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A Test of a Conceptual Model of Sexual Self-Concept  
and its Relation to Other Dimensions of Sexuality

By

Arielle R. Deutsch

A Dissertation

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The Graduate College at the University of Nebraska  
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A Test of a Conceptual Model of Sexual Self-Concept and its Relation to Other Dimensions of  
Sexuality

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University of Nebraska, 2012

Adviser: Brian Wilcox

One theoretical concept that has received modest attention in contemporary sexuality research is the sexual self, particularly focusing on sexual self-concept (SSC). While research on the sexual self has expanded over the past 20 years, there is a lack of cohesion within this research that has culminated in a collection of SSC models that, while sharing certain factors, are dissimilar from each other. Therefore a unified conceptual model of SSC needs to be empirically established. Additionally, little research has examined potential differences between genders in how SSC is expressed, as most SSC research focuses exclusively on women. Finally, understanding of human sexuality can be expanded by examining SSC models in a broader sexual context via its relationship with other aspects of sexuality, such as sexual behavior, intentions, and socialization. Using Buzwell and Rosenthal's 1996 sexual selves model as a theoretical basis, a six-factor higher-order latent SSC model was tested using confirmatory factor analysis. Lower-order factors for this model included sexual self-esteem, sexual self-efficacy, arousal, anxiety, exploration, and commitment. A five-factor latent model, after removing commitment and one sexual self-efficacy factors, was the best-fitting model, such that a higher-order SSC latent factor accounted for the correlations between these lower-order factors. This model was then tested for measurement and structural invariance between genders. Results indicated that SSC was similar on a measurement level for both men and women. Finally, a structural equation model was

estimated examining the relationship between the five-factor SSC model and previous sexual behavior, intended sexual behavior, and sexual socialization. When the three sexual dimensions were examined separately, all three sexual dimensions related to the latent SSC factor for both men and women. However, when all three sexual dimensions were entered together in the model, only intended sexual behavior was significantly related to a more positive SSC for both genders. Previous sexual behavior was only significantly related to SSC in women, and sexual socialization had no relationship for either gender. These findings have important implications for both sexual self-concept research, as well as contributing to better understanding human sexuality.

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## Table of Contents

<b>Title Page .....</b>	<b>i</b>
<b>Abstract.....</b>	<b>ii</b>
<b>Acknowledgements.....</b>	<b>iv</b>
<b>Table of Contents.....</b>	<b>vi</b>
<b>List of Tables and Figures.....</b>	<b>viii</b>
<b>Chapter 1: Introduction.....</b>	<b>1</b>
The Sexual Self .....	5
Sexual self-concept.....	11
Sexual Self-Concept and Gender.....	23
Sexual Self-Concept and its Relation to Broader Aspects of Sexuality.....	28
Current Study.....	33
Specific research questions and hypotheses.....	35
<b>Chapter 2: Method.....</b>	<b>43</b>
Participants.....	43
Measures.....	44
Procedure.....	49
Analytic Plan.....	51
<b>Chapter 3: Results.....</b>	<b>58</b>
Preliminary Results.....	58
Lower Order Factor SSC Latent Factors.....	58
Higher-Order Latent SSC Model.....	76
Measurement and Structural Invariance of Latent SSC Factors.....	82
Relationship Between SSC and Other Dimensions of Sexuality.....	84

Structural Equation Model.....	87
Post-Hoc Analyses.....	94
<b>Chapter 4: Discussion.....</b>	<b>96</b>
Sexual self-concept: A multidimensional construct.....	98
Sexual self-concept and gender: Similarities rather than differences.....	107
Sexual self-concept and sexual dimensions: Complex relationships.....	110
Limitations of the study.....	117
Future directions and implications.....	121
Conclusions.....	128
<b>References.....</b>	<b>130</b>
<b>Appendices.....</b>	<b>148</b>
Appendix A: Study questionnaire.....	148
Appendix B: Recruitment letter.....	174
Appendix C: Letter of consent.....	175
Appendix D: Tables for study.....	176



### List of Tables and Figures Provided In Text

Table 1: Operational definitions of sexual self-concept from articles using different sexual self-concept models.....	14
Table 2: Lower level factors within different models of sexual-self concept.....	15
Table 3: Examination of factors within sexual self-concept models in previous literature through Buzwell & Rosenthal's sexual-self theory.....	19
Table 4: Univariate statistics by gender for all model variables .....	59
Table 5: Bivariate statistics for SSC factors and sexual dimensions.....	60
Table 6: Bivariate relationships with SSC factors, dimensions of sexuality, and demographic variables .....	61
Table 7: Model fit statistics for SSC lower-order model factors for full sample.....	64
Table 8: Correlations between plausible value factor scores.....	78
Table 9: Correlations between 5-factor SSC plausible value factors for men and women.....	83
Table 10: Correlations between lower-order sexual self-concept factors and sexual dimension factors .....	89
Table 11: Correlations between higher-order sexual self-concept factor and structural equation model variables (standardized estimates).....	90
Table 12: Standardized structural equation model estimates and chi-square difference tests between genders.....	92
Figure 1: Buzwell and Rosenthal (1996) Sexual Self Model.....	9
Figure 2: Conceptual latent SSC model with plausible value lower order factors.....	37
Figure 3: Proposed analytic model predicting previous sexual behavior, sexual socialization, and intended future sexual behavior.....	41
Figure 4: Steps for testing all research hypotheses.....	53

Figure 5: Standardized factor loadings for hypothesized six-factor sexual self-concept model.....	77
Figure 6: Five-factor sexual self-concept model with two-factor sexual self-efficacy factor.....	81
Figure7: Pathways for structural equation model relating sexual self-concept to previous sexual behavior, intended sexual behavior, and sexual socialization.....	93

## Chapter 1

### A Test of a Conceptual Model of Sexual Self-Concept and its Relation to Other Dimensions of Sexuality

Over the past 20 years, there have been large paradigm shifts within sexuality research. Many researchers now view adolescent sexuality as an important aspect of healthy adolescent development. These ideas about sexuality are considerable departures from the negative, pathological frameworks featured in earlier sexuality research (Diamond, 2006; Russell, 2005). Contemporary research also differs from earlier studies through emphasis on sexual behavior as a normative adolescent behavior that is neither dichotomously positive nor negative, nor inherently risky (Tolman & McClelland, 2011). This shift in adolescent sex research is built on two main premises. The first is an emphasis on holistic sexual health. While early research defined sexual health as an absence of disease or disorder, both health organizations and researchers now recognize the importance of emotional, mental, and cognitive sexual wellbeing as important to overall sexual health (Edwards & Coleman, 2004). For example, the World Health Organization (2010) defines sexual health as “a state of physical, emotional, mental, and social well-being related to sexuality” (p3). In other words, healthy sexuality entails not only a lack of sexually transmitted infections or sexual disorders, but also sexual health in thoughts, feelings, and behavioral conduct. The second premise is an increasing consensus among social scientists that adolescent sexual exploration is necessary for both psychosocial wellbeing and future adult sexual health (Brooks-Gunn & Paikoff, 1993; Diamond, 2006; Moore & Rosenthal, 1993). While sexuality has long been regarded an integral part of adolescent development (Erikson, 1968), research that refers to adolescent sexuality as a natural aspect of the developmental process is a fairly recent phenomenon.

Researchers who strive to develop sophisticated understandings of adolescent sexuality may use developmental theory frameworks. Utilization of these frameworks entails examining longitudinal models of adolescent sexual development and the contexts in which adolescent sexuality develops, as well as using a multidimensional definition of what sexuality is (Chilman, 1990; Graber, Brooks-Gunn & Galen, 1998; Halpern, 2006; Smith & Gunthrie, 2005; Tolman, Steipe & Harmon, 2003). For example, Graber et al., (1998) describe nine different perspectives on adolescent sexuality that emerge when applying a developmental frame. These include viewing sexuality as a series of events that incorporate multiple behaviors and feelings, rather than focusing solely on intercourse, portraying adolescent sexuality as more than a single transition (i.e., onset of intercourse), and embedding sexuality within adolescent development. Researchers also are starting to examine other dimensions of sexuality important to development within adolescence. Such dimensions include one's subjective interpretation of adolescent sexual experiences and subsequent integration into a personal sexual narrative (Thomson, 1995), development of sexual agency and empowerment (Averett, Benson & Vaillancourt, 2008), biopsychosocial models of adolescent sexual development (Halpern, 2006), and sexual socialization in the environment (e.g., Bearman, Moody & Stovel, 2004; Brown, 2002; Miller & Whitaker, 2000). Researchers now understand that examining sexual behavior by itself is an insufficient way to truly understand it; sexual behavior must be examined as embedded in a broader context of human sexuality. This can especially hold true in adolescence, a time where one's sexuality starts to become a prominent aspect of an individual's self.

As such, a burgeoning area of adolescent sexuality research that has grown considerably in the past decade is sexual selfhood (Tolman & McClelland, 2011). The sexual self is defined as how an individual perceives his or her own qualities within the sexual domain (Buzwell &

Rosenthal, 1996). This research typically involves the development of theoretical and empirical models of how individuals think and feel about themselves as sexual beings. Much of this work is focused on adolescent and young adult populations. While a substantial body of sexual self research has started to grow, it has also started to become fragmented, with both niche conceptualizations and a large amount of data-driven models that are unrelated to each other. Ultimately, this limits the usefulness of sexual selfhood as a theory and a conceptual model in enhancing understanding of human sexuality.

The purpose of this dissertation is to further expand on sexual selfhood research, focusing on a specific area of sexual selfhood called the sexual self-concept (SSC). Sexual self-concept shares the same definition as sexual selfhood. While there are other terms for sexual selfhood (e.g. sexual self-schema, sexual subjectivity, sexual self-perception), sexual self-concept is the most common term within sexual selfhood research, and thus has the largest body of research to examine. Like most other domain-specific self-concepts (e.g., Marsh & Shavelson, 1985), SSC models are typically multidimensional. As detailed below, SSC models share many common lower-order factors, such as sexual self-esteem, sexual self-efficacy, and sexual anxiety, but no two models are the same. An emphasis on data-driven models as well as a lack of theoretical and empirical foundation has led to a very fragmented body of literature. Therefore, the first aim of this dissertation will be to create a conceptual, testable model of SSC that brings cohesion to SSC research. This model will be based on Buzwell and Rosenthal's (1996) sexual selves model, which proposes sexual selfhood is composed of six lower order factors: sexual self-esteem, sexual self-efficacy, arousal, exploration, anxiety, and commitment. This model is supported empirically, through previous SSC models, as well as theoretically, through previous research on self-concept. As detailed below, this model will comprehensively cover most of the lower-order

factors that are often featured in SSC models, therefore linking many of the previous models to each other. Therefore, the first research question that will be examined is “does a higher-order six-factor SSC model, as based on Buzwell and Rosenthal (1996) adequately explain the relationships between these factors?”.

Another characteristic of sexual selfhood (and SSC) research is the overemphasis on women. At least two sexual self-concept measures focus solely on women (O’Sullivan, Meyer-Balzburg, & McKeague, 2006; Vickberg & Deaux, 2005). While Buzwell and Rosenthal’s (1996) original study featured both men and women, very few SSC studies (Breakwell & Millward, 1997), have examined men. However, there are specific theories addressing sexual and gender roles, such as sexual script theory (e.g., Gagnon & Simon, 1973), that suggest men and women may think differently about sexuality, and ultimately, themselves as sexual individuals. Therefore, the second purpose of this dissertation is to examine the SSC model’s applicability for both men and women. The second research question that will be examined is “Do late adolescent/young adult men and women share the same underlying factor structure for a latent factor SSC model?”.

Finally, in order to both examine potential validity of the model, and examine the relationship between the SSC model and other dimensions of sexuality, the third goal of the dissertation will be to estimate how previous sexual behavior, intended sexual behavior, and sexual socialization relate to the SSC model. While testing a conceptual model of SSC is important, understanding the role of SSC in regard to other aspects of sexuality is the only way that we can truly start to construct a comprehensive understanding of human sexuality. Previous sexual behavior, intended sexual behavior, and sexual socialization have been linked individually to previous models of SSC. Furthermore, as forms of self-concept specific experiences, intention,

and general external feedback, all three dimensions are theoretically related to SSC. Therefore, the third research question that will be examined is “Do three prominent dimensions of sexuality relate to a latent factor of SSC?”

The remainder of this dissertation is as follows: First, I will discuss literature regarding sexual selfhood and SSC, and critically analyze previous SSC models. Discussion of the potential role of gender regarding SSC, as well as relationships between SSC and other sexual dimensions will follow. A conceptual model of SSC will then be proposed, and tested using latent factor analysis. The model with the best fit will be examined for measurement and structural invariance between genders, and then a structural equation model examining the relationship between the SSC model and previous sexual behavior, intended sexual behavior, and sexual socialization will be estimated. Finally, the results and implications for this study will be discussed.

### **The Sexual Self**

The sexual self is considered an active, dynamic structure that forms from organizing perceptions one’s own qualities in the sexual domain into a cohesive, internalized construct. Separate from personal conceptualizations of sex or sexual attitudes, the sexual self is defined as how individuals think and feel about sex in general and more how they think and feel about themselves as sexual beings. The sexual self has both intrapersonal and interpersonal dimensions; it requires understanding and evaluation of the self as both a sexual individual alone as well as in the context of a sexual experience with another individual. Throughout adolescence sexual selfhood can be very unstable. Both sexual socialization and personal sexual experiences will shape the way that adolescents perceive themselves as sexual individuals. In turn, this sexual

self will influence the way that adolescents think about sex, make decisions about sex, and interpret information they receive about sex.

Self-processes become particularly important in adolescence, as adolescence is the developmental time period in which individuals cultivate more sophisticated understandings about their identity and the self (Harter, 1999; Harter, 2012). While the development of sexuality happens throughout life (DeLamater, & Friedrich, 2002), and certainly does not start at adolescence, adolescence is a time in which many aspects of sexual development start to flourish. The onset of puberty, which brings development of secondary sex characteristics and the ability to reproduce, as well as an increase in sex hormones (i.e., gonadarche and adrenarche), starts in middle childhood and increases in intensity in adolescence (Halpern, 2006; McClintock & Herdt, 1996). Romantic relationships (and/or sexual relationships) become increasingly important for adolescent development (Collins, 2003; Seiffge-Krenke & Shulman, 2012), especially as they set the stage for young adulthood (Furman & Winkles, 2012). Finally, socially and culturally constructed norms can increasingly endorse sexual behavior over adolescence leading to socialization of such behavior (e.g., L'Engle & Jackson, 2008; Warner, Giordano, Manning & Longmore, 2011). As development in both self-processes (e.g., maturation of the self-concept) and sexuality start to coincide, adolescents start to cultivate a more sophisticated sexual self. Therefore, many studies on sexual self development (and as discussed later, sexual self-concept), focus on adolescent or young adult samples, as for many individuals, the sexual self will start to flourish during this time period. Based on an adolescent's sexual experiences, feedback from others regarding sexuality and their own sexual conduct, as well as more general messages that adolescents may start to internalize that shape how they



objectively feel about sexuality and subjectively feel about their own sexuality, an adolescent's sexual self will start to develop, and become a multidimensional complex personal construct.

An example of how the sexual self shapes and is shaped by an adolescent's sexual world can be seen in Thomson's (1995) qualitative examination of adolescent girls' accounts of their first sexual intercourse experiences. The study revealed that the way in which girls decided to have sex/pursued sex and interpreted their first sexual experience was influenced largely by the state of their sexual selves. This included their perceived self-efficacy about handling sexual situations, how confident they felt about themselves as sexual partners and sexual agents, and how much they felt a sexual relationship was important to who they were as girls, as romantic partners, and as individuals. Thomson also documented that the girls felt their sexual experiences changed the ways they felt about sexuality and themselves as sexual. Their positive and negative outcomes, in terms of physical health (such as STI's or teen pregnancy) as well as psychosocial wellbeing (such as self-esteem and general affect), was significantly impacted by their sexual selves prior to and after their intercourse experiences. A healthy, positive sense of sexual self-esteem (i.e., feeling positively about ones' sexuality and sexual conduct) and sexual self-efficacy (i.e., feeling confident and having a sense of mastery about how to conduct oneself sexually) led girls to make better sexual decisions and to more positively interpret their experiences.

Thomson's work detailed how sexual selves are not only aspects of sexual health, but interact with other dimensions of sexuality, and how the construct of sexual self is dynamic and changes over time. Similar dynamic processes involving the reciprocal relationship between motivational forces of sexual self-perceptions, and subjective sexual experiences are documented in other qualitative (Mollen & Stabb, 2010; Tolman, 1994) and quantitative (Archer & Grey, 2009; Pearson, 2008) works.

One of the most important works in cultivating a conceptual definition and working model of the sexual self is Buzwell and Rosenthal's (1996) taxonomy of different sexual selfhood styles in adolescence (see Figure 1). Buzwell and Rosenthal detail how the sexual self is a multidimensional construct with multiple factors that can affect other aspects of sexuality such as sexual risk taking behavior. They draw on three areas of research relating sexual self-belief to sexual practices. The first two, sexual self-esteem and sexual self-efficacy, they support with both empirical sexual research investigating both sexual self components, as well as theoretical self-concept research documenting the importance of self-esteem and self-efficacy as dimensions of self-concept. The third, sexual self-perceptions, is primarily based on Goggin's 1989 work examining sexual self-perceptions and sexual health. The sexual self-perception factors appear to be primarily based on empirical, rather than theoretical research. This conceptual model of the sexual self contains six lower order factors which potentially form a higher-order latent factor of sexual selfhood, derived from empirical and theoretical research regarding relationships between specific sexual self-beliefs and sexual behaviors.

Examining how the factors can relate to each other in a variety of ways, Buzwell and Rosenthal documented five different taxonomical sexual self styles: Sexually Naïve, Sexually Unassured, Sexually Competent, Sexually Adventurous, and Sexually Driven. The distinct taxonomical classifications seen within Buzwell and Rosenthal's sample indicates that while individuals can have different levels of different sexual self factors, these factors together make up overall sexual selves. The same sexual self categories were replicated by Smith and Rosenthal (1998), indicating that the six-factor model may be a valid conceptualization of the sexual self. Although many researchers use Buzwell and Rosenthal's conceptual definition of the sexual self, there has been very little empirical examination of their conceptual model. Only one study has

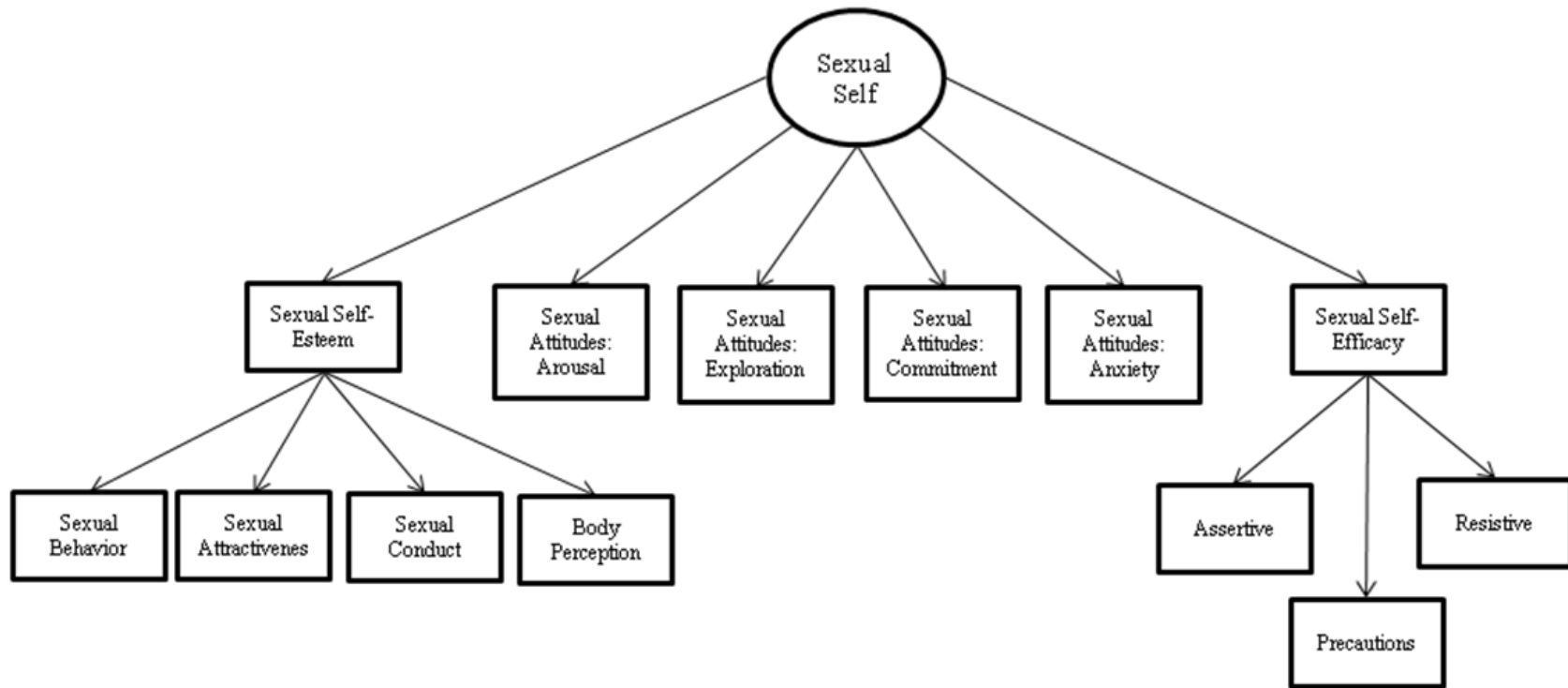


Figure 1: Buzwell and Rosenthal (1996) Sexual Self Model<sup>1</sup>

<sup>1</sup> Note: The sexual self-esteem sub factors are defined as follows: sexual behavior (perceptions of one's overall sexuality); sexual attractiveness (feelings of sexual appearance and desirability); sexual conduct (feelings of adequacy of behavior in sexual situations and with partner); body perception (contentment of body and feeling of body as "mature").

The sexual self-efficacy sub factors are defined as follows: resistive (confidence in ability to be responsible about and take initiative for saying no to unwanted sexual activity); assertive (confidence in ability to be assertive in achieving sexual satisfaction); precautions (confidence relating to purchase of condoms)

examined aspects of Buzwell and Rosenthal's model as lower order factors that can contribute to a higher-order latent sexual self construct (Aubrey, 2007). However, an examination of sexual self literature indicates that these six factors are common components of other sexual self conceptual models as well.

While Buzwell and Rosenthal's model gives a fairly clear model of what the sexual self may be composed of, it is not the only model of sexual selfhood. The sexual self can be a broad, fairly ambiguous concept, and researchers continue to create conceptual and empirical models of sexual selves for quantification and measurement purposes. As this research has started to grow, various synonyms for "sexual self" have increased (e.g., sexual self-perception, sexual self-views, and sexual self-schemata). The most common of these is "sexual self-concept" (SSC) which shares an overlapping definition with sexual selfhood. As discussed later, SSC models also share lower order factors in common with Buzwell and Rosenthal's original sexual self model. Like the original sexual self model, SSC models also encompass both cognitive and affective evaluations of one's self as sexual. However, a problem in SSC research (and thus, in sexual self research) is a lack of congruence between studies. There are various SSC models, none of which support each other's findings to different methodologies, different measures, and a lack of conceptual theorizing prior to building the model. Therefore, SSC research is fragmented, and thus its ability to contribute to understanding of adolescent sexuality is limited.

It is important to note that another sexual self model, sexual self-schemata, is also used interchangeably with sexual self-concept in some literature. Sexual self-schemata theory refers to a specific sexual self model that deals primarily with cognitive attributions and evaluations of the sexual self (Andersen & Cyranowski, 1994; Andersen, Cyranowski & Espindle, 1999; Cyranowski & Andersen, 1998). This is different from the joint contribution of cognitive-

affective evaluations in most SSC models. Therefore although SSC literature references the sexual self-schemata, it is a conceptually different construct and will not be included in reference to “SSC models”.

Although the conceptual definition of SSC (how one thinks and feels about his or herself as a sexual being) is the same across different models, there is no consensus as to what factors should be an SSC model. There is now a need for conceptual definitions and models that bridge work between various empirical studies, as well as an understanding of how SSC links to other aspects of adolescent sexual development. As SSC research is a large portion of sexual selfhood research, it is important to present a unified SSC model in order to ensure understanding of sexual selfhood as a whole.

The remainder of this review will be devoted to critically examining the body of sexual self-concept research, detailing the lack of cohesion within the SSC literature and the potential causes behind this problem, as well as what common underlying factors the models share. I will then compare these factors to the original conceptual model proposed in Buzwell and Rosenthal’s sexual self taxonomy.

### **Sexual self-concept.**

There are two main types of research articles within sexual self-concept research. The first is psychometric creation and evaluation, which focuses on building a valid measure of SSC (O’Sullivan, Meyer-Bahlberg & McKeague; Snell, 1998; Vickberg & Deaux 2005) and testing reliability of this scale. The second type of research involves empirical examinations relating SSC to other aspects of sexuality, such as contraceptive use (Winter, 1988), sexual risk-taking (Breakwell & Millward, 1997), sexual behavior (Hensel, Fortenberry, O’Sullivan, & Orr, 2011), sexual self-efficacy (Rostosky, Dekhtyar, Cupp & Anderman, 2008), sexual socialization

(Aubrey, 2007) or sexual emotionality and gender roles (Garcia, 1999). This second type of research focuses less on the actual measurement of SSC itself than on the empirical relationships between SSC on a conceptual level and other dimensions of sexuality. A common theme that links all of these studies together is a shared conceptual definition of SSC (i.e., the definition of the sexual self detailed above). However these studies all vary in the way that SSC is conceptualized and measured. This may be due to the fact that research on SSC is fairly new and still mostly exploratory, and the conceptual definition is broad enough to encompass many different SSC models. Another reason for the lack of cohesion between SSC models within this literature could be that the articles vary in amount of theory on related subjects such as self-concept and sexual development (particularly adolescent sexual development) that are used to cultivate hypothetical models and psychometric measures.

***Theory in sexual self-concept models.***

Table 1 documents the conceptual definitions of different SSC models and the methodological techniques used to create them for nine articles concerning SSC. These articles make up a large portion of the SSC body of literature, and can be considered representative of SSC research as a whole. As seen in Table 1, all models share a similar conceptual definition. Research developing conceptual SSC models is usually exploratory; the sub-factors that make up SSC models are typically created via a factor analysis of a number of items that the researchers claim adequately measures an individual's SSC. The items used in SSC measures can be generated via a focus group, interviews, or panel of research subjects (Breakwell & Milward, 1997; O'Sullivan, et al., 2006; Winter, 1988), or adapted from other SSC measures (Hensel et al., 2011; Rostosky et al., 2008; Vickberg & Deaux, 2005). However, except for Aubrey's 2007 model, no SSC model is derived from a hypothesized, tested model. That is, all other models

were based purely on exploratory results rather than a falsifiable model based on theory and previous empirical work.

Table 2 documents the specific factors within the eight SSC models examined. While these models may have similar methodologies or come from similar sources, the models themselves differ in terms of their individual factors. Examining the factors that make up these conceptual models reveals although many of these models share particular factor (e.g., the SSC models of Aubrey [2007], Breakwell & Millward, [1997], Hensel et al., [2011], Snell, [1998] and Rostosky et al., [2008] all include a sexual self-esteem factor), no two models are the same.

This lack of cohesion may stem in part from the tendency for most SSC models to have fairly weak theoretical foundations. For example, one of the first SSC models, Winter's (1988) exploration of the role of SSC in contraceptive use, gives an operational definition for SSC and explains how a SSC may form based on Markus' self-schemata work (Markus, 1977), but gives very little rationale for why specific question items should be asked as indicators of SSC. Studies that use factor analyses to build their models of SSC, such as Breakwell and Millward (1997), or Vickberg and Deux (2005), are mostly exploratory. In most of these studies, the main purpose is to link SSC to either sexual behavior (Breakwell & Millward 1997; Hensel et al., 2011; Rostosky et al., 2008) or other related areas of sexuality (Garcia, 1999; Winter, 1988), rather than to test a theoretically and empirically sound model of SSC. Therefore there is less of a reason to examine whether the featured conceptual SSC model is an all-encompassing model. Only one study (Aubrey, 2007) used previous sexual self work (Buzwell & Rosenthal, 1996) to create a SSC model that was then used in analysis. Aubrey's results indicated that the lower order factors used each contributed to a higher-order construct of SSC. However, Aubrey's model was a modified

Table 1:

*Operational definitions of Sexual Self-Concept from Articles Using Different Sexual Self-Concept Models*

Study	Conceptual Definition of SSC	Type of study/analyses on creation of conceptual SSC model
Aubrey, J. S. (2007)	“an individual’s perception of his or her ‘qualities’ in the sexual domain” (quoting Buzwell & Rosenthal, 1996)	Latent factor analysis of 5 measures hypothesized to create a higher-order sexual self-concept factor.
Breakwell & Millward, 1997	None given, conceptualized as perception of how “sexual” characteristics apply to self	Factor analysis of 14 sexual self-concept item scale by gender Scale created by analysis of semi structured interviews about adolescent sexual self-perceptions
Garcia, 1999	“Sexual self view” (pp263) ; this definition is used interchangeably with sexual self-concept	No analyses on self-concept – 38 item scale Scale created from focus groups and pilot data (See Garcia and Carrigan, 1998)
Hensel, Fortenberry, O’Sullivan, & Orr, 2011	“An understanding of one’s self as a sexual person” (pp 1)	17 item Factor analysis Scale adapted from previous research (See Reynolds & Herbernick, 2003)
O’Sullivan, Meyer-Bahlberg, & McKeague, (2006)	“Individual’s view of him- or herself as a sexual person” (pp 140)	Psychometric test of Sexual Self Concept Inventory and factor analysis of items
Snell, 1998	None given	Items created from focus group Psychometric examination No indication of theoretical/empirical generation of items or factors
Rostosky, Dekhtyar, Cupp & Anderman, 2008	“Sexual self-concept is considered a multidimensional construct that refers to an individual’s positive and negative perceptions and feelings about him- or herself as a sexual being” (pp277)	Factor analysis of 20 item scale. Scale created from four Multidimensional Sexual Self Concept Questionnaire (Snell 1998) subscales (not said which ones)
Vickberg & Deaux, 2005	Individual’s perception of themselves sexually	Factor analysis of items and psychometric test of Women’s Sexual Self Concept Scale Scale created from work on sexual self-schemata (Andersen & Cyranowski, 1999), Sexual Self-Awareness Scale (Snell,
Winter, 1988	“an individual’s evaluation of his or her own sexual thoughts, feelings and actions” (pp124)	Fisher & Miller, 1991), and earlier pilot work not specified. Psychometric properties of scale not discussed – no subscales Items created from focus group.



Table 2:

*Lower Level Factors Within Different Models of Sexual-Self Concept*

Study	Dimensions of SSC
Aubrey, 2007	<p><u>Sexual Esteem</u>: confidence in the capacity to experience one's sexuality in a satisfying and enjoyable way</p> <p><u>Sexual Assertiveness</u>: initiation of wanted sexual events, refusal of unwanted sexual events</p> <p><u>Sexual Interest</u>: dispositional motive for engaging in sexual activity</p> <p><u>Sexual Anxiety</u>: anxiety towards violating perceived normative sexual standards</p> <p><u>Body Image Self Consciousness</u>: concern of appearing unattractive to a sexual partner during intimacy</p>
Breakwell & Millward, 1997	<p>Men:</p> <p><u>Socio-Emotional sexuality</u>: Perception of self passion, romanticism, sensitivity, knowledge of eroticism and faithfulness</p> <p><u>Relationship Issues</u>: Perception of self interest in sex, willingness for premarital sex and sexual exploration, exploitativeness, and faithfulness</p> <p><u>Sexual Control</u>: Perception of self as in control of sex, exploitativeness, willingness for premarital sex</p> <p>Women:</p> <p><u>Sexual Awareness</u>: Perception of passion and romanticism, awareness of eroticism, and control and exploitation of sex</p> <p><u>Sexual Relationship Responsiveness</u>: being sexually responsive and faithful</p>
Garcia, 1999	<p><u>Sexual experience</u>: perception of oneself as sexually experienced or promiscuous</p> <p><u>Sexual deviance</u>: perception of oneself as kinky or deviant</p> <p><u>Sexual attractiveness</u>: perception of oneself as sexually attractive</p> <p><u>Sexual attitudes</u>: perception of oneself as sexually permissive or liberal</p> <p><u>Sexual responsiveness</u>: perceptions of oneself as physiologically responsive to sex</p> <p><u>Romanticism</u>: Perception of oneself as loving or romantic</p>
Hensel, Fortenberry, O'Sullivan, & Orr, 2011	<p><u>Sexual Openness</u>: willingness to sexually experiment</p> <p><u>Sexual Self-Esteem</u>: self-esteem towards one's sexuality</p> <p><u>Sexual Anxiety</u>: feeling anxious in or about sexual situations</p>
O'Sullivan, Meyer-Bahlberg, & McKeague, 2006	<p><u>Sexual Arousability</u>: physiological responsiveness to sex, positive feelings towards sex, sexual curiosity</p> <p><u>Sexual Agency</u>: Assertiveness in deciding and planning to have sex, making good sexual decisions</p> <p><u>Negative Sexual Affect</u>: Negative feelings towards sex, anxiety towards sexual situations</p>

Snell, 1998

Sexual Anxiety: the tendency to feel tension, discomfort, and anxiety about the sexual aspects of one's life

Sexual Self-Efficacy: the belief that one has the ability to deal effectively with the sexual aspects of oneself

Sexual Consciousness: defined as the tendency to think and reflect about the nature of one's own sexuality

Motivation to Avoid Risky Sex: the motivation and desire to avoid unhealthy patterns of risky sexual behaviors (e.g., unprotected sexual behavior)

Chance/luck sexual Control: the belief that the sexual aspects of one's life are determined by chance and luck considerations

Sexual preoccupation: tendency to think about sex to an excessive degree

Sexual Assertiveness: the tendency to be assertive about the sexual aspects of one's life

Sexual Optimism: the expectation that the sexual aspects of one's life will be positive and rewarding in the future

Sexual Problem Self-Blame: the tendency to blame oneself when the sexual aspects of one's life are unhealthy, negative, or undesirable in nature

Sexual Monitoring: the tendency to be aware of the public impression which one's sexuality makes on others

Sexual Motivation: motivation and desire to be involved in a sexual relationship

Sexual Problem Management: tendency to believe that one has the capacity/skills to effectively manage and handle any sexual problems that one might develop or encounter

Sexual Self-Esteem: a generalized tendency to positively evaluate one's own capacity to engage in healthy sexual behaviors and to experience one's sexuality in a satisfying and enjoyable way

Sexual Satisfaction: the tendency to be highly satisfied with the sexual aspects of one's life

Power-Other Sexual Control: the belief that the sexual aspects of one's life are controlled by others who are more powerful and influential than oneself

Sexual Self-Schemata: a cognitive framework that organizes and guides the processing of information about the sexual-related aspects of oneself

Fear of Sex: a fear of engaging in sexual relations with another individual

Sexual Problem Prevention: the belief that one has the ability to prevent oneself from developing any sexual problems or disorders

Sexual Depression: the experience of feelings of sadness, unhappiness, and depression regarding one's sex life

Internal Sexual Control: the belief that the sexual aspects of one's life are determined by one's own personal control

Rostosky,  
Dekhtyar, Cupp &  
Anderman, 2008

Sexual Esteem: pride in handling own sexual needs, optimism towards sexual life in future

Sexual Anxiety : Anxiety elicited from thinking about sexual aspects of life, pessimism towards sexual life in future

Vickberg & Deaux,  
2005

Agentic Sexuality: Having an active role in sexuality, openness and experimentation, sexually responsive and socio-emotional intimacy

Negative Associations: fears about sexual subjects, sexually inhibited and repressed, negative feelings towards, during, or after sex

Reserved Approach: Responsible behavior towards safe sex

Winter, 1988

Scale contains items on positive or negative feelings towards personally engaging in sex, perception of normality of sexual feelings, feelings towards birth control

version of Buzwell and Rosenthal's work which removed two of the original factors (sexual openness and commitment), and added one (body image). Therefore, it is not comparable to other models, highlighting another issue in SSC research, namely a lack of integration of both theory and previous SSC literature

Another common feature of these studies is that they do not examine if the SSC factors in their model are consistent with theory that deals with either broader definitions of self-concept or other conceptual models of SSC. For example, while Rostosky et al., (2008) predict sexual self-efficacy using their SSC conceptual model (which includes sexual self-esteem), O'Sullivan et al., (2006) predict sexual self-esteem using their SSC conceptual model (which includes a form of sexual self-efficacy). However in Buzwell & Rosenthal's (1996) conceptual SSC model, sexual self-efficacy and sexual self-esteem are both aspects of SSC. This is supported theoretically, as some self-concept research reports that *both* self-esteem and self-efficacy are dimensions of self-concept (Harter, 1985; Rosenberg, 1985; Bong & Clark, 1999; Bong & Slaalvik, 2003). Using self-concept theories as foundations for SSC research highlights how using models of SSC to predict either sexual self-efficacy or sexual self-esteem is therefore counterproductive if both variables are actually lower-order factors of a higher-order latent factor.

In order to gain a more comprehensive understanding of what lower order factors should be in a SSC model, a theoretical hypothesized model should be conceptualized and tested. As mentioned before, this is relatively rare in SSC research. Even when the main purpose is to provide accurate measurement of SSC itself (O'Sullivan et al. 2006; Snell, 1998; Vickberg & Deaux, 2005), there are no a priori hypotheses of what factors may contribute to a latent SSC model based on previous research and theory. While the generation of the measurement items may be based on strong psychometric practices for building a subjective measure of sexual self-

concept, there are no testable potential models. The resulting model is based purely on the best model fit statistics, with little regard to theory or the body of previous empirical research. Therefore, one of the main issues with the analyses within these articles is that there are very few theoretical predictions about what *should* be included in a conceptual model of SSC prior to its creation. Within current SSC research, the burden of validity is placed completely on the individual measurement items and the way they relate to one another. The individual items and factors themselves may be accurate portrayals of specific components of SSC, particularly when they are developed by qualitative research such as focus groups. The entirety of the scale and its subsequent latent factor structure, however, may be an incomplete portrayal of SSC. More rigorous methodological procedures are needed in order to examine a comprehensive SSC model. One of the primary ways to evaluate this model is to examine a hypothesized conceptual model prior to factor analysis.

In order to evaluate a hypothesized conceptual SSC model, there needs to be a strong, theoretical and empirical foundation based on prior literature. As there are no specific theories pertaining to constructs of SSC, the current empirical literature must be analyzed through a broader theoretical lens. This will allow for determining which factors within the nine different conceptual models of SSC should be a part of the present hypothesized model. Utilizing Buzwell and Rosenthal's original conceptual model of sexual selves, one can examine common factors within the research. Therefore, Buzwell and Rosenthal's conceptual model will be used to build a hypothesized model of SSC.

#### ***Analysis of SSC literature using Buzwell & Rosenthal (1996).***

Table 3 displays how various factors or items of SSC models can be interpreted through

Table 3:

*Examination of Factors Within Sexual Self-Concept Models in Previous Literature Through Buzwell & Rosenthal's Sexual-Self Theory*

Model	Sexual Self-esteem	Sexual Self-Efficacy	Negative Sexual Affect (Anxiety)	Openness/Exploration	Arousal/Desire	Commitment/Relationship
Aubrey, 2007	Sexual esteem	Sexual assertiveness	Sexual anxiety	None	Sexual interest	None
Breakwell & Millward, 1998	None	Control items (control factor for men)  Responsibility items (sexual awareness factor for women)	None	Exploration items (Relationship issues factor for men, sexual awareness factor for women)  Permissiveness (Relationship issues and control factors for men, sexual awareness factor for women)	Interest in sex items (Relationship issues factor for men, sexual awareness factor in women)	Romanticism items (Socioemotional sexuality factor for men, sexual awareness factor for women)  Commitment items (socioemotional and relationship issues factor for men, relationship responsiveness factor for women)
Garcia, 1999	Sexual attractiveness	None	None	Permissiveness Deviance	Sexual Responsiveness	None
Hensel, Fortenberry, O'Sullivan, & Orr, 2011	Sexual Self-esteem	None	Sexual Anxiety	Sexual Openness	None	None
O'Sullivan, Meyer-Bahlberg, & McKeague, 2006	None	Sexual Agency	Negative Sexual Affect	None	Sexual Arousability	None
Snell, 1998	Sexual Self-	Sexual Self-Efficacy	Sexual anxiety	None	Sexual	None

	Esteem	Sexual control perceptions (chance/luck control; power-other control; internal sexual control)	Sexual depression Fear of sex		Motivation	
Rostosky, Dekhtyar, Cupp & Anderman, 2008	Sexual Esteem	None	Sexual Anxiety	None	None	None
Vickberg & Deaux, 2005	None	Having an active role in sexuality (part of Agentic Sexuality factor)	Negative Associations	Openess and experimentation (part of Agentic Sexuality factor)	Sexually responsive (part of Agentic Sexuality factor)	None
Winter, 1988	Items concerning positive feelings towards personally engaging in sex	None	Items concerning negative feelings towards personally engaging in sex	None	None	None

Buzwell and Rosenthal's six-factor sexual self model. Factors of each SSC conceptual model within every article can be seen as related to one of these six theoretical factors.

Sexual self-esteem factors were classified as any factors that described perceptions of worth as a sexual person, pride in one's own sexual behaviors or conduct and perceptions of sexual attractiveness. Factors from five SSC models and items from one SSC model fit this classification (Aubrey, 2007; Garcia, 1999; Hensel et al., 2011; Snell, 1998; Rostosky et al., 2008; Winter, 1988). Sexual self-efficacy factors were classified as any factor that measured perception of self ability and competence as a sexual agent, perception of ability to engage in either/or sexual behavior and safe sexual behavior, perception of competence as a sexual partner, perceived ability to obtain sexual satisfaction, and perception of control over one's sexual life. Although attributions of control over one's sexual life was not part of the original sexual self-efficacy factor as detailed in Buzwell and Rosenthal, the Breakwell and Millward (1997) and Snell (1998) control factors were included as constructs of self-efficacy due to research linking perception of control and self-efficacy (Bandura, 1997; Judge, Erez, Bono & Thorensen, 2002; Rosenberg, 1985). Factors from five SSC models fit this classification (Aubrey, 2007; Breakwell & Millward, 1998; O'Sullivan et al., 2006; Snell, 1998 & Vickberg & Deaux, 2005). The anxiety factor from Buzwell and Rosenthal's model was changed into a more inclusive "Negative Affect" classification in order to account for factors in other SSC models that included a negative self-perception components that were similar and conceptually related to perceived sexual anxiety, but were differently named or defined. Therefore, Negative Affect factors were classified as any factors that measured a negative thoughts or feelings towards oneself as a sexual person, or perception of oneself as having negative feelings towards sex. There were six models that had a negative affect factor, and one model that contained negative affect items

(Aubrey, 2007; Hensel et al., 2011, O'Sullivan et al., 2006; Snell, 1998; Rostosky et al., 2008; Vickberg & Deaux, 2005; Winter, 1988). Openness/Exploration factors were classified as any factors that measured perception of oneself as sexually adventurous, willing to experiment, or open to engaging in a variety of sexual behaviors. Factors from three SSC models and items from a factor in one SSC model fit this classification (Breakwell & Millward, 1998; Garcia, 1999; Hensel et al., 2011; Vickberg & Deaux, 2005). Arousal/Desire factors were classified as any factors that measured perceptions of one's own sexual frustration, energy, or desire, or one's perception of sexual responsiveness. Factors from four SSC models and items from a factor in two SSC models fit this classification (Aubrey, 2007; Breakwell & Millward, 1998; Garcia, 1999; O'Sullivan et al., 2006; Snell, 1998). Finally, Commitment/Relationship factors were classified as factors that measured one's desire for a sole sexual partner and perceived level of sexual fidelity. Only one SSC model had a factor that fit this classification (Breakwell & Millward, 1998). It also should be noted that five models had both a sexual self-esteem and a negative sexual affect factor in their model, compared to three models that only had either sexual self-esteem or negative sexual affect. While the two factors appear to overlap, this would imply that feelings towards oneself as a sexual person can be measured on a unidimensional continuum from "positive" to "negative". However this implies that individuals would not be able to hold both positive and negative feelings about their own sexuality simultaneously, which, as seen in qualitative research on sexuality (Thomson, 1995; Tolman, 1994), is not necessarily the case.

Except for Snell (1998) and Garcia (1999), no SSC model had any factor that did not fit into one of the six factors in Buzwell and Rosenthal's model. These two models were the only models that had pre-formed factors (i.e., subscales on a self-concept measure) rather than created by a factor analysis. While the factors contained within these two studies could potentially be



included in the conceptual model, there is little information that would support why these factors theoretically or empirically relate to sexual self-concept. Particularly in Snell's (1998) questionnaire, which is composed of over 20 subscales, there is currently no information as to how the questionnaire was created, or information regarding how well these factors (subscales) relate to each other through psychometric testing. While Garcia (1999) does detail how the scale was created (Garcia & Carrigan, 1998), which included a "reliability" vetting process for all scale items in which individuals rated their perceived relevance of specific items to "a person's sexuality" (rather than their own sexuality), there is no documentation of assessing the psychometric properties of reliability or validity for this scale. Furthermore, there are no psychometric analyses evaluating if all of the subscales relate to each other, which would indicate that they may contribute to the same underlying latent factor. Therefore, due to the weak methodological background for these two scales, the subscales in these measures that were not relevant to Buzwell and Rosenthal's model were not included in the conceptual model. Factor analysis studies indicated that based on the item content of the measure used and the specific factors created, all six factors appear to be potentially reliable factors for a comprehensive SSC model.

### **Sexual Self-Concept and Gender.**

Building a conceptual SSC model also entails accounting for potential gender differences; SSC may operate differently in men and women on both a structural level (i.e., differences in how the lower-order factors contribute to a higher latent factor of SSC) and on a measurement level (i.e., differences in how an instrument measures a latent lower-order factor of SSC). Most SSC literature focuses on women (Aubrey, 2010; Hensel et al. 2011; O'Sullivan et al. 2006; Winters 1988), and only one study has examined differences in SSC models between

men and women. Breakwell and Millward (1997) examined factor structures for SSC in men and women (using the same scale), documenting a three-factor model for males and a two-factor model for women. The three-factor structure for men included factors of socioemotional sexuality, sexual relationship, and sexual control. The two-factor structure for females included factors of sexual awareness (a combination of socioemotional sexuality and sexual responsibility), and sexual responsiveness and faithfulness. A difference in SSC is also seen in Buzwell and Rosenthal's original work, which had both teenage boys and girls in the sample. The boy/girl ratio within each taxonomical group was very different; boys and girls were not equally distributed within each group, indicating that the sexual styles that were more common for boys were different than the ones common for girls. Thus, there may be a lack of structural invariance for men and women regarding an SSC latent factor model.

As sexuality is a main component of socially-prescribed and internalized gender roles, how men and women perceive themselves as sexual beings may be different due to examining themselves within contexts of specific, culturally sanctioned sex roles. The influence of societal sex and gender roles can shape an individual's perception of sexuality in general, as well as their own sexuality. For example, Tolman highlights the role of compulsory heterosexuality within her work examining the development of sexuality in adolescent girls (Tolman, 2006). Compulsory heterosexuality refers to a societal push towards a specific type of sexual relationship (heterosexual relationships) that enforces specific sexual roles, in order to regulate sexual behavior and sexuality. Although men and women may be similar in their sexual desires, feelings, and thoughts, these socialized sexual roles can be internalized, influencing an individual's sexuality. Tolman, Steipe and Harmon's (2003) examination of models of female and male sexual health revealed that the more personal the area of sexual health was (e.g., need

for emotional connection), the more overlap there was between male and female sexual health models. However, the more distant the area (e.g., developing critical perspectives on romantic conventions regulating heterosexual relationships (p. 8), the more gender differences would manifest in the respective models. As SSC theoretically is formed in part by comparison with and feedback from others, these differences may exert influence on how individuals perceive themselves not only as sexual *beings* but as sexual *men or women*. Individuals who conduct themselves sexually in a manner consistent with hegemonic masculinities and femininities (i.e., a set of characteristics that are ascribed to how “normal and real” men and women should act) within society may find themselves receiving more positive feedback and appraisal from the world around them. Men and women who challenge or defy the hegemonic masculine or feminine roles enforced in society may receive negative feedback and may face societal consequences (Connell, 2009). One only has to look at the sexual double standard (that sexually active women are looked upon more unfavorably than sexually active men) to know that a violation of societal sex roles through expression of one’s sexuality can lead to poorer evaluations (Crawford & Popp, 2003).

Other gender theories also support a hypothesized difference between male and female SSC models. Theories that examine social constructions of gender such as script theory (Gagnon & Simon, 1973) and social role theory (Frayser, 1985), propose that sexual behavior and sexuality essentially mean different things to men and women. For example, Gagnon and Simon (1973) propose that the meaning of sexuality is tied to individual pleasure for men and interpersonal relationships for women. The stark contrasts between men’s and women’s gender and sex roles in industrialized nations such as the United States are diminishing. However, how men and women behave sexually, and what those behaviors mean to both the individual and the

society at large, are still reflections of a patriarchal culture (Schwartz & Rutter, 1998). Therefore, a society's sex and gender norms shape not only the way that individuals receive information and feedback about their sexual conduct, but also the way that men and women give their own sexuality meaning.

The multidimensional nature of SSC may highlight these sex role and gender differences. The different factors within the six-factor SSC model can potentially relate to different sex roles within society. Hegemonic masculinity in many cultures, which is associated with strength, virility, and an innate sexual drive that is typically expressed in risky sexual behavior (Connell & Messerschmidt, 2005), places high emphasis on SSC factors such as high arousal/desire and openness/exploration, high sexual self-esteem, and being sexually assertive (or even aggressive), and low emphasis on sexual committed relationships. Therefore, men can evaluate themselves in the context of how well they fit a prototypical male sex role, comparing their own perceptions of who they are as a sexual being. A sexual self-concept that is influenced by traditional male sex roles may potentially have lower-order factors of sexual self-esteem, sexual self-efficacy, arousal, and exploration as important contributors. However, since sexual anxiety and commitment are not emphasized (and seen as “not masculine”) within a traditional male sex role, these two lower-order factors may not be important contributors for the SSC of a man who adheres strongly to the traditional male sex role, and has been sexually socialized to embrace hegemonic masculine role. This sex role comparison will obviously be dependent upon what the preferred societal or cultural sex role is within an individual's environment.

Hegemonic femininity on the other hand, emphasizes a sex role that teems with contradictions; women are to be sexually desirable and confident but express little sexual desire, be sexually responsible (e.g., the “gateway” to sexual activity) but also sexually submissive

(Schippers, 2007; Reid & Bing, 2000). These traits relate to factors such as sexual self-efficacy (e.g., sexual responsibility), sexual self-esteem (e.g., sexual confidence and desirability), and sexual desire/arousal (e.g., lack of sexual desire). There is also an emphasis on sexual relationships for women that is not present in the male sex role, such that women are expected to want/need a committed sexual relationship (echoing the double standard where women should have a low number of sexual partners), and to be adept at managing them (highlighting the broader nurturing/cooperative qualities within female gender roles). For a sexual self-concept that has been strongly influenced by traditional female sex roles, lower-order SSC factors of sexual self-efficacy, commitment, and potentially sexual self-esteem, would all strongly contribute to the SSC latent factor. However, for women who endorse traditional female sexual roles and embrace hegemonic feminine norms, lower-order factors of exploration and arousal would not contribute to an SSC latent factor, as these are factors that are portrayed negatively. However, how important the contribution of the lower-order factor of sexual anxiety would be to an SSC strongly influenced by traditional female sex roles is less clear. While traditional sex role norms propose that open expressions of sexuality are seen as shameful for women who are not married (or at least not strongly committed), married and strongly committed women are expected to yield to their male partners' sexual desires, becoming capable sexual counterparts who are able to satisfy their partners. High levels of sexual anxiety within committed relationships is seen negatively, these women are portrayed as "frigid"; as they are unable to perform what is an important role for traditional females (sexually pleasing your male counterpart), this ultimately undermines their femininity. Therefore, depending on the relationship context, sexual anxiety may either be emphasized as an important aspect of one's sexual self-concept (as a single, virtuous woman), or not (as a committed, capable female

partner) for women endorsing traditional sex roles. Therefore, the six-factor model keys into specific aspects of traditional male and female sex roles differently, and thus men and women may receive different environmental (social) feedback regarding their sexual behaviors and conduct, which in turn may influence their sexual self-concepts.

### **Sexual Self-Concept and its Relation to Broader Aspects of Sexuality.**

While it is important to evaluate a comprehensive, theoretically based model of SSC, this should only be the first step for research involving sexual selves. It is equally important to link SSC to other aspects of sexuality. In order to gain a more comprehensive understanding of sexuality, and how it develops in adolescence, individual areas of sexual research need to be examined in relation to each other. Particularly relevant to SSC are the various areas of sexuality that may shape it, and in turn what areas of sexuality SSC may influence. Based on both sexual self and self-concept research, three areas of sexual development are discussed as potentially being related to a comprehensive SSC model: previous sexual behavior and sexual socialization, and intentions to engage in future sexual behavior.

#### **Sexual self-concept and sexual behavior.**

The most common sexual self research involves examining the relationship between sexual self and sexual behavior, and research that includes SSC as a measure is no exception (Breakwell & Millward 1997; Hensel et al., 2011; Impett & Tolman, 2006; Rostosky et al., 2008). Previous research documents a positive relationship between some factors of sexual self-concept (e.g., sexual self-esteem, sexual self-efficacy), and higher levels of previous sexual experience (Andersen & Cyranowski, 1994; Impett & Tolman, 2006). Previous sexual experience also has a negative relationship with other factors of sexual self-concept such as negative affect (O'Sullivan et al., 2006). Buzwell and Rosenthal documented that individuals

with similar levels of sexual experience were likely to be classified in the same sexual self-style; typically one with high sexual self-esteem. Furthermore, changes in levels of sexual experience are related to changes in levels of the sexual self-esteem factor of the sexual self (Hensel et al., 2011; Zimmer-Gembeck, Ducat, & Boislard, 2011). For example, Hensel et al., (2011) reported that growth in coital frequency over time leads to growth in sexual openness and decline in sexual anxiety over time, but growth in coital frequency did not relate to a growth in sexual self-esteem. Therefore not all factors of SSC appear to be influenced by sexual behavior uniformly: some may be more susceptible to change than others. The relationship between SSC and sexual experiences also is theoretically supported by self-concept literature. The self-concept is generated primarily by self-evaluations which are fostered through subjective interpretations of one's own experiences and the appraisals of others, direct self assessment, and social comparisons (Gecas, 1982; Markus & Wurf, 1987; McLean, Pasupathl & Pals, 2007). Therefore, the self-concept develops both in an individual context (via self-reflection on one's own actions, thoughts and feelings) as well as a relational context with others (via appraisal of others, social comparisons, and relational self-worth). Especially during adolescence, the self-concept is both stable and fluid. While underlying, central self-perceptions may remain fairly stable, cumulative experiences, specifically in social contexts, add to the malleability of self-concept (Markus, & Kunda, 1986) While in early and middle adolescence, self-concepts tend to be directly related to environmental and relational contexts and their specific experiences, in late adolescence the self-concept becomes more cohesive, integrating different self-representations and subjective experiences into a comprehensive understanding of oneself (Harter, Bresnick, Bouchey & Whitesell, 1997). Sexual experiences should therefore be a main influence in the development of the SSC, as one can reflect on their own actions, physiological responses, cognitions and affect

during specific sexual experiences in an individual context, as well as receive appraisal of sexual experiences from others in a relational context.

Taking both theoretical and empirical research on sexual selves and self-concept into consideration, both frequency of sexual experience and sexual experience quality appears to be important. Having more sexual experiences appears to increase SSC factors such as sexual self-esteem and self-efficacy, contributing to an overall more positive sexual self-concept. As it is the self evaluations and subjective interpretations of experiences that seem to contribute to a self-concept, the quality of sexual experiences (e.g., positively versus negatively evaluated sexual experiences) should also be taken into account.

### **Sexual self-concept and sexual socialization.**

Sexual socialization is defined as the way in which an individual acquires understanding of how to function sexually within a culture (Lerner & Spanier, 1980). Much of sexual socialization research focuses on how external influences shape an individual's sexual thoughts, feelings, and behaviors. Previous research has examined socialization influences on sexual attitudes, decisions, and behaviors of adolescents, with particular focus on parents (Miller & Whitaker, 2000), peers (Bearman, Moody & Stovel, 2004), media (Ward, 2003), religion (Rostosky, Wilcox, Wright & Randall, 2004) and sex education programs (Kirby, 2009). There are only a few studies that have examined the direct effect of sexual socialization on SSC. Aubrey (2007) examined the role of television exposure over time on SSC, documenting that exposure to prime time television dramas and soap operas had a negative impact on SSC (e.g., a decrease in sexual esteem, increase in sexual anxiety). Kornreich, Hearn, Rodriguez and O'Sullivan (2003) examined the effect of older siblings on young adolescent SSC (as measured by O'Sullivan's scale). The authors reported that while sexual self-esteem and sexual agency



were unaffected by having an older sibling, adolescents with older siblings were significantly less sexually responsive (interest in sexual cues), indicating that sibling socialization may have influence on specific SSC factors. Another study on sexual socialization effects of SSC factors is Peter and Valkenberg's (2008) examination of adolescent exposure to sexually explicit material. Exposure to sexually explicit material increased sexual preoccupation (a strong desire and interest in sex sometimes to the exclusion of other thoughts) through subjective sexual arousal. This phenomenon is similar to general self-concept formation where subjective experience (e.g., the subjective interpretation of sexual arousal elicited by pornography) ultimately influences aspects of self-concept (the desire/arousal SSC factor).

Examining self-concept literature reveals that sexual socialization may be particularly relevant as social comparison or appraisal information influences that shape SSC, as social agents play large hand in self-concept formation (Markus & Wurf, 1987; Tarrant, McKenzie, & Hewitt, 2006; Watt, 2004). Feedback from important social agents such as peers and parents on one's own sexual thoughts, feelings, and behaviors could be considered a source of self-representation. Furthermore, social comparisons with peers on both sexual attitudes and experiences could be another influence on factor of SSC. For example, an individual's sexual self-esteem could decrease if they feel sexually inexperienced in comparison to their peers. Sexual socialization influences may especially be important to the SSC of sexually-inexperienced individuals. In Buzwell and Rosenthal's (1996) sexual style classification study, adolescents with little to no sexual experience typically fell into two of the five styles: sexually naïve (mostly composed of virgin girls) and sexually unassured (mostly composed of virgin boys). This was not considered a "lack" of SSC, but a specific classification based on shared levels of individual sexual self factors.

Sexual socialization may also influence SSC indirectly by affecting how individuals subjectively interpret sexual experiences. Martino, Collins, Elliott, Kanouse and Berry (2009) documented that a high consumption of televised sexual content increased the likelihood that adolescent boys would interpret their first sexual intercourse experiences negatively, as they experienced a dissonance between what was portrayed on television and what they felt they had experienced personally. These results indicate that the ways adolescents are socialized to think about sex may therefore ultimately influence how they interpret their sexual experiences, which in turn will influence how their SSC is shaped.

### **Sexual self-concept and future intentions of sexual behavior.**

Another neglected area that may be important to examine is the influence of SSC on future intentions of sexual behavior. Only two studies have examined the direct relationship between SSC and intentions to engage in sex, both using the same SSC model (O'Sullivan et al., 2006). In O'Sullivan's original study, a psychometric evaluation of the Sexual Self Concept Inventory, all three factors (sexual arousability, sexual agency, and negative sexual affect) were related to future orientation to engage in sexual behavior. Similar relationships, specifically the positive relationship between sexual arousability and future sexual behavior intentions, were also documented in an examination of early adolescence Taiwanese girls (Pai, Lee, & Chang, 2010). Only a few studies have investigated relationships between specific SSC factor and intention to engage in future sexual behavior. However these studies indicate that there is a relationship between SSC and sexual behavior intention on a factor level. For example, intention to engage in sexual behavior in the future is related to various SSC factors such as sexual self-efficacy, sexual self-esteem, negative sexual affect; positive relationships between future orientation and the factors of sexual arousability and agency, and a negative relationship between future orientation

and negative sexual affect (Guillermo-Ramos, Jaccard, Dittus, Gonzolez & Bouris, 2008; Randall, 2008).

The relationship between intentions to engage in future behavior and self-concept has a strong theoretical basis, especially the connection between self-efficacy, an important component in self-concept models, and behavioral intentions (Bandura, 1997). Markus and Wurf (1987) detail theoretical models of self-concept that relate to setting specific goals for oneself, and mediate the relationship between motivation to engage in behavior and behavioral engagement. Other theoretical models such as the prototype-willingness model (Gibbons & Gerrard, 1995) and the theory of planned behavior (Ajzen, 1991) have also linked self-representations to behavioral intentions. These models indicate that individuals with specific, strong self-representations (or self-concepts) should intend to engage in behaviors that are related to these concepts. Therefore, individuals who have a strong, positive SSC (e.g., high scores in sexual self-esteem and self-efficacy, low scores in negative sexual affect) should be more likely to intend to engage in future sexual behavior than those who either have: a) a weak SSC (i.e., low scores in all factors or conflicting scores such as high sexual self-esteem but low sexual arousal/desire) or b) a strong negative SSC (e.g., scores that reflect low sexual self-esteem and self-efficacy, but high negative sexual affect).

### **Current Study**

As the sexual self literature grows, there needs to be a more cohesive and comprehensive conceptual model of SSC, both to be able to make sense of the literature as a whole and to enhance its contribution to research on sexuality and sexual development. A model of SSC which includes common factors in these models should be evaluated in order to determine which specific factors contribute to a higher-order latent SSC factor. More rigorous theoretical and

empirical methods need to be utilized in order to build an empirically derived model. While previous research indicates there is a specific group of factors that relate to a higher-order latent factor of SSC, there are still questions about which factors are actually indicating an overall SSC factor.

This study was specifically designed to examine three research questions concerning sexuality within late adolescence/early adulthood. The first involved how well a latent factor of SSC predicted the correlations between the six hypothesized lower order factors, as detailed in Buzwell and Rosenthal (1996). The second question examined measurement and structural invariance between men and women regarding the higher-order latent SSC model. The third question involved how well this six-factor model related to three other dimensions of sexuality: previous sexual behavior, previous sexual socialization, and intentions of future sexual behavior.

The purpose of this study was to examine whether all six factors, which are all present in at least one previous SSC model (as seen in Table 3), are all related to each other, indicating an underlying latent SSC factor. Therefore, a conceptual sexual self model based on both theory and previous empirical findings was tested. It was also important to examine if the proposed six-factor SSC model operates similarly for men and women. Only one study (Breakwell & Millward, 1998) examined differences in SSC between genders; and many SSC models focus on women only (Hensel et al., 2011; O'Sullivan et al., 2006; Vickberg & Deaux, 2005). Previous SSC research will also be extended by examining relationships with other aspects of sexuality that are theoretically and empirically linked to SSC. As stated previously, SSC also needs to be examined within the context of other aspects of sexuality. Previous studies have examined SSC in relation to prior sexual behavior (Breakwell & Millward, 1998; Hensel et al., 2011, Rostosky et al., 2008). However sexual socialization and future sexual behavior intentions are two areas of

research that have received only minimal attention in SSC research (Aubrey, 2007; Pai et al., 2010), but have strong theoretical connections to SSC (Bandura, 1997; Markus & Wurf, 1987). Furthermore, relationships between the proposed SSC model and these other dimensions of sexuality will give validity to the SSC model itself.

### **Specific research questions and hypotheses.**

The first research question addressed was “Does the conceptual six-factor SSC model based on Buzwell and Rosenthal’s 1996 sexual selves model meaningfully load onto a higher-order latent factor of SSC?” In order to test the conceptual six-factor SSC model the following hypothesis was tested:

*H1: A latent factor of sexual self-concept will predict the relationship between all six factors- such that all six factors will meaningfully load onto a higher- order of sexual self-concept.*

Figure 2 displays the conceptual six-factor latent SSC model. As mentioned previously, no two SSC models within previous literature are alike. However they share common factors, which all generally fall into one of the six dimensions specified by Buzwell and Rosenthal as aspects of the sexual self. Besides Aubrey (2007), previous SSC models have used factor analytic models such as principal components analysis rather than theory and empirically supporting literature to create these models, and while these may be statistically sound, they are theoretically lacking. Having all factors together in a six-factor model, as proposed via Buzwell and Rosenthal, gives a testable model allowing for examination all six factors as potential valid

contributors to a higher-order latent factor model of SSC, which is supported both theoretically and empirically (see Table 3).

The second research question addressed was “Does this latent SSC model have measurement and structural invariance between genders?”. Most SSC research has focused on women, and the little research that examines both men and women indicates there may be structural differences in SSC models. Furthermore, the differences in sex roles for men and women emphasize differences in what is “normal” sexual conduct. These differences may influence the type of feedback that men and women receive regarding their own sexual behavior and conduct. As social feedback is one way in which self-concepts develop, this feedback may ultimately differentiate the way that men’s and women’s sexual self-concepts develop by emphasizing different ways in which the factors that may up SSC are important. SSC may therefore be structurally different for men and women. Specifically, differences should be in the factors that differ for traditional male and female sexual sex roles. As discussed before, men and women differ in the emphasis on exploration, arousal, and commitment in traditional sex roles. Therefore, the hypothesis addressing the second research question was:

*H2: The higher-level latent factor for sexual self-concept model will lack measurement invariance between men and women*

As mentioned before, previous studies examining SSC in men and women indicate that latent SSC factors may have different underlying factor structures for men and women (Breakwell & Millward, 1998). Theoretically, male and female sexualities should be different due to different societal norms; sexual behavior therefore becomes tied to symbolic meanings that emphasize

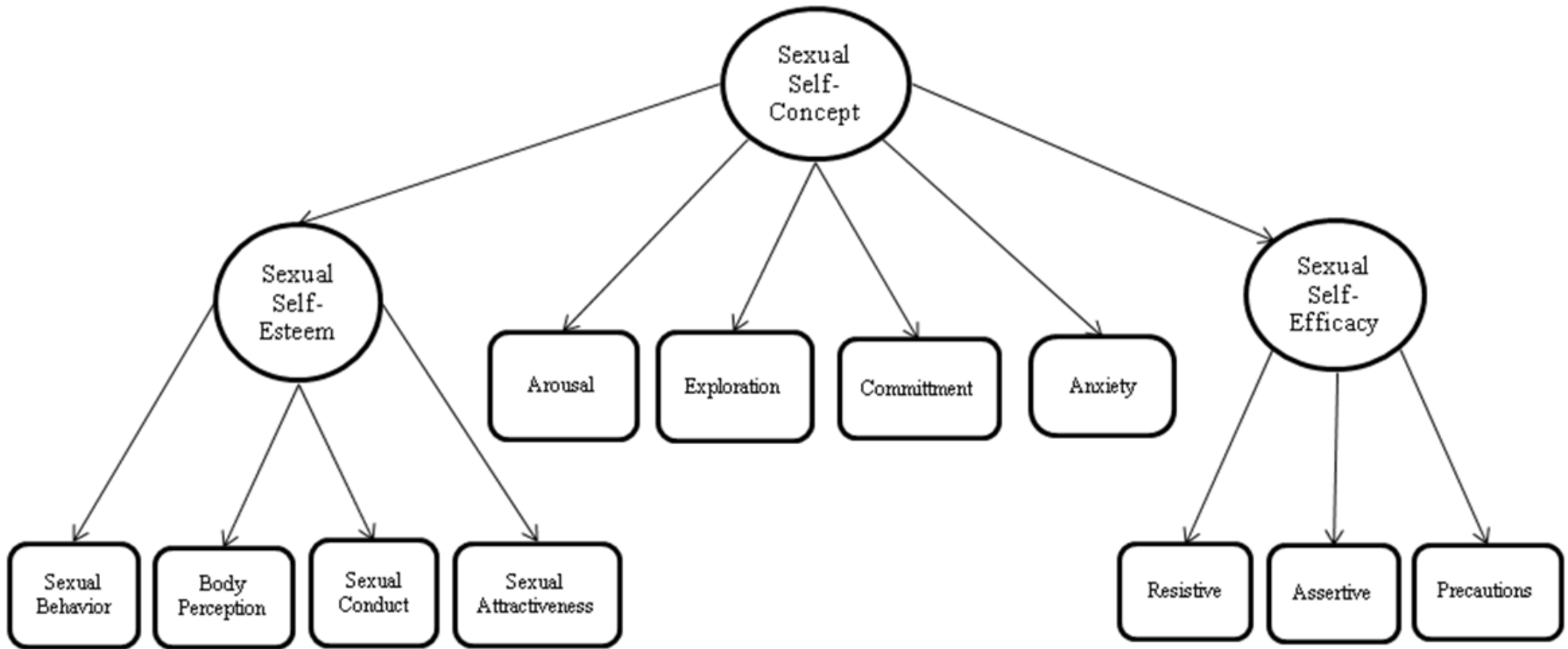


Figure 2: Conceptual Latent SSC Model with Plausible Value Lower Order Factors

attachment to a specific meaning (Gagnon & Simon, 1973). Therefore, these social norms may not only influence the way that men and women not only ascribe meaning to sexuality, but to how they see themselves sexually.

It is important to note that for this hypothesis, this measurement invariance pertains only to the higher-order model; that is, the loadings, intercepts, and residuals of the six lower-order factors on the higher-order SSC model. Measurement invariance indicates that the ways in which the scales used to measure the latent lower and higher-order factors are equal across different groups. If there is measurement invariance between groups on a specific scale, score differences can be attributed to different levels of the latent factor between the groups. If the scale lacks measurement invariance, the scores between groups can not accurately be compared to each other due to differences in the number of factors and pattern of indicator factor loadings, the way the items load onto the factor, or the inequality of indicator intercepts or residuals. While no direct hypothesis about potential measurement invariance differences between specific lower-order factor scores were proposed in this dissertation, the individual lower-order factors were also tested for measurement invariance. Only if measurement invariance between each lower-order factor is achieved will the higher-level measurement invariance be able to be compared between groups. As there is little research regarding potential differences in latent factors for the lower-level factors (e.g., if sexual exploration or arousal can be measured in similar ways for men and women), hypotheses potential gender differences regarding the individual measurement of these six factors will not be made. However, the second hypothesis could have been supported in two different ways. First, there could be no measurement invariance between men and women for specific lower-order factors (e.g., sexual self-esteem, commitment), and thus the higher-order



SSC latent model would not be able to be compared between groups (or tested for measurement invariance). Second, there could be measurement invariance (or partial measurement invariance) for all lower-order factors, and measurement invariance tests indicate that there are differences between the male and female latent factor models at the higher-order factor level.

After examining if this model operates similarly in men and women, the next step was to examine a third research question: “Does the conceptual SSC model relate to other areas of sexuality with which it has empirical and theoretical links?” Examining the relationship between the conceptual SSC model and other areas of sexuality tests the validity of the model, as these areas of sexuality have previously been related to SSC. Previous research documents relationships between the development of the sexual self and sexual behavior, (Andersen & Cyranowski, 1994; Breakwell & Millward, 1997; Buzwell & Rosenthal, 1996; Horne & Zimmer-Gembeck, 2006; Hensel et al., 2011), relational contexts (e.g., social influences used for social comparisons and relational feedback) (Gecas, 1982; Markus & Kunda, 1986) and future intentions (Guillermo-Ramos, Jaccard, Dittus, Gonzolez & Bouris, 2008; Randall, 2008). Building upon previous empirical and theoretical work, the following hypotheses was tested:

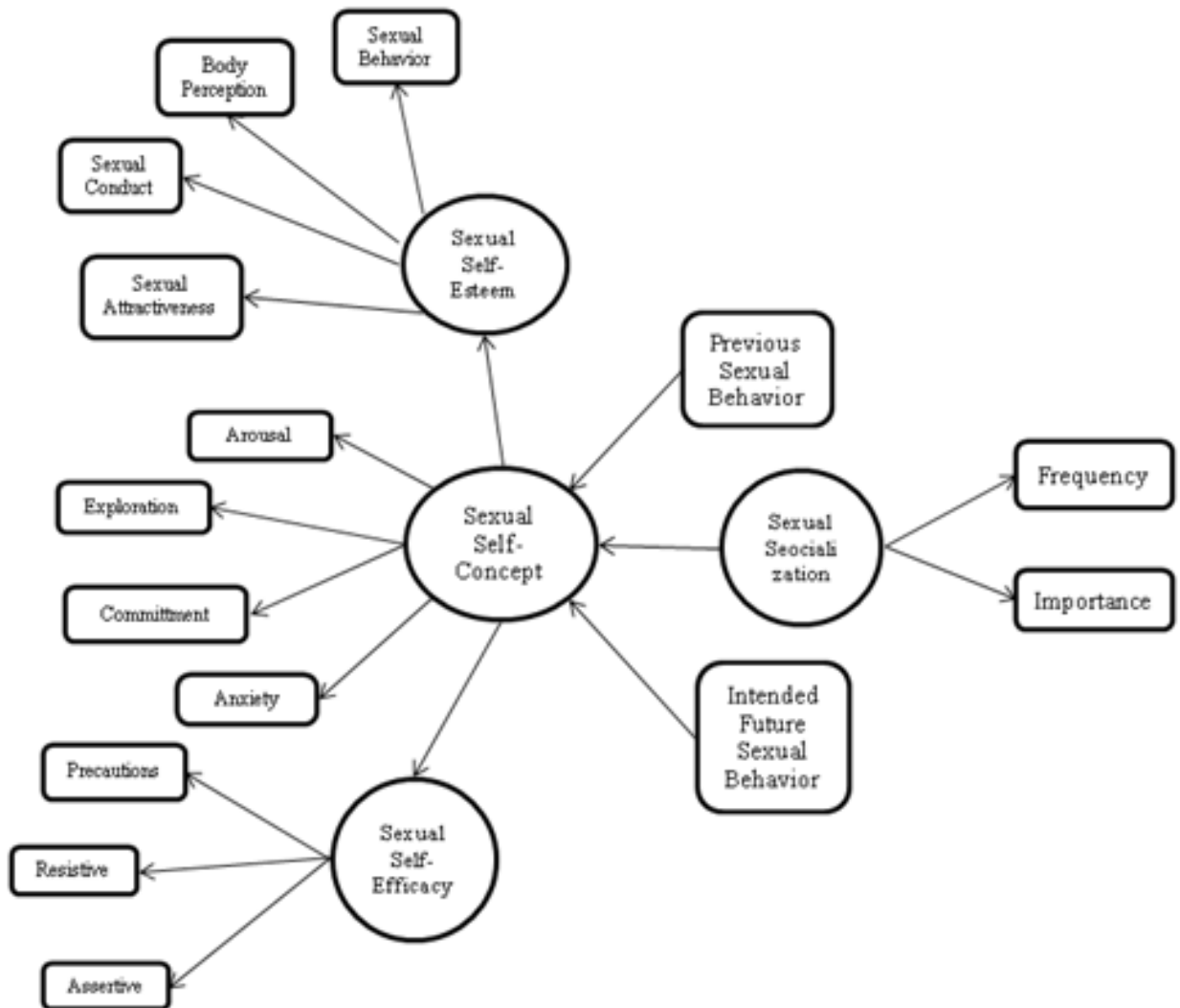
*H3a: Previous sexual behavior frequency should be significantly related to the higher-order latent sexual self-concept factor such that more sexual experience should have a positive relationship with sexual self-concept*

*H3b: Sexual socialization should be significantly related to the higher-order latent sexual self-concept factor such that higher reported levels of sexual socialization should have a positive relationship with sexual self-concept.*

*H3c: Future sexual behavior intentions should be significantly related to the higher-order latent sexual self-concept factor such that reporting more intended sexual behavior should be positively related to sexual self-concept.*

Figure 3 details both the hypothesized factor structure of the SSC model, as well as the analytic model examining the relationship between SSC and previous sexual behavior and sexual socialization, and intended future sexual behavior. As mentioned before, previous sexual behavior (hypothesis 3a) both empirically (Breakwell & Millward; Hensel et al., 2011; Impett & Tolman, 2006; Rostosky et al., 2008), and theoretically (Markus & Wurf, 1987) related to SSC, such that the two are SSC (Aubrey, 2007; Kornreich, et al., 2003). In addition to empirical support, there is theoretical support for this hypothesis. Self-concept is formed in part by feedback from social influences. Therefore the way an individual thinks about himself or herself as a sexual being will be formed in part by feedback provided by others about the individual's own sexuality and sexual conduct. This in turn will affect SSC formation. positively related. Sexual socialization should also be related to SSC (hypothesis 3b). As discussed previously, two studies have already linked forms of sexual socialization to models of sexual self-concept.

There is also previous research that displays the relationship between intended sexual behavior and SSC (Pai et al., 2010), which gives rationale for hypothesis 3c. Furthermore, there is strong theoretical literature linking self-concept and intended behavior. General self-concept literature details a theoretical link between motivation to engage in behaviors and behavioral action and self-concept, particularly regarding the self-efficacy factor of self-concept. These theoretical foundations provide rationale for the hypothesized relationship between SSC (i.e., self-



*Figure 3.* Proposed analytic model predicting previous sexual behavior, sexual socialization, and intended future sexual behavior.

representations of one's sexuality) and intended sexual behavior (i.e., sexual behavior in which an individual plans to engage in).

In summary, the purpose of this dissertation was to further explore a fragmented area of sexual research, in hope of bringing cohesion to this area of literature. First, a conceptual model of sexual self-concept was tested, and then examined for applicability between genders. Finally, the relationship between the resulting SSC model and other areas of sexuality was examined in order to a) examine validity of the model, and b) provide more understanding of the role of SSC within human sexuality. Chapter two describes the method of the study, including the participants, measures, and procedures, as well as the analytic plan. Chapter three provides the results of analyses for all three hypotheses. Finally, chapter four provides discussion of the findings from each individual hypothesis, as well as the study as a whole, and concludes with limitations and areas for future research.

## Chapter 2

### Method

#### Participants

The final sample was made up of 230 individuals, 40% men (92), and mean age 23.3. Ethnic diversity was 60% Caucasian American, 22% Asian American, 6.5% African American, 5.22% Hispanic, 2.17% Native American, and 3.91% “other” (e.g. biracial). Table 1 in Appendix D presents all demographic information. Most participants reported having a “completely heterosexual” orientation (76%). Participants were mostly either employed full time (42.17%) or students (39.57%), with a small number stating either part time employment (10%) or unemployment (8.26%). Most participants had completed a 4 year college degree as their highest level of education (47%), with smaller numbers reporting finishing some college (25%) or graduate/professional school (14%). A minority of participants completed associates degrees (5.68%) or high school (7.42%). The majority of participants reported maternal education as high-school (21.40%), college (34.93%), or graduate/professional school (21.40%). Paternal education was skewed towards slightly higher education levels compared to maternal education, with most participants reporting paternal education as college (31.44%) or graduate/professional school (27.51%), with a smaller number just completing high school (19.65%). Most participants reported being in a romantic relationship (59.57%), and the majority stated their relationship length was between either one to two years (40%) or three to five years (25.37%). Most individuals who were in a relationship stated they were “committed to each other” (48.51%), with a smaller number reporting that they were dating (25.37%), engaged (15.67%) or married (10.45%). The majority of participants also reported living with their significant other (55%).

## Measures

Appendix A includes the study questionnaire. This questionnaire included questions about demographic characteristics, the six-factor SSC conceptual model, sexual socialization, sexual behavior history, and sexual behavior intentions.

*Demographics:* Demographic variables included, age, race, and gender. Socioeconomic status was measured by assessing mother and father education. Religiosity was measured by three questions assessing religious affiliation, importance of religion, and attendance of religious services. Romantic relationship status was measured, and those who reported that they were currently in a romantic relationship were further asked about the status of this relationship (i.e., dating, committed to each other, engaged, or married), if they were living with their significant other, and the length of their relationship. Finally, sexual orientation was measured using the seven-point Kinsey scale, in which sexuality is assessed from “completely heterosexual” to “completely homosexual”, with “bisexual” as the middle point.

*Sexual Self-Concept measures:* Sexual self-concept measures were the original items from Buzwell and Rosenthal’s 1996 sexual self-study. This included measures of sexual self-esteem, sexual self-efficacy, and sexual attitudes, with subscales measuring sexual arousal, exploration, anxiety, and commitment (Buzwell, 1996).

The *sexual self-esteem* scale was a 20-item measure evaluating individuals’ sense of self-esteem within the sexual domain. The item response options were altered from the original four point scale (Buzwell, 1996) to a five-point scale that allowed for greater variability (*strongly agree to strongly disagree*). There were four subscales that assessed sexual behavior, sexual attractiveness, sexual conduct, and body perception. The sexual behavior subscale had five items ( $\alpha = .82$  for women,  $\alpha = .79$  for men), and assessed perceptions of one’s sexual activity (e.g., “I

feel good about my sexual behavior”). The sexual attractiveness subscale had six items ( $\alpha = .83$  for women,  $\alpha = .80$  for men) and assessed feelings of sexual appeal and desirability (e.g., “I am confident that males/females find me sexually attractive”). The sexual conduct subscale had four items ( $\alpha = .83$  for women,  $\alpha = .83$  for men) and assessed feelings of adequacy of one’s behavior in sexual situations and with a partner (e.g., “I don’t know how to behave with a sexual partner”). The body perception subscale ( $\alpha = .78$  for women,  $\alpha = .77$  men) assessed individuals’ feelings about their body as “mature”, as well as satisfaction with their body (e.g., “I have a poorly developed body”). This subscale initially had nine items but two items (“Most of my friends are better looking than I am” and “I frequently feel ugly and attractive”) were removed for poor fit as per Cronbach alpha analyses.

The *sexual self-efficacy scale* was a 20-item measure assessing respondent confidence in their ability to engage in activities relating to sexual behavior. Items were rated in two ways: first, individuals rated if they are able to perform a specific behavior. Second, items that individuals rated as able to perform were further evaluated in terms of perceived confidence on a five-point scale ranging from 1 (*very uncertain*) to 5 (*very certain*). The two question types were merged during data analysis such that reporting a “no” on the binary can/cannot do items was made into a score of “0” on the perceived confidence scale. Therefore for the present study each of the 20 items had a 6 point scale from 0 (*cannot do at all*) to 5 (*very certain can do*).

This scale had three subscales: the first subscale was “resistive” or “say no” ( $\alpha = .86$  for women,  $\alpha = .85$  for men), which assessed perceived ability to be responsible for, take initiative for, and say no to unwanted sexual activity (e.g., “How confident are you that you could tell your partner that you do not want to have sex?”). This subscale had 10 items, but two were removed for poor fit (“Can you discuss with your partner the use of condoms for AIDS protection if you

(or your partner) are already using a different type of contraception” and “Can you insist your partner respect your sexual needs”). The second subscale was “assertive”, which had five items ( $\alpha = .68$  for women,  $\alpha = .67$  for men), which assessed confidence in ability to be assertive in achieving sexual satisfaction (e.g., “How confident are you that you could ask your partner to provide the type and amount of sexual stimulation you require?”). The third subscale was “precautions” ( $\alpha = .69$  for women,  $\alpha = .62$  for men), which assessed self-efficacy regarding purchase and use of condoms (e.g., “How confident are you that you could put a condom on an erect penis?”), and had five items.

The *sexual self attitudes measure* was originally developed by Goggin (1989). There were 38 items with four subscales: arousal, exploration, anxiety, and commitment. The original study scored items on a four-point scale; however the current study expanded this scale to five points to increase variability. Items were rated from 1 (*strongly disagree*) to 5 (*strongly agree*).

The *arousal* subscale ( $\alpha = .90$  for women,  $\alpha = .78$  for men) reflected feelings of sexual energy, frustration, and desire (e.g., “I have very strong sexual desires”), with higher scores indicating higher levels of arousal. There were originally 10 items, but one item (“I often engage in sexual behaviors even though I don’t feel like it”) was removed for poor fit as indicated by the Cronbach alpha analyses.

The *exploration* subscale ( $\alpha = .84$  women,  $\alpha = .86$  men) reflected sexual adventurousness and willingness to explore sexual options (e.g., “I would like to experiment when it comes to sex”), with higher scores indicating higher willingness to explore. There were originally 10 items, but one item (“I don’t want to be committed to just one person”) was eliminated for poor fit as indicated by the Cronbach alpha analyses.



The *anxiety* subscale ( $\alpha = .84$  for women,  $\alpha = .78$  for men) evaluated anxiety in sexual situations or when considering sexual issues (e.g. “I would find it hard to relax while having sex”). In order to ensure that a positive factor score was equivalent to a positive sexual self-concept, the anxiety items were reverse-coded such that a higher score indicated less anxiety. There were initially 11 items, but one was eliminated (Even with condoms I would still worry about getting AIDS if I had sex) due to poor conceptual fit with the other items.

The *commitment* subscale ( $\alpha = .84$  for women,  $\alpha = .82$  for men) was a nine item scale that assessed interest in a monogamous sexual relationship, sex as pleasure and sexual fidelity (e.g., “There needs to be commitment before I have sex with someone”), with higher scores indicating more interest in monogamy and a committed relationship.

*Sexual behavior history:* Sexual behavior was measured by using a 24 item scale that assessed frequency of noncoital and coital behavior. This scale was modeled after other sexual behavior scales (Hansen, Paskett & Carter, 1999; Hennessy, Bleakley, Fishbein & Jordan, 2008) that feature both noncoital and coital behaviors, including items that ranged from less intimate to more intimate behaviors. The scale included questions about nine different noncoital behaviors, from lower intimacy (kissing and genital touching) to higher intimacy (oral, vaginal, and anal sex). Questions asked about each behavior include ever engaging in behavior, number of lifetime partners engaged in behavior with, and frequency of engaging in behavior over the past three months. Lifetime partner questions were assessed on a six point scale from *1 person* (1) to *6 people or more* (6). Frequency of engaging in behavior over the past three months was assessed on a five point scale, from *never* (1) to *daily* (5). Twelve questions about three different types of sexual intercourse behavior were asked (oral, penile-vaginal, and anal): sexual intercourse engagement, lifetime number of partners, and frequency over the past three months. The same

scales were used for these questions as for the non-coital questions. This method of asking about coital behavior has been employed in other surveys such as the Youth Behavior Risk Survey (CDC, 2010). For the present study, only the number of types previous sexual behaviors engaged in and the frequency of these behaviors were used for the sexual behavior variable. Cronbach's alpha was .90 for women and .83 for men.

Three questions asked about quality of sexual experiences. One dichotomous yes/no question asked about experiencing unwanted sexual experiences ("Have you ever had a sexual experience with someone when you didn't want to?"). Two dichotomous true/false questions measured experiencing positive and negative sexual experiences.

*Sexual Socialization:* The sexual socialization scale was a 12-item measure that assessed frequency of discussion of sexual topics with parents, friends, and sexual/romantic partners, and ascribed importance of parents' friends' and sexual/romantic partners' opinions on sex and birth control. The frequency of discussion subscale consisted of 6 questions asking about the frequency of conversations participants had with their parents, friends, and sexual/romantic partners about both sex and birth control over the past month. This scale was taken from the behavior inventory of Kirby's (1994) Mathtech questionnaire. While Kirby's initial scale asks for a specific number (i.e., "fill in the blank"), for the current study, items were assessed on a five point scale from *never* (1) to *seven or more times* (5) in order to keep the consistency of the answer format and to reduce cognitive complexity and satisficing (Krosnick, 1991; Martin, 2006). Cronbach's alpha for this subscale was .80 for women and .77 for men. The importance subscale contained six questions asking about how important parents', friends', and romantic partners' opinions on both sex and birth control are to the participant. This subscale was included in order to assess the salience of the conversations that participants may have with important

social contacts. Previous research on sexual socialization indicates that duration/frequency of exposure to specific sexual messages is not as important as the worth individuals ascribe to them (Jaccard, Dodge, & Dittus, 2002; Ward, 2003). Therefore it was important to assess both frequency and salience of sexual socialization messages. Items were rated on a five point scale from *very unimportant* (1) to *very important* (5). Cronbach's alpha for this subscale was .70 for women and .74 for men, but only after removing the item regarding importance of parent's opinion on birth control, which resulted in at least a .5 improvement for both groups.

*Intended Sexual behavior:* Intended sexual behavior was measured using a five-item scale that asked about the perceived likelihood of engaging in 5 different behaviors (making out, touching someone's private parts, having someone touch your private parts, receiving and giving oral sex, and sexual intercourse) in the next year. Items assessing likelihood of performing certain behaviors were measured using a five point scale from *very unlikely* (1) to *very likely* (5). This method of measuring intended sexual behavior (assessing likelihood of engaging in behavior within a specified timeframe) has been used in previous studies (Forehand, Gound, Kotchick, Armistead, Long & Miller, 2005; Kirby, 1984; L'Engle, Brown & Kenneavy, 2006). Cronbach's alpha was .95 for women, .93 for men.

## **Procedure**

The sample from this study was recruited from the study participant panel from studyresponse.net. Studyresponse.net is a standing online panel that allows researchers to solicit participants for their studies (Stanton & Weiss, 2002). Studyresponse does not solicit participants to sign up to be a part of the panel, but instead employs an open recruitment method by maintaining an active website (Stanton, 2006). Participants can volunteer themselves to be part of the standing panel, where they can then be solicited for specific studies based on the

researcher's sampling frame specifications. The panel has over 50,000 individuals as of March 2012 ([studyresponse.net/sample.htm](http://studyresponse.net/sample.htm), 2012). After the sampling frame is specified by the researcher, studyresponse.net administration email study participants a solicitation that is either generic or drafted by the researcher, and which contains instructions for participating in the study. Multiple waves of email solicitations are submitted to participants, until the researcher has the appropriate size sample (or as close to it as feasible). A sampling frame of 260 English-speaking participants, ages 18 – 25, was specified for the studyresponse.net administration. Montecarlo analyses<sup>1</sup> estimated using Mplus v5 in order to assess the sample needed for necessary statistical power (Muthén & Muthén, 2002) indicated that a sample of 220 participants was needed in order to achieve 80% power. Studyresponse.net then contacted individuals from the survey pool who were in this sampling frame. These participants sent an email that asked to complete the questionnaire and receive a \$5 dollar amazon.com gift card (see Appendix B). Participants were given a link to the study online through qualtrics.com, an online study website where one can build their questionnaire and generate data. Qualtrics.com allows individuals to build online surveys that can be distributed to the public. The data is collected and saved in real-time as the participants answer questions, which are compiled into data files that the researcher can download. Once participants clicked on the link, they were directed to the first page of the survey, which was the consent form, detailing the nature of the study. Only participants who consented (by clicking the “consent” option), were able to fill out the rest of the survey (see

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<sup>1</sup> A simulated structural equation model as proposed in hypothesis 2 was estimated, with a hypothesized estimated pathway of .3 for the relationship between latent sexual behavior and latent sexual self concept variables, .2 for the relationship between latent sexual socialization and sexual self concept variables, and .25 for the relationship between intended sexual behavior and sexual self concept latent variables. The estimates were hypothesized as such due to a potentially stronger relationship between previous sexual behavior and SSC, as based on previous research documenting a clear link between the two (Hensel, et al., 2010; O'Sullivan, et al., 2006), while relationships between SSC and sexual socialization or intention of future sexual behavior, while examined in previous literature (Pai, et al. 2010), do not have as strong a body of empirically supporting literature.

Appendix C). Those who clicked the “I do not consent” option were taken to a page thanking them for their interest in the study, and telling them by not consenting they were not able to take the survey. The survey itself took approximately 25 minutes to complete.

### **Analytic Plan**

Analyses proceeded in three stages (see Figure 4). All lower-order factor analyses were first fit, and then tested for measurement invariance between genders, which tested the first part of hypotheses one and two. Then, the higher-order, six-factor SSC model was tested (hypothesis one), and the best-fitting SSC model was then tested for measurement and structural invariance between genders (hypothesis two). Then, to test hypothesis three, the factors of previous sexual behavior, intended future sexual behavior, and sexual socialization frequency and importance were fit and tested for measurement invariance. Finally, a structural equation model was tested relating the sexual dimension factors with the SSC model.

For all six factors, as well as the three sexual constructs in the structural equation model (previous and intended sexual behavior and sexual socialization), confirmatory factor analysis (CFA) was used to estimate both the lower-order and higher-order latent factors. Since the 5 item likert scales used in all measures are technically on the “cusp” of the continuous/categorical continuum, either CFA or IFA (item factor analysis, used for categorical data) could have been used in estimation (Wirth & Edwards, 2007). While CFA is considered a less precise latent analysis method than IFA, IFA could not be used as there were specific measure items that did not have answers for every point on the item scale (e.g., on a five-point likert scale, there must be at least one answer for every point 1 – 5). This problem arose when examining gender group comparisons. For example, for the arousal item “I have a lot of sexual energy”, no male participant answered “strongly disagree”, while almost 10% of the female participants answered

“strongly disagree”. While one option in order to use IFA would be to merge scale points “somewhat disagree” and “strongly disagree” together in order to ensure that every scale point has answers, this means that the 10% of women who chose this option will be misrepresented. Therefore, although using CFA means that there may not be as much detail and information about the model (e.g., all points on the scale are equal distances from each other with regard to measurement of the latent construct), it allows for more accurate representations of all individuals within the dataset. All lower-order models were analyzed using Mplus 6, using robust maximum likelihood estimation (MLR), which is needed in data with non-normal distributions. Many of the distributions for individual items were skewed (e.g., the arousal factor item “I rarely feel that I would want to have sex” has a skewness of -1.057). MLR adjusts for non-normality within the data by scaling the standard errors and mean-adjusting the chi-square test statistic estimated in maximum likelihood estimations, making them “robust” (valid despite violations of the normality assumption) (Muthén & Muthén, 2007 – 2010). Higher-order models, and the structural equation model, were tested using ML, as when imputation data is used, only the chi-square likelihood test will give the accurate measure of model fit (Asparouhov & Muthén, 2010a). This is not a typical maximum likelihood estimation, but rather one where likelihood ratio tests and parameter estimates are pooled (Asparouhov & Muthén, 2010b; Enders 2010). This is different than simply averaging the likelihood ratio tests over all datasets, but rather a test that compares the arithmetic average of the constrained model likelihood ratio statistics adjusted by the average relative increase in variance. Thus, model fit is being examined the same way (contrasting the saturated model and the hypothesized model). This is currently the only formal operation for assessing fit for these analyses using multiply imputed data, although there is no procedure for directly pooling model fit indices (Enders, 2010, p. 240 – 242),

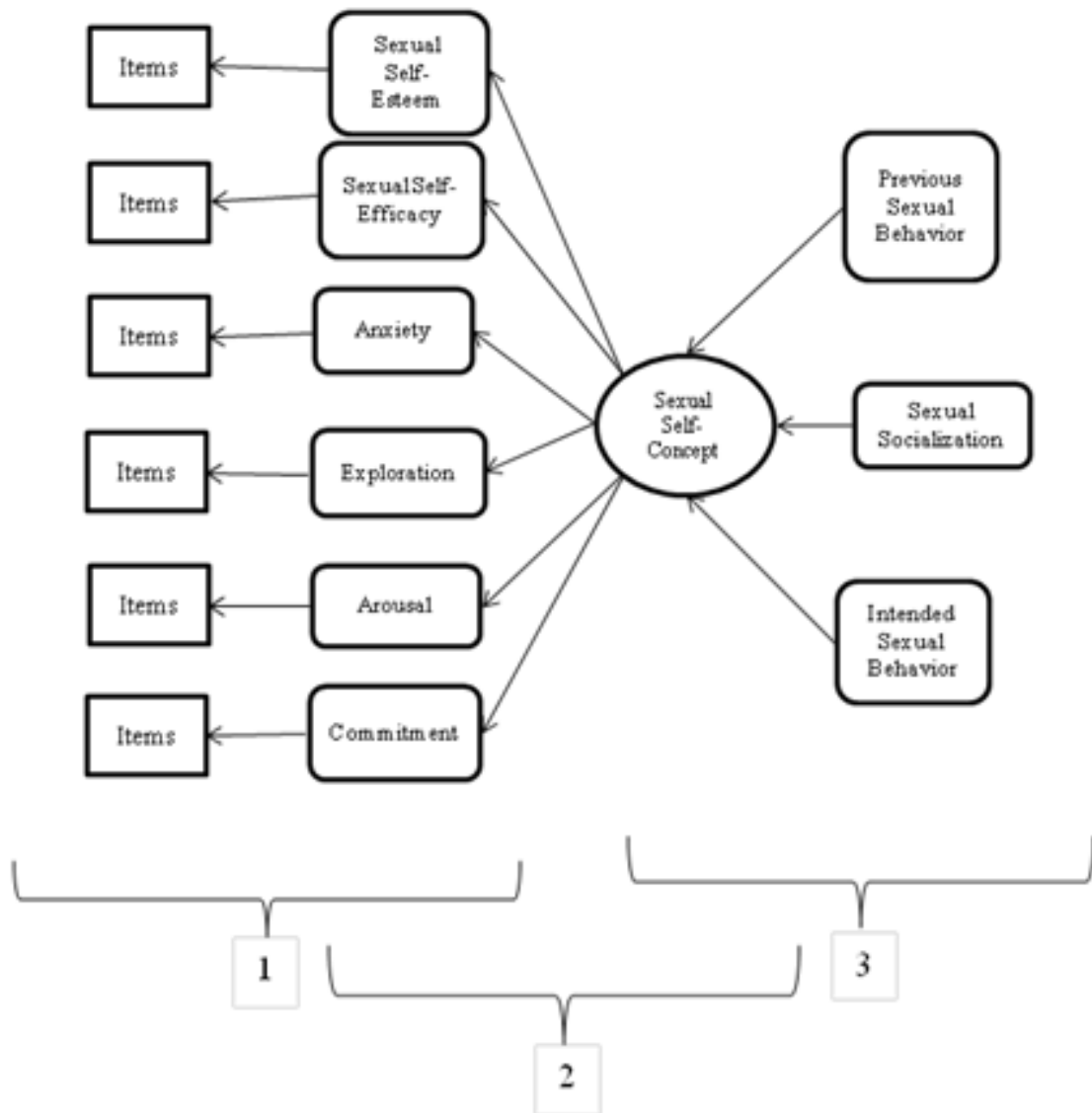


Figure 4. Steps for testing all research hypotheses.

Note: Step 1: Estimating lower-order factors and testing for gender measurement and structural invariance

Step 2: Estimating latent SSC model and testing for gender measurement and structural invariance

Step 3: Estimating structural equation model relating latent factor model to other dimensions of sexuality

However, while the approximate fit indices that are averaged in imputation data are indeed just averages, these averages should be valid if based on this correct chi-square statistic (Aparouhov, 2011).

Lower-order factors were first estimated using CFA. Model fit was assessed by significance values for chi-square significance tests (where non-significance indicates the best model fit). As most models typically have chi-square values that are statistically significant, CFI values (.95 or higher) and RMSEA values (.06 or lower) were also used as indicators of good fit (Hu & Bentler, 1995), and CFI values of .90 and RMSEA values of .10 and above used as indicators of acceptable fit (Barrett, 2006). Each lower-order factor was first tested for unidimensionality and reliability, identified by setting factor variances to 1 and factor means to 0, while estimating the item loadings, intercepts, and residuals for each factor. That is, estimating that the items correlate highly with the factor (loadings), estimating the value of the item when the factor is zero (intercept) and estimating the variance of the item that is not accounted for by the latent trait (residual). Next, each factor was tested for measurement and structural invariance between genders in order to test the first part of hypothesis two using the rescaled  $-2\Delta LL$  test for nested model comparisons, which is necessary for MLR estimation. Men served as the reference group for all invariance models.

As all factors had measurement invariance between genders, a higher-order latent factor was estimated to fully test hypothesis one. It was hypothesized that a SSC latent factor would account for correlations between the six lower order factors. Plausible values were used as the lower order factor scores, instead of assessing a higher-order model with all lower order factors (with all factor items). Using plausible values is an aggregation method that can be used in order to accommodate smaller sample sizes in highly complex models with many parameters.



Models using maximum likelihood estimators need large sample sizes, and smaller sample sizes can often result in standard error increases. Using only one score for each participant also underestimates the standard error as it makes the estimation of an individual's "true" score more precise than it really is. Plausible values are much more accurate than simply estimating factor scores, as they are generated through a Bayesian analysis which allows for a more comprehensive distribution of possible scores for each participant to have (Wu, 2005). Typically estimated factor scores assume one fixed score for the participant that is an estimation of mean central tendency for the participant's factor score distribution. However, imputation methods used for Bayesian analyses allow for imperfect measures and imperfect respondents: they assume that there is a range of scores that each respondent might have. This is more preferable than estimating factor scores using ML. Often times high standard errors (reflecting poor estimation) are an issue with estimated factor scores in maximum likelihood estimation, particularly for small sample sizes, which in turn influences the quality of the estimated factor scores. Standard errors are vastly improved using plausible values (Asparouhov & Muthén, 2010a).

The MLR parameter estimates for each factor in male and female groups was then used to generate a range of potential scores for each individual using a bayes estimator and a gibbs algorithm. The best fitting measurement invariance model for all factors was used as the model from which all estimates were fixed (with invariant item loadings, intercepts, residuals and residual covariances constrained between genders). Fifty datasets of plausible values for each factor for each participant were created using this method. The factors for each dataset were then merged into single files (Fifty in all), with the original data containing non plausible value variables. Then, the six factor model for hypothesis one was tested, using all fifty datasets, through an imputation method (see Asparouhov & Muthén, 2010). This method averages model

fit and factor estimates over all fifty datasets, giving the means. As the six factor model did not have a good fit, an alternate, three factor model was estimated that improved fit, using the correlation matrix to examine the relationships between factors. Examining the correlation matrix, one can infer which factors may not be parts of the underlying latent factor (as these factors would not be highly correlated with most other factors), and which factors may have strong relationships with each other, indicating different specific latent factors.

Next, to test hypothesis two, the higher-order five-factor latent model was tested for measurement and structural invariance between genders. Testing for measurement invariance proceeded in the same steps as the lower-order factor analyses. Both the lower-order plausible values loadings for sexual self-esteem and sexual self-efficacy were tested by constraining across groups first, and the higher-order factors loading onto SSC were constrained for the first step. Then, both the lower order plausible value intercepts and higher-order intercepts were constrained across groups. This sequence would be followed for residuals and factor variances. As these models were estimated using ML, chi-square difference tests could be used to assess changes between nested models, testing for configural, metric, scalar, residual, and structural invariance in sequence.

For testing hypothesis three, relationships between the five-factor SSC model and previous sexual behavior, future intended sexual behavior, and sexual socialization (frequency and social agent importance) were estimated using maximum likelihood. Plausible values were created for the three dimensions of sexuality in the same way that the SSC plausible values were created. First the full-sample latent factors were estimated to assess for appropriate fit using a robust maximum likelihood estimator. Then, the factors were tested for measurement and structural invariance. Finally, fifty datasets of plausible values were generated through multiple

imputation and merged with the appropriate datasets. The structural equation model (SEM) was then estimated relating the higher-order SSC model to the three latent sexual constructs. Quality of sexual behavior experiences, report of nonconsensual experience, sexual/romantic relationship status and relationship length, sexual orientation, and religiosity were added as controls. As there was partial measurement invariance between genders for the five-factor SSC model, the partially-constrained model was used, and the analyses for men and women were estimated simultaneously using four two-group models. Three models examined the relationship between SSC and each of the three sexual dimensions individually, while controlling for demographic variables, and then a final model examined the unique effect of each sexual dimension while accounting for all other variables. This way, gender differences in the pathway between the SSC and each sexual dimension could be examined individually, and then the relationship examining the incremental influence of each sexual dimension variable accounting for others could be examined.

## Chapter 3

### Results

#### Preliminary Results

Table 4 displays univariate statistics for all variables for men and women. More detailed univariate statistics are presented in Table 2 in Appendix D. Men scored significantly higher for arousal, exploration, anxiety, and importance of sexual socialization, while women scored significantly higher for commitment, sexual self-efficacy, and previous sexual behavior. Table 5 displays the bivariate relationships between SSC variables (mean scores), and Table 6 displays the bivariate relationships between the SSC variables, sexuality dimension variables, and demographic variables.

#### Lower-Order Factor SSC Latent Factors

##### Single group latent factor.

Lower order latent factor were estimated using CFA with MLR estimators. Table 7 provides all fit statistics for single-group latent factor scores for each of the four unidimensional factors and the lower-order factors for sexual self-esteem and sexual self-efficacy. Each subscale factor of sexual self-esteem and sexual self-efficacy was assessed individually before being estimated on a higher-order latent factor. As seen in Table 7, all factors had acceptable fit after adding reasonable error correlations, indicating high reliability and unidimensionality. Error correlations were only added if they were conceptually similar; model modification indices that suggested correlating error for items that were not conceptually similar were not added. For example, anxiety factor items “I would worry about physical pain while having sex” and “I would worry about showing fear or discomfort while having sex” were correlated due to being very similar in subject matter. However, even though the modification indices suggested that

Table 4.

*Univariate statistics by gender for all model variables*

Variable	N	Mean	SD	Range
Sexual Self-Esteem: Attractiveness	91 (135)	3.73 (3.62)	.81 (.91)	2.00-5.00 (1.00-5.00)
Sexual Self-Esteem: Behavior	92 (134)	4.28 (4.18)	.62 (.75)	1.80 – 5.00 (2.00 – 5.00)
Sexual Self-Esteem: Body Perception	92 135	3.85 (3.77)	.60 (.60)	2.14 – 5.00 (2.29 – 4.71)
Sexual Self-Esteem: Conduct	92 (134)	3.39 (3.50)	1.02 (1.03)	1.00 – 5.00 (1.00 – 5.00)
Arousal	89 (132)	3.40** (3.01)	.60 (.88)	2.00 – 4.50 (.90-4.50)
Exploration	90 (130)	3.18** (2.90)	.77 (.79)	1.00 – 4.50 (1.10-5.00)
Commitment	90 (134)	3.54** (3.97)	.83 (.79)	1.22 – 5.00 (1.78-5.00)
Anxiety (lack of)	89 (132)	3.51* (3.29)	.65 (.73)	1.54 – 4.90 (.90-4.54)
Sexual Self-Efficacy: Assertiveness	88 (128)	3.14* (3.59)	1.30 (1.23)	.00 – 5.00 (.00-5.00)
Sexual Self-Efficacy: Precaution	89 133	3.39 (3.52)	1.21 (1.32)	.80 – 5.00 (0 – 5.00)
Sexual Self-Efficacy: resistive	85 (129)	2.79** (3.80)	1.36 (1.19)	.00 – 5.00 (.11 – 5.00)
Future sexual behavior likelihood	90 (131)	3.98 (4.20)	1.06 (1.16)	1.00 – 5.00 (1.00-5.00)
Previous sexual behavior frequency	85 (129)	2.01* (2.33)	.87 (.99)	1.00-3.85 (1.00-5.00)
Sexual Socialization (talk)	91 (132)	1.96 (2.13)	.78 (.87)	1.00-4.17 (1.00-5.00)
Sexual Socialization (importance)	88 (133)	2.94* (2.75)	.67 (.66)	1.00-4.17 (.83-4.17)

\* $p < .05$ , \*\* $p < .01$ 

Note: Women's figures are presented in parentheses. Means with asterisks indicate significant differences between sexes.

Table 5.

*Bivariate statistics for SSC factors and sexual dimensions*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. SS-Esteem: Attractive	-	.75**	.62**	.62**	.39**	.30**	-.10	.53**	.38**	.30**	.06	.52**	.58**	.45**	-.03
2. SS-Esteem: Behavior	.76**	-	.44**	.64**	.64**	.50**	-.04	.55**	.61**	.42**	.17	.56**	.58**	.48**	.07
3. SS-Esteem: Body Perc.	.38**	.44**	-	.30**	.13	.01	.03	.20*	.07	.05	.01	.27**	.28**	.17	-.06
4. SS- Esteem: Conduct	.63**	.63**	.44**	-	.52**	.43**	-.06	.76**	.48**	.29**	.23**	.50**	.47**	.25**	-.26**
5. Arousal	.44**	.48**	.33**	.47**	-	.68**	-.29**	.51**	.48**	.36**	-.01	.32**	.38**	.41**	.14
6. Exploration	.07	.15	-.01	.16	.51**	-	.44**	.34**	.40**	.40**	-.05	.40**	.47**	.44**	.09
7. Commitment	-.19	-.15	-.09	-.21*	-.33**	-.43**	-	-.23**	.14	-.01	.40**	-.01	-.06	-.27**	.03
8. Anxiety (lack of)	.41**	.47**	.23*	.57**	.34**	.15	-.08	-	.40**	.29**	.07	.37**	.36**	.25**	-.18*
9. SS-Efficacy: Assertive	.23**	.28**	.20	.35**	.32**	.25*	.19	.44**	-	.60**	.50**	.45**	.45**	.38**	.16
10. SS-Efficacy: Precaution	.22**	.34**	.27**	.34**	.26*	.36**	.03	.31**	.56**	-	.38**	.50**	.40**	.34**	.10
11. SS-Efficacy: resistive	.01	.15	.11	.26*	.05	.06	.39**	.37**	.68**	.60**	-	.16	.12	-.13	-.07
12. Future SB likelihood	.37	.48**	.11	.29**	.25*	.14	-.39**	.23*	.08	.33**	-.06	-	.69**	.42**	-.06
13. Previous SB frequency	.26**	.32**	.27*	.30**	.28**	-.02	-.34**	.20	.05	.06	-.01	.53**	-	.52**	-.04
14. Sexual Soc.(talk)	.10	.31**	.14	.10	-.02	.02	-.24*	-.07	-.05	.06	-.13	.36**	.41**	-	.35**
15. Sexual Soc. (import)	.15	.11	.25*	-.04	-.05	-.12	.11	-.25*	.07	.04	-.14	-.06	-.12	.25*	-

\* $p < .05$ , ^ $p < .01$ , Note: Male estimates on the lower diagonal, female estimates on upper diagonal

Table 6.

*Bivariate relationships with SSC factors, dimensions of sexuality, and demographic variables*

	SS- Est. Attract	SS-Est. Behave	SS-Est. Body P.	SS-Est. Conduct	Arousal	Explore	Commit	Anxiety	SS-Eff Assert	SS-Eff Precau	SS-Eff “Resist”	Future SB Lhood	Previous SB Freq	Sex Soc. (freq)	Sex Soc. (import)
Age	-.07 (.07)	-.13 (-.01)	-.22* (.10)	-.04 (-.07)	-.08 (-.01)	-.04 (.05)	.03 (-.12)	.06 (-.01)	.05 (.07)	-.10 (.21*)	-.05 (.03)	.06 (-.13)	.10 (-.17)	.12 .01	.07 (.03)
Religiosity	.18 (.08)	.01 (.10)	.18 (.09)	.09 (-.04)	.08 (-.10)	-.09 (-.20*)	.24** (.28**)	-.11 (-.04)	-.05 (-.01)	-.07 (-.14)	-.02 (-.25**)	-.06 (-.20)	.03 (-.23*)	.21** .06	.10 (.38**)
Mother’s Education	-.16 (-.06)	.06 (-.11)	.15 (-.11)	.07 (-.08)	.09 (-.16)	.08 (.01)	-.22** (.04)	.03 (.10)	-.11 (-.16)	-.03 (.07)	.04 (-.17*)	-.16 (-.06)	-.09 (-.03)	.07 (.21*)	-.01 (.08)
Father’s Education	.14 (-.06)	.07 (-.09)	.10 (-.03)	.14 (-.10)	.04 (-.07)	-.01 (.05)	-.10 (-.09)	-.03 (.12)	-.07 (-.13)	.01 (.06)	-.01 (-.05)	-.16 (.16)	-.12 (.01)	.01 (.20)	-.06 (.05)
Education Status	.07 (.05)	-.02 (-.06)	-.01 (.08)	.03 (-.01)	-.06 (.15)	-.07 (.01)	.17* (-.11)	.02 (.01)	-.17 (-.08)	-.22* (.06)	-.23* (.03)	-.04 (.08)	.10 (.04)	.08 (.14)	-.06 (.21*)
Employ Status	.08 (-.10)	.05 (-.02)	.19 (-.11)	.18 (-.02)	-.03 (.06)	-.07 (.01)	.12 (.07)	-.07 (.14)	.09 (-.04)	.13 (-.13)	.01 (.10)	-.01 (.14)	-.11 (.14)	-.18* (-.06)	-.17* (-.14)
Romantic Status	.25* (.54**)	.34** (.46**)	.14 (.26**)	.16 (.31**)	.14 (.20*)	.23** (-.15)	.05 (-.12)	.15 (-.08)	-.03 (.39**)	.02 (.32**)	-.12 (-.01)	.63** (.31**)	.69** (.46**)	-.18 (.31**)	.08 (.09)
Live with Sig. Other	-.02 (-.09)	.21 (-.04)	.11 (.04)	.34* (.01)	.19 (.23)	-.01 (.33*)	.09 (.10)	-.09 (.20)	.28 (-.04)	.40** (-.11)	.31* (.08)	-.07 (.21)	-.10 (-.04)	-.17 (-.14)	-.01 (.21)
Length of Romantic Relation.	.22* (-.16)	.07 (-.12)	-.16 (-.15)	.08 (-.10)	-.35 (.32*)	-.33** (.09)	-.16* (.06)	-.19 (.31**)	.19 (-.01)	.14 (.14)	.12 (.20)	.03 (.03)	-.16 (.34*)	-.18 (-.07)	-.04 (-.36*)
Sexual Orientation	-.17 (-.11)	-.17 (.05)	-.04 (-.10)	.04 (.09)	.15 (-.06)	.34** (.20*)	.17* (-.19)	-.02 (.04)	-.01 (.09)	.07 (.25**)	.06 (.18*)	.07 (.11)	.06 (.02)	.11 (-.01)	-.01 (-.16)

Non-Consent Exp.	.07 (.08)	-.05 (.09)	.27** (.15)	.02 (.01)	.05 (.05)	.17* (.10)	-.17* (-.23*)	-.07 (.03)	-.11 (-.03)	-.09 (.07)	-.22* (-.06)	.15 (.12)	.19* (.19)	.19* (.27**)	-.13 (.18)
Positive Sexual Exp.	.32** (.48**)	.38** (.50**)	.08 (.27**)	.31** (.40**)	.33 (.36)	.32** (.37**)	-.11 (-.30**)	.35 (.29**)	.14 (.54**)	.34** (.48**)	0.01 (.25**)	.54** (.43**)	.48* (.33**)	.37** (.08)	.06 (-.08)
Negative Sexual Exp.	.03 (-.16)	-.12 (.18**)	.02 (.17)	-.10 (.17)	.05 (.03)	.21* (.13)	-.07 (-.15)	.04 (.20)	-.08 (.18*)	-.06 (.33**)	-.07 (.22**)	.38** (.04)	.32* (.06)	.16 (.12)	-.13 (.12)

\* $p < .05$ , ^ $p < .01$ , Note: Male estimates in parentheses

Note: Romantic status is 0 = no relationship, 1 = relationship

Non-consent is 0 = no experience 1 = yes experience

Positive/negative

Sexual experience is 0 = no experience 1 = yes experience



items “I often feel pressured into having sex” and “I worry about enjoying having sex” should be correlated to each other, this was not added to the model as these two did not deal with similar themes in the sexual anxiety factor. All items loaded significantly onto their respective factors. Factor item loadings for all factors are presented in Appendix D in Tables 3 - 12

The exception to this was the sexual self esteem body perception factor, which initially had poor fit (see Table 7). When the four sexual self-esteem factors were estimated as contributing to a higher-order sexual self esteem factor, sexual conduct, sexual behavior, and sexual attractiveness all had high loadings (.76, .98, and .95 respectively), while the body perception factor loading was much lower (.47). This indicated that the lower-order body factor was not highly correlated with the sexual self-esteem higher-order latent factor compared to the other three lower-order factors. When the body perception factor was removed, the model fit was adequate after adding three error correlations,  $\chi^2=212.81$ ,  $p < .05$ , CFI = .90, RMSEA = .08, SRMR = .06.

Taken together, these analyses indicated that the lower-order factors were unidimensional, in that the individual factor items were all measuring the same latent construct. While the three sexual self-efficacy lower-order factors all related to each other highly, such that they were individual dimensions of a higher order factor, not all four of the sexual self-esteem factors operated in a similar manner. Sexual self-esteem body perception did not relate to sexual self-esteem conduct, attractiveness, and behavior the same way that these three factors related to each other, and as such, the body perception factor was not seen as a dimension of sexual self-esteem.

Table 7.

*Model fit statistics for SSC lower-order model factors for full sample*

Factor	Number of Items	DF	Chi Square	CFI	RMSEA	SRMR
Anxiety	10	33	67.24**	.93	.07	.05
Exploration	9	24	57.19**	.94	.08	.05
Arousal	9	26	65.52**	.94	.08	.05
Commitment	9	26	50.27**	.95	.06	.05
Sexual Self Esteem – Attractive	6	9	34.62**	.93	.11	.04
Sexual Self-Esteem- Body Perception	7	13	26.41	.95	.05	.07
Sexual Self-Esteem – Sexual Conduct	4	2	1.27	1.00	.01	.01
Sexual Self-Esteem – Sexual Behavior	5	5	4.75	1.00	.01	.02
Sexual Self-Efficacy – Assertive	5	5	15.69**	.93	.10	.04
Sexual Self-Efficacy – Precaution	5	4	11.17*	.94	.09	.04
Sexual Self-Efficacy – Resistive	8	19	41.80**	.96	.07	.04
Sexual Self-Esteem (4 Factor)	22	205	613.27**	.78	.09	.10
Sexual Self-Esteem (3- Factor)	15	84	212.81**	.90	.08	.06
Sexual Self-Efficacy	18	127	247.25**	.90	.07	.08

\* $p < .05$ , \*\* $p < .01$

### **Gender group measurement and structural invariance for lower-order factors.**

Lower-order factors were next examined for measurement invariance, and then structural invariance between gender groups. Measurement invariance was first tested, and then, if there was at least partial measurement invariance, structural invariance was tested. For each factor model, the configural invariance was tested, in which the factor was estimated simultaneously in both groups, and in which all item loadings, intercepts, residuals, and factor loadings remained free. Configural invariance tests if the groups have the same factor structure (i.e., the same number of factors). To identify groups, the first item loading was fixed to 1 and the item intercept was fixed to 0. Metric invariance was then tested, where the item loadings would be constrained between groups (Millsap & Yun-Tien, 2004). In this model, the factor variance was fixed to 1 in the reference (male) group, while remaining free in the female group, and factor means were fixed to 0 in both groups. Metric invariance tests if the items load similarly on the factors for both groups. That is, if items have a similar correlation with the latent factor in both groups. Scalar invariance was then tested, where the item intercepts would be constrained between groups, and the factor mean was estimated in the female group. Scalar invariance tests if item intercepts are the same in both groups, that is, if the values of the item when the factor is zero are the same in both groups. This is particularly important for comparing mean differences between males and females. Residual invariance was then tested in which all residual item variances were constrained between groups. Residual invariance tests if the variance of the item not related to the factor is similar in both groups. Finally, residual covariances, which were added as suggested by both model modification indices, were constrained between groups. Residual covariance invariance indicates that the error correlations are the same in both groups. However, residual covariances do not need to be invariant in order to move onto testing

structural invariance. If measurement invariance held such that there was at least partial residual invariance, structural invariance was then tested. For testing structural invariance, the factor variance was first constrained between groups, to determine if men's and women's relative standing on the latent dimension was similar (i.e., if the sample variability for the latent factor was similar between groups). Next, the factor means were constrained between groups, to determine if there was a significant difference between the mean levels of the factor between groups.

Traditional chi-square difference tests cannot be used with an MLR estimator, therefore scaled difference log likelihood tests (-2LL rescaled difference test) were used to estimate differences in model fit. If there was a significant difference between models after constraint such that the model fit became significantly worse, the model was then tested at an individual item level to examine partial invariance. Each item was individually freed, and this new model with the freed item was compared to the fully-constrained model in order to examine which specific items were significantly different between groups. After testing all items, the items that were significantly different would remain free, while the items that were not significantly different between groups would remain constrained. This new partial-invariance model would be compared against the previous invariance model to ensure that the model fit was not significantly worse. For example, if the full metric model (all item loadings constrained) had a significantly worse model fit than the configural model, each item loading would be freed, and the model with this freed item would be compared against the full metric model to examine which items significantly differ between groups. Then, when the significantly different items are found, these items would remain free, while the others are constrained, and this new partial metric invariant model would be compared to the configural model.

Research on partial invariance indicates that some of the item or factor structures can be constrained between groups, but not all, while the factors themselves can still be considered somewhat equivalent (Byrne, Shavelson, & Muthen, 1989). While there only needs to be one other item (besides the item marker) constrained between groups (Steenkamp & Baumgartner, 1998), some researchers contest that this is dubious (Vandenberg & Lance, 2000), as it indicates that all other item structures (e.g., loadings or intercepts) are significantly different from each other. Credibility for model comparisons with many significantly different items between groups may be weak. There is no strict rule for how many items should be constrained for partial invariance, and many researchers claim that “theoretical justification” is the only real way to determine how many items should remain invariant (Ployhart & Oswald, 2004). I decided that a good cut-off point would be at least half of the items fully constrained for model comparisons (i.e. loadings, intercepts, and residuals constrained between groups), although exceptions could be made depending on the situation. If there was partial measurement invariance, structural invariance would then be tested, first by constraining the factor variance (setting it to 1 in both groups), and then by constraining the factor mean between groups (setting it to 0 in both groups).

**Anxiety.** The anxiety factor had acceptable model fit,  $\chi^2=107.08$ ,  $p < .05$ , CFI = .92, RMSEA = .08, SRMR = .06 after adding three error correlations (residual covariances), indicating configural invariance for gender. Item loadings are presented in Appendix D Table 13. When metric invariance was tested and the item factor loadings were constrained across groups, the model fit became significantly worse ( $-2\Delta LL(9) = 32.21$ ,  $p < .05$ ). Therefore, items were tested individually to examine which item factors significantly differed between groups by systematically freeing individual items and assessing if there was significant model fit improvement. Freeing two out of the ten items significantly improved the model such that it was

no longer significantly worse than the configural model ( $-2\Delta LL(7) = 9.31, p > .05$ ). Therefore, the model had partial metric invariance. Scalar invariance was then assessed, constraining the intercepts between groups. When intercepts were constrained, the model was significantly worse ( $-2\Delta LL(6) = 46.66, p < .05$ ). Item intercepts were systematically freed to examine significant differences between groups for individual intercepts. Freeing three item intercepts significantly improved the model such that it was no longer significantly worse than the partial metric model ( $-2\Delta LL(4) = 9.30, p > .05$ ). Residual invariance between groups was then tested, constraining only those items that were still constrained in the scalar model. When item residuals were constrained, model fit became significantly worse ( $-2\Delta LL(5) = 11.34, p < .05$ ). Residual variances were then freed individually. Freeing one item's residual variance significantly improved the model such that it was no longer significantly worse than the partial scalar model ( $-2\Delta LL(4) = 5.14, p > .05$ ). However, the partial residual model only had four out of ten items constrained. While this surpassed the half-item cutoff point, an exception was made to continue to evaluate structural invariance. This is because the metric model, which is often considered the most important, or at least the most used aspect of measurement invariance (Cheung & Rensvold, 1999; Schmitt & Kuljanin, 2008; Vandenberg & Lance, 2000), had more than half of the items constrained. Therefore, while restraint is important in making broad inferences between men and women regarding the anxiety factor, as the factor measurement invariance may be dubious, the most important aspects of measurement invariance (i.e., the metric and scalar invariance) were satisfactory. Finally, the three residual covariances were constrained between groups, which made the model significantly worse ( $-2\Delta LL(3) = 8.97, p < .05$ ). Two residual covariances needed to remain free while one could still be constrained in order to improve model fit such that it was not significantly worse than the residual model ( $-2\Delta LL(2) = 4.16, p > .05$ ).

Structural invariance was then tested, first constraining factor variances and then factor means. The anxiety measure had factor variance structural invariance, as the model did not get significantly worse ( $-2\Delta LL(1) = .34, p > .05$ ). Finally, the model also had factor mean structural invariance, as the model did not get significantly worse ( $-2\Delta LL(1) = 2.82, p > .05$ ). Therefore, there was structural invariance between groups, indicating that factor distributions and means were the same between groups.

**Arousal.** The arousal factor, which contained nine items, had acceptable model fit, at least for two of the three indices of model fit  $\chi^2 = 78.16, p < .05$ , CFI = .96, RMSEA = .08, SRMR = .05 after adding three error correlations, indicating configural invariance between groups. Item loadings are featured in Appendix D, Table 14. When the nine item loadings were constrained between groups, the model did not become significantly worse ( $-2\Delta LL(8) = 8.17, p > .05$ ), indicating there was full metric invariance. When intercepts were constrained between groups, the model did become significantly worse ( $-2\Delta LL(8) = 16.97, p < .05$ ), indicating that there was not full scalar invariance between groups. When item intercepts were freed individually, only one intercept needed to remain free in order to significantly improve model fit ( $-2\Delta LL(1) = 7.93, p < .05$ ) compared to the metric invariance model. The item residuals were then constrained between groups, which did not make the model significantly worse ( $-2\Delta LL(8) = 4.77, p > .05$ ). Finally, the three residual covariances were constrained to test invariance between groups. Constraining residual covariances made the model fit significantly worse ( $-2\Delta LL(3) = 7.93, p < .05$ ) compared to the residual model. However, all of the covariances had remain free, as constraining each individual covariance made model fit significantly worse. Given that partial measurement invariance held for the arousal factor between groups, structural invariance was then estimated. Factor variance was first constrained between groups. However,

this made the model significantly worse ( $-2\Delta LL(1) = 24.97, p < .05$ ), which indicated that the factor did not have structural invariance, as the factor variance was significantly different between groups (female variance was 2.51 higher). Women also had a factor mean score of .66 lower than men.

**Commitment.** The commitment factor, which had nine items, had acceptable model fit,  $\chi^2 = 71.38, p < .05$ , CFI = .95, RMSEA = .07, SRMR = .05 after adding three error correlations, indicating configural invariance between groups. Item loadings are presented in Appendix D, Table 15. When item loadings were constrained between groups, the model did not become significantly worse ( $-2\Delta LL(8) = 10.12, p > .05$ ). However, when all item intercepts were constrained, the model did become significantly worse ( $-2\Delta LL(8) = 17.70, p < .05$ ), indicating there was not full scalar invariance between groups. When individual items were freed, only one item needed to remain freed in order to maintain partial scalar invariance ( $-2\Delta LL(7) = 8.05, p > .05$ ), when compared to the metric invariance model. When all item residuals were constrained, the model did not become significantly worse ( $-2\Delta LL(8) = 13.52, p > .05$ ). Finally, the three residual covariances were constrained between groups, making the model significantly worse ( $-2\Delta LL(3) = 17.22, p < .05$ ). One residual covariance was not significantly different between groups, and remained constrained, while the other two were freed.

Structural invariance was then tested. When the factor variance was constrained between groups, the model did not get significantly worse ( $-2\Delta LL(1) = .14, p > .05$ ), indicating structural factor variance invariance between groups. When the factor mean was constrained, the model became significantly worse ( $-2\Delta LL(1) = 62.26, p < .05$ ), indicating that there was not full structural invariance between groups for the commitment factor. Women's factor mean score was .67 higher than men's factor mean score.



**Exploration.** The exploration factor, which had nine items, had acceptable model fit,  $\chi^2=87.21$ ,  $p < .05$ , CFI = .93, RMSEA = .09, SRMR = .06 after adding three error correlations, indicating there was configural invariance between groups. Item loadings are presented in Appendix D, Table 16. When item loadings were constrained between groups, the model did not become significantly worse ( $-2\Delta LL(8) = 9.01$ ,  $p > .05$ ), indicating there was full metric invariance. When the item intercepts were constrained, the model got significantly worse ( $-2\Delta LL(8) = 16.23$ ,  $p < .05$ ), indicating that there was not full scalar invariance between groups. When individual item intercepts were freed, only one intercept was significantly different between groups, and constraining the other intercepts allowed for partial scalar invariance ( $-2\Delta LL(7) = 9.50$ ,  $p > .05$ ). When the item residuals were constrained between girls, the model did not get significantly worse, ( $-2\Delta LL(8) = 12.57$ ,  $p > .05$ ). Finally, when the three residual covariances were constrained between groups, the model did not get significantly worse ( $-2\Delta LL(3) = 7.03$ ,  $p > .05$ ). Therefore, there was partial measurement invariance for the exploration factor.

Structural invariance between groups was then estimated. When factor variance was constrained between groups, the model did not get significantly worse ( $-2\Delta LL(1) = 0.01$ ,  $p > .05$ ). However, when the factor means were constrained between groups, indicating that there was no structural invariance between groups for factor means ( $-2\Delta LL(1) = 16.61$ ,  $p < .05$ ), as there was a significant difference in factor mean between groups Women had a factor mean score that was .35 lower than men. Therefore there was only partial structural invariance for the exploration factor.

**Sexual Self-Efficacy – Assertion.** The assertion lower-order factor for the sexual self-efficacy factor, which had five items, had good model fit,  $\chi^2=16.995$ ,  $p > .05$ , CFI = .95,

RMSEA = .08, SRMR = .04. Item loadings are presented in Appendix D, Table 17. When the item loadings were constrained, the model did not get significantly worse, indicating metric invariance ( $-2\Delta LL(4) = 3.44, p > .05$ ). Item intercepts were then constrained, which did make the model significantly worse ( $-2\Delta LL(4) = 9.66, p < .05$ ), indicating there was not full scalar invariance. One intercept was freed, which improved model fit such that it was not significantly worse than the metric model ( $-2\Delta LL(3) = .40, p > .05$ ). When the item residuals were constrained, the model did not get significantly worse, indicating residual invariance between groups ( $-2\Delta LL(4) = 3.89, p > .05$ ). Therefore, there was partial measurement invariance for the assertion self-efficacy factor. Structural invariance was then estimated. The model did not get significantly worse ( $-2\Delta LL(1) = .71, p > .05$ ), when factor variance was constrained between groups. Constraining the factor means between groups also did not make the model worse, ( $-2\Delta LL(1) = 3.22, p > .05$ ), indicating that there was full structural invariance.

***Sexual Self-Efficacy – Precaution.*** The precaution lower-order factor for the sexual self-efficacy factor, which had five items, had acceptable model fit,  $\chi^2 = 13.40, p < .05, CFI = .96, RMSEA = .08, SRMR = .04$  after adding one error correlation, indicating configural invariance between groups. Item loadings are presented in Appendix D, Table 18. However, when item loadings were constrained between groups, the model did not become significantly worse ( $-2\Delta LL(4) = 5.52, p < .05$ ), indicating there was not full metric invariance between groups.. When item intercepts were constrained, the model fit became significantly worse ( $-2\Delta LL(4) = 41.28, p > .05$ ), indicating there was not full scalar invariance. Two item intercepts were freed in order to make the partial scalar model not significantly worse than the metric model ( $-2\Delta LL(2) = 2.28, p < .05$ ). When the item residuals were constrained, the model fit did not get significantly worse ( $-2\Delta LL(1) = 3.56, p > .05$ ). Finally the residual covariance was constrained between

groups, which did not make the model significantly worse ( $-2\Delta LL(1) = 3.53, p > .05$ ). Structural invariance was then tested. When factor variance was constrained between groups, the model did not become significantly worse ( $-2\Delta LL(1) = 1.64, p > .05$ ). Factor means were then constrained between groups, the model again did not become significantly worse ( $LL(1) = 2.28, p > .05$ ). Therefore, the precaution factor had structural invariance.

***Sexual Self-Efficacy – Resistive.*** The resistive sexual self-efficacy factor, which had eight items, had acceptable fit for the configural model,  $\chi^2 = 74.43, p < .05$ , CFI = .93, RMSEA = .09, SRMR = .05 after adding one error correlation, indicating there was configural invariance between groups. Item loadings are presented in Appendix D Table 19. When the item loadings were constrained across groups, the model fit did not get significantly worse ( $-2\Delta LL(9) = 9.18, p > .05$ ), indicating full metric invariance. Item intercepts were then constrained between groups, which did not make the model fit significantly worse ( $-2\Delta LL(9) = 13.03, p < .05$ ). Constraining the item residuals made the model fit significantly worse ( $-2\Delta LL(9) = 49.34, p < .05$ ). When six item residuals were freed, the residual model was not significantly worse than the scalar model ( $-2\Delta LL(3) = 5.93, p > .05$ ). While this indicated that less than half of the items had residual invariance between genders, again, the decision was made to consider this partial invariance as the items had both full metric and scalar invariance. Finally, the residual covariance was constrained across groups, which made model fit significantly worse ( $-2\Delta LL(1) = 5.93, p < .05$ ). Therefore, the residual covariance remained free, and the resistive sexual self-efficacy factor had partial measurement invariance. When factor variance was constrained between groups, the model did not become significantly worse, indicating similar factor variance between groups ( $-2\Delta LL(1) = 2.36, p > .05$ ). However, the model became significantly worse when the factor means were constrained between groups ( $-2\Delta LL(1) = 21.36, p < .05$ ), indicating there was not

full structural invariance between groups. There was a significant factor mean difference between groups, with the women scoring .70 higher than men on the factor mean.

***Sexual Self-Esteem – Sexual Attractiveness.*** The sexual attractiveness sexual self-esteem factor, which had six items, had acceptable model fit for two of the model fit indices, indicating configural invariance between groups,  $\chi^2=44.79$   $p < .05$ , CFI = .92, RMSEA = .11, SRMR = .05. Item loadings are presented in Appendix D Table 20. When item loadings were constrained between groups, the model became significantly worse ( $-2\Delta LL (5) = 12.94$ ,  $p < .05$ ), indicating that there was not full metric invariance between groups. Only one item needed to be freed in order to maintain partial metric invariance ( $-2\Delta LL (1) = 4.52$ ,  $p > .05$ ). When the item intercepts were constrained, the model again became significantly worse ( $-2\Delta LL (5) = 18.34$ ,  $p < .05$ ). Only one item intercept needed to be freed in order to maintain partial scalar invariance ( $-2\Delta LL (3) = 4.75$ ,  $p > .05$ ). When item residuals were constrained between groups, the model did not become significantly worse ( $-2\Delta LL (4) = 3.97$ ,  $p > .05$ ). Therefore, there was partial measurement invariance for the attractive factor. When the factor variance was constrained between groups, the model fit did not get significantly worse ( $-2\Delta LL (1) = .01$ ,  $p > .05$ ). The model also did not get significantly worse when the factor means were constrained ( $-2\Delta LL (1) = .29$ ,  $p > .05$ ). Therefore, the sexual attractiveness sexual self-esteem factor had structural invariance between groups.

***Sexual Self-Esteem – Sexual Behavior.*** Initial model fit for the sexual behavior sexual self-esteem model, which had five items, was good,  $\chi^2=10.85$   $p > .05$ , CFI = 1.00, RMSEA = .03, SRMR = .03, indicating configural invariance between groups. Item loadings are presented in Appendix D Table 21. When the item loadings were constrained, the model did not get significantly worse ( $-2\Delta LL (4) = 6.48$ ,  $p > .05$ ). However, when the item intercepts were

constrained across groups, the model did get significantly worse ( $-2\Delta LL(4) = 16.58, p < .05$ ). Only one item intercept needed to be freed in order to maintain partial scalar invariance between groups ( $-2\Delta LL(4) = 3.56, p > .05$ ). The model did not get significantly worse when the item residuals were constrained ( $-2\Delta LL(4) = .73, p > .05$ ). Finally, the one residual covariance was constrained between groups, but as this made the model significantly worse ( $-2\Delta LL(1) = 4.89, p < .05$ ), it remained free when estimating the structural invariance model. Therefore, there was partial measurement invariance for the behavior sexual self-esteem factor. When factor variance was constrained between groups, the model did not get significantly worse ( $-2\Delta LL(1) = 2.19, p > .05$ ). There was also no significant change when the factor means were constrained between groups, ( $-2\Delta LL(1) = .16, p > .05$ ), indicating structural invariance.

***Sexual Self-Esteem – Sexual Conduct.*** The model fit for the sexual conduct sexual self-esteem factor, which had four items, was good for the two-group sexual conduct model indicating configural invariance,  $\chi^2 = 2.38, p > .05$ , CFI = 1.00, RMSEA = .01, SRMR = .01. Item loadings are presented in Appendix D Table 22. When the item loadings were constrained between groups, the model did not become significantly worse ( $-2\Delta LL(3) = 4.44, p > .05$ ). The model also did not become significantly worse when item intercepts were constrained between groups, indicating full scalar invariance ( $-2\Delta LL(3) = 2.96, p > .05$ ). Finally, there was also full residual invariance, as constraining the item residuals did not make the model significantly worse ( $-2\Delta LL(4) = 4.01, p > .05$ ), indicating full measurement invariance. When testing structural invariance, the model also did not get significantly worse when constraining factor variance between groups ( $-2\Delta LL(1) = .10, p > .05$ ), but did get significantly worse when constraining factor means between groups ( $-2\Delta LL(1) = 46.23, p < .05$ ). Women's factor mean score was on

average .14 higher than men's factor mean score. Therefore, there was not structural invariance for the sexual self-esteem sexual conduct factor.

Taken together, the measurement invariance analyses indicate that all lower-order factors are measured similarly in men and women, although some of the factors have differences in means and distributions between men and women. This indicates that men and women are able to be analyzed together regarding the higher-order latent model, and are able to be compared for higher-order factor invariance.

### **Higher-Order Latent SSC Model**

In order to fit the higher-order latent SSC model, a CFA using was estimated using maximum likelihood. The three sexual self-esteem and sexual self-efficacy plausible value factors were loaded onto their respective higher-order latent factors, with one value fixed to 1 for each latent factor for identification. These two latent traits were then loaded onto a higher-order SSC factor, along with the four other plausible value factors (e.g., arousal). All SSC factor loadings were estimated, with the factor variance fixed to 1 and factor mean fixed to 0 for identification. When the six-factor model was estimated using the plausible value factor scores, the model did not have good fit,  $\chi^2(33) = 141.42, p < .05, CFI = .76, RMSEA = .12, SRMR = .11$ . As seen in Figure 5, the commitment factor was particularly problematic, as it negatively loaded on the higher-order SSC factor, indicating that it was negatively related to the other factors. This can also be seen in Table 8, which displays average correlations between the plausible value factor scores. A potential area of misfit was the sexual self-efficacy resistive factor, as while this factor did relate positively with the other sexual self-efficacy factors precaution ( $r = .51$ ) and assertion ( $r = .31$ ), it did not have strong relationships with any other factor instead of

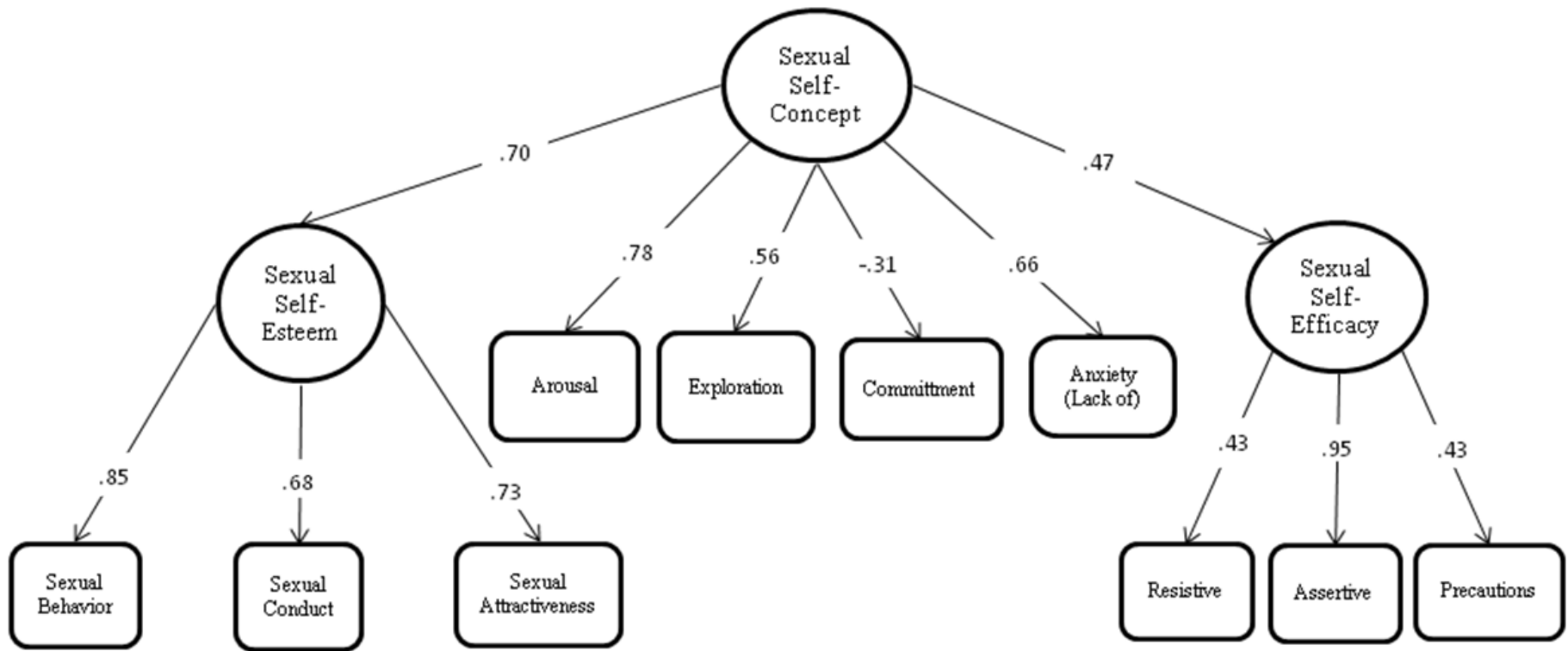


Figure 5. Standardized factor loadings for hypothesized six-factor sexual self-concept model

Table 8.

*Correlations between plausible value factor scores*

	1	2	3	4	5	6	7	8	9	10
1. Sexual Self-Esteem: Sexual Attractiveness	-									
2. Sexual Self-Esteem Sexual Behavior	.64**	-								
3. Sexual Self-Esteem: Sexual Conduct	.52**	.54**	-							
4. Arousal	.25**	.45**	.34**	-						
5. Exploration	.15*	.28**	.24**	.53**	-					
6. Commitment	-.14	-.11	-.09	-.29**	-.42**	-				
7. Anxiety (lack of)	.36**	.45**	.57**	.51**	.24**	-.13	-			
8. Sexual Self-Efficacy "resistive"	-.01	.09	.18*	-.10	-.08	.43**	.11	-		
9. Sexual Self-Efficacy Assertive	.29**	.40**	.35**	.30**	.20**	.10	.36**	.45**	-	
10. Sexual Self-Efficacy Precaution	.19*	.30**	.23**	.27**	.30**	-.03	.24**	.27**	.39**	-

\* $p < .05$ , \*\* $p < .01$



commitment. All other factors had at least moderate relationships with two other factors. For example, the sexual self-efficacy precaution factor had moderate relationships with the sexual self-esteem behavior factor ( $r=.30$ ) and the exploration factor ( $r=.30$ ). The sexual self-efficacy assertive factor had moderate relationships with the sexual self-esteem behavior ( $r=.40$ ) and conduct ( $r=.35$ ) factors, as well as the arousal ( $r=.30$ ) and anxiety ( $r=.36$ ) factors. Therefore, the sexual self-efficacy resistive factor was a potential candidate for removal along with the commitment factor. As this model did not have good fit, a new model needed to be examined. First, the commitment factor was removed, as it negatively related to the sexual self-concept latent factor. This model provided a better fit with an improved RMSEA,  $\chi^2(25) = 88.90, p < .05$ , CFI = .84, RMSEA = .10, SRMR = .08, however this model still did not have good fit. Therefore, the factor correlation matrix was examined further.

Examination of the sexual self-efficacy resistive factor indicated that while this factor was related to the other sexual self-efficacy factors, it had little relation with the other factors. In comparison, the precaution and assertion sexual self-efficacy factors had much higher relations with the other factors in the model. Therefore, the sexual self-efficacy resistive factor was removed. In order to keep the sexual self-efficacy model identified, both of the lower order plausible value factors (assertion and precaution) were fixed to 1. This further improved the model fit,  $\chi^2(19) = 57.92, p < .05$ , CFI = .89, RMSEA = .10, SRMR = .06, although this fit was only acceptable for two out of the three approximate fit indices. After adding one error correlation between (lack of) anxiety and sexual self-esteem sexual conduct, this five-factor model had acceptable model fit,  $\chi^2(18) = 37.70, p < .05$ , CFI = .94, RMSEA = .07, SRMR = .06. As seen in Figure 6, all factors highly loaded onto their higher-order latent factors. Therefore, this new model had five factors, with a reduced two-factor construct of sexual self-efficacy.

Finally, two comparisons were made in order to assess if the five-factor model was the best way to account for the correlations between the SSC variables. First, a model in which all five factors were correlated with each other was compared to the five-factor model as a “baseline”.

Comparisons could be made directly as the five-factor model is nested within the correlation model. The model fit of the correlation model was good,  $\chi^2(14) = 30.50, p < .05, CFI = .95, RMSEA = .07, SRMR = .04$ . However, this was not significantly different from the five-factor model, ( $\chi^2(4) = 7.20, p > .05$ ), indicating that the five-factor model fit equally as well as the correlation model. Second, a “one”-factor SSC model was estimated in which all plausible values loaded onto a single SSC factor, in which all loadings were freely estimated and the factor variance was fixed to 1 for identification. This was to examine the possibility that the lower order sexual self-esteem and sexual self-efficacy factors would be able to be independent loadings onto an SSC latent factor, rather than components of a multidimensional higher-order factor. This model had poor fit,  $\chi^2(19) = 78.45, p < .05, CFI = .83, RMSEA = .12, SRMR = .07$ . While all plausible values significantly loaded onto the SSC factor (see Appendix D, Table 24), the poor fit indicated that the sexual self-esteem and sexual self-efficacy plausible values operated better as constructs of a multidimensional higher-order factor, as they are more related to each other in a way that is not accounted for by one big SSC factor.

Taken together, these results indicate that a five-factor higher-order model, with two multi-dimensional lower order factors, accurately explains the correlations between these lower-order factors.

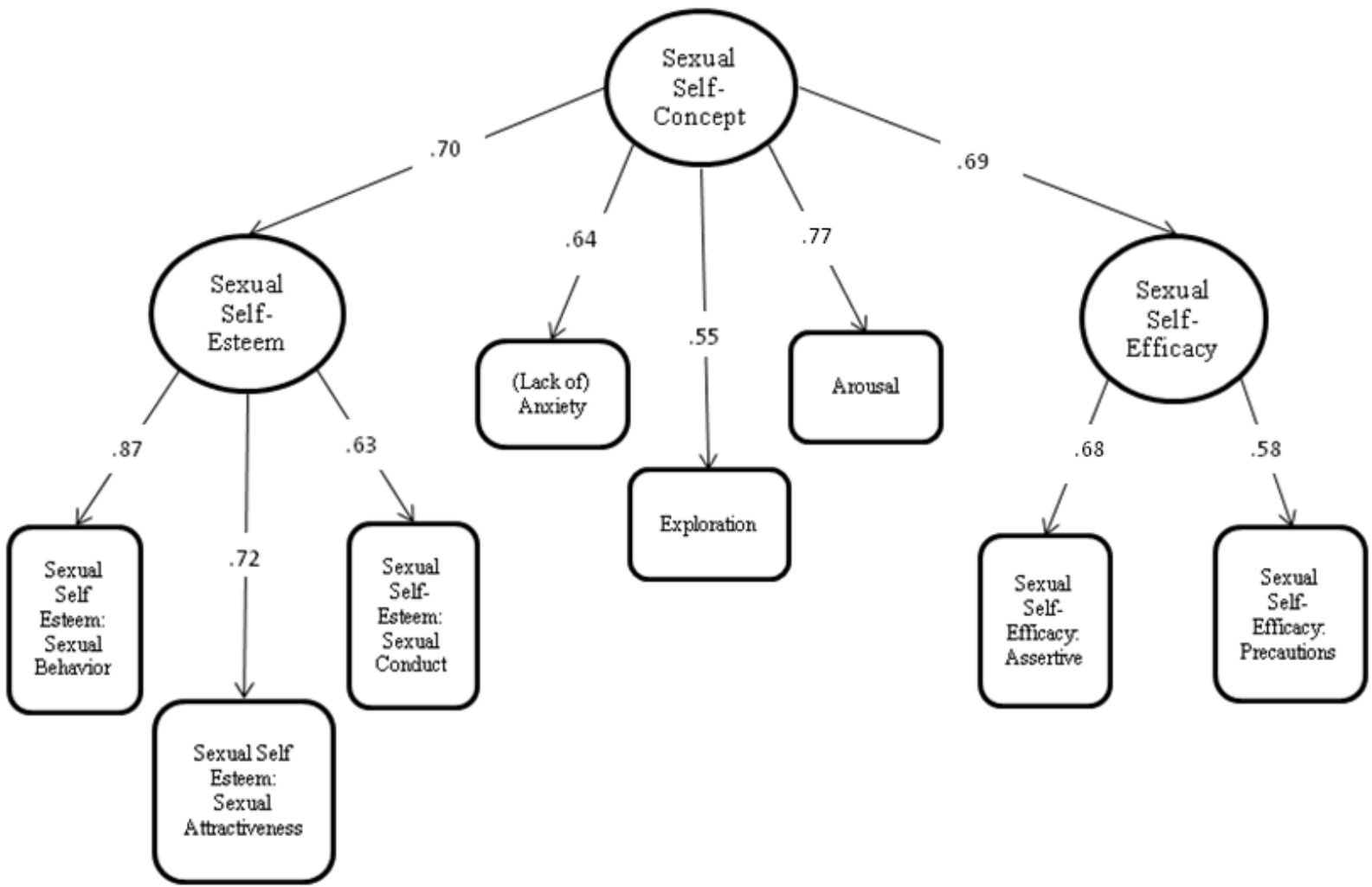


Figure 6. Five-factor sexual self-concept model with two-factor sexual self-efficacy factor. Note: All loadings are standardized

### Measurement and Structural Invariance of Latent SSC Factor

Next, measurement and structural invariance between genders for this five-factor model was examined in order to test hypothesis two. As this was a higher-order model, with lower and higher-order factors, the model was tested with both the lower- and higher-order loadings, intercepts and residuals constrained in sequence. Table 9 displays correlations between plausible value factors for men and women. The unconstrained model for the two gender groups had good model fit,  $\chi^2(34) = 42.75, p < .05$ , CFI = .97, RMSEA = .05, SRMR = .05, indicating configural invariance. Loadings are presented in Appendix D Table 23. Next, the loadings for lower order values for sexual self-esteem and sexual self-efficacy were constrained to be equal across groups. For lower order factors, one plausible value on each factor was constrained to one across groups, while the higher-order factor variance was constrained to one in the reference group (men). This did not make the model significantly worse, indicating there was full metric invariance between groups ( $\Delta \chi^2(7) = 4.34, p > .05$ ). The metric model was tested holding two different items on each factor to one across groups in order to make sure that holding any specific plausible value to one affected the model. When intercepts were constrained between groups, the model got significantly worse ( $\Delta \chi^2(7) = 13.38, p > .05$ ). After testing each intercept, results indicated that the sexual self-efficacy factor was the source of the misfit; either plausible value (precaution or assertion) when freed made the partial scalar and full metric models statistically similar ( $\Delta \chi^2(6) = 3.08, p > .05$ ). Next, residuals were constrained between groups. This made the model significantly worse ( $\Delta \chi^2(7) = 13.58, p > .05$ ). When the arousal factor was freed, the partial scalar and residual models were statistically similar ( $\Delta \chi^2(6) = 4.48, p > .05$ ). Finally, the residual covariance was constrained between groups, which did not make the model fit significantly worse ( $\Delta \chi^2(1) = 1.17, p > .05$ ). Therefore, there was partial measurement invariance

Table 9

*Correlations between 5-factor SSC plausible value factors for men and women*

	1	2	3	4	5	6	7	8
1) Sexual Self-Esteem: Sexual Attractiveness	-	.63**	.51**	.24**	.23*	.38**	.35**	.23*
2) Sexual Self-Esteem Sexual Behavior	.65**	-	.56**	.49**	.36**	.48**	.51**	.32**
3) Sexual Self-Esteem: Sexual Conduct	.55**	.53**	-	.37**	.33**	.63**	.40**	.24*
4) Arousal	.29**	.36**	.39**	-	.56**	.53**	.41**	.26**
5) Exploration	.04	.13	.17	.45**	-	.28**	.29**	.31**
6) Anxiety (lack of)	.34**	.40**	.53	.45**	.13	-	.40**	.24*
7) Sexual Self-Efficacy Assertive	.22	.24*	.27*	.24*	.15	.36**	-	.44**
8) Sexual Self-Efficacy Precaution	.12	.23*	.25*	.19	.24*	.22	.39*	-

Note: Correlations for women are on the upper diagonal, while men are on the lower diagonal

\* $p < .05$ , \*\* $p < .01$

between groups. Finally, structural invariance was tested by constraining each factor variance to one in the comparison group (women). The model became significantly worse when the sexual self-esteem factor ( $\Delta \chi^2 (1) = 8.53, p > .05$ ), sexual self-efficacy ( $\Delta \chi^2 (1) = 15.39, p > .05$ ), and the sexual self-concept factor ( $\Delta \chi^2 (1) = 5.041, p > .05$ ) were constrained between groups. Therefore, while the five-factor model had partial measurement invariance, it did not have structural invariance. Women had a significantly lower SSC factor mean of .89 compared to men. The

partial measurement invariance for the higher-order factor model indicated that a partially constrained SSC latent factor could be used in the structural equation model. The latent higher-order factor structure for SSC was similar between men and women. Furthermore, the structural equation model would be able to be compared between groups.

### **The Relationship Between SSC and Other Dimensions of Sexuality**

The three sexual dimensions, previous sexual behavior, future sexual behavior intentions, and sexual socialization frequency and importance, were first examined for dimensionality and reliability. The previous sexual behavior factor,  $\chi^2=40.85$   $p <.05$ , CFI = .95, RMSEA = .09, SRMR = .06., future sexual behavior intention factor,  $\chi^2=15.82$   $p <.05$ , CFI = .98, RMSEA = .10, SRMR = .02., and the sexual socialization importance factor,  $\chi^2=5.71$   $p <.05$ , CFI = .99, RMSEA = .04, SRMR = .02., all had good model fit. However, the sexual socialization frequency factor,  $\chi^2=99.73$   $p <.05$ , CFI = .74, RMSEA = .21, SRMR = .84. did not have good model fit, indicating that the factor was multidimensional. As the model modification indices indicated that the items concerning each social influence agent (parent, friend, and romantic partner) were highly related, two error correlations were added that correlated the parent and romantic/dating partner social agent questions together (friend social agent items were not significantly related to each other). This model had much better fit, at least by two of the three approximate fit indices,  $\chi^2=30.56$   $p <.05$ , CFI = .93, RMSEA = .12, SRMR = .04. All item loadings for all four factors are displayed in Appendix D25 - 28.

***Previous Sexual Behavior.*** The sexual behavior factor, which had seven items, had acceptable model fit for both unconstrained groups  $\chi^2=61.45$   $p <.05$ , CFI = .95, RMSEA = .09, SRMR = .09, after adding two residual covariances, indicating configural invariance. When all loadings were constrained, the model did not get significantly worse ( $-2\Delta LL(5) = 4.47$ ,  $p > .05$ ).

However, when item intercepts were constrained between groups, the model did get significantly worse ( $-2\Delta LL(6) = 14.93, p < .05$ ). The partial scalar invariance model was not significantly worse than the metric model after one intercept was freed ( $-2\Delta LL(5) = 9.89, p > .05$ ). Next, the item residuals were constrained between groups. This model was significantly worse than the partial scalar model ( $-2\Delta LL(5) = 15.25, p < .05$ ). One item residual was freed in order to make the partial residual model statistically similar to the partial scalar model ( $-2\Delta LL(4) = 4.16, p > .05$ ). When the residual covariances were constrained between groups, this also made the model significantly worse ( $-2\Delta LL(2) = 8.44, p < .05$ ). One of the two residual covariances remained free in order to improve model fit ( $-2\Delta LL(1) = 3.65, p > .05$ ). Therefore, the previous sexual behavior model had partial measurement invariance between groups. When the factor variance was constrained between groups, the model became significantly worse ( $-2\Delta LL(1) = 4.68, p < .05$ ), indicating that there was not structural invariance. Women's factor variance was .36 greater than men's factor variance, and women's factor mean was .45 greater than men's factor mean.

***Future Sexual Behavior Intention.*** The sexual behavior intention model, which had five items, had good fit for both unconstrained groups, after adding one residual covariance  $\chi^2 = 12.96, p > .05$ , CFI = .99, RMSEA = .07, SRMR = .02, indicating configural invariance. When all loadings were constrained between groups, the model did not get significantly worse ( $-2\Delta LL(4) = 2.76, p > .05$ ), indicating full metric invariance. When the item intercepts were constrained between groups, the model again did not become significantly worse, indicating full scalar invariance ( $-2\Delta LL(4) = 2.95, p > .05$ ). Next, item residuals were constrained between groups, which also did not make the model significantly worse ( $-2\Delta LL(5) = 8.18, p > .05$ ). When the residual covariance was constrained between groups, which did not make the model significantly worse ( $-2\Delta LL(1) = 3.35, p > .05$ ). Therefore the future sexual behavior intention factor had full

measurement invariance. Next, the factor variance was constrained between groups, which did not make the model significantly worse ( $-2\Delta LL(1) = .74, p > .05$ ). Constraining the factor means also did not make the model significantly worse ( $-2\Delta LL(1) = 1.22, p > .05$ ), indicating structural invariance.

***Sexual Socialization – Frequency*** The sexual socialization frequency factor, which had six items, had acceptable model fit, for two of the three approximate fit statistics, after adding two error correlations,  $\chi^2 = 42.61, p < .05$ , CFI = .92, RMSEA = .14, SRMR = .04, indicating configural invariance. When item loadings were constrained between groups, the model did not get significantly worse ( $-2\Delta LL(5) = 2.01, p > .05$ ). Next, the item intercepts were constrained between groups, which also did not make the model worse ( $-2\Delta LL(5) = 5.93, p > .05$ ). Constraining the item residuals between groups also did not make the model significantly worse ( $-2\Delta LL(6) = 2.52, p > .05$ ). The item covariances could also remain constrained ( $-2\Delta LL(2) = .20, p > .05$ ). Therefore, the sexual socialization frequency factor had full measurement invariance. When factor variances were constrained between groups, the model did not get significantly worse ( $-2\Delta LL(1) = .33, p > .05$ ). The model also did not get significantly worse when the factor means were constrained between groups ( $-2\Delta LL(1) = 1.17, p > .05$ ). Therefore, there was full structural invariance between groups as well.

***Sexual Socialization – Importance*** The sexual socialization importance factor, which had five items, had good model fit  $\chi^2 = 12.61, p < .05$ , CFI = .98, RMSEA = .07, SRMR = .03, after adding one residual covariance, indicating configural invariance. When all item loadings were constrained between groups, the model fit did not get significantly worse, indicating full metric invariance ( $-2\Delta LL(4) = 3.41, p > .05$ ). Constraining item intercepts also did not make the model significantly worse, indicating full scalar invariance ( $-2\Delta LL(4) = 5.73, p > .05$ ). The



model also had full residual invariance ( $-2\Delta LL(5) = 9.51, p > .05$ ), as the model did not get worse after constraining all item residuals between groups. The residual covariance was also allowed to remain constrained ( $-2\Delta LL(1) = 2.02, p > .05$ ). Thus, the model had full measurement invariance. The model also did not get significantly worse when the factor variance ( $-2\Delta LL(1) = .68, p > .05$ ) and factor means ( $-2\Delta LL(1) = 2.65, p > .05$ ) were constrained between groups, indicating structural invariance.

### **Structural Equation Model.**

The structural equation model was estimated simultaneously for men and women in a two-group model using maximum likelihood. The five-factor SSC model was related to the previous sexual behavior and intended future sexual behavior plausible value factor scores. A latent sexual socialization factor was estimated, loading the two sexual socialization values (frequency and importance of social agent) on a higher-order latent factor, which was then related to the SSC factor. Sexual orientation, relationship status, age, religiosity, and sexual experience quality were also added to the models as controls as independent variables predicting the SSC latent factor. Descriptive statistics for these variables are presented in Appendix D, Table 29.

Table 10 displays correlations between all lower-order SSC factors and sexuality dimension variables. As displayed below, most lower-order SSC factors are related to previous and intended sexual behavior and sexual socialization frequency factors, particularly for women. However, the sexual socialization importance factor is not highly related to any of the lower-order SSC factors for men or women. Table 11 displays correlations between all variables in the model for both men and women. SSC was significantly related to all three sexual dimensions for both genders. Previous sexual behavior, intended sexual behavior, and sexual socialization were

related to a more positive SSC for women. However, only previous sexual behavior and intended sexual behavior were related to a more positive SSC for men. Sexual socialization was related to a more negative SSC for men. Romantic relationship status, and positive and negative sexual experiences were also related to a more positive SSC for women, while only positive sexual experience was related to a more positive SSC for women. Other demographic and contextual variables were not related to SSC for either men or women.

In order to test if the pathways between SSC and the three sexual dimension factors were similar for men and women, three models were estimated. Each sexual dimension factor was entered in an individual model, along with all demographic and contextual variables, and then constrained between groups. The rationale for estimating sexual dimension factors in individual models was to examine the difference in the individual pathways, without the influence of the other two sexual dimension factors. The previous sexual behavior model (where just previous sexual behavior and demographic variables were predictors of SSC) had good fit,  $\chi^2=181.42$   $p >.05$ , CFI = .97, RMSEA = .03, SRMR = .07. Previous sexual behavior significantly predicted positive SSC for women ( $\beta= .56, p<.05$ ), but not men ( $\beta= .18, p>.05$ ). This pathway significantly differed between males and women ( $\Delta\chi^2 (1) = 5.45, p<.05$ ). Pathways and chi square difference tests for all pathways are seen in Appendix D Table 30. The intended sexual behavior model also had good fit,  $\chi^2=180.49$   $p >.05$ , CFI = .96, RMSEA = .03, SRMR = .07. Intended sexual behavior was significantly related to SSC for both men ( $\beta = .29, p<.05$ ), and women ( $\beta = .49, p<.05$ ). This path was not significantly different between groups ( $\Delta\chi^2 (1) = 2.20, p>.05$ ). Estimates and chi square difference tests are featured in Appendix D, Table 31. Finally, the sexual socialization model had adequate fit for two of the three approximate fit indices,  $\chi^2=259.72$   $p <.05$ , CFI = .89, RMSEA = .05, SRMR = .09. Sexual socialization was

Table 10.

*Correlations between lower-order sexual self-concept factors and sexual dimension factors*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Future SB Intentions	-	.69**	.42**	-.06	.45**	.50**	.52**	.56**	.50**	.32**	.40**	.37**
2. Previous SB Behavior	.53**	-	.52**	-.04	.45**	.40**	.57**	.58**	.47**	.38**	.47**	.36**
3. Sexual Socialization Frequency	.34**	.41**	-	.35**	.39**	.34**	.45**	.49**	.25**	.41**	.44**	.25**
4. Sexual Socialization Importance	.06	-.13	.25*	-	.16 <sup>^</sup>	.11	-.03	.07	-.16**	.14	.09	-.18*
5. SS-Eff: Assertive	.08	.05	-.05	-.07	-	.60**	.38**	.61**	.47**	.48**	.40**	.40**
6. SS-Eff: Precaution	.33**	.06	.06	.04	.56**	-	.30**	.42**	.29**	.36**	.40**	.28**
7. SS-Est: Attractive	.37**	.27*	.10	.15	.23*	.22*	-	.75**	.61**	.39**	.30**	.53**
8. SS-Est: Behavior	.48**	.32**	.12	-.01	.28**	.34**	.77**	-	.65**	.63**	.50**	.54**
9. SS-Est: Conduct	.29**	.30**	.10	-.04	.35**	.34**	.63**	.63**	-	.29**	.43**	.76**
10. Arousal	.25*	.28**	-.02	-.05	.32**	.26*	.44**	.48**	.47**	-	.68**	.50**
11. Exploration	.14	-.01	.01	-.12	.25*	.36**	.07	.15	.16	.51**	-	.34**
12. Anxiety	.23*	.20 <sup>^</sup>	-.07	-.25*	.44**	.31**	.42**	.47**	.57**	.34**	.14	-

<sup>^</sup> $p < .07$ , \* $p < .05$ , \*\* $p < .01$

Note: males on lower diagonal, women on upper diagonal

Table 11

*Correlations between higher-order sexual self-concept factor and structural equation model variables (standardized estimates)*

Variables	1	2	3	4	5	6	7	8	9	10	11
1) SSC	-	<b>.65**</b>	<b>.57**</b>	<b>.46**</b>	<b>.28*</b>	<b>.04</b>	<b>.02</b>	<b>.14</b>	<b>.07</b>	<b>.20*</b>	<b>.58**</b>
2) Previous Sexual Behavior	<b>.32**</b>	-	<b>.67**</b>	.25	<b>.53**</b>	.13	-.02	.03	.11	<b>.29**</b>	<b>.48**</b>
3) Intended Sexual Behavior	<b>.43**</b>	<b>.46**</b>	-	.17	<b>.54**</b>	.05	-.07	.08	.14	<b>.38**</b>	<b>.49**</b>
4) Sexual Socialization	<b>-.11*</b>	-.09	.13	-	-.06	.13	<b>.27*</b>	.10	.17	.04	.21
5) Romantic Status	<b>.14</b>	<b>.38**</b>	<b>.29**</b>	.12	-	<b>.21*</b>	.12	-.01	-.06	.14	<b>.35**</b>
6) Age	<b>-.04</b>	-.14	-.14	.16	-.03	-	-.02	<b>-.27**</b>	-.06	.11	.08
7) Religiosity	<b>-.02</b>	<b>-.23*</b>	<b>-.20*</b>	<b>.49**</b>	-.02	-.05	-	-.05	.01	-.10	-.15
8) Sexual Orientation	<b>-.06</b>	.02	.12	-.10	-.14	-.05	-.13	-	.12	<b>.16*</b>	.08
9) Nonconsensual Experience	<b>-.08</b>	.17	.11	<b>.41*</b>	.09	.04	<b>.21*</b>	.09	-	<b>.46**</b>	.13
10) Negative Sexual Experience	<b>-.12</b>	.03	.07	-.22	-.07	-.07	-.05	<b>.37*</b>	<b>.43**</b>	-	<b>.32**</b>
11) Positive Sexual Experience	<b>.48**</b>	<b>.33**</b>	<b>.43**</b>	-.10	.05	-.15	<b>-.29**</b>	.18	-.06	.19	-

\* $p < .05$ , \*\* $p < .01$

Note: Relationships between SSC and all other variables in bold.

Women on top, men on bottom

significantly related to positive SSC for women ( $\beta = .30, p < .05$ ), but not men ( $\beta = -.15, p > .05$ ). This pathway was not significantly different between groups ( $\Delta\chi^2(1) = 3.11, p > .05$ ). Standard estimates and chi square difference tests are featured in Appendix D, Table 32.

Finally, in order to examine the incremental contribution of each sexual dimension factor on SSC, a full structural equation model was estimated in which all three factors were included in the model, along with all contextual and demographic variables. The model had good fit  $\chi^2 = 279.05, p > .05$ , CFI = .93, RMSEA = .04, SRMR = .09. Figure 7 presents all major pathways for the model. As seen in the figure, there were differences between sexual dimensions related to SSC for men and women. While intended sexual behavior was related to SSC for both men and women, this was the only construct significant for both groups. Previous sexual behavior was also significantly related to SSC for women, but not for men. Furthermore, sexual socialization was not significant for SSC for either men or women. Finally, the only contextual variable that was significant for either group was positive sexual behavior experience. Table 12 displays standardized model estimates and chi square difference tests for the incremental model. Unlike in the individual models, when all sexual dimension factors were taken into account, there were no significant differences between genders for any pathway. Similar to the individual models, few demographic or control variables also related to SSC. The only other variable that significantly related to SSC (for both men and women), was reporting a positive sexual experience ( $\beta = .44, p < .01$  for men,  $\beta = .35, p < .01$  for women). There was no significant difference between groups for the unique pathway between positive sexual experience and SSC ( $\Delta\chi^2(1) = .30, p > .05$ ). No other variables incrementally contributed to the model for either men or women.

Table 12

*Standardized structural equation model estimates and chi-square difference tests between genders*

Variable	Male $\beta$	Female $\beta$	$\Delta\chi^2$
Previous Sexual behavior	.10	.43**	3.35
Intended Sexual Behavior	.29*	.28*	.13
Sexual Socialization	-.21	.17	1.91
Romantic Status	-.01	-.20	1.23
Age	.09	.01	.27
Sexual Orientation	-.09	.11	.14
Religiosity	.20	.08	1.25
Nonconsensual Experience	-.06	.05	.63
Negative Sexual Experience	-.19	-.06	.54
Positive Sexual Experience	.44**	.35**	.30

\* $p < .05$ , \*\* $p < .01$

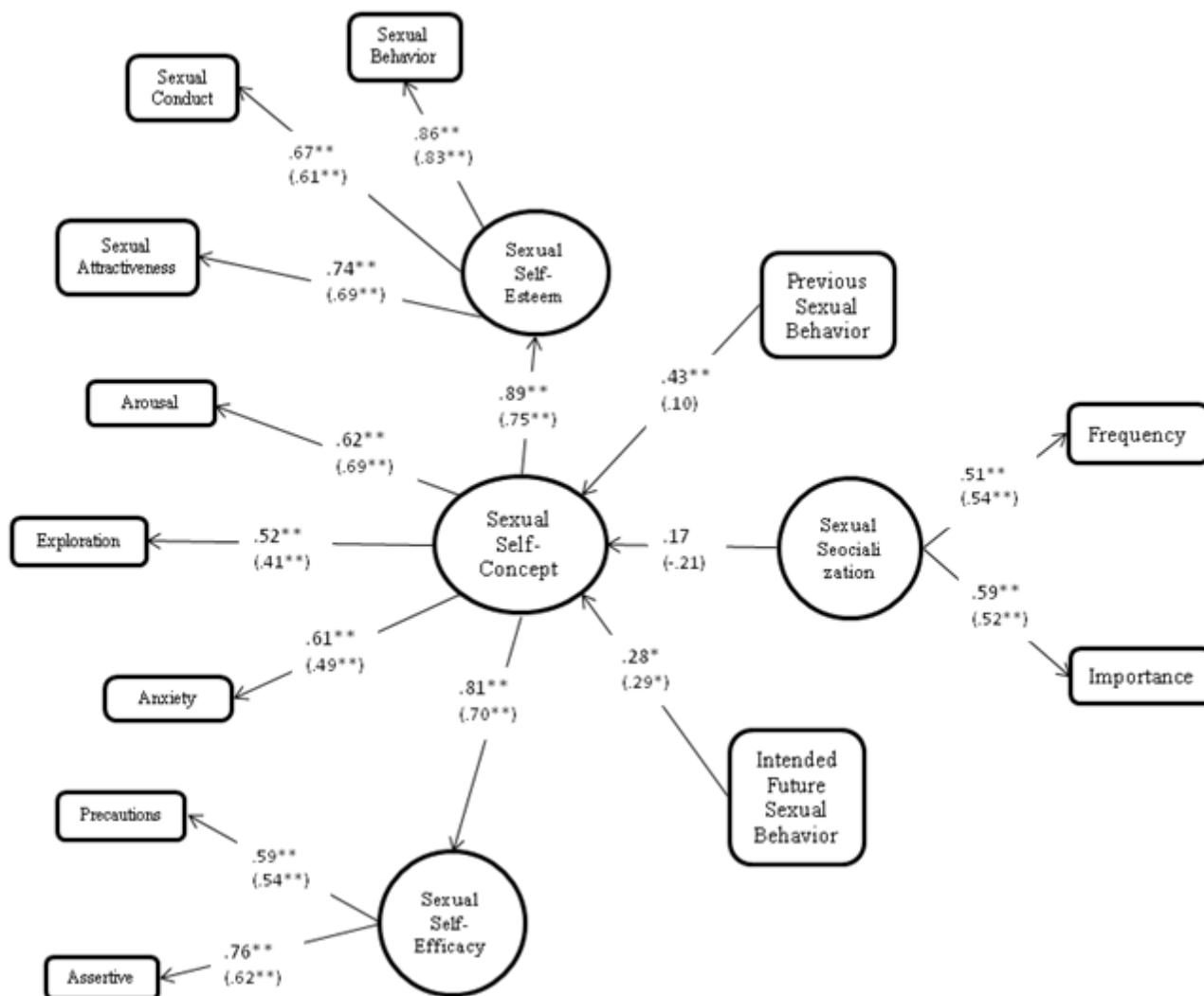


Figure 7. Pathways for structural equation model relating sexual self-concept to previous sexual behavior, intended sexual behavior, and sexual socialization.

\* $p < .05$ , \*\* $p < .01$

Note: All estimations are standardized. Males in parentheses

### Post-Hoc Analyses

The specific relationship between SSC and previous sexual behavior was examined further, as this relationship was only significant for women. Post hoc analysis of the individual model (where only previous sexual behavior and the demographic/descriptive variables were included in the model) indicated that the lack of a relationship between SSC and previous sexual behavior was due to the positive sexual experience factor. When positive sexual experience was removed from the model, the relationship between previous sexual behavior and SSC was significant for men ( $\beta = .34, p < .05$ ). In fact, Sobel tests (MODEL:INDIRECT in Mplus not applicable using multiple imputation) indicated that positive sexual experience fully mediated the relationship between SSC and previous sexual behavior ( $Z = 2.74, p < .01$ ) for men, and partially mediated the relationship for women ( $Z = 3.77, p < .01$ ).

As all social agents in the socialization factor were lumped together, individual relationships between SSC and the frequency of discussion of both sexual topics and birth control with parents, friends, and romantic partners were estimated, while controlling for romantic status, previous sexual behavior and intended sexual behavior. Analyses indicated that frequency of discussing sexual topics with friends was significantly related to a more positive sexual self-concept for both men ( $\beta = .30, p < .05$ ) and women ( $\beta = .30, p < .05$ ) while controlling for other sexual dimensions. However, discussing sexual topics with romantic partners was not significant for men ( $\beta = .12, p < .05$ ) or women ( $\beta = .16, p < .05$ ), and discussing sexual topics with parents was not significant for men ( $\beta = .06, p < .05$ ) or women ( $\beta = -.03, p < .05$ ). Birth control discussion was not significant with any social influence group for men or women.

When the relationships between SSC and the individual frequency of discussion with sexual socialization agents were not controlled by intended and previous sexual behavior, both



friends ( $\beta = .34, p < .05$ ) and romantic partner ( $\beta = .39, p < .05$ ) socialization was related to SSC for women, but only friends' socialization ( $\beta = .35, p > .05$ ) was related to SSC for men.

However, even when though other variables were not significant, while only one of the variables (birth control discussion with parents) had a negative relationship with SSC for women, three of the variables (birth control discussion with all three agents) had a negative relationship with SSC for males. A similar trend was found for the amount of negative and positive relationships between sexual socialization importance variables and SSC (in total, seven out of twelve variables were negative for men, four out of twelve were negative for women). This could account for the difference for men and women in relationship direction between the sexual socialization and SSC factors in the bivariate and individual models.

## Chapter 4

### Discussion

The purpose of this set of studies was to examine the structure of sexual self-concept (SSC) and its applicability across genders, as well as examine its relationship to other aspects of sexuality within a sample of late adolescents/early adults. Specifically, the purpose of the first set of analyses was to test an empirically and theoretically supported hypothesized multidimensional model of SSC comprised of common factors (sexual self-efficacy, sexual self-esteem, arousal, exploration, commitment, and anxiety), based on Buzwell and Rosenthal's (1996) sexual selves model. As detailed in the introduction, all six of these factors were commonly featured within previous SSC empirical models. No other factors that were included in these previous models had strong enough empirical or conceptual reasons to be included in the current conceptual model. Many SSC models currently featured in the sexuality research literature have little empirical or theoretical support and most models have been created through exploratory factor analyses. This practice provides data-driven atheoretical models that may not be providing a comprehensive picture of what SSC truly is. In turn, this has led to a body of literature that lacks cohesion; while there are many different models of SSC, no two have the same factor structure. This ultimately limits the usefulness of SSC as a component of sexuality research that can contribute to building a more complete understanding of human sexuality. Therefore, this study was intended as a first test of a hypothesized sexual self-concept model, specifically designed to encompass a variety of factors commonly featured in previous SSC models, in order to provide a more cohesive view of SSC as a conceptual model, linking core components of these previous models featured within this literature.

The purpose of the second analysis was to examine the applicability of the resulting (best fitting) SSC model for both men and women. As previous SSC models have predominately focused on women, it was important to include men in these analyses. Furthermore, the only study to examine gender differences in SSC factor structures for men and women concluded that there were gender differences in SSC factor structure (Breakwell & Millward, 1997). Literature on the social construction of gender roles has documented how gender roles emphasize and enforce differences between men and women in society. These societal constructions of gender may ultimately influence how men and women think about sexuality (Gagnon & Simon, 1973), and therefore, how they think about themselves as sexual individuals (i.e., sexual *men* and *women*). Thus, it was hypothesized that, due to the influence of gender roles emphasizing the importance of different factors featured within SSC, men and women would not have the same factor structure for an underlying SSC factor.

Finally, the third set of analyses were used to examine the relationship between SSC and three other aspects of sexuality that were previously empirically related to other models of SSC; previous sexual behavior, intended sexual behavior, and sexual socialization. This allowed for a rough testing of the validity of the conceptual SSC model, as previous literature has documented relationships between these areas of sexuality and other SSC models (e.g., Hensel et al., 2011; O'Sullivan et al., 2006). Furthermore, these analyses would help enhance understanding of the role of the conceptual SSC model within a broader context of human sexuality. As relationships between these three areas and the SSC model had support from both previous empirical literature on sexuality and theoretical literature on self-concepts, it was hypothesized that the conceptual SSC model (i.e. a positive sexual self-concept) would have substantial relationships with these three areas. Previous sexual experience (i.e., personal experiences and self reflection), future

intended sexual behavior (i.e., motivation to engage in self-concept specific behaviors), and sexual socialization (i.e., external feedback from others) are all important factors that were hypothesized to relate positively with SSC.

### **Sexual Self-Concept: A Multidimensional Construct**

While the hypothesized six-factor SSC model was not supported when tested, a five-factor solution was found to be the best fitting model. The factors of sexual self-esteem, sexual self-efficacy, arousal, exploration, and anxiety all loaded onto a higher-order factor of SSC. While this model does not completely support Buzwell and Rosenthal's model of the sexual self, it does support the theory that sexual self-concept is a multidimensional construct composed of a variety of affective and cognitive evaluations regarding how one feels about themselves as a sexual individual. This finding also supports previous SSC models that have included (or found, after exploratory factor analyses) these factors in their models. Therefore, a link among previous, disconnected models has been provided in this study, indicating that when the common factors within these previous models are taken together, there is an underlying comprehensive model of SSC. At the same time, this finding highlights the redundancy of studies which have used smaller models of SSC to predict other factors which are also actually underlying SSC factors (e.g., O'Sullivan et al., 2006). If both independent and dependent variables are part of the same underlying construct, one is not able to predict the other. The five factors that fit a higher-order SSC latent factor are supported not only by previous SSC research (each one of the factors were present in at least two previous SSC models), but they are also factors which are supported by theory and empirical self-concept research. Self-concept is a multidimensional construct, where a broader, more abstract concept can be broken down into more specific descriptive and evaluative categories. As the current sample spans from late adolescence to

young adulthood, these dimensions should be fairly nuanced and distinct, as most individuals have developed sophisticated, differentiated self-concepts by this time period (e.g., Marsh & Shavelson, 1985). Self-esteem and self-efficacy are two core components of self-concept commonly represented in self-concept theory and research (Oyserman, Elmore, & Smith, 2012). The indication that both sexual anxiety and sexual self-esteem are important, separate components (although inter-related, as indicated by the one error covariance needed in the model between anxiety and the sexual self-esteem attractiveness factor), is also reflected in another similar sexual self theory, sexual self-schema (Anderson & Cyranowski, 1994; Anderson et al., 1998). Although sexual self-schema theory focuses primarily on sexual cognitions, rather than sexual cognitions and affect, sexual self-schema research indicates that individuals can simultaneously hold positive and negative cognitions about their own sexuality; and that these positive and negative cognitions are two separate dimensions, rather than a unidimensional continuum. Therefore, individuals should be able to hold both positive and negative feelings concurrently. For example, one may feel good about their ability to attract sexual partners, but may feel inadequate or negative about their lack of sexual skills for certain sexual behaviors.

Finally, arousal and exploration are important, as sexuality has both physiological and behavioral components. The arousal dimension seems to focus on the physiological/mental aspects of sexuality; the desire to engage in sexual behavior, while the exploration component focuses on interest in engaging in a variety of different behaviors. It is important to note that while the exploration factor loaded significantly onto the higher-order SSC model, and while it is at least moderately related to the other SSC factors, it has the lowest SSC factor loading. Most sexually active individuals engage in a variety of sexual behaviors, and over time, individuals may increase the types of sexual stimuli they enjoy, as proposed by the Sexual Behavioral

Sequence Theory (Fisher, 1986). This theory argues that associations between sexual stimuli and affective/behavioral responses change over time, as different associations are learned. While individuals could certainly be interested in engaging in only a few sexual behaviors and have still have high sexual self-esteem, efficacy, and arousal, along with low sexual anxiety, an interest in a variety of sexual behaviors throughout one's lifetime is natural (Herbenick, Reece, Schick, Sanders, Dodge, & Fortenberry, 2010) and linked to other core constructs in the SSC model.

These results also highlight the need for more rigorous, hypothesis-driven research regarding SSC. While certainly the current study is not definitive in its examination of conceptual models of SSC, it will hopefully provide not only cohesion among previous studies, but also a new model that can be drawn upon. Previous models have either focused too narrowly on a limited number of factors (e.g., Rostosky et al., 2008), have clustered various, potentially independent or conceptually different factors into a unidimensional contributing factor (e.g., Breakwell & Millward, 1997; Vickberg & Deaux, 2005) or have tried a "kitchen sink" formula, adding all potential constructs of SSC as their own independent dimensions (Snell, 1995). However the results of this study indicate that the best fitting model has both breadth and depth regarding perceptions of oneself about sexuality; there were factors relating to affective (e.g., sexual self-esteem), cognitive (e.g., sexual self-efficacy), and behavioral (e.g., exploration) dimensions of how individuals think and feel about themselves as sexual beings. Certainly, this indicates that there are different aspects of SSC that independently contribute to an overall model, and that these unique constructs should not be either overlooked or clustered together. However, these factors were not all unidimensional constructs; both sexual self-esteem and sexual self-efficacy were contributing factors that are multidimensional themselves. The fact that a model in which these separate components (e.g., the sexual self-esteem construct factor) loaded

independently onto a higher-order SSC latent factor had substantially worse fit compared to the five-factor model indicates that the multidimensionality of sexual self-esteem or self-efficacy is important. Furthermore, the fact that the resistive sexual self-efficacy factor contributed to model misfit indicates that only *specific* aspects of some of these multidimensional constructs are important to an overall SSC model. That is, only factors that pertained to the self's role in sexuality and sexual behavior engagement seemed to relate to each other, indicating an underlying latent SSC factor.

The two factors that did not hold, namely commitment and the resistive sexual self-efficacy factor, also provide insight into the multidimensional nature of SSC, particularly in later adolescence/early adulthood. Most interestingly, the commitment factor was not part of the latent SSC model. The commitment factor measured interest in a monogamous sexual relationship, sex as pleasure and sexual fidelity, and while it did significantly load onto the SSC factor, this loading was negative. Examining the correlations between factors revealed that the commitment factor negatively related with many of the other factors in the SSC model. Only one previous SSC model featured a commitment factor (Breakwell & Millward, 1997), and only for the women in the sample (relationship/commitment items were split between two factors for men). Thus, this was the factor with the least amount of previous support within SSC models. While it is possible that the commitment factor is truly not an aspect of sexual self-concept (see below), it may also be possible that the present study was not adequate in capturing the relationship between SSC and commitment. For example, the potential that commitment may be a lower-order SSC factor for women, but not men, was not explored. Sexuality has different meanings for men and women, and the relational aspect (e.g., sex is an expression of the relational bond between two individuals) is much more emphasized for women than for men

(Gagnon & Simon, 1973). Thus, although the five-factor model had partial measurement invariance between men and women, it is also possible that a six-factor model, which would have included commitment, would have been a better fit for women than for men. Furthermore, comparisons were not made between individuals who were and were not in committed relationships. Although it is possible that SSC is an abstract construct that is more global than situation specific (i.e., a construct that applies to the general self rather than the self within different types of sexual relationships), it is also possible that sex and sexuality takes on different meanings when individuals become part of a committed couple. Thus, for individuals within committed relationships, commitment may be more important to one's sexual self-concept than those not in committed relationships.

Another possible explanation is the commitment measure itself. While the other measures of sexual self-concept focused primarily on the individual's own sexual thoughts, feelings and conduct, the commitment measure was the only one to emphasize the importance (or type) of the sexual partner. Items such as "Intimate partners have found (or would find) me sexually satisfying" in the sexual self-esteem measure, "I would worry about physically hurting my partner if I had sex" in the anxiety measure, or "I feel confident I could tell my partner how to treat me sexually" do relate to specific scenarios dealing with the sexual partner, however, these questions still focus on the role of the individual first. In contrast, items like "I don't think I could enjoy sex with someone I just met" or "I would prefer to have one committed relationship than many sexual partners" from the commitment scale focus on the role/context of the sexual partner. These questions focus less on how an individual may think and feel about themselves as sexual, but rather deal with preference for a specific relationship context within which sex can occur. Therefore, the two are not conceptually similar. If the questions in the commitment factor



dealt more with one's perception of themselves as sexual individuals within the contexts of specific relationships, this commitment factor may have been more conceptually similar to the others, and thus the commitment factor may have had stronger relationships with the other lower-order factors. While the following discussion gives potential explanations of why perception of one's self within specific relationships/as a romantic partner and perception of oneself as a sexual individual may be different, the two are inextricably linked; and thus further research is needed to examine the role of commitment within sexual self-concept, from both perspectives of sexuality and gender, as well as how a lower-order commitment factor may vary in its application to SSC across different types of sexual relationships.

Empirical research and theory supports that self-concept becomes more complex as individuals mature. Particularly across adolescence and into young adulthood, as cognitive capacity and ability for self reflection and understanding increases, self-concept becomes increasingly differentiated, with domains becoming increasingly specialized and separated (Harter, 1999). For example, general social competence eventually differentiates by domain; competence with colleagues in a professional setting becomes distinct from social competence within romantic relationships. This could be one reason why the commitment factor is distinct and separate from other factors that reflect a latent factor of sexual self-concept; commitment and the self's role as a committed/romantic partner is seen as distinct from the view of the self as a sexual individual. As individuals mature, and their sexual self-concepts become more sophisticated, differentiation between one's own sexuality and the relationships in which sexual behavior is engaged in may increase. Individuals place distinctions between "I/me" selves, (internal focus), and "us/we" selves, (relational focus). The sexual cognitive and affective evaluations detailed in the SSC seem to focus primarily on the "me" self. While sexual

behavior/sexuality and sexual relationships are obviously linked, they may still be independent constructs. Kim (2006) documented that while self-concept and relationship concept (with particular focus on romantic relationships) are related to each other, they are two distinct constructs; how one thinks and feels about themselves and how one thinks and feels about romantic relationships (and how they relate to them) are distinct. Further still, committed sexual relationships, which are associated with deeper intimacy and trust than casual sexual relationships, may be conceptually distinct. Banker, Kaestle and Allen's (2010) qualitative analysis of young adult narrative regarding romantic and sexual relationships documented that young adults have different language used to define and describe a romantic compared to a sexual relationship. Within these narratives, young adults discourse reflected relationship taxonomies for relationships that were purely romantic, purely sexual, or relationships that were both romantic and sexual.

Alternatively, self-concept domains also become more integrated over different social environments and social roles over later adolescence after a period of conflicting multiple selves in mid-adolescence (Harter, Bresnick, Bouchev, & Whitesell, 1997). As adolescents become more introspective they start to understand the inconsistencies in how they portray themselves in different social relationships. These conflicts eventually become resolved as multiple selves become integrated at a higher and more abstract level as adolescents move into young adulthood. Given the various contexts in which sexual behavior can occur, either by one's self or with sexual partners of various levels of commitment, particularly in later adolescence and early adulthood (e.g., casual partner, "friend with benefits", dating partner, committed, monogamous partner, serial monogamy), (e.g., Banker, et al., 2010) the commitment factor may be too narrow. Rather, SSC may be a higher-level understanding of one's sexuality across various romantic

and sexual partner roles and contexts. SSC may be a broad construct of how an individual thinks and feels about his or her sexual self “in general” (or at least across multiple sexual experiences and contexts). Had participants been prepped to think about specific sexual experiences in specific sexual contexts before filling out the questionnaire, they may have had different responses, as they would be focusing on a specific sexual context in which they would have had a specific sexual role.

The lack of inclusion of the resistive sexual self-efficacy factor is also interesting, although again, understandable. This factor assessed perceived ability to be responsible for, take initiative for, and be resistive to unwanted sexual activity. Conceptually, this factor is different from the others in that while all other factors focus on topics pertaining to the *engagement* of sexual activity, this factor focuses on *lack* of engagement. Self-efficacies, broadly defined, are beliefs about ability to “organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). As such, believing you can refuse sexual advances relates more to power in relationships and susceptibility/influence of others (i.e., the belief that others cannot coerce you into having sex, or that you are able to say “no” to a sexual advance when you do not want it), than beliefs about your ability to engage in sexual behavior. However, both the assertive and precaution sexual self-efficacy factors deal with the myriad of situations/behaviors that relate to actually engaging in sexual behavior; the belief that you can efficiently protect yourself from negative sexual consequences, the belief that you can be assertive in getting pleasurable sex (i.e., telling your partner what you want and what is pleasurable), and the belief that you can initiate sex, rather than waiting for someone else to initiate it. While the three different sexual self-efficacy factors were obviously related to each other, and all loaded

significantly onto a higher-order sexual self-efficacy factor, the resistive sexual self-efficacy factor did not relate to any of the other SSC factors.

Refusal efficacy is a common measure in studies used to examine safe sexual behavior and sexual risk, and is typically combined with other aspects of sexual self-efficacy to create a unidimensional scale (e.g., Impett, Schooler, & Tolman, 2006; Seal, Minichello, & Omodei, 1997). In previous SSC models, sexual self-efficacy factors are typically unidimensional (e.g., Aubrey, 2007; Vickberg & Deaux, 2005). The only previous study featuring an SSC model that treated sexual self-efficacy as a multidimensional construct documented that resistive sexual self-efficacy was related to SSC factors sexual self-esteem and sexual anxiety (Rostosky et al., 2008). However, sexual self-efficacy was a predictor in this model, rather than a latent factor, and therefore this is not an indication that the other SSC factors and resistive sexual self-efficacy were part of the same underlying latent construct in Rostosky's study. Therefore, this was the first SSC model to treat core factors such as sexual self-efficacy and sexual self-esteem as multidimensional. The fact that not all sexual self-efficacy dimensions contributed to the SSC model is important, as this demonstrates that these dimensions are unique in how they relate and contribute to other aspects of sexuality (i.e. other factors of SSC).

This further calls into question other SSC models treating individual SSC factors as unidimensional when they are demonstrably multidimensional, either through classical test theory aggregation methods (e.g., summing or averaging measures to create a "factor"), or through exploratory methods of factor analysis for an entire SSC scale (e.g., O'Sullivan et al., 2006; Hensel et al., 2011) which may cause a factor's true multidimensional nature to be overlooked. This issue may be true for other factors in previous SSC models. For example, in Vickberg and Deaux's (2005) assessment of a sexual self-concept questionnaire, exploratory

principal components analysis indicated that there were three factors within their scale. One factor, A genetic Sexuality, included items that relate to the current model's sexual self-efficacy factors (e.g., insists on having own sexual needs met, likely to initiate sex), the sexual arousal factor (e.g., likely to desire sex, likely to enjoy sex), and the sexual exploration factor (e.g., likely to experiment, open about sexuality). While the factors that were created were certainly the best fit, there were no additional tests to ensure that the factors were truly unidimensional, or even if they loaded onto a single construct sufficiently. Therefore the findings regarding sexual self-efficacy highlight the importance of rigorous methodology – to test statistical assumptions as well as form hypotheses and research questions that are falsifiable.

### **Sexual Self-Concept and Gender: Similarities Rather than Differences**

While the second hypothesis proposed that men and women would have different lower-order structures for the higher-order SSC latent factor (i.e., no higher-order measurement invariance), this was not the case. For all lower-order factors, and the higher-order SSC factor, there was at least partial measurement invariance between groups, indicating that the latent factors were conceptually the same (e.g., the same factor was being measured) for men and women. This does not necessarily lead to the conclusion that the best fitting model would be the same for men and women. For example, Breakwell and Millward (1997) estimated models for men and women separately, assessing the best fitting model for each group. However this does indicate that this theoretically and empirically driven model of SSC fits equally well for men and women in the sample. This indicates that although men and women still have different sexual roles and norms in American society, the factors that make up how they feel as sexual beings are basically similar.

This finding recalls Tolman et al's (2003) look at sexual health development in adolescents. Tolman initially examined girls, and then examined boys as a request from school administrators at the study site. Tolman discovered that male and female developmental models of sexual health were extremely similar. While male and female socio-cultural environments may define male and female sexual roles in different ways, the more personal the area of sexuality, the more similarities there may be. The idea of gender similarity between personal aspects of sexuality is also supported by Masters, Case, Wells, and Morrison (in press), who examined how young men and women endorse or eschew traditional sexual scripts. While all participants in the study noted existence of the traditional hegemonic sexual scripts (e.g., men being highly sexual and wanting sex for pleasure, women being sexually desirable but sexually weak and inexperienced) on a cultural level, endorsement of these scripts at either an individual or a dyadic level varied. The authors noted there were three main ways that individuals interacted with these scripts personally. One group of participants adopted them to their own sexual lives although there were sub-groups of individuals who either did not question their own conformity, or who were conflicted by their conformity. A second group of participants understood the general pervasiveness of these scripts but described ways and specific instances in which they were "exceptions" to the traditional gender and sexual scripts. The third group constructed their own sexual scripts and gender norms, transforming the traditional scripts. While the sample for this qualitative study was small, and generalizing to the current study should be done so with caution, other studies (e.g., Dworkin & O'Sullivan, 2005; McCabe, Tanner, & Heiman, 2010), also highlight discrepancies between traditional cultural sexual scripts and personal sexual scripts.

As sexual self-concept is a personal area of sexuality, the present results support the idea that personal sexual beliefs may not always conform to cultural and societal sexual roles and norms. It is also possible that while SSC has the same underlying factors for men and women, traditional hegomomies are influential at a structural level (e.g. mean and variance) rather than a measurement level. While the present SSC model had partial measurement invariance, it did not have structural invariance. Men had more positive sexual self-concepts on average than women (a .89 difference when examining the factor mean scores). Indeed, men scored significantly higher for levels of arousal, exploration, and (lack of) anxiety, while women scored higher for levels of commitment and sexual self-efficacy, which parallel traditional sexual roles. Namely, men were more interested in sex (or at least had stronger sexual desires) and were less interested in relational aspects of sex compared to pleasure aspects. Women had weaker sexual desires, but were stronger in regulating and managing their sexuality and sexual behavior (e.g., sexual gatekeeping, sexual safety), while also having a stronger interest in the relational aspects of sex. Therefore while the lower-level factors are equally important contributors of SSC for men and women, the actual content of one's SSC (i.e., the levels of specific lower-level factors) may be influenced by the predominant sexual roles defined for men and women in society. While there were no measures that examined participants' endorsements of traditional sexual roles, the current results give insight into the ways that men and women have both similarities and differences regarding their own sexualities.

Finally, given the age of the sample, it is possible that the similarities regarding how men and women's sexual self-concepts are constructed is a generational artifact. The current generation has been exposed to high levels of discourse regarding sexuality (particularly with respect to HIV/AIDS and increasing acceptance and understanding of alternative sexualities)

compared to previous generations. Novel or alternative sexual interpretations, discourses, and scripts may be created as a result of this increased discussion (and sometimes debate) regarding both public and private sexuality. Examining sexual self-concepts in middle-aged or elderly populations (or comparing both of these populations to younger populations) may provide different results regarding gender differences in SSC factor structures. While this is purely speculative (and indeed the subgroups of individuals endorsing/rejecting traditional sexual scripts may be seen in populations of many different ages, rather than an emerging trend in younger individuals), this is a testable hypothesis that can easily build on the current findings.

### **Sexual Self-Concept and Sexual Dimensions: Complex Relationships**

Results from the bivariate analyses and the individual structural equation models indicated that previous sexual behavior, intended sexual behavior, and sexual socialization each related to SSC for both men and women. These results fully support hypotheses 3a and 3c, such that higher levels of previous sexual behavior and intended sexual behavior individually related to a more positive sexual self-concept in men and women. Hypothesis 3b, that higher levels of sexual socialization would be related to a more positive SSC, was supported only for women; for men, higher sexual socialization levels related to a more negative SSC. However, the pathway between sexual socialization and SSC was not significantly different between men and women, indicating that the direction of this pathway may not necessarily matter. Given that the relationship between SSC and sexual socialization was barely significant for either group (and indeed, when controlling for other sexual dimensions, the pathway loses significance in both groups), the relationship may be too weak in either group to be substantially different from each other. Furthermore, when not controlling for the other sexual dimensions, only the pathway between previous sexual behavior and SSC was significantly different between genders, such



that previous sexual behavior was a stronger predictor of positive SSC for women compared to men.

The examination of incremental influence of each sexual dimension (i.e., examining unique influence while controlling for other sexual dimensions) is a different story. A higher level of intended sexual behavior was significantly related to a more positive SSC for both men and women. However, previous sexual behavior was only significantly related to SSC for women, and sexual socialization did not relate to the latent SSC factor for either men or women. No pathway was significantly different between groups. Therefore, while all three sexual dimensions individually related to SSC, sexual socialization and male previous sexual behavior did not relate to SSC when controlling for the other dimensions of sexuality.

There are a few additional important findings to take note of. First, intended sexual behavior was related to SSC for both men and women, even when controlling for other dimensions of sexuality. Indeed, individuals who felt more positively about themselves as sexual individuals reported higher likelihoods to engage in sexual behavior in the future. Not only is this congruent with previous research documenting the relationship between intended sexual behavior and SSC or SSC factors (Guillermo-Ramos et al., 2008; O'Sullivan et al., 2006; Pai et al., 2010), but it also gives validity to the SSC model as an actual self-concept dimension. Self-concept is strongly linked to behavioral intentions, particularly the self-efficacy factor (Bandura, 1997), and self-representations, both the current concepts and ideation of how individuals would "like" to be in the future, have strong ties to what behavioral goals individuals set for themselves (Markus & Wurf, 1987). Behavioral intention models (e.g., theory of planned behavior, Fishbein's integrated model, prototype-willingness model) typically have both efficacy and attitudinal self-representation components that relate to an individual's intention to engage in

behavior (e.g., Azjen, 1991, Fishbein, 2000, Gibbons & Gerrard, 1995). In fact, when examining the relationship between SSC and intention to engage in sexual behavior on a lower-order factor level, many of the SSC factors, besides sexual self-efficacy were significantly related to sexual behavioral intentions, indicating that it is the overall factor, with its multidimensionality, that was important for the relationship (see Table 10). While Table 10 indicates that more lower-order factors were related to sexual behavior intentions for women than for men, it is important to remember that pathways between the higher-order SSC factor and the sexual dimension factors were not significantly different between gender groups. This indicates that sexual self-concept as a higher-order latent factor was similarly related to sexual behavior intentions for men and women.

Another important finding is that sexual socialization, whether examined alone or in the context of other sexual dimensions, seems to have the weakest relationship with SSC (or none at all). Sexual socialization was the least studied of the three sexual domains for studies examining SSC; only Aubrey (2007) and Konreich et al. (2003) studied socialization effects in a comprehensive SSC model. Both studies found that sexual socialization effects significantly related to (or even predicted) levels of overall SSC. The differences between these two studies and the current study may account for differences in results. While Aubrey's sample was similar in age to the current study (i.e., late adolescence/young adulthood), the socializing agent examined in her study was media; highly sexualized forms of media (e.g., soap operas and television dramas) predicted SSC levels one year later. Pervasive representations of sex and sexuality within media, which can be both explicit and implicit, are considerably different from discrete conversations about sexuality or birth control an individual may have with family, friends, or romantic/sexual partners. While Konreich's socializing agent was similar to

socializing agents investigated in the current study (older siblings), the age of the sample was much younger. While early adolescents are highly sensitive to feedback from others, by late adolescence and into early adulthood, individuals place less emphasis on others' opinions. They instead internalize socialized norms, attitudes, and values from others and start to make them their own (Harter, 1999). Thus, they may not place as much importance, or engage in as many conversations, with individuals regarding specific topics, such as their own sexuality, but rather their thoughts and feelings more through their own personal experiences.

Post hoc analyses indicated that relationships with friends may have been the driving force regarding the pathways between the socialization factor and SSC discussed in the results section, as friends were the only social agents who significantly related to SSC. While this suggests that sexual socialization (at least between friends) does relate to sexual self-concept, the cross-sectional nature of this study does not allow for testing of directionality. While higher amounts of discussion could potentially produce a more positive sexual self-concept, it is also perfectly reasonable (and especially in late adolescence/young adulthood, when the sexual self-concept may become more complex and have more stability) that individuals with higher sexual self-concepts are more open to discussing sexuality, particularly if they select friends with similar sexual self-concepts (e.g., homophily principle [McPherson, Smith-Lovin, & Cook, 2001]). It is a little surprising that romantic or dating partners are not as influential, especially in young adulthood, when forming a strong romantic partnership is a normative developmental task. However, friends are a strong source of social support, and as friendships in late adolescence and young adulthood are built on both trust and intimacy (Chow, Roelse, Buhrmester, & Underwood, 2012), these close friends can be strong socializing agents. Furthermore, relationship status and length of relationship may influence the amount of

romantic/dating partner socialization. As 40% of the sample reported not currently being in a relationship, these individuals may either lack a partner to discuss sex with, or be in relationship (e.g., casual, hookups) where they may not have more intimate discussions. Length of relationship time could also influence romantic partner socialization, as individuals who are in longer-term relationships may have previously discussed sexual topics (not within the past three months), while individuals who are in shorter term relationships may feel they are not close enough to discuss sexual topics.

The lack of a relationship between parental discussions of sexuality and SSC is not surprising. Parental communication about sexuality is typically lower than discussion about sex with peers or with romantic partners, and even when parents feel they have discussed sexual topics with their children, their children often report no sexual communication (Jaccard, Dittus, & Gordon, 1998; Moore & Rosenthal, 1991). In fact, parental discussion of sexual topics ( $M=1.60$ ) was much lower than reported discussion with friends ( $M=2.55$ ) or romantic partners ( $M=2.55$ ). As individuals become more autonomous in late adolescence, they also may rely less on their parents as socializing agents. Throughout adolescence, parents tend to be the most preferred source of sex education (Somers & Surman, 2004). However, when it comes to understanding sexuality as a function of the self, late adolescents and young adults may be more likely to rely on their own experiences, or social agents who are more relatable (e.g., comparable in age and sexual experience), such as peers. As such, perceived importance of parent's opinion on sexuality ( $M=2.98$ ) was lower compared to friends' opinion ( $M=3.10$ ) or romantic partner's opinion ( $M=4.36$ ).

Finally, it is important to acknowledge the mixed results for the pathway between previous sexual behavior and SSC. When examined both individually and as an incremental

contribution to SSC, previous sexual behavior was significantly related to SSC only for women. As previous research has made empirical connections between SSC models and frequency of sexual behavior in female samples (e.g., Impett & Tolman, 2006; O'Sullivan et al., 2006), it was not surprising that these findings were replicated in the current study. However, that this was not the case for men was surprising. Post hoc analyses of the previous sexual behavior SEM (where only previous sexual behavior and the demographic/descriptive variables were included in the model) indicated that the lack of a relationship between SSC and previous sexual behavior was due to the positive sexual experience factor. Furthermore, the fact that positive sexual experiences positively mediated the relationship between SSC and previous sexual behavior for women and fully mediated the relationship for men demonstrates the importance not only of the quantity, but also the quality of sexual experiences for both men and women.

Importance of the quality of sexual experience is nothing new in sexuality research, although certainly an understudied topic. Qualitative studies of sexual experiences indicate that subjective interpretation of such experiences contribute to subsequent sexual and general wellbeing (e.g., Thomson, 1996). As discussed previously, sexual behavior influences SSC, which in turn influences the way in which sexual behaviors are subsequently interpreted, similar to a reciprocal effects model detailed in other self-concept research (e.g., Marsh & Craven, 2006). Therefore, the subjective interpretation of an individual's sexual experiences will ultimately matter; what is interesting is that only positive experiences, and not negative experiences mediated the pathway. The majority of men reported having positive sexual experience (70 [77%]), while a minority of men reported having a negative experience (33 [36%]). However, a majority of women reported both having positive (110 [83%]) as well as negative sexual experiences (81 [60%]). Sexual experiences seem to be generally more

pleasurable for men; sex seems to be more of a “dichotomous” experience for men; it is either good or bad. For example, Holland, Ramazanoglu, Sharpe, and Thomson (2010) documented that while some adolescent boys obviously had both positive and negative emotions and cognitions when subjectively interpreting their first sexual intercourse experience, more boys felt empowered and positive, as they were able to “become a man”. Adolescent girls however voiced more ambivalent feelings. Discourse on sex as pleasurable and positive was much less frequent, and girls were more likely to say that losing their virginity was a negative experience. This higher level of reported pleasure regarding virginity loss for men is also documented in quantitative reports of sexual pleasure (Higgins, Trussell, Moore, & Davidson, 2010; Sprecher, Barbee, & Schwartz, 1995).

Sexual pleasure is emphasized more in masculine sexual scripts and sexual roles, through emphasis on innate sexual arousal and desire and higher tolerance for exploration and promiscuity. For men, traditional sexual roles emphasize the function of sex as pleasure, while in female sexual roles, there is a emphasis on interpersonal relations (e.g., Seal & Ehrhardt, 2003; Wiederman, 2005). Furthermore, sexual pleasure tends to be physiologically “simpler” for men than for women, as it is typically easier for men to achieve orgasm. This higher rate of orgasm may be one of the reasons why men rate their first intercourse experiences more positively and report more pleasure than women (DeLamater, 1987). Thus, this strong connection between physical pleasure and sex may ultimately limit what men define as a pleasurable or positive sexual experience. Men who cannot report having positive or pleasurable sexual experiences may subjectively interpret these experiences as “abnormal”. They may discredit, ignore, or deny such experiences and thus these experiences would not ultimately influence their sexual self-concept. In this way, the frequency of sexual experiences doesn’t matter if such experiences are

not “valid” sexual experiences in accordance with gendered expectations and norms. However, as this is speculation, more research needs to be done examining men and their relationships between sexual behavior experiences and SSC. Men are typically understudied with regards to sexuality, and research indicates that many of the biological, contextual, and attitudinal factors that relate to adolescent sexuality (or at least, sexual behavior) are less predictive in men compared to women (Smith, Guntrhie, & Oakley, 2005).

In summation, the present study is among the first empirical test of a conceptual SSC model, based on previous SSC literature. As the factors within this SSC model are present in previous models, this study implies that all of these factors contribute to a higher-order model of SSC. Therefore, this study brings not only cohesion to the previous SSC literature, but also supports the proposition that SSC is a multidimensional construct. Furthermore, this study supports the factors that were previously represented in SSC literature. Second, this study demonstrates that SSC can be measured similarly in men and women, as evidenced by partial measurement invariance in both the lower-order factors as well as the higher-order factor model. Third, this study supports the relationships between SSC and other sexuality dimensions, but extends previous research by demonstrating that these relationships differ by gender.

### **Limitations of the Study**

Several limitations of the study need to be taken into account while interpreting its results. First, it is obviously important to acknowledge that these results may only generalize to age and cultural groups similar to the sample. In younger adolescents, or in older adults, SSC may be very different. Particularly in younger adolescents, SSC may not have as many dimensions; especially if differentiation comes with age, experience, and development. Furthermore, in older adults, who may have compiled a multitude of sexual experiences (and

also have different cultural and social expectations and norms regarding sexuality), there may be dimensions that are not included in younger adults/older adolescents. For example, it is possible that as sexual drive and desire starts to decrease, the relational/emotional aspects of sexuality may be more important than the arousal/exploratory aspects. Cultures that have different views of sexuality, either more liberal (e.g., Scandinavian countries) or more conservative (e.g., highly religious cultures), may also influence how individuals see themselves sexually. For example, if sexuality is thought to be related primarily to reproductive functions, factors such as sexual self-esteem may not be as important. Finally, although sexual orientation did not relate to SSC in this study, this study's predominantly heterosexual sample may generalize poorly to individuals with alternative sexualities.

It is also important to recognize limitations involving online data collection. While online data collection has several benefits over traditional pen-and-paper surveys (e.g., ease of data collection and cost), there are also potential drawbacks to using an online format. While I specified a specific sampling frame (18 – 25 year old English speakers), I am dependent upon both studyresponse.net to solicit the correct individuals, and the participants themselves to truthfully portray who they are. For example, if individuals had not answered panel data truthfully (i.e., they lied to the studyresponse.net team about their age), they could have received the soliciting email, even if they were not part of the actual sampling frame, and then lie about their age to receive the reward. However, the risk of misrepresentation may be lower when using study pools (which have more monitoring and control) than simply using an open-ended solicitation method, where the general public would be able to access the online survey. Individuals from the general public may be inclined to lie about their age in order to receive the reward, and there would not be any regulations to determine if they were being truthful or not.



Another potential issue with using online participant pools like surveyresponse.net is generalizability/representativeness of late adolescent-young adult population. The study sample can be considered more diverse and potentially more representative than a typical college sample, as only 40% of the participants are college students. However it is possible that individuals within the study, and within the entire survey pool, are more similar to each other than individuals who are not part of the survey pool. Studyresponse.net's survey pool is composed of individuals who have internet access and are willing to participate in a range of academic/marketing surveys for amazon.com gift cards. Schillewaert and Meulemeester (2005) documented that samples in different data collection methods (e.g., online, telephone and mail) had different demographic distributions. While potential differences between survey pool volunteers and non-volunteers is purely speculative, it is important to keep this in mind when extending the results of the current study to a broader population.

Another limitation deals with self-selection bias in the sample, which is particularly problematic in sexuality research. In countries like the United States, where sexuality is a culturally sensitive topic, there may be differences between individuals who are willing to participate in a study on sexuality and to those who are not. Studies investigating the effect of participant bias in sexuality research indicate that there are differences between responders and non-responders. Widerman (1999) documented that sexuality research respondents had higher levels of sexual experience and sexual self-esteem, and had more liberal/non-traditional sexual attitudes. These findings were supported in other studies of volunteer bias of sexuality research (Bogaert, 1996; Strassberg & Lowe, 1995). It is quite possible that individuals who volunteered to participate in the present study had more positive, or more developed sexual self-concepts.

Thus, individuals in the studyresponse.net survey pool who received the email, but chose not to respond could have qualitatively or quantitatively different SSC's.

Another limitation involves the sample size; the small sample size for this study may have lead to underpowered latent analyses, particularly for the lower-order invariance tests. More power is needed for estimating latent traits, and it is certainly possible that with a larger sample, the lower order traits would not have had measurement invariance between genders. Another issue with the small sample size is the requirement for aggregation methods for the higher-order latent factor estimations (i.e., using plausible values. Plausible values are certainly preferable to traditional classical test theory practices (e.g., mean scores), which assumes that the scale is uni-dimensional and that items are either tau-equivalent only or tau-equivalent and parallel (Raykov, 1997; Raykov & Marcoulides, 2010). Plausible values are also preferable to standard factor scores using maximum likelihood, which have less accurate standard errors due to poorer estimation. Standard errors are also held constant across all observations in CFA estimation, using ML, it is based off of the assumption that there is a linear relationship between item response and the factor (Asparouhov & Muthén, 2010). Plausible values are not dependent on this assumption. However, plausible values are still an aggregation method; therefore individual items are combined together, which provides less accurate results than if individual items were allowed to be separate. Given that the analyses for this study would require thousands of participants before aggregation methods would not be needed, plausible values are the best way to aggregate the data in order to estimate complex models

Finally, interpretations of the results for the structural equation model are limited by the cross-sectional nature of the data. As discussed previously, SSC develops through a dynamic relationship between external experiences and feedback, and internal subjective interpretation

and reflection. This is particularly true for the relationship between SSC and sexual behavior experience; how one feels about themselves as a sexual being will influence the types of sexual experiences one has. In turn, these sexual experiences will both be interpreted and understood through one's SSC, as well as influence and either change or reinforce one's SSC. Using cross-sectional data, this relationship cannot be captured. Thus, we cannot say that a higher level of sexual experience influences SSC to become more positive, any more than we can say a more positive SSC influences one to become more sexually experienced. Longitudinal data are needed in order to better capture the relationship between SSC and other areas of sexuality.

### **Future Directions and Implications**

Future research should focus on replicating the current model in different populations in order to enhance reliability. Research should also focus on the development of SSC across development, the mechanisms that influence SSC development (e.g., internal influences such as self-reflection and subjective interpretation of sexual events or messages) as well as external and interpersonal influences such as feedback from others (e.g., socialization messages) and sexual experiences. Furthermore, potential relationships between SSC and gender/sexual role endorsement should be examined. Finally, this research should be extended to examine alternative sexualities, such as homosexuality or bisexuality.

While the content of the SSC factor was supported by previous SSC research, it is important to establish the five-factor model through replication, with different populations. Examining the five-factor model in both younger and older populations (as well as testing measurement invariance across age groups) would give strong support for the five-factor model as a credible conceptualization of SSC. Also, while the sample for this study was fairly diverse, with only 60% European Americans, more exploration of SSC within different ethnic and

cultural groups is warranted, as cultural and societal ideas about sexuality and sexual behavior differ in these groups. These cultural contexts in turn may influence the way that individuals think and feel about themselves as sexual individuals, ultimately influencing their sexual self-concept formation. Finally, although the commitment factor was not part of the final SSC model, it was related to the other factors. Examining SSC for individuals in different relationship contexts may be useful. While SSC appears to be more of an intrapersonal understanding of sexuality, this may be influenced by one's current interpersonal understanding of sexuality (i.e., an individual's thoughts and feelings of themselves as sexual *partners*). Depending upon the different types of sexual relationships one may or may not be in, they may have specific sexual roles, and thus their thoughts and feelings about these roles may ultimately influence the ways they feel about themselves as sexual individuals. The five-factor model of SSC should have measurement invariance across individuals in all types of sexual relationships in order for it to be a reliable measurement of the individual's sexual self.

Similar to other self-concepts, SSC may develop from a more "general" construct with little multidimensionality, to a more complex structure. While the current study focused on late adolescence/young adulthood, where SSC may be fairly mature, there may be differences in different age groups, and it is warranted to examine SSC as a developmental process. Sexual self-concept does not have a specific developmental timetable that is either socially or institutionally enforced, such as academic self-concepts, occupational self-concepts, or even, to a lesser extent, social self-concepts. Some individuals may start to develop a mature SSC relatively earlier than others, while other individuals may have very delayed development. Studies should focus on both the developmental process of SSC within individuals, as well as how this process may vary between individuals. Therefore, longitudinal examinations of SSC would provide a

wealth of information pertinent to better understanding SSC. Potentially, these examinations would start from a fairly early age, such as middle childhood, and extend into late adulthood, as sexuality continues to change over one's lifetime. Examining how SSC may be affected by particular sexual "transitions", such as the onset of specific sexual behaviors, would certainly strengthen understanding of how subjective interpretation of experiences influence SSC.

Longitudinal research would also help establish directionality of relationships between SSC and its influences, something the present study was unable to do due to the cross-sectional data. Examining timing of sexual experiences, as well as exposure to both sexual messages and external feedback, would help disentangle the interrelationships between SSC and its influences. Furthermore, other potential influences, such as pubertal timing (e.g., physiological maturation), that may influence SSC, can also be examined. More in-depth analysis on some of the influences would also enhance our understanding of SSC. For example, while the current study examined the frequency of sexual socialization messages, as well as the importance of social agents, the content of the messages could be examined. In future research, the way that SSC develops, especially when individuals are more impressionable, may depend on the content of the messages themselves. Furthermore, as evidenced by the results, quality of sexual experiences seems to be an important influence beyond simply frequency of sexual behavior. Therefore, more information is needed about previous sexual behavior in order to gain a comprehensive picture as to how it influences SSC. A longitudinal study would allow researchers to examine important influences such as timing of sexual behaviors, but questions about the perceived quality of the experience (beyond "positive" or "negative") would also be important. A mixed-methods study that incorporates qualitative analysis of personal narrative accounts of sexual experiences may be a particularly appropriate way to better understand the relationship between

SSC and sexual behavior. Finally, as discussed in Horne and Zimmer-Gembeck (2006), who propose an alternate sexual self model called sexual subjectivity, self-reflection of sexual experience may be an important component to examine. Sexual self-reflection involves meta-cognitive activity regarding one's own sexual behavior and experiences, and may be an important component of subjective interpretations of sexual experience. Individuals who spend more time reflecting on their own sexual behavior may have a more mature SSC (e.g., more differentiated, more stable) compared to individuals who spend relatively little time interpreting sexual experiences or sexual behavior. Therefore, this too should be included as an important influence, as this may moderate the way that subjective interpretations of sexual experiences influence SSC development.

The findings which highlight gender differences, particularly the significant difference in mean levels of SSC between men and women, as well as the difference in the pathway between sexual behavior and SSC, should also be further explored. Future research may benefit from examining the relationship between SSC and endorsement of specific gender or sexual roles, as well as scripts for sexual behavior and relationships. While the current research indicated that there were no gender differences in the structure of SSC itself, there were differences that may relate to gendered norms and sexual scripts. It is possible that endorsement of either traditional or alternative norms, roles, or scripts may influence both levels of SSC expressed, as well as the ways in which specific influences (e.g., socialization messages, sexual experiences) influence SSC development. These endorsements may not only influence the ways in which individuals construct a sexual narrative, but ultimately how much of a specific factor they report having (e.g., men report higher levels of arousal). It may also be interesting to examine if there are differences between individual's thoughts and feelings of themselves as "sexual beings" versus

themselves as “sexual men/women”, as the latter includes specific social and cultural roles and expectations, while the former may not.

Finally, although sexual orientation did not seem to relate to SSC, it is important to look further into the development of SSC in individuals with alternative sexual orientations. While there may not be many structural differences between heterosexual or homosexual individuals regarding SSC, the socialization and experiences that these individuals face are very different. As gender and sexual norms in society strongly encourage heterosexuality, individuals with alternative sexualities will encounter very different messages, which may influence the way that they think about themselves sexually. Furthermore, their opportunities for sexual experiences will typically differ, and these qualitative differences in these experiences may also influence SSC development. As gender and sexual roles relate to each other (e.g., Tolman, 2006) transgender individuals may also encounter experiences that differ from either cisgender (i.e., individuals whose gender identity is consistent with their biological sex) heterosexual or homosexual individuals. Thus, the unique experiences of transgender individuals with regard to development of SSC should be examined. Again, a longitudinal approach would allow for in-depth analyses examining changes within individuals of differing sexual orientations, as well as between-person comparisons.

This research also has potential implications for empirical and theoretical research, as well as practice. While researchers have amassed a considerable body of literature regarding sexual behavior, there is comparatively limited information regarding how individuals think and feel about sexuality. This is especially true regarding more complex models of cognitive and affective aspects of sexuality; most research examining attitudes, cognitions, or beliefs focus on simple, unidimensional assessments. Establishing a conceptual model of sexual self-concept that

other researchers can utilize will help make more detailed, comprehensive examinations of human sexuality. A cohesive model of SSC will allow researchers to explore the role of SSC in regards to other aspects of sexual behavior, sexual decision making, and sexual wellbeing. For example, SSC can be examined in relation to risky sexual behavior, particularly since some dimensions of SSC (e.g., arousal and exploration) may foster more sexual risk behavior, while others (e.g., sexual self-efficacy) may be protective factors against such behaviors. While researchers have already started to examine these relationships, a cohesive model helps draw connections between these separate pieces of literature; enhancing our overall understanding of sexuality. A cohesive model that can be used within various different studies will help researchers to portray a better picture of both SSC itself, as well as the relationships between SSC and other aspects of sexuality. Researchers can use a single SSC model to examine differences between age and cultural groups, as well as continue to examine potential gender differences. The potential for SSC to increasingly differentiate as one ages can also be tested; younger samples seem to have a smaller number of factors (e.g., O'Sullivan et al., 2006; Hensel et al., 2011). While this could be indicative of increasing multidimensionality in self-concept in young adulthood as compared to adolescents, research using the same model needs to be used in order to test this speculation. Using the same model in different studies will also help clarify the relationships between SSC and other aspects of sexuality. For example, while the weak relationship between sexual socialization and SSC is contrary to the stronger relationship seen in other studies (e.g., Aubrey 2007), using the same model can help understand what types of sexual socialization at which developmental time points have the strongest relationships.

This research also has implications for theoretical self-concept research. Most researchers who examine SSC focus on the sexuality rather than the self-concept aspects of SSC. However,



not only does SSC contain crucial components present in other types of self-concept (e.g., self-esteem and self-efficacy), but SSC also appears to behave similarly to other self-concepts in early adulthood. However, SSC also has components that may not be present in other self-concepts, as biological and interpersonal aspects of sexuality are important components that are not necessarily present in other self-concepts, such as academic self-concepts. Thus, theory can benefit from examining biopsychosocial aspects of self-concept formation by continuing to examine how SSC develops, as well as the core components that make up SSC. A cohesive SSC model also helps contribute to a more holistic view of sexuality (e.g., Graber, Brooks-Gunn & Galen, 1998; Halpern, 2006; Smith & Gunthrie, 2005) and sexual wellbeing (e.g. WHO 2010), in which mind, body, and environment are all important components contributing to one's sexual development and positive sexual health. Individuals should not only practice safe sexual behaviors and be free from sexual disease (e.g., STI) and disorder (e.g., sexual dysfunctions), but also have a positive perceptions of themselves as sexual beings. The implication that sexual behaviors and SSC are related to each other indicates that when researchers focus only on sexual behaviors, they are only looking at a part of the whole regarding one's sexuality. A cohesive model of SSC will allow SSC research to become a more prominent part of the conceptualization of sexuality as a whole.

Finally, SSC can be important for application to programs such as sexual education. Adolescents often report that they desire more information about emotional and cognitive aspects of sex, beyond discussing biology, behavior, and risk (e.g., Allen, 2008). Using SSC as a guide to improve curricula, educators would be able to develop lesson plans and discourse focusing on the different aspects of SSC. Students would be able to reflect on their own thoughts and feelings for each of these dimensions, and educators would be able to provide external feedback in order

to help promote positive SSC development through increasing efficacy and esteem, decreasing anxiety, and discussing appropriate ways to channel arousal and exploration. This may be particularly beneficial for adolescents who have alternative sexual orientations; as these adolescents face a much higher level of negative feedback, which is likely to have negative effects on SSC formation. Interventions that target how LGBT youth think and feel about themselves sexually may be beneficial, especially as such youth are often exposed to higher levels of bullying and abuse due to their sexual orientations. It is possible that understanding more about SSC could also help in the treatment of sexual disorders, many of which have psychological components such as a high level of guilt or anxiety regarding sexual practice and behaviors. In better understanding how an individual thinks and feels about themselves sexually, practitioners would potentially be able to utilize SSC as a guide for how to help promote a more positive SSC in patients, thus decreasing negative emotional and cognitive attributions regarding one's personal sexuality.

## **Conclusions**

Although I have critiqued the atheoretical approaches of previous SSC research, without these previous exploratory studies the present research would not be possible. It is this previous work that has allowed for a more sophisticated, testable model. However, as researchers start to employ more developmental paradigms and examine sexuality from a more holistic approach, it is important to remember that this work should be grounded in strong theory and tested using research methods. In order to truly advance understanding of human sexuality, and in order to ensure that this research can be used to benefit society, theoretical constructs such as SSC must be regarded not simply as a collection of various models, but as cohesive concepts that can be applied to other areas of sexual research. As a theoretical construct, SSC has great potential to

help build a more sophisticated empirical model of human sexuality and sexual development. Too often researchers have been only interested in what individuals do with their bodies, although that is simply one part of a much more complex conception of sexuality.

I propose that SSC is a self-concept like any other, and as such it should be given similar attention as a dynamic aspect of self-development. With more in-depth, rigorous research, the “self-concept” qualities of SSC can be examined. Thus, if SSC is a “true” self-concept, it can be seen not only as a dimension of sexuality, but also as an important general aspect of human development. Understanding SSC may be especially important in specific developmental periods, such as adolescence. Too often, particularly in adolescent research, when focusing on risk behaviors with salient, measureable consequences, we forget that wellbeing involves mind and body. This should be as true for sexual wellbeing as for any other type of wellbeing. Rather than assume that a lack of negative sexual health indicators (e.g., STI) indicates positive sexual wellbeing, we must also strive to make sure that individuals think and feel positively about their own sexuality. Cultivating a strong body of SSC research is one small step towards this goal.

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## Appendix A: Study Questionnaire

*Demographics*

Please enter your Studyresponse.net ID number (ID number needed in order to receive gift card)

ID Number

1. What is your gender?
  - a. male
  - b. female
  
2. What is your racial/ethnic group?
  - a. Native American
  - b. Black/African-American
  - c. White/European-American
  - d. Asian/Asian-American
  - e. Hispanic
  - f. Other (Please specify \_\_\_\_\_ )
  
3. What is your age? \_\_\_\_\_ years
  
4. What is your religious affiliation?
  - a. None
  - b. Catholic
  - c. Protestant
  - d. Muslim
  - e. Jewish
  - f. Other (Please specify \_\_\_\_\_ )
  
5. How important is your religion to you?
  - a. Not at all important
  - b. A little important
  - c. Somewhat important
  - d. Quite important
  - e. Very important

6. How often do you attend religious services?
  - a. Daily
  - b. Weekly
  - c. Monthly
  - d. Yearly
  - e. Other (\_\_\_\_\_)
  - f. Never attend services
  
7. What is the highest level of education your mother (or stepmother) finished?
  - a. Some high school
  - b. High school
  - c. Some college
  - d. College
  - e. Graduate or professional school
  - f. Don't know
  
8. What is the highest level of education your father (or stepfather) finished?
  - a. Some high school
  - b. High school
  - c. Some college
  - d. College
  - e. Graduate or professional school
  - f. Don't know
  
9. Is English your native language?
  - a. Yes
  - b. No
  
10. What is the highest level of education you have completed?
  - a. Some high school
  - b. Graduated high school
  - c. Some college
  - d. Associate's degree
  - e. 4 year college degree
  - f. Graduate or professional school
  - g. Other

11. What is your current employment status?
  - a. Full time
  - b. Part time
  - c. Student
  - d. Unemployed
  
12. Are you currently in a romantic relationship?
  - a. No (if no, go to question 16)
  - b. Yes (if yes, go to question 13)
  
13. What is the status of your relationship?
  - a. Dating
  - b. Committed to each other
  - c. Engaged
  - d. Married
  
14. Are you living with your significant other?
  - a. Yes
  - b. No
  
15. How long have you been with your romantic partner?
  - a. Less than 6 months
  - b. 6 months to a year
  - c. One to two years
  - d. Three to five years
  - e. More than five years
  
16. What is your sexual orientation?
  - a. completely heterosexual
  - b. predominately heterosexual
  - c. somewhat heterosexual
  - d. bisexual
  - e. somewhat homosexual
  - f. predominately homosexual
  - g. completely homosexual



*Sexual Self Esteem Measure*

You will now be asked some questions about your own feelings about sexual subjects. Please indicate how much you **agree** or **disagree** with the following statements.

- 1) Intimate partners have found (or would find) me sexually satisfying
- |          |          |           |          |          |
|----------|----------|-----------|----------|----------|
| A        | B        | C         | D        | E        |
| Strongly | Somewhat | Neither   | Somewhat | Strongly |
| Agree    | Agree    | agree nor | Disagree | Disagree |
|          |          | disagree  |          |          |
- 2) Most of my friends are better looking than I am
- |          |          |           |          |          |
|----------|----------|-----------|----------|----------|
| A        | B        | C         | D        | E        |
| Strongly | Somewhat | Neither   | Somewhat | Strongly |
| Agree    | Agree    | agree nor | Disagree | Disagree |
|          |          | disagree  |          |          |
- 3) I feel comfortable with my sexuality
- |          |          |           |          |          |
|----------|----------|-----------|----------|----------|
| A        | B        | C         | D        | E        |
| Strongly | Somewhat | Neither   | Somewhat | Strongly |
| Agree    | Agree    | agree nor | Disagree | Disagree |
|          |          | disagree  |          |          |
- 4) I like my body
- |          |          |           |          |          |
|----------|----------|-----------|----------|----------|
| A        | B        | C         | D        | E        |
| Strongly | Somewhat | Neither   | Somewhat | Strongly |
| Agree    | Agree    | agree nor | Disagree | Disagree |
|          |          | disagree  |          |          |
- 5) I try to be healthy
- |          |          |           |          |          |
|----------|----------|-----------|----------|----------|
| A        | B        | C         | D        | E        |
| Strongly | Somewhat | Neither   | Somewhat | Strongly |
| Agree    | Agree    | agree nor | Disagree | Disagree |
|          |          | disagree  |          |          |
- 6) I like to take care of my appearance
- |          |          |           |          |          |
|----------|----------|-----------|----------|----------|
| A        | B        | C         | D        | E        |
| Strongly | Somewhat | Neither   | Somewhat | Strongly |
| Agree    | Agree    | agree nor | Disagree | Disagree |
|          |          | disagree  |          |          |

7) It is very hard for me to know how to behave in a sexual situation

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

8) I am confident that people find me attractive

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

9) I don't know how (or would not know how) to behave with a sexual partner

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

10) I do (or would) enjoy engaging in sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

11) When other people look at me they must think I have a poorly developed body

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

12) I am confident about being able to get a boyfriend/girlfriend

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

13) In general, I do (or would) enjoy having my boyfriend/girlfriend look at me when I have no clothes on

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

14) I feel good about my sexual behavior

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

15) Most of my friends are (or would) feel more comfortable sexually with their partners than I do

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

16) I frequently feel ugly and unattractive

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

17) It is important to me that my body is healthy and in good shape

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

18) I don't think males/females find me very interesting

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

19) I find it hard to talk to males/females (people of the gender I'm attracted to)

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

20) I am comfortable being affectionate with dating partners

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

21) I don't think I could be comfortable in a sexual situation

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

22) My desire to be healthy influences a lot of my behavior

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

23) People say I am good looking

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor Disagree	Somewhat Disagree	Strongly Disagree

24) I am confident that I can have a sexual relationship

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

*Sexual Attitudes Questionnaire (Anxiety, Arousal/Desire, Openness/Exploration, and Commitment)*

You will now be asked some questions about your personal feelings and thoughts about sexual subjects. Please read each statement carefully and indicate how much you **agree** or **disagree** with each statement.

1) I often feel pressured into having sex

A	B	C	D	E
Strongly	Somewhat	Neither	Somewhat	Strongly
Agree	Agree	agree nor	Disagree	Disagree
		disagree		

2) I worry about enjoying sex

A	B	C	D	E
Strongly	Somewhat	Neither	Somewhat	Strongly
Agree	Agree	agree nor	Disagree	Disagree
		disagree		

3) I would find it hard to relax while having sex

A	B	C	D	E
Strongly	Somewhat	Neither	Somewhat	Strongly
Agree	Agree	agree nor	Disagree	Disagree
		disagree		

4) I have a lot of sexual energy

A	B	C	D	E
Strongly	Somewhat	Neither	Somewhat	Strongly
Agree	Agree	agree nor	Disagree	Disagree
		disagree		

5) I don't need sex at all

A	B	C	D	E
Strongly	Somewhat	Neither	Somewhat	Strongly
Agree	Agree	agree nor	Disagree	Disagree
		disagree		

6) I don't think I could satisfy a partner sexually

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

7) Most of the time I am very sexually active

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

8) I would feel bad about having sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

9) Even with condoms I would still worry about getting AIDS if I had sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

10) I often have sex even though I don't feel like it

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

11) I can feel quite frustrated if I don't have sex often

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

12) I would worry about physically hurting my partner if I had sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

13) Sexual fulfillment is very important to me

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

14) I would like to experiment when it comes to sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

15) I rarely feel that I would want to have sex with someone

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

16) I have very strong sexual desires

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

17) My sexual desires are less than most peoples'

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

18) I would be too worried to have sex with someone I just met

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

19) I would worry about physical pain if I had sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

20) I would worry about showing fear or discomfort if I had sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor Disagree	Somewhat Disagree	Strongly Disagree

21) If I had sex I would worry about someone finding out

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

22) I don't think I could enjoy sex with someone I just met

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

23) It doesn't matter who you have sex with as long as you enjoy it

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

24) I don't want to be committed to sex with just one person

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree



25) I could be turned on by watching someone masturbate

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

26) I constantly look for new sexual relationships

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

27) Group sex might be fun

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor Disagree	Somewhat Disagree	Strongly Disagree

28) I would like an adventurous sexual partner

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

29) I think it is natural to have many sexual partners in life

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

30) Pornography does not excite me

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

31) I like to commit myself to a relationship

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

32) I am very choosy about my sexual partners

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

33) There needs to be commitment before I would have sex with someone

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

34) I don't think I could like oral sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

35) I would prefer to have one committed relationship than many sexual partners

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

36) I would not like to watch other people having sex

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

37) When it comes to sex I would try almost anything once

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

38) I am easily aroused

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

39) Masturbating with someone else could be pleasurable

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

40) I think too many sexual partners is risky

A	B	C	D	E
Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat Disagree	Strongly Disagree

*Sexual Self-Efficacy Questionnaire*

This section will ask you about your perceived ability to do certain activities or behaviors. Please mark only those you feel you CAN DO, and then rate your degree of confidence that you can do them

For example: if you could not jump over Mount Everest but you were absolutely certain you could jump over a small puddle your answers would look like this:

		CONFIDENCE				
CAN DO		Very Uncertain	Somewhat Uncertain	Neither certain or uncertain	Somewhat Certain	Very Certain
Jump over mount Everest						
Jump over a small puddle	X					X

**Start here Please:**

Could you:

		CONFIDENCE				
CAN DO		Very Uncertain	Somewhat Uncertain	Neither certain or uncertain	Somewhat Certain	Very Certain
Refuse a sexual advance by your partner						
Have a sexual encounter without feeling you had to have intercourse						
Put a condom on an erect penis						
Be the one to start sexual activities						





*Intended Sexual Behavior Questionnaire*

This section deals with how likely you *think* you will engage in certain behaviors in the future. Please mark the appropriate answer.

- 1) Over the next year, how likely is it that you will “make out” (kiss someone for a long period of time) with someone?
  - a. Very likely
  - b. Somewhat likely
  - c. Neither likely nor unlikely
  - d. Somewhat unlikely
  - e. Very unlikely
  
- 2) Over the next year, how likely is it that you will touch someone else’s genitals?
  - a. Very likely
  - b. Somewhat likely
  - c. Neither likely nor unlikely
  - d. Somewhat unlikely
  - e. Very unlikely
  
- 3) Over the next year, how likely is it that someone will touch your genitals?
  - a. Very likely
  - b. Somewhat likely
  - c. Neither likely nor unlikely
  - d. Somewhat unlikely
  - e. Very unlikely
  
- 4) Over the next year, how likely is it that you will give oral sex (put your mouth on someone else’s genitals) or receive oral sex (have someone put their mouth on your genitals)?
  - a. Very likely
  - b. Somewhat likely
  - c. Neither likely nor unlikely
  - d. Somewhat unlikely
  - e. Very unlikely
  
- 5) Over the next year, how likely is it that you will have sexual intercourse?
  - a. Very likely
  - b. Somewhat likely
  - c. Neither likely nor unlikely
  - d. Somewhat unlikely
  - e. Very unlikely

*Sexual Socialization Questionnaire*

This section asks questions about discussions of sexual topics with people you know. Please indicate *how much* you talk about sexual topics with people you know, and *how important* you feel their opinions are.

1. During the last month, how many times have you had a conversation or a discussion about sex with your parents?
  - a. Never
  - b. One time
  - c. Two to three times
  - d. Four to six times
  - e. 7 or more times
  
2. During the last month how many times have you had a conversation or discussion about sex with your friends?
  - a. Never
  - b. One time
  - c. Two to three times
  - d. Four to six times
  - e. 7 or more times
  
3. During the last month, how many times have you had a conversation or discussion about sex with a date or significant other?
  - a. Never
  - b. One time
  - c. Two to three times
  - d. Four to six times
  - e. 7 or more times
  
4. During the last month, how many times have you had a conversation about birth control with your parents?
  - a. Never
  - b. One time
  - c. Two to three times
  - d. Four to six times
  - e. 7 or more times



5. During the last month, how many times have you had a conversation or discussion about birth control with your friends?
  - a. Never
  - b. One time
  - c. Two to three times
  - d. Four to six times
  - e. 7 or more times
  
6. During the last month, how many times have you had a conversation or discussion about birth control with a date or significant other?
  - a. Never
  - b. One time
  - c. Two to three times
  - d. Four to six times
  - e. 7 or more times
  
7. How important or unimportant are your parents' opinions about sex to you?
  - a. Very important
  - b. Somewhat important
  - c. Neither important or unimportant
  - d. Somewhat unimportant
  - e. Very unimportant
  
8. How important or unimportant are your friends' opinions about sex to you?
  - a. Very important
  - b. Somewhat important
  - c. Neither important or unimportant
  - d. Somewhat unimportant
  - e. Very unimportant
  
9. How important or unimportant are your dates or significant others' opinions about sex to you?
  - a. Very important
  - b. Somewhat important
  - c. Neither important or unimportant
  - d. Somewhat unimportant
  - e. Very unimportant

10. How important or unimportant are your parents' opinions about birth control to you?

- a. Very important
- b. Somewhat important
- c. Neither important or unimportant
- d. Somewhat unimportant
- e. Very unimportant

11. How important or unimportant are your friends' opinions about birth control to you?

- a. Very important
- b. Somewhat important
- c. Neither important or unimportant
- d. Somewhat unimportant
- e. Very unimportant

12. How important or unimportant are your dates' or significant others opinions about birth control to you?

- a. Very important
- b. Somewhat important
- c. Neither important or unimportant
- d. Somewhat unimportant
- e. Very unimportant

*Sexual Behavior Experience Questionnaire*

This section will ask some questions about certain behaviors you may or may not have engaged in. Please mark the appropriate answer for each question. If you feel uncomfortable answering a question, please feel free to skip it.

1) Have you ever “made out” (kissed for a long period of time) with someone?

- a. No (**go to question 2**)
- b. Yes (**if yes, go to question 1b**)

1b) Over your lifetime, how many people have you engaged in this activity with (“made out” with)?

- a. 1 person
- b. 2 people
- c. 3 people
- d. 4 people
- e. 5 people
- f. 6 people or more

1c) Over the past 3 months, how many times have you engaged in this activity (made out)?

- a. None
- b. Once or twice
- c. A few times a month
- d. A few times a week
- e. daily

2) Have you ever touched someone else’s’ genitals?

- a. No (**go to question 5**)
- b. Yes (**if yes go to question 4b**)

2b) Over your lifetime, how many people have you engaged in this activity with (touched someone else’s’ genitals)?

- a. 1 person
- b. 2 people
- c. 3 people
- d. 4 people
- e. 5 people
- f. 6 people or more

2c) Over the past 3 months, how many times have you engaged in this activity (touched someone else's genitals)?

- a. None
- b. Once or twice
- c. A few times a month
- d. A few times a week
- e. Daily

3) Has someone ever touched your genitals?

- a. No (**go to question 6**)
- b. Yes (**if yes, go to question 5b**)

3b) Over your lifetime, how many people have you engaged in this activity with (someone touching your genitals )?

- a. 1 person
- b. 2 people
- c. 3 people
- d. 4 people
- e. 5 people
- f. 6 people or more

3c) Over the past 3 months, how many times have you engaged in this activity (someone touching your genitals)?

- a. None
- b. Once or twice
- c. A few times a month
- d. A few times a week
- e. Daily

This next section asks about engagement in several types of sexual intercourse. Please mark down the appropriate answer. If you do not feel comfortable answering any questions, please feel free to skip them.

- 1) Have you ever given oral sex (put your mouth on someone else's genitals)?
  - a. No (go to question 2)
  - b. Yes (if yes, go to question 1b)
  
- 1b) During your life, with how many people have you given oral sex to?
  - a. 1 person
  - b. 2 people
  - c. 3 people
  - d. 4 people
  - e. 5 people
  - f. 6 people or more
  
- 1c) Over the past 3 months, how many times have you given oral sex to someone?
  - a. None
  - b. Once or twice
  - c. A few times a month
  - d. A few times a week
  - e. Daily
  
- 2) Have you ever received oral sex (had someone put their mouth on your genitals)?
  1. No (go to question 3)
  2. Yes (go to question 2b)
  
- 2b) How many people have you received oral sex from?
  - a. 1 person
  - b. 2 people
  - c. 3 people
  - d. 4 people
  - e. 5 people
  - f. 6 people or more

2c) Over the past 3 months, how many times have you received oral sex from someone?

- a. none
- b. once or twice
- c. a few times a month
- d. a few times a week
- e. daily

3) Have you ever had penile-vaginal sexual intercourse?

- A. yes (go to question 3b)
- B. No (go to question 4)

3b) During your life, with how many people have you had penile-vaginal sexual intercourse?

- a. 1 person
- b. 2 people
- c. 3 people
- d. 4 people
- e. 5 people
- f. 6 people or more

3c) Over the past 3 months, how many times have you had penile-vaginal sexual intercourse?

- a. None
- b. Once or twice
- c. a few times a month
- d. A few times a week
- e. Daily

4) Have you ever had anal intercourse?

- A. yes (go to question 3b)
- B. No (go to question 4)

4b) During your life, with how many people have you had anal intercourse?

- a. 1 person
- b. 2 people
- c. 3 people
- d. 4 people
- e. 5 people
- f. 6 people or more

4c) Over the past 3 months, how many times have you had anal intercourse?

- f. None
- g. Once or twice
- h. a few times a month
- i. A few times a week
- j. Daily

1) Have you ever had a sexual experience with someone when you didn't want to?

- a. No
- b. Yes

2) I have had sexual experience(s) that I would consider negative (I look at them unfavorably)

- a. True
- b. False

3) I have had sexual experience(s) that I would consider positive (I look at them favorably)

- a. True
- b. False

Appendix B: Recruitment Email (sent by studyresponse.net)

Hello!

You are invited to participate in an online survey regarding sexuality. You will be asked questions about your sexual behaviors, thoughts, feelings and attitudes. The survey will take approximately 25 minutes to complete, and you will be credited a \$5 amazon.com giftcard. If you would like to participate in this survey, please click on the link below to the survey site.

(survey website here)

If you would like more information about this survey, please contact the primary investigator, Arielle Deutsch, at [aride.unl@gmail.com](mailto:aride.unl@gmail.com).



## Appendix C: Consent Form (first page of online survey)

You are invited to participate in a research study on sexuality and sexual self-concept. This study is conducted by Arielle Deutsch, doctoral graduate student in the Developmental Psychology department, from the University of Nebraska-Lincoln.

This study will take approximately 25 minutes of your time. You will be asked to complete an online survey about personal sexual behaviors, thoughts, feelings, and attitudes.

Your decision to participate or decline participation in this study is completely voluntary. You are free to decide not to participate in this study. You can also withdraw at any time without harming your relationship with the researchers or the University of Nebraska-Lincoln.

**Your participation in this research will be completely confidential** and data will be averaged and reported in aggregate. The server that hosts this survey is secured, and data is encrypted. IP addresses will NOT be recorded. We ask that you enter your Studyresponse ID in order to obtain your reward, however the investigators will NOT have access to your identifying information, and the ID variable will be removed from the dataset after ID's are given to the StudyResposne team. Only the researchers will see the individual responses, which will be stored electronically on a password-protected computer. Possible outlets of reporting this data will be through doctoral dissertations and academic papers, however only group information will be presented (no individual answers or information).

By participating in this study you will receive a \$5 amazon.com gift card. Furthermore, your participation will help build understanding about how people think and feel about themselves as sexual beings, as well as how different aspects of human sexuality connect to one another in order to promote better sexual health.

There is minimal risk anticipated from taking part in this study. You may encounter questions that make you uncomfortable. Feel free to skip any questions you do not wish to answer.

If you have questions about this project, you may contact the primary investigator, Arielle Deutsch, at [aride.unl@gmail.com](mailto:aride.unl@gmail.com), or the faculty adviser, Brian Wilcox, at [bwilcox1@unl.edu](mailto:bwilcox1@unl.edu).

If you have any questions about your rights as a research participant in the study, please contact the University of Nebraska Institutional Review Board at (402) 472- 6965.

Please print a copy of this consent form for your records, if you so desire.

I have read and understand the above consent form, I certify that I am 18 years old or older and, by clicking the "I consent" option to enter the survey, I indicate my willingness voluntarily take part in the study.

- I consent
- I do not consent

## Appendix D

Table D1

*Demographic Variables for Sample*

Variable	Groups	n	Percentage
Gender	Male	92	40
	Female	138	60
Ethnicity	Native American	5	2.17
	African American	15	6.52
	European American	138	60
	Asian American	51	22.17
	Hispanic	12	5.22
	Other	9	3.91
Education Status	Some high school	1	.44
	Graduated high school	17	7.42
	Some college	57	24.89
	Associate's degree	13	5.68
	4 year college degree	108	47.16
	Graduate/professional school	32	13.97
	Other	1	.44
Employ	Full time	97	42.17
	Part time	23	10.00
	Student	91	39.57
	Unemployed	19	8.26
Mother's education status	Some high school	12	5.24
	Graduated high school	49	21.40
	Some college	33	14.41
	Associate's degree	80	34.93
	4 year college degree	49	21.40
	Graduate/professional school	6	2.62
Father's education status	Some high school	10	4.37
	Graduated high school	45	19.65
	Some college	29	12.66
	Associate's degree	72	31.44
	4 year college degree	63	27.51
	Graduate/professional school	10	4.37
Romantic Relationship	Yes	137	59.57
	no	93	40.43
Romantic Relationship			

Status	Dating	34	25.37
	Committed	65	48.51
	Engaged	21	15.67
	Married	14	10.45
Living with Sig other	Yes	75	55.56
	no	60	44.44
Sexual Orientation	Completely heterosexual	175	76.09
	Predominately heterosexual	28	12.17
	Somewhat heterosexual	5	2.17
	Bisexual	14	6.09
	Somewhat homosexual	1	.43
	Predominately homosexual	3	1.30
	Completely homosexual	4	1.74

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Table D2  
*Univariate Statistics for All Model Variables*

Variable	Mean		Standard Dev		Range		Skewness	
	Men	Women	Men	Women	Men	Women	Men	Women
Arousal	3.40	3.01	.60	.88	2 – 4.5	.9 – 4.5	-.19	-.47
Anxiety	3.51	3.29	.65	.74	1.54 – 4.54	.91 – 4.54	-1.04	.40
Exploration	3.19	2.9	.77	.79	1 – 4.5	1.1 – 4.5	-.44	-.11
Commitment	3.54	3.97	.82	.78	1.22 – 5	1.77 – 5	-.55	-.74
Sexual Self-Esteem Behavior	4.28	4.18	.62	.74	1.8 - 5	2 – 5	-1.28	-.82
Sexual Self-Esteem Conduct	3.39	3.50	1.01	1.03	1 – 5	1 – 5	-.29	-.42
Sexual Self-Esteem Attractiveness	3.73	3.62	.81	.91	2 – 5	1 – 5	-.41	-.70
Sexual Self-Esteem Body Perception	3.85	3.77	.60	.60	1.14 – 5	2.30 – 4.71	-.31	-.53
Sexual Self-Efficacy Resistance	2.79	3.80	1.36	1.19	0 - 5	.11 – 5	-.46	-1.53
Sexual Self-Efficacy Assertiveness	3.14	3.59	1.30	1.23	0 – 5	0 – 5	-.60	-.89
Sexual Self-Esteem Precautions	3.39	3.52	1.21	1.32	0 – 5	0 – 5	-.52	-1.05
Previous Sexual Behavior	2.01	2.33	.87	.99	1 – 3.86	1 – 5	.29	.14
Sexual Socialization Frequency	1.96	2.13	.78	.87	1 – 4.17	1 – 5	.81	.74
Sexual Socialization Importance	2.34	2.75	.67	.66	1 – 4.17	.83 – 4.17	-.39	-.28

Intended Sexual Behavior	3.99	4.20	1.06	1.16	1 – 5	1 – 5	-1.32	-1.56
Age	23.18	23.41	1.50	1.75	19 – 25	18 – 25	-.48	-1.16
Sexual Experiences Variable	Men		Women					
	Yes	No	Yes	No				
Nonconsensual Experience	26 (28.57%)	65 (71.43%)	49 (36.57%)	85 (63.43%)				
Positive Sexual Experience	70 (76.92%)	21 (23.76%)	110 (82.71%)	23 (17.29%)				
Negative Sexual Experience	33 (36.26%)	58 (63.74%)	81 (60.45%)	53 (39.55%)				

Table D3

*Standardized Factor Loadings for Arousal Factor*

	Estimate	SE	P-value
1) I have a lot of sexual energy	0.82	0.03	.00
2) I don't need sex at all (reverse)	0.57	0.06	.00
3) Most of the time I am very sexually active	0.52	0.06	.00
5) I can feel quite frustrated if I don't have sex often	0.50	0.06	.00
6) Sexual fulfillment is very important to me	0.74	0.04	.00
7) I rarely feel that I would want to have sex with someone (reverse)	0.68	0.05	.00
8) I have very strong sexual desires	0.90	0.02	.00
9) My sexual desires are less than most peoples' (reverse)	0.58	0.06	.00
10) I am easily aroused	0.68	0.05	.00
Error correlation : Item 2 and Item 7:	0.31	0.10	.00

Table D4

*Standardized Loading for Exploration Factor*

	Estimate	S.E.	P-Value
1) I would like to experiment when it comes to sex	0.66	0.05	.00
3) I could be turned on by watching someone masturbate	0.63	0.05	.00
4) Group sex might be fun	0.64	0.05	.00
(5) I would like an adventurous sexual partner	0.58	0.06	.00
6) Pornography does not excite me (reverse)	0.58	0.06	.00
7) I don't think I could like oral sex (reverse)	0.53	0.06	.00
8) I would not like to watch other people having sex (reverse)	0.68	0.06	.00
9) When it comes to sex I would try almost anything once	0.54	0.07	.00
10) Masturbating with someone else could be pleasurable	0.60	0.06	.00
Error correlations			
Item 9 with item 1	0.34	0.07	.00
Item 9 with item 4	0.25	0.07	.00
Item 10 with item3	0.35	0.07	.00

Table D5

*Standardized Factor Loadings for Commitment Factor*

	Estimate	S.E.	P-Value
1) I don't think I could enjoy sex with someone I just met	0.64	0.05	.00
2) It doesn't matter who you have sex with as long as you enjoy it (reverse)	0.69	0.05	.00
3) I constantly look for new sexual relationships (reverse)	0.70	0.04	.00
4) I think it is natural to have many sexual partners in life (reverse)	0.55	0.06	.00
5) I like to commit myself to a relationship	0.49	0.08	.00
6) I am very choosy about my sexual partners	0.50	0.07	.00
7) There needs to be commitment before I would have sex with someone	0.65	0.05	.00
8) I would prefer to have one committed relationship than many sexual partners	0.63	0.06	.00
9) I think too many sexual partners is risky	0.67	0.06	.00
Error correlation Item 5 with item 8	0.32	0.08	.00



Table D6

*Standardized Loadings for Anxiety Factor*

	Estimate	S.E.	P-Value
1) I often feel pressured into having sex	0.64	0.06	.00
2) I worry about enjoying sex	0.70	0.06	.00
3) I would find it hard to relax while having sex	0.79	0.04	.00
4) I don't think I could satisfy a partner sexually	0.53	0.08	.00
5) I would feel bad about having sex	0.62	0.07	.00
7) I would worry about physically hurting my partner if I had sex	0.29	0.09	.00
8) I would be too worried to have sex with someone I just met	0.32	0.07	.00
9) I would worry about physical pain if I had sex	0.48	0.07	.00
10) I would worry about showing fear or discomfort if I had sex	0.63	0.06	.00
11) If I had sex I would worry about someone finding out	0.54	0.07	.00
Error correlation			
Item 9 with item 10:	0.46	0.10	.00
Item 2 with item 3:	0.31	0.11	.00

Table D7

*Standardized Loadings for Sexual Self-Efficacy Assertion Factor*

	Estimate	S.E.	P-Value
1) Be the one to start sexual activities	0.59	0.07	.00
2) Choose when and with whom to have sex	0.47	0.08	.00
3) Tell your partner how to treat you sexually	0.86	0.07	.00
4) Admit to being sexually inexperienced to your sexually experienced peers	0.22	0.09	.01
5) Ask your partner to provide the type and amount of sexual stimulation required	0.66	0.07	.00

Table D8

*Standardized Loadings for Sexual Self Efficacy Precaution Factor*

	Estimate	S.E.	P-Value
1) Put a condom on an erect penis	0.57	0.09	.00
2) Discuss the use of condoms and/or contraceptives with a potential sex partner	0.44	0.09	.00
3) Carry condoms with you “just in case”	0.56	0.07	.00
4) Be able to buy condoms in a shop	0.66	0.09	.00
5) Discuss precautions with a doctor or a health professional	0.35	0.10	.00
Error correlation Item 2 with item 5	0.24	0.08	.00

Table D9

*Standardized Loadings for Sexual Self-Efficacy Resistive Factor*

	Estimate	S.E.	P-Value
1) Refuse a sexual advance by your partner	0.67	0.05	.00
2) Have a sexual encounter without feeling you had to have intercourse	0.41	0.07	.00
3) Ask someone to wait for sex if not protected at the time (for example, if you do not have a condom)	0.67	0.06	.00
4) Control your sexual urges under the influence of alcohol or drugs	0.47	0.07	.00
5) Refuse to do something with your sexual partner which you don't feel comfortable about	0.82	0.04	.00
6) Reject an unwanted sexual advance from someone other than your partner	0.86	0.04	.00
7) Tell your partner you don't want to have sex	0.83	0.04	.00
8) Refuse to have sex with your partner even when they really wanted to	0.67	0.05	.00
Error correlation Item 7 with item 8	0.30	0.10	.00

Table D10

*Standardized Loadings for Sexual Self Esteem Sexual Attractiveness Factor*

	Estimate	S.E.	P-Value
1) I am confident that people find me attractive	0.75	0.04	.00
2) I am confident about being able to get a boyfriend/girlfriend	0.89	0.03	.00
3) In general, I do (or would) enjoy having my boyfriend/girlfriend look at me when I have no clothes on	0.50	0.07	.00
4) I don't think males/females find me very interesting (Reverse)	0.60	0.06	.00
5) I find it hard to talk to males/females (reverse)	0.56	0.06	.00
6) I am comfortable being affectionate with dating partners	0.64	0.06	.00

Table D11

*Standardized Loadings for Sexual Self-Esteem Sexual Behavior Factor*

	Estimate	S.E.	P-Value
1) Intimate partners have found (or would find) me sexually satisfying	0.65	0.06	.00
2) I feel comfortable with my sexuality	0.66	0.05	.00
3) I do (or would) enjoy in engaging in sexual behavior	0.61	0.07	.00
4) I feel good about my sexual behavior	0.79	0.07	.00
5) I am confident that I can have a sexual relationship	0.68	0.06	.00

Table D12

*Standardized Loadings for Sexual Self Esteem Sexual Conduct Factor*

	Estimate	S.E.	P-Value
1) It is very hard for me to know how to behave in a sexual situation (Reverse)	0.82	0.03	.00
2) I don't know how (or would not know how) to behave with a sexual partner (Reverse)	0.88	0.04	.00
3) Most of my friends are (or would) feel more comfortable sexually with their partners than I do (reverse)	0.56	0.05	.00
4) I don't think I could be comfortable in a sexual situation (reverse)	0.73	0.05	.00

Table D13

*Standardized loadings for unconstrained multiple group model for anxiety factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
AX1	0.77	0.07	.00	0.53	0.09	.00
AX2	0.87	0.07	.00	0.59	0.09	.00
AX3	0.82	0.06	.00	0.76	0.05	.00
AX4	0.48	0.12	.00	0.64	0.10	.00
AX5	0.69	0.11	.00	0.54	0.08	.00
AX7	0.21	0.13	.11	0.35	0.11	.00
AX8	0.32	0.10	.00	0.29	0.09	.00
AX9	0.16	0.14	.24	0.64	0.07	.00
AX10	0.45	0.11	.00	0.77	0.06	.00
AX11	0.48	0.12	.00	0.60	0.08	.00
Error						
Correlations						
AX10 and AX9	0.17	0.10	.09	0.42	0.12	.00
AX3 and AX2	0.04	0.26	.88	0.46	0.10	.00
AX 9 and AX7	0.39	0.13	.00	0.06	0.07	.44

Table D14

*Standardized loadings for unconstrained multiple group model for arousal factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
AR1	0.61	0.10	.00	0.86	0.03	.00
AR2	0.57	0.11	.00	0.57	0.08	.00
AR3	0.42	0.13	.00	0.56	0.07	.00
AR5	0.34	0.13	.01	0.55	0.06	.00
AR6	0.77	0.09	.00	0.76	0.05	.00
AR7	0.56	0.09	.00	0.74	0.06	.00
AR8	0.80	0.06	.00	0.92	0.02	.00
AR9	0.47	0.12	.00	0.60	0.08	.00
AR10	0.43	0.13	.00	0.74	0.05	.00
Error correlations						
AR7 and AR2	0.46	0.11	.00	0.29	0.13	.03
AR7 and AR3	-0.41	0.08	.00	0.02	0.08	.78
AR5 and AR3	0.01	0.10	.95	0.31	0.10	.00

Table D15

*Standardized loadings for unconstrained multiple group model for commitment factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
C1	0.56	0.11	.00	0.64	0.07	.00
C2	0.72	0.08	.00	0.63	0.07	.00
C3	0.65	0.09	.00	0.76	0.06	.00
C4	0.67	0.09	.00	0.48	0.08	.00
C5	0.37	0.14	.01	0.56	0.08	.00
C6	0.28	0.13	.03	0.60	0.08	.00
C7	0.62	0.11	.00	0.69	0.06	.00
C8	0.59	0.11	.00	0.59	0.09	.00
C9	0.57	0.12	.00	0.71	0.06	.00
Error						
Correlations						
C8 and C5	0.22	0.11	.06	0.46	0.12	.00
C7 and C6	0.47	0.09	.00	-0.03	0.14	.83
C3 and C7	0.19	0.13	.14	-0.47	0.14	.00



Table D16

*Standardized loadings for unconstrained multiple group model for exploration factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
E1	0.62	0.09	.00	0.71	0.07	.00
E3	0.63	0.08	.00	0.63	0.08	.00
E4	0.66	0.08	.00	0.59	0.07	.00
E5	0.68	0.07	.00	0.52	0.09	.00
E6	0.60	0.12	.00	0.54	0.09	.00
E7	0.67	0.08	.00	0.45	0.08	.00
E8	0.73	0.07	.00	0.62	0.09	.00
E9	0.41	0.13	.00	0.62	0.09	.00
E10	0.60	0.10	.00	0.62	0.08	.00
Error correlations						
E9 and E4	0.24	0.12	.04	0.27	0.08	.00
E9 and E1	0.18	0.11	.09	0.42	0.09	.00
E10 and E3	0.26	0.11	.02	0.41	0.10	.00

Table D17

*Standardized loadings for unconstrained multiple group model for sexual self-efficacy: assertion*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
EFF4	0.47	0.13	.00	0.68	0.09	.00
EFF10	0.48	0.12	.00	0.44	0.11	.00
EFF11	0.84	0.14	.00	0.87	0.08	.00
EFF15	0.29	0.15	.05	0.16	0.11	.12
EFF17	0.64	0.12	.00	0.67	0.08	.00

Table D18

*Standardized loadings for unconstrained multiple group model for sexual self-efficacy: precaution*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
EFF3	0.60	0.14	.00	0.60	0.12	.00
EFF5	0.61	0.10	.00	0.49	0.11	.00
EFF7	0.37	0.12	.00	0.58	0.08	.00
EFF13	0.61	0.10	.00	0.67	0.10	.00
EFF14	0.51	0.16	.00	0.52	0.12	.00
Error Correlation EFF14 and EFF3	-0.48	0.17	.00	-0.10	0.13	0.43

Table D19

*Standardized loadings for unconstrained multiple group model for sexual self-efficacy resistive factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
EFF1	0.71	0.07	.00	0.59	0.09	.00
EFF2	0.29	0.11	.01	0.46	0.09	.00
EFF6	0.50	0.09	.00	0.69	0.1	.00
EFF8	0.36	0.11	.00	0.50	0.09	.00
EFF12	0.71	0.08	.00	0.89	0.05	.00
EFF16	0.85	0.07	.00	0.82	0.07	.00
EFF18	0.82	0.06	.00	0.87	0.04	.00
EFF19	0.63	0.09	.00	0.72	0.05	.00
Error Correlation EFF 16 and EFF18	-0.23	0.22	0.31	0.33	0.19	.07

Table D20

*Standardized loadings for unconstrained multiple group model for sexual self-esteem attractiveness factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
SE8	0.78	0.07	.00	0.72	0.05	.00
SE12	0.94	0.05	.00	0.86	0.04	.00
SE13	0.50	0.09	.00	0.53	0.08	.00
SE18	0.53	0.10	.00	0.67	0.08	.00
SE19	0.59	0.08	.00	0.55	0.08	.00
SE20	0.53	0.09	.00	0.71	0.07	.00

Table D21

*Standardized loadings for unconstrained multiple group model for sexual self-esteem behavior factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
SE1	0.69	0.11	.00	0.63	0.08	.00
SE3	0.64	0.09	.00	0.66	0.06	.00
SE10	0.56	0.16	.00	0.66	0.08	.00
SE14	0.67	0.14	.00	0.85	0.06	.00
SE24	0.73	0.08	.00	0.66	0.08	.00

Table D22

*Standardized loadings for unconstrained multiple group model for sexual self-esteem conduct factor*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
SE7	0.82	0.05	.00	0.81	0.04	.00
SE9	0.96	0.03	.00	0.82	0.07	.00
SE15	0.52	0.09	.00	0.60	0.06	.00
SE21	0.70	0.07	.00	0.76	0.07	.00

Table D23

*Standardized Loadings for Five-Factor SSC Model*

	Male			Female		
	Estimate	S.E.	P-Value	Estimate	S.E.	P-Value
<b>Sexual Self Efficacy Factor</b>						
Assertion	0.71	0.20	.00	0.81	0.11	.00
Precaution	0.56	0.17	.00	0.55	0.10	.00
<b>Sexual Self Esteem Factor</b>						
Attractive	0.79	0.08	.00	0.69	0.07	.00
Behavior	0.81	0.07	.00	0.90	0.06	.00
Conduct	0.68	0.09	.00	0.64	0.08	.00
<b>Sexual Self Concept Factor</b>						
Arousal	0.73	0.14	.00	0.76	0.07	.00
Explore	0.41	0.16	.01	0.57	0.09	.00
Anxiety	0.61	0.14	.00	0.64	0.08	.00
Sexual Self-Esteem	0.65	0.16	.00	0.78	0.08	.00
Sexual Self-Efficacy	0.58	0.19	.00	0.74	0.11	.00
Anxiety with Sexual Self – Esteem Conduct	0.33	0.13	.02	0.48	0.09	.00

Table D24

*Standardized loadings for a “single” factor SSC model*

	Estimate	S.E.	P-Value
Anxiety	0.61	0.06	.00
Exploration	0.41	0.07	.00
Arousal	0.58	0.06	.00
Sexual self-esteem: Attractive	0.67	0.06	.00
Sexual self-esteem: Behavior	0.81	0.05	.00
Sexual self-esteem: Conduct	0.67	0.05	.00
Sexual self-efficacy: Assertion	0.52	0.06	.00
Sexual self-efficacy: Precautions	0.41	0.07	.00

Table D25

*Standardized Loadings for Sexual Behavior Factor*

	Estimate	S.E.	P-Value
1) Over the past 3 months, how many times have you engaged in this activity (made out)?	0.83	0.03	.00
2) Over the past 3 months, how many times have you engaged in this activity (touched someone else's genitals)?	0.94	0.02	.00
3) Over the past 3 months, how many times have you engaged in this activity (someone touching your genitals)?	0.97	0.01	.00
4) Over the past 3 months, how many times have you given oral sex to someone?	0.72	0.04	.00
5) Over the past 3 months, how many times have you received oral sex from someone?	0.69	0.05	.00
6) During your life, with how many people have you had penile-vaginal sexual intercourse?	0.79	0.04	.00
7) Over the past 3 months, how many times have you had anal intercourse?	0.28	0.07	.00



Table D26

*Standardized Loadings for Intended Sexual Behavior Factor*

	Estimate	S.E.	P-Value
1) Over the next year, how likely is it that you will “make out” (kiss someone for a long period of time) with someone?	0.78	0.05	.00
2) Over the next year, how likely is it that you will touch someone else’s genitals?	0.97	0.01	.00
3) Over the next year, how likely is it that someone will touch your genitals?	0.95	0.02	.00
4) Over the next year, how likely is it that you will give oral sex (put your mouth on someone else’ genitals) or receive oral sex (have someone put their mouth on your genitals)?	0.84	0.03	.00
5) Over the next year, how likely is it that you will have sexual intercourse?	0.87	0.03	.00

Table D27

*Standardized Loadings for Sexual Socialization Frequency Factor*

	Estimate	S.E.	P-Value
1) During the last month, how many times have you had a conversation or a discussion about sex with your parents?	0.54	0.07	.00
2) During the last month how many times have you had a conversation or discussion about sex with your friends?	0.68	0.06	.00
3) During the last month, how many times have you had a conversation or discussion about sex with a date or significant other?	0.42	0.07	.00
4) During the last month, how many times have you had a conversation about birth control with your parents?	0.57	0.07	.00
5) During the last month, how many times have you had a conversation or discussion about birth control with your friends?	0.82	0.06	.00
6) During the last month, how many times have you had a conversation or discussion about birth control with a date or significant other?	0.57	0.0	.00
Parent variable item correlation	0.40	0.08	.00
Romantic/dating partner item correlation	0.50	0.06	.00

Table D28

*Standardized Loadings for Sexual Socialization Importance Factor*

	Estimate	S.E.	P-Value
1) How important or unimportant are your parents' opinions about sex to you?	0.64	0.11	.00
2) How important or unimportant are your friends' opinions about sex to you?	0.79	0.12	.00
3) How important or unimportant are your dates or significant others' opinions about sex to you?	0.21	0.07	.01
4) How important or unimportant are your friends' opinions about birth control to you?	0.86	0.14	.00
5) How important or unimportant are your dates' or significant others opinions about birth control to you?	0.27	0.07	.00

Table D29

*Descriptive Statistics for Structural Equation Model Control Variables*

Variable	Means (SD)	Categories	n	Percentage
Positive Sexual Experience		Yes	180	80.36%
		No	44	19.64%
Negative Sexual Experience		Yes	114	50.67%
		No	111	49.33%
Nonconsensual experience		Yes	75	33.33%
		no	150	66.67%
Religiosity	2.64 (1.43)			

TableD30

*Standardized Estimates for Structural Equation Model – Previous Sexual Behavior Only*

Variable	Male			Female			$\Delta\chi^2(1)$
	$\beta$	S.E.	<i>P</i>	$\beta$	S.E.	<i>p</i>	
Previous Sexual Behavior	0.18	0.14	.20	0.56	0.10	.00	5.44
Romantic Status	0.03	0.13	.80	-0.15	0.11	.18	1.13
Age	0.06	0.12	.62	0.00	0.08	.96	.35
Religiosity	0.14	0.13	.29	0.11	0.08	.17	.18
Sexual Orientation	-0.06	0.13	.65	0.08	0.09	.34	1.04
Nonconsensual Experience	0.08	0.14	.59	-0.03	0.09	.71	.58
Negative Sexual Experience	-0.23	0.14	.10	-0.03	0.09	.74	1.03
Positive Sexual Experience	0.53	0.12	.00	0.40	0.09	.00	.37

TableD31

*Standardized Estimates for Structural Equation Model – Intended Sexual Behavior Only*

Variable	Male			Female			$\Delta\chi^2(1)$
	$\beta$	S.E.	<i>p</i>	$\beta$	S.E.	<i>p</i>	
Intended Sexual Behavior	0.29	0.14	.03	0.49	0.10	.00	2.20
Romantic Status	0.03	0.13	.84	-0.14	0.12	.24	.93
Age	0.06	0.12	.59	0.04	0.09	.62	.26
Religiosity	0.14	0.12	.27	0.15	0.08	.07	.34
Sexual Orientation	-0.08	0.13	.52	0.09	0.09	.30	1.41
Nonconsensual Experience	0.07	0.14	.62	-0.03	0.09	.71	.53
Negative Sexual Experience	-0.23	0.14	.10	-0.06	0.10	.53	.70
Positive Sexual Experience	0.47	0.13	.00	0.42	0.09	.00	.80

TableD32

*Standardized Estimates for Structural Equation Model – Sexual Socialization Only*

Variable	Male			Female			$\Delta\chi^2 (1)$
	$\beta$	S.E.	<i>p</i>	$\beta$	S.E.	<i>p</i>	
Sexual Socialization	-0.15	0.21	.46	0.30	0.15	.04	2.11
Romantic Status	0.10	0.13	.44	0.11	0.11	.31	.18
Age	0.05	0.12	.68	-0.02	0.09	.82	.41
Religiosity	0.12	0.13	.35	0.07	0.09	.45	.19
Sexual Orientation	-0.07	0.13	.61	0.06	0.09	.50	.84
Nonconsensual Experience	0.14	0.14	.32	-0.05	0.10	.64	1.11
Negative Sexual Experience	-0.24	0.14	.10	0.06	0.10	.56	2.29
Positive Sexual Experience	0.58	0.11	.00	0.53	0.09	.00	1.24