm proud of my body ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I am preoccupied with trying to change my body weight ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I think my appearance would help me get a job ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I like what I see when I look in the mirror ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

There are lots of things I'd change about my looks if I could ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I am satisfied with my weight _____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I wish I looked better ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I really like what I weigh ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I wish I looked like someone else ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

People my own age like my looks ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

My looks upset me ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I'm as nice looking as most people ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I'm pretty happy about the way I look ____1_____2_____3_____4_____5_____
Never Not often Sometimes Often Always

I feel I weigh the right amount for my height	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always
I feel ashamed of how I look	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always
Weighing myself depresses me	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always
My weight makes me unhappy	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always
My looks help me to get dates	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always
I worry about the way I look	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always
I think I have a good body	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always
I'm looking as nice as I'd like to	____1_____2_____3_____4_____5_____ Never Not often Sometimes Often Always

Mendelson, Mendelson, & White, (2001)

Appendix J – Composite Questionnaire

Demographic Information — Choose not to answer

1. Age: _____ □

2. Ethnicity (circle one): Black Hispanic White Asian
Pacific Islander American Indian Alaskan Native Other _____ □

3. Years of Education (circle one): 8 9 10 11 12 13 14 15 16+ □

4. Are you currently in a sexual relationship? (circle one) YES NO □

5. Are your sexual partner/s? (circle one): MEN WOMEN BOTH □

6. Have you ever given birth?(circle one): YES NO □

If yes,

How many children have you had vaginally? _____

How many children have you had by cesarean section? _____

7. Have you ever been diagnosed with pelvic organ prolapse? : YES NO □

8. Have you ever had genital surgery? (circle one) YES NO □

If yes, what type? _____

9. Have you ever considered genital cosmetic surgery (labiaplasty, vaginoplasty, vaginal rejuvenation, hymen reconstruction YES NO □

10. Have you ever been sexually abused? (circle one) YES NO □

If yes, do you feel that you have adequately dealt with it? YES NO □

INSTRUCTIONS: Please indicate how much you feel each of the following:

1. I like what I look like in pictures
[ ] never [ ] not often [ ] sometimes [ ] often [ ] always

2. Other people consider me good looking
[ ] never [ ] not often [ ] sometimes [ ] often [ ] always

3. I'm proud of my body
[ ] never [ ] not often [ ] sometimes [ ] often [ ] always

4. I am preoccupied with trying to change my body weight
   [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

5. I think my appearance would help me get a job
   [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

6. I like what I see when I look in the mirror
   [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

7. There are lots of things I'd change about my looks if I could
   [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

8. I am satisfied with my weight
   [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

9. I wish I looked better
   [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

10. I really like what I weigh
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

11. I wish I looked like someone else
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

12. People my own age like my looks
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

13. My looks upset me
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

14. I'm as nice looking as most people
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

15. I'm pretty happy about the way I look
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

16. I feel I weigh the right amount for my height
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

17. I feel ashamed of how I look
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

18. Weighing myself depresses me
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

19. My weight makes me unhappy
    [ ] never [ ] not often [ ] sometimes [ ] often [ ] always

20. My looks help me to get dates
[ ] never [ ] not often [ ] sometimes [ ] often [ ] always

21. I worry about the way I look
[ ] never [ ] not often [ ] sometimes [ ] often [ ] always

22. I think I have a good body
[ ] never [ ] not often [ ] sometimes [ ] often [ ] always

23. I'm looking as nice as I'd like to
[ ] never [ ] not often [ ] sometimes [ ] often [ ] always

INSTRUCTIONS: Please read the following items and check the category that applies to YOUR feelings or thoughts about your genitals (i.e., labia, vagina, clitoris, vulva).

1. I feel anxiety and worry when I think about how my genitals function.
[ ] always [ ] often [ ] sometimes [ ] never

2. I look at my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

3. I feel confident that I understand my sexual anatomy.
[ ] always [ ] often [ ] sometimes [ ] never

4. When I think about my genitals, I feel ashamed or embarrassed.
[ ] always [ ] often [ ] sometimes [ ] never

5. I feel comfortable/positive about my partner seeing my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

6. I have sad and depressed feelings when I think about my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

7. I feel ashamed/embarrassed about the size of my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

8. I feel ashamed/embarrassed about the shape of my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

9. I feel ashamed/embarrassed about the look of my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

10. I feel ashamed/embarrassed about the odor of my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

11. I feel my genitals work/function as they should.
[ ] always [ ] often [ ] sometimes [ ] never

12. I am conscious of trying to hide my genitals from being seen by my partner.
[ ] always [ ] often [ ] sometimes [ ] never

13. I feel that my genitals are attractive and would arouse my partner.
[ ] always [ ] often [ ] sometimes [ ] never

14. As a child/adolescent, I was self-conscious or embarrassed about my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

15. I use feminine hygiene products (douches, sprays, suppositories, etc.)
[ ] always [ ] often [ ] sometimes [ ] never

16. Growing up, my family/care givers gave me positive messages about my genitals.
[ ] always [ ] often [ ] sometimes [ ] never

17. Growing up, I was given the message that touching my genitals was “bad” or “dirty.
[ ] always [ ] often [ ] sometimes [ ] never

18. I feel my genitals are normal, or like other women's
[ ] always [ ] often [ ] sometimes [ ] never

19. I enjoy my genitals
[ ] always [ ] often [ ] sometimes [ ] never

INSTRUCTIONS: Please check whether or not the following adjectives describe your feelings about your genitals:

1. Unattractive
[ ] applies to me [ ] does not apply to me

2. Embarrassing
[ ] applies to me [ ] does not apply to me

3. Disgusting
[ ] applies to me [ ] does not apply to me

4. Attractive
[ ] applies to me [ ] does not apply to me

5. Malodorous (bad smelling)
[ ] applies to me [ ] does not apply to me

6. Offensive
[ ] applies to me [ ] does not apply to me

7. Inadequate
[ ] applies to me [ ] does not apply to me

8. Healthy

[ ] applies to me [ ] does not apply to me

9. Functional
[ ] applies to me [ ] does not apply to me

10. Desirable
[ ] applies to me [ ] does not apply to me

11. Well-shaped
[ ] applies to me [ ] does not apply to me

12. Good-sized
[ ] applies to me [ ] does not apply to me

INSTRUCTIONS: If you have experienced trauma or hurt (through accident, infection, surgery, abuse, birth – please circle appropriate category) to your genitals please answer the following question

1. I felt better about my genitals before hurt/trauma
[ ] not applicable [ ] always [ ] often [ ] sometimes [ ] never

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.
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.
CHECK ONLY ONE BOX PER QUESTION

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

2. 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** you 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

Your feedback is very important to this research….please comment on your experience of participating in this research.

_____

_____

_____

_____

_____

Thank you for completing this questionnaire!

Appendix K – Correlation Matrix

	I feel anxiety about function	I look at my genitals	I feel confident I understand my anatomy	When I think about my genitals I feel ashamed	I feel comfortable about my partner seeing my genitals
I feel anxiety about function	1.00	.034	.163	.326	.159
I look at my genitals	.034	1.00	.152	.005	.142
I feel confident I understand my anatomy	.163	.152	1.00	.212	.242
When I think about my genitals I feel ashamed	.326	.005	.212	1.00	.423
I feel comfortable about my partner seeing my genitals	.159	.142	.242	.423	1.00
I have sad feelings when I think about my genitals	.428	-.013	.119	.400	.203
I feel ashamed about the shape	.300	-.110	.057	.533	.214
I feel ashamed about the look	.281	-.134	.063	.593	.282
I feel ashamed about the odor	.223	-.071	.074	.249	.192
My genitals function as they should	.345	.099	.296	.199	.212
I try to hide my genitals from my partner	.125	.062	.184	.497	.501
I feel my genitals are attractive	.115	.172	.141	.361	.520
My family gave me positive messages about my genitals	.054	.091	.135	.092	.154
I was given messages that touching my genitals was bad	.150	.027	.070	.095	.131
Unattractive	.256	.020	.058	.419	.306

	I feel anxiety about function	I look at my genitals	I feel confident I understand my anatomy	When I think about my genitals I feel ashamed	I feel comfortable about my partner seeing my genitals
Disgusting	.132	.079	.119	.272	.160
Attractive	.177	.145	.063	.218	.347
Malodorous	.106	.024	.088	.187	.170
Offensive	.104	-.051	.037	.145	.067
Inadequate	.321	.066	.038	.184	.010
Healthy	.280	-.009	.039	.156	.164
Functional	.247	.049	.129	.185	.159
Desirable	.136	.152	.158	.247	.386
Well-shaped	.250	.100	.071	.307	.288
I feel embarrassed about the size	.199	-.116	.090	.447	.205
As a child I was self conscious about my genitals	.196	-.040	.126	.264	.263
I use feminine hygiene products	.076	-.048	-.015	.001	.075
Good sized	.178	.155	.071	.245	.249
I feel my genitals are like other women's	.360	.037	.373	.408	.323
I enjoy my genitals	.211	.256	.332	.338	.458

	I have sad feelings when I think about my genitals	I feel ashamed about the shape	I feel ashamed about the look	I feel ashamed about the odor	My genitals function as they should
I feel anxiety about function	.428	.300	.261	.223	.345
I look at my genitals	-.013	-.110	-.134	-.071	.099
I feel confident I understand my anatomy	.119	.057	.063	.074	.296
When I think about my genitals I feel ashamed	.400	.533	.593	.249	.199
I feel comfortable about my partner seeing my genitals	.203	.214	.282	.192	.212
I have sad feelings when I think about my genitals	1.00	.502	.444	.168	.265
I feel ashamed about the shape	.502	1.00	.767	.182	.204
I feel ashamed about the look	.444	.767	1.00	.248	.166
I feel ashamed about the odor	.168	.182	.248	1.00	.166
My genitals function as they should	.265	.204	.166	.166	1.00
I try to hide my genitals from my partner	.222	.287	.391	.130	.213
I feel my genitals are attractive	.186	.210	.276	.189	.208
My family gave me positive messages about my genitals	.092	.034	.052	.051	.170
I was given messages that touching my genitals was bad	.020	.091	.047	.174	.133
Unattractive	.286	.474	.515	.169	.118
Embarrassing	.327	.390	.421	.188	.197

	I have sad feelings when I think about my genitals	I feel ashamed about the shape	I feel ashamed about the look	I feel ashamed about the odor	My genitals function as they should
Disgusting	.085	.113	.158	.159	.069
Attractive	.179	.208	.234	.176	.165
Malodorous	.077	.067	.119	.437	.152
Offensive	.097	.105	.192	.150	-.010
Inadequate	.176	.124	.202	.153	.160
Healthy	.257	.130	.060	.125	.226
Functional	.286	.092	.057	.129	.273
Desirable	.164	.186	.176	.105	.134
Well-shaped	.228	.378	.304	.180	.211
I feel embarrassed about the size	.412	.756	.625	.151	.141
As a child I was self conscious about my genitals	.113	.069	.106	.166	.144
I use feminine hygiene products	.013	-.021	.074	.105	.103
Good sized	.134	.198	.183	.166	.076
I feel my genitals are like other women's	.363	.380	.404	.180	.443
I enjoy my genitals	.208	.114	.127	.179	.239

	I try to hide my genitals from my partner	I feel my genitals are attractive	My family gave me positive messages about my genitals	I was given messages that touching my genitals was bad	Unattractive
I feel anxiety about function	.125	.115	.054	.150	.256
I look at my genitals	.062	.172	.091	.027	.020
I feel confident I understand my anatomy	.184	.141	.135	.070	.058
When I think about my genitals I feel ashamed	.497	.361	.092	.095	.419
I feel comfortable about my partner seeing my genitals	.501	.520	.154	.131	.306
I have sad feelings when I think about my genitals	.222	.186	.092	.020	.286
I feel ashamed about the shape	.287	.210	.034	.091	.474
I feel ashamed about the look	.391	.276	.052	.047	.515
I feel ashamed about the odor	.130	.189	.051	.174	.169
My genitals function as they should	.213	.208	.170	.133	.118
I try to hide my genitals from my partner	1.00	.321	.035	.111	.352
I feel my genitals are attractive	.321	1.00	.185	.098	.314
My family gave me positive messages about my genitals	.035	.185	1.00	.081	.074
I was given messages that touching my genitals was bad	.111	.098	.081	1.00	.081
Unattractive	.352	.314	.074	.120	1.00
Embarrassing	.376	.327	.065	.170	.534

	I try to hide my genitals from my partner	I feel my genitals are attractive	My family gave me positive messages about my genitals	I was given messages that touching my genitals was bad	Unattractive
Disgusting	.157	.189	-.027	.023	.327
Attractive	.286	.478	.221	.041	.340
Malodorous	.119	.216	.079	.145	.098
Offensive	.053	-.014	-.051	.114	.176
Inadequate	.085	.108	.114	.090	.287
Healthy	.086	.132	.022	-.024	.256
Functional	.189	.108	.073	-.003	.145
Desirable	.257	.526	.214	.089	.288
Well-shaped	.192	.384	.181	.053	.360
I feel embarrassed about the size	.282	.234	.048	.038	.372
As a child I was self conscious about my genitals	.337	.089	.138	.123	.176
I use feminine hygiene products	.107	.087	-.080	.195	.137
Good sized	.192	.386	.125	.064	.353
I feel my genitals are like other women's	.341	.279	.116	.107	.392
I enjoy my genitals	.308	.508	.175	.175	.312

	Embarrassing	Disgusting	Attractive	Malodorous	Offensive
I feel anxiety about function	.248	.132	.177	.106	.104
I look at my genitals	.038	.079	.145	.024	-.051
I feel confident I understand my anatomy	.117	.119	.063	.088	.037
When I think about my genitals I feel ashamed	.491	.272	.218	.187	.145
I feel comfortable about my partner seeing my genitals	.332	.160	.347	.170	.067
I have sad feelings when I think about my genitals	.327	.085	.179	.077	.097
I feel ashamed about the shape	.390	.113	.208	.067	.105
I feel ashamed about the look	.421	.158	.234	.119	.192
I feel ashamed about the odor	.188	.159	.176	.437	.150
My genitals function as they should	.197	.069	.165	.152	-.010
I try to hide my genitals from my partner	.376	.157	.286	.119	.053
I feel my genitals are attractive	.327	.189	.478	.216	-.014
My family gave me positive messages about my genitals	.065	-.027	.221	.079	-.051
I was given messages that touching my genitals was bad	.170	.023	.041	.145	.114
Unattractive	.534	.327	.340	.098	.176
Embarrassing	1.00	.317	.256	.202	.193

	Embarrassing	Disgusting	Attractive	Malodorous	Offensive
Disgusting	.317	1.00	.140	.086	.119
Attractive	.256	.140	1.00	.177	.019
Malodorous	.202	.086	.177	1.00	.164
Offensive	.193	.119	.019	.164	1.00
Inadequate	.276	.171	.216	.236	.400
Healthy	.181	.206	.174	.044	.022
Functional	.079	.056	.193	.098	.178
Desirable	.273	.119	.522	.152	-.067
Well-shaped	.327	.135	.492	.176	.065
I feel embarrassed about the size	.363	.170	.187	.045	.153
As a child I was self conscious about my genitals	.161	-.006	.033	.153	.080
I use feminine hygiene products	.138	.070	.091	.054	.104
Good sized	.318	.158	.439	.176	.081
I feel my genitals are like other women's	.375	.241	.257	.112	.136
I enjoy my genitals	.283	.240	.442	.205	.032

	Inadequate	Healthy	Functional	Desirable	Well-Shaped
I feel anxiety about function	.321	.280	.247	.136	.250
I look at my genitals	.066	-.009	.049	.152	.100
I feel confident I understand my anatomy	.038	.039	.129	.158	.071
When I think about my genitals I feel ashamed	.184	.156	.185	.247	.307
I feel comfortable about my partner seeing my genitals	.010	.164	.159	.386	.288
I have sad feelings when I think about my genitals	.176	.257	.286	.164	.228
I feel ashamed about the shape	.124	.130	.092	.186	.378
I feel ashamed about the look	.202	.060	.057	.176	.304
I feel ashamed about the odor	.153	.125	.129	.105	.180
My genitals function as they should	.160	.226	.273	.134	.211
I try to hide my genitals from my partner	.085	.086	.189	.257	.192
I feel my genitals are attractive	.108	.132	.108	.526	.384
My family gave me positive messages about my genitals	.114	.022	.073	.214	.181
I was given messages that touching my genitals was bad	.090	-.024	-.003	/089	.053
Unattractive	.287	.255	.145	.288	.360
Embarrassing	.276	.181	.079	.273	.327

	Inadequate	Healthy	Functional	Desirable	Well-Shaped
Disgusting	.171	.206	.056	.119	.135
Attractive	.216	.174	.193	.522	.492
Malodorous	.236	.044	.098	.152	.176
Offensive	.400	.022	.178	-.067	.065
Inadequate	1.00	.131	.149	.144	.211
Healthy	.131	1.00	.430	.185	.262
Functional	.149	.430	1.00	.134	.183
Desirable	.144	.185	.134	1.00	.624
Well-shaped	.211	.262	.183	.624	.203
I feel embarrassed about the size	.150	.025	.037	.203	.350
As a child I was self conscious about my genitals	.102	.128	.164	.038	.097
I use feminine hygiene products	.053	.079	.000	.045	.073
Good sized	.240	.207	.147	.578	.779
I feel my genitals are like other women's	.264	.351	.384	.296	.388
I enjoy my genitals	.198	.250	.249	.423	.353

	I feel ashamed about the size of my genitals	As a child I was self conscious about my genitals	I use feminine hygiene products	Good sized	I feel my genitals are like other women's
I feel anxiety about function	.119	.196	.076	.178	.360
I look at my genitals	-.116	-.040	-.048	.155	.037
I feel confident I understand my anatomy	.090	.126	-.015	.071	.323
When I think about my genitals I feel ashamed	.447	.264	.001	.245	.408
I feel comfortable about my partner seeing my genitals	.205	.263	.075	.249	.325
I have sad feelings when I think about my genitals	.412	.113	.013	.134	.363
I feel ashamed about the shape	.756	.069	-.021	.198	.380
I feel ashamed about the look	.625	.106	.074	.183	.404
I feel ashamed about the odor	.151	.166	.105	.166	.188
My genitals function as they should	.141	.144	.103	.076	.443
I try to hide my genitals from my partner	.282	.337	.107	.192	.341
I feel my genitals are attractive	.234	.089	.087	.386	.279
My family gave me positive messages about my genitals	.048	.138	-.080	.125	.116
I was given messages that touching my genitals was bad	.038	.123	.195	.064	.107
Unattractive	.372	.176	.137	.353	.392
Embarrassing	.363	.161	.138	.318	.375

	I feel ashamed about the size of my genitals	As a child I was self conscious about my genitals	I use feminine hygiene products	Good sized	I feel my genitals are like other women's
Disgusting	.170	-.006	.070	.158	.241
Attractive	.187	.033	.091	.439	.257
Malodorous	.045	.153	.054	.176	.112
Offensive	.153	.080	.104	.081	.136
Inadequate	.150	.102	.053	.240	.264
Healthy	.025	.128	.079	.207	.351
Functional	.037	.164	.000	.147	.384
Desirable	.203	.038	.045	.578	.296
Well-shaped	.350	.097	.073	.779	.388
I feel embarrassed about the size	1.00	.032	-.010	.266	.380
As a child I was self conscious about my genitals	.032	1.00	.088	.123	.228
I use feminine hygiene products	-.010	.088	1.00	.075	.062
Good sized	.266	.123	.075	1.00	.330
I feel my genitals are like other women's	.380	.228	.062	.330	1.00
I enjoy my genitals	.147	.186	.049	.335	.406

Appendix L – GSIS with Validity Results

INSTRUCTIONS: Please read the following items and check the category that applies to YOUR feelings or thoughts about your genitals (i.e., labia, vagina, clitoris, vulva).

1. I feel anxiety and worry when I think about how my genitals function.
   [ ] always [ ] often [ ] sometimes [ ] never
2. *I look at my genitals. (low correlations)*
   [ ] always [ ] often [ ] sometimes [ ] never

3. *I feel confident that I understand my sexual anatomy.(low correlations)*
   [ ] always [ ] often [ ] sometimes [ ] never

4. When I think about my genitals, I feel ashamed or embarrassed.
   [ ] always [ ] often [ ] sometimes [ ] never

5. I feel comfortable/positive about my partner seeing my genitals.
   [ ] always [ ] often [ ] sometimes [ ] never

6. I have sad and depressed feelings when I think about my genitals.
   [ ] always [ ] often [ ] sometimes [ ] never

7. *I feel ashamed/embarrassed about the size of my genitals.(CVI .4, highly correlated with 8, , & 31)*
   [ ] always [ ] often [ ] sometimes [ ] never

8. I feel ashamed/embarrassed about the shape of my genitals.
   [ ] always [ ] often [ ] sometimes [ ] never

9. *I feel ashamed/embarrassed about the look of my genitals. , (highly correlated with 7, 8 & 31)*
   [ ] always [ ] often [ ] sometimes [ ] never

10. I feel ashamed/embarrassed about the odor of my genitals.
    [ ] always [ ] often [ ] sometimes [ ] never

11. I feel my genitals work/function as they should.
    [ ] always [ ] often [ ] sometimes [ ] never

12. *I am conscious of trying to hide my genitals from being seen by my partner. (CVI .6, low communality)*
    [ ] always [ ] often [ ] sometimes [ ] never

13. I feel that my genitals are attractive and would arouse my partner.
    [ ] always [ ] often [ ] sometimes [ ] never

14. *As a child/adolescent, I was self-conscious or embarrassed about my genitals. (CVI .4)*
    [ ] always [ ] often [ ] sometimes [ ] never

15. I use feminine hygiene products (douches, sprays, suppositories, etc.) (CVI .4, low correlations)
[ ] always [ ] often [ ] sometimes [ ] never

16. Growing up, my family/care givers gave me positive messages about my genitals.
[ ] always [ ] often [ ] sometimes [ ] never (CVI.6, low correlations)

17. Growing up, I was given the message that touching my genitals was "bad" or "dirty.
[ ] always [ ] often [ ] sometimes [ ] never (low correlations)

18. I feel my genitals are normal, or like other women's
[ ] always [ ] often [ ] sometimes [ ] never

19. I enjoy my genitals
[ ] always [ ] often [ ] sometimes [ ] never

INSTRUCTIONS: Please check whether or not the following adjectives describe your feelings about your genitals:

20. Unattractive
[ ] applies to me [ ] does not apply to me

21. Embarrassing
[ ] applies to me [ ] does not apply to me

22. Disgusting(CV .6, low correlations)
[ ] applies to me [ ] does not apply to me

23. Attractive
[ ] applies to me [ ] does not apply to me

24. Malodorous (bad smelling)
[ ] applies to me [ ] does not apply to me

25. Offensive
[ ] applies to me [ ] does not apply to me

26. Inadequate
[ ] applies to me [ ] does not apply to me

27. Healthy
[ ] applies to me [ ] does not apply to me

28. Functional
[ ] applies to me [ ] does not apply to me

29. Desirable
[ ] applies to me [ ] does not apply to me

30. Well-shaped

[ ] applies to me [ ] does not apply to me

31. Good-sized
[ ] applies to me [ ] does not apply to me (CVI .4, highly correlated with 7, 8, & 9)

INSTRUCTIONS: If you have experienced trauma or hurt (through accident, infection, surgery, abuse, birth – please circle appropriate category) to your genitals please answer the following question

32. I felt better about my genitals before hurt/trauma
[ ] not applicable [ ] always [ ] often [ ] sometimes [ ] never

BOLD ITEMS WERE ADDED AFTER THE CONTENT ANALYSIS
ITEMS IN ITALICS WERE REMOVED AFTER THE FACTOR ANALYSIS

Appendix M. The GSIS-20

INSTRUCTIONS: Please read the following items and check the category that applies to YOUR feelings or thoughts about your genitals (i.e., labia, vagina, clitoris, vulva).

1. I feel anxiety and worry when I think about how my genitals function.
   [ ] always [ ] often [ ] sometimes [ ] never

2. When I think about my genitals, I feel ashamed or embarrassed.
   [ ] always [ ] often [ ] sometimes [ ] never

3. I feel comfortable/positive about my partner seeing my genitals.
   [ ] always [ ] often [ ] sometimes [ ] never

4. I have sad and depressed feelings when I think about my genitals.
   [ ] always [ ] often [ ] sometimes [ ] never

5. I feel ashamed/embarrassed about the shape of my genitals.
   [ ] always [ ] often [ ] sometimes [ ] never

6. I feel ashamed/embarrassed about the odor of my genitals.
   [ ] always [ ] often [ ] sometimes [ ] never

7. I feel my genitals work/function as they should.
   [ ] always [ ] often [ ] sometimes [ ] never

8. I feel that my genitals are attractive and would arouse my partner.
   [ ] always [ ] often [ ] sometimes [ ] never

9. I feel my genitals are normal, or like other women's
   [ ] always [ ] often [ ] sometimes [ ] never

10. I enjoy my genitals
    [ ] always [ ] often [ ] sometimes [ ] never

INSTRUCTIONS: Please check whether or not the following adjectives describe your feelings about your genitals:

11. Unattractive
    [ ] applies to me [ ] does not apply to me

12. Embarrassing
    [ ] applies to me [ ] does not apply to me

13. Attractive
    [ ] applies to me [ ] does not apply to me

14. Malodorous (bad smelling)
    [ ] applies to me [ ] does not apply to me

15. Offensive
    [ ] applies to me [ ] does not apply to me

16. Inadequate
    [ ] applies to me [ ] does not apply to me

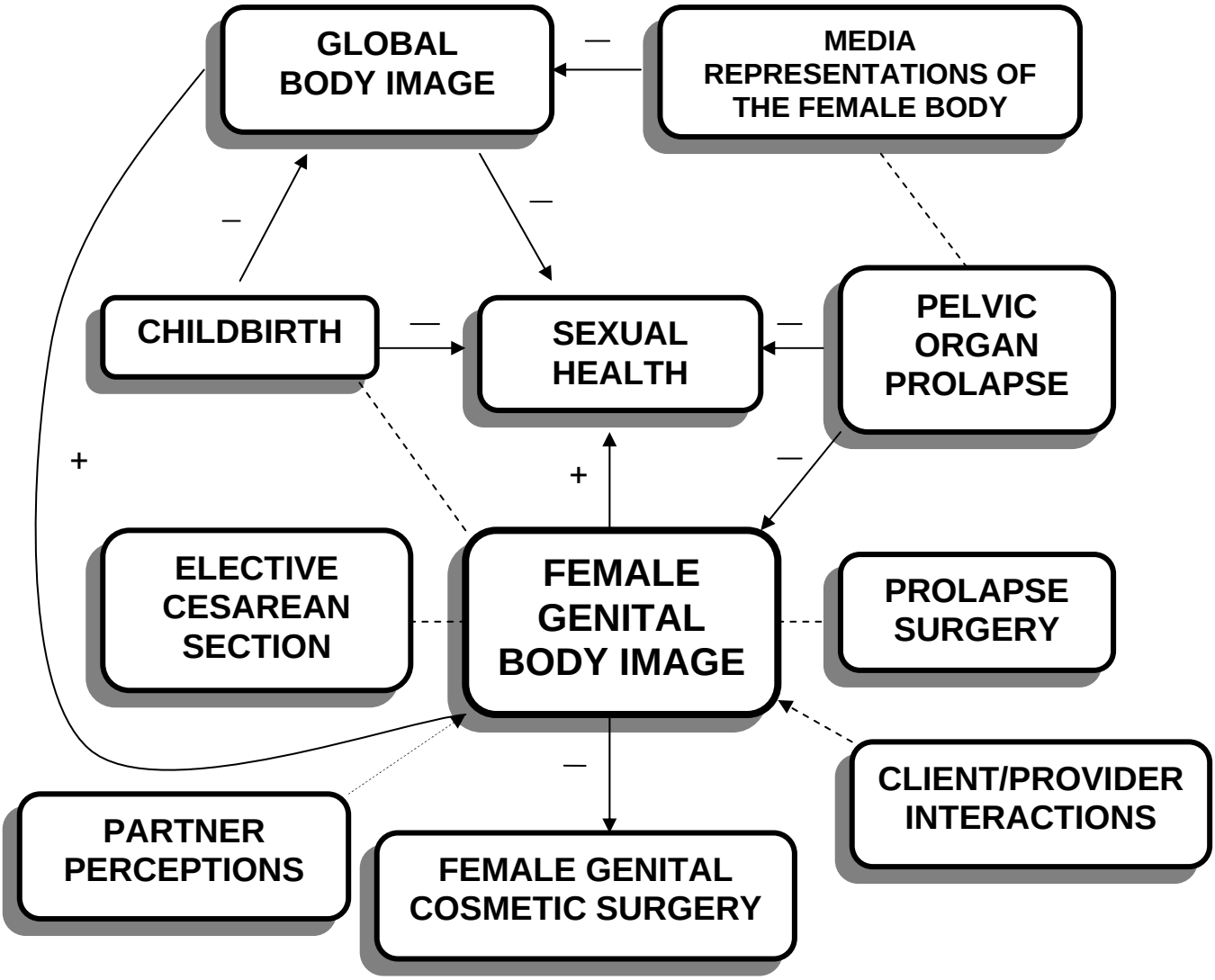
17. Healthy
    [ ] applies to me [ ] does not apply to me

18. Functional
    [ ] applies to me [ ] does not apply to me

19. Desirable
    [ ] applies to me [ ] does not apply to me

20. Well-shaped
    [ ] applies to me [ ] does not apply to me

Appendix N. – Revised Conceptual Model



Appendix O. Participant Comments

Theme	Undergraduate Group	Prolapse/Control Group	Post childbirth group
Research participation as an opportunity for self reflection	• sometimes I think my boyfriend and I aren't physical enough…sometimes I think I'm shy, but taking this survey really made me evaluate my physical and emotional connection with him and made me realize that overall I am very pleased • it made me think about my sexual experience and how uncomfortable it can be also how I view my body • (very in depth questions – but interesting questions never really thought about them before • it made me think about my genitals that I have never thought about (open eyes to the importance of how genitals affect how women view themselves) • it was interesting to reflect on myself in this way. I enjoyed it! • interesting to remembering these topic, especially my perception to my genitals! • I'm pretty happy with myself (I would be interested in seeing the results to see how many women are not happy with themselves)	• I don't think about my genitals • This questionnaire made me think about myself (insight) • thinking back to when I was young, till now I feel better about my body and very proud •	• Honestly don't think about my "genital body image" all this much
Research participation as contribution	• I think it's great to survey women, especially on these topics • I would be interested in seeing the results to see how many women are not happy with themselves	• I have enjoyed participating in this research • I am glad to participate in survey…good luck	• Best of luck with your dissertation! • (it took 16 weeks to accomplish penetration after delivering my baby)

	• good luck with your research • (very personal but) I hope this helps!	• I'd be happy to do it again • (Not a problem) – glad to help! • I hope my answers have been of some help to you... Good luck! • Good luck • Best wishes for a successful dissertation! Congratulations! • I am willing to help out on studies if it helps someone out in the end. • I don't know if I've helped you with your survey • I hope this helps with your research • (some questions didn't apply) – but glad to answer as best I could • Thank you for the opportunity to help you in your study. Call on me any time!	so I am more than willing to share • I am completely okay with taking surveys and am happy to help • best of luck on your research! • (My answers are skewed due to recentness of giving birth….hopefully this sill still help your research!

Comfort in participation	• I felt comfortable to answer honestly • very good! • :) • good	• I have enjoyed participating in this research • This research was easy to follow and complete • Not a problem • I did not feel uncomfortable participating in the study • I was not embarrassed to participate in this study • For me it was very easy (especially seeing I have not had sex in a while) • No problems filling out the questionnaire • No problem at all! • The questions were not as "bad" as I had anticipated	• My experience was fine. I didn't feel any discomfort when answering questions
Discomfort in participation	• very in depth questions • weird to share • awkward to fill out in class (surrounded by others) • Very personal (but I hope this helps!) • (the study seems interesting) a bit hard to rate my feelings and experiences	• rather embarrassed but answered honestly • extremely uncomfortable answering these questions • this was difficult • these questions were hard to answer • a little uncomfortable (since I'm a widow) • sorry, last page too personal	• A little uncomfortable with the genitals questions •

Positive responses to research topic	• I feel this research asks important questions and the potential to reach conclusions or correlations between self esteem and sexual experience. • (Very in depth questions) – but interesting questions • (the survey was very thorough and engaging) unlike any other survey I've ever taken before • I think it's great to survey women, especially on these topics. We need the reassurance that other women feel the same/have many similar experiences. (**research participation as reassurance)** • open eyes to the importance of how genitals affect how women view themselves • the study seems interesting	• It was interesting • Good questions • Quite interesting! • This was an interesting research project questionnaire • interesting! • I think it's very interesting	• I thought this was a good survey (I wish my OB would ask questions like this to me. I think this could help me if someone gave me answers about what I answered) • I think it's an interesting topic that has never been discussed but I think it should be discussed • It was interesting to read the questions

	• Interesting (weird to share) • Interesting to remembering these topic	
Limitations of FSFI regarding sexual partners	• didn't really take into consideration someone in a long term relationship with someone who doesn't go here…what if I haven't seen him in 4 weeks…I answered as if I had • for myself for example I am in a long distance relationship and haven't seen my boyfriend since Christmas which was over 4 weeks, therefore some questions were difficult to answer • I recently ended a sexual relationship, so in the past 4 weeks I had sexual experiences but not in the past 2 weeks • I've been out of a sexual relationship for about 2 years so my sexual experiences are from masturbation	• My partner is disabled, diabetic. Sexual activity is basically mutual masturbation • my husband has heart problems • no partner • my partner died 10 years ago • I'm a widow and do not date • no partner and have not been in any sort of relationship for over 10 years • I am not sexually active • My husband was an alcoholic, has diabetes and depression – no sex for almost 20 years now. • If I had taken this research while I was married and not a widow the answers would have been different. • I have no partner • I am not in a relationship with anyone • I haven't been sexual active or interested in past fourteen years • Past 4 weeks husband and I were not together, so answers reflect that • (a little uncomfortable) since I'm a widow

	• I think you should keep in mind in all questions that some participants have yet to experience a sexual partner. • I haven't had sex in a while ☹ • I have been with the same person and sexual partner for almost 2 years. He has also been my only sexual partner. We are also currently in a long distance relationship • my boyfriend goes to college in a different location and he is my only sexual partner	• not sexually active • Since I have not been sexually active for 12 years, I'm not sure how meaningful my answers will be to you
Constraints of response options	• I did not like the absolute options "always" "never". That's just not realistic. Better options to choose are needed • the adjectives section shouldn't be "this or that"	• Some questions difficult to respond "yes-no" – some gray areas for me • not all variables could be accounted for and so some answers would need to be modified/explained
Ambiguity of questions **Repetitiveness of questions**	• not all questions had applicable answers • question wording kind of ambiguous • Some questions	

	seemed repetitive or dancing around a previous question • I didn't enjoy answering the same questions over and over		
Global body image	• I don't like all of the questions about weight, weight doesn't impact my body image, but my size and how my clothing fits does • Keep in mind that some people are currently losing weight for health-related issues • an overweight by 30lbs	• I have gained 10 lbs this year and my self appreciation has plunged. My libido which was always high and very fun and enjoyable has plunged. I feel bad about everything. This has happened to me even with watching my diet, eating healthy food and exercise. Very discouraging • My body in general isn't the greatest but I'm thankful I'm healthy • I think when I feel better about the way I look physically that sex tends to be better • I believe I have a very pretty face/and hair but DO NOT like the way my body looks w/the extra pounds I am carrying • When my weight is closer to normal for my I think I have a good body. • my weight is good for my height (women always wish they were smaller) • I get frustrated with function not	• Since childbearing my body does not look good and I am upset all the time, the stretch marks and excess belly fat. I was small in size (weight_ but after the baby am very unhappy. I try slimming tea and diet pills but I am tired. (I don't feel for sex, since after the baby)

		looks. How I look, how I feel about my looks isn't the issue. I had the same feelings about weight, attractiveness, etc before the injury. But the days I've had the excessive urine loss I'm just mad at my body – it's like a betrayal	
Comments specific to sexual health	• Oral sex – orgasms easy. Sexual intercourse – harder to orgasm	• (my partner is disabled, diabetic) Sexual activity is basically mutual masturbation. I don't need that. If I'm aroused a vibrator works well and it's quick! • Although it may be interpreted that my dissatisfaction with sex may be due to "genital" image – I would say that it is based solely on the lack of endogenous lubrication that has resulted from that • There has been no sexual activity since my surgery 1/2007. As it made the opening smaller, and the inside much shorter, which caused so much pain we no longer attempt. We have a strong marriage so are able to live without it. • We have been married 39 years; we have sex once a week. My husband still likes sex. I like it too, but he has more sexual desire than me. I used to have a strong sex drive but my hormones are gone. We engage in oral sex	• I would think that breastfeeding plays a role in the decreased desire • I am breastfeeding a baby now, so I think that impacts my sex life and libido. It was better before • It took 16 weeks to accomplish penetration after delivering my baby (vaginally with episiotomy and forceps) so I am more than willing to share. • my answers are skewed due to recentness of giving birth (3.5 months ago), 3rd degree tear and breastfeeding • I wish my OB would ask questions like this to me. I think this could help me if someone gave me answers about what I answered • I gave birth only 5 months ago which has affected me more because my son is very snuggly and doesn't want to be put down alone than it has physically • the last section answered for the last 4 weeks is not necessarily a good indication of what I would consider a

		sometimes. We do alright for our age group I think. • Whatever sexual stimulation I experience is an occasional masturbation and it doesn't always end in orgasm. (age 81) • I am an 81 year old woman, why would you send me this questionnaire??? • There are several reasons not just for me but for my husband why we both have some difficulties with sexual intercourse. We both have very low sex drive and difficulty with intercourse for multiple reasons. It has been frustrating for both of us. • lose ability to reach orgasm (fast) • I feel like my age and my husband's age are big influences to my answers. Menopause doesn't do very nice things to some parts of our bodies! • current pessary use precluded penetration but it was not difficult or painful prior to this • I use Estrace Vaginal cream weekly and vaginal lubricant during sexual intercourse • I feel emotionally close to my husband outside of "sexual activity" during sexual activity I feel personally selfish – not in a	"normal" response or feeling for me as I'm still recovering from a recent vaginal birth with 3rd degree tearing/episiotomy and I am exclusively breastfeeding • Use OTC lubricant • recently had baby, now nursing – affects interest and comfort in sexual activity • use external lubricant • It should be noted that I just gave birth 6 months ago – so the sexual questions are related to this (not my normal level of arousal) • I gave birth in November 08 and since becoming pregnant in early 2008 sex has been a major issue in my relationship (in a negative way). We are working on it as a couple • My sex life is not 100% because my husband can't keep hard for long and he breaks very fast and I take a long time to reach orgasm. But I try hard. I don't feel for sex, since after the baby. • My lack of sexual interest has mostly to do with being very tired and grieving my father's loss and also financial difficulties • Have been content with the quality of intercourse but quantity has been too low. • Right after having my daughter it was

		negative way.	like having sex for the first time all over again for the first few times, after that we were back to normal.
Genital body image	•	• After 3 births my genitals look like ground meat and not a flower. • I feel like it hangs too low • didn't get messages about my genitals growing up • I grew up in Scotland – we just didn't talk about our genitals at all! • "well shaped" and "desirable" who cares! They are what they are and I don't think about it – I don't think they're pretty! Part of the body but I don't care	• My husband is extremely supportive and has not acted affected by the scarring to my genital area. In fact, he often jokes about it in a loving way. I'm pretty sure his nonchalant attitude has contributed to my acceptance of my scarring. In addition, my son is more than worth the trauma I had to endure – I'd do it again in a heartbeat. • The trauma my genitals went through are still healing • I was definitely more confident and sexually active/proud before I had my son. Things have never really felt the same since – that was 11 months ago • Honestly don't think about my "genital body image" all this much
Sexual abuse	• was abused by a female, happened at 5	• my son's father sexually abused me when I was a virgin •	• I was date raped by a boyfriend in college and did not experience my first orgasm with my partner/ husband until the age of 33.

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