

THE EMOTIONAL CONTEXT OF FIRST SEXUAL INTERCOURSE ON CURRENT
SEXUAL GUILT

A Dissertation

by

MATTHEW JOSEPH DAVIS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2011

Major Subject: Counseling Psychology

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ABSTRACT

The Emotional Context of First Sexual Intercourse on Current
Sexual Guilt. (August 2011)

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This dissertation presents three separate studies examining the effects of an individual's emotional response to their sexual initiation and their current feelings of sexual guilt. First, a systematic review of the literature is presented. From this review it was shown that previous research has found that an individual's response to his/her FSI experience has the potential to lead to later negative mental, physical and sexual health outcomes. However, limitations existed among and between studies. It was determined that a new measure of FSI emotional response was needed to minimize the limitations of previous measures which can be used consistently in future research. Criteria for such a measure are discussed.

Second a new measure of an individual emotional response to his/her sexual initiation experience was constructed using the conclusions of the previous review of the literature. The validity of this measure was examined among a mixed gender sample of participants, asking participants to rate emotions currently and at the time of the event,

using more sophisticated statistical analyses than previous research. Results provided evidence for the appropriateness of the measure as well as support for utilizing both time periods of questioning. It was found that individuals were able to make a distinction between these two time periods, providing separate and distinct factor structures.

Implications of these results are discussed.

Finally, utilizing the newly constructed measure, a structural equation model was created to examine the relationship between FSI emotional response and current sexual guilt. An individual's emotional response to his/her sexual initiation experience was found to be associated with his/her current degree of sexual guilt. Despite previous research suggesting the importance of the individual's age at the time of the sexual initiation event, it was found in the current study that this FSI emotional response was more strongly related to sexual guilt than age at FSI. The results highlight important relationships that must be further explored to better understand how youth and young adults respond to their sexual initiation and how this impacts their later sexual, physical, and mental health.

DEDICATION

To my wife, who stands by me and edits me in my writing and my life. My life would not just be incomplete, but it would be gray without her. To my parents who raised me to be a man, to follow my dreams, and to never give up. To my brother who inspired me by his own accomplishments and paved the way for my own success. To my sister who showed me what family is through her children and her love. To my new family, the Niebes', whose generosity and openness makes me a better person. And to my friends, for sticking by me as life is empty without laughter and tears of which good friends are never in short supply.

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NOMENCLATURE

FSI First sexual intercourse

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CHAPTER I

INTRODUCTION

It has been stated by researchers that sexual initiation signifies an important developmental milestone for most individuals (Else-Quest, Hyde, DeLamater, 2005; Koch, 1988). This step has been described as indicating a desire to take on increased autonomy and responsibility (Jessor & Jessor, 1975), an attempt to create a unique identity (Clark, Rhodes, Rogers, & Liddon, 2004), and a sign of entering adulthood (Ku, Sonenstein, & Pleck, 1993). Although this transition can be seen as a positive developmental step, it is not without consequences, and requires that the individual must be ready to make crucial decisions (Baumrind & Moselle, 1985; Reiss 1967). This transition also comes with the onset of physical health risks such as unwanted pregnancy and sexually transmitted infections (STIs), including HIV/AIDS, as well as emotional or psychological risks. The present dissertation project examines how an individual's sexual initiation event impacts their current degree of sexual guilt. To accomplish this examination, a systematic review of the current knowledge on first sexual intercourse (FSI) emotional response is discussed, a new measure to examine FSI emotional response is created, and finally a structural equation model (SEM) is designed and empirically tested.

As youth enter sexual maturity at younger ages, the time period between the point when an individual is physically able to engage in sexual intercourse and when

This dissertation follows the style of the *Journal of Sex Research*.

youth marry is increasing (Duke, Litt, & Gross, 1980; Miller & Heaton, 1991). This has been attributed as one of the potential factors explaining increases in teenage sexual intercourse over the last few decades (e.g., Abma, Chandra, Mosher, Peterson, & Piccinino, 1997; Terry & Manlove 2000). With many youth engaging in FSI prior to graduating high school (Eaton et al., 2008), STIs on the rise (CDC, 2008a), and teenage pregnancy at a high rate (41.1 live births per 1,000 females; Martin, Hamilton, Sutton et al., 2009), it is not surprising that many researchers have attempted to establish an association between age at FSI and later young adult negative sexual health outcomes (e.g., Baldwin & Baldwin, 1988; Koyle, Jensen, Olsen, & Cundick, 1989; Resnick et al., 1997; Miller & Heaton, 1991). However, age at FSI may only be showing a limited picture of this complex developmental transition. Research has found evidence to suggest that how the FSI event occurs and the subsequent response the individual has toward FSI may be more powerful than the age in which the event occurred (e.g., Else-Quest et al., 2005).

Researchers have attempted to expand the understanding of these statistics by looking beyond age at FSI, examining the context of the FSI experience through emotional responses toward it (e.g., Guggino & Ponzetti, 1997; Schwartz, 1993; Smiler, Ward, Caruthers, & Merriwether, 2005; Sprecher, Barbee, & Schwartz, 1995; Weis, 1983). However, these studies are not without limitation and may not be effectively measuring this emotional response (see Chapter II for a full review).

It is typically believed that the FSI event is an important and memorable event in most people's lives (Harvey, Flanary, & Morgan, 1986; Jessor, Costa, Jessor, &

Donovan, 1983). Symbolic interactionism (Blumer 1969) posits that individuals ascribe some meaning toward the FSI experience prior to engaging in it. Whether positive, negative, or ambivalent, an initial meaning of the FSI experience is present in the individual prior to the act itself, and this subjective value is a product of the interactions the individual has had in society and with individuals whom they deem important to them. Examples of such interactions include peer relationships and perceived peer norms for sexual behavior, family relationships, religious involvement, and general cultural involvement. Following the FSI experience, the individual either confirms or refutes the meaning they originally ascribed to the event. Depending on the individual's initial meaning of the event and their level of dissonance between prior and subsequent meanings of the event, a response toward FSI is influenced. Therefore, an understanding of this relationship is important as this response has the possibility of leading to negative psychosocial outcomes, or serve as a protective factor depending on how the individual perceives their experience (Bettor, 1990; Koch, 1988; Moore & Davidson, 1997).

Engaging in sexual behavior brings with it many potential consequences for an individual. These consequences can be physical, such as acquiring a sexually transmitted infection (STI) or becoming pregnant. Much research has examined factors leading to these physical outcomes, and intervention research attempts to prevent these consequences. However, consequences of sexual behavior can also be emotional and psychological. Less research has examined these emotional/psychological consequences, and few interventions beyond psychological counseling have been

concerned with reducing these consequences. One potentially important emotional/psychological consequence is guilt.

An individual's FSI experience has been found to be related to later sexual guilt (Bettor, 1990; Else-Quest et al., 2005; Moore & Davidson, 1997). As Lewis (1971) described, situations evoke guilt when the experience violates the individual's own internalized set of moral standards. Therefore, an FSI experience that is negative, dissatisfying, or against the individual's values/beliefs may lead to feelings of guilt, which can then impact future sexual satisfaction or actions (Moore & Davidson, 1997). The concept of general guilt has been modified by Mosher to examine the concept of sexual guilt specifically (1966; 1968; Mosher & Cross, 1971). Mosher and Cross (1971) defined sexual guilt as a personality disposition which is characterized by a "generalized expectancy for self-mediated punishment for violating or for anticipating violating standards of proper sexual conduct" (p. 27). The authors went on to state that such guilt is likely to be revealed through resistance of sexual temptation or behaviors and a lack of sexual knowledge.

The hypotheses of Mosher and Cross (1971) have been supported by a vast literature base which has shown that sexual guilt is related to a variety of negative sexual outcomes, including: (a) having a negative attitude toward contraceptives (Alden & Crowley, 1995; Fisher, Byrne, & White, 1983; Gerrard, McCann, & Fortini, 1983), (b) less consistent contraceptive use, or use of unreliable methods (Fisher, Byrne, White, & Kelley, 1988; Geis & Gerrard, 1984; Strassberg & Mahoney, 1988), (c) less sexual and contraceptive knowledge (Alden & Crowley, 1995; Lewis, Gibbons, & Gerrard, 1986;

Mendelsohn & Mosher, 1979), and (d) stronger belief in sexual myths (Mosher, 1979). However, sexual guilt can also be thought of as a protective factor in that it is also associated with sexual outcomes that can be considered more positive, such as decreased levels of sexual activity (D'Augelli & Cross, 1975; Gerrard, 1987; Love, Sloan, & Schmidt, 1976) and less permissive sexual attitudes (Mosher & Cross, 1971). Due to these findings, researchers have thought of sexual guilt as an inhibitory mechanism (D'Augelli, & Cross, 1975; Galbraith & Mosher, 1968), because, as suggested, individuals with high sexual guilt show a repression of sexuality through a lack of ability to obtain sexual knowledge, and a decrease in positive sexual attitudes and sexual behaviors across most domains of sexuality.

Sexual guilt is an important mechanism to examine for several reasons. According to symbolic interactionism (Blumer 1969), after the FSI experience, an individual's initial meaning toward FSI is either confirmed or refuted, and those with a high dissonance (i.e., a negative response) may be more likely to experience guilt regarding sexuality later in life. Further, according to psychodynamic principles, guilt has the power to influence our later thoughts, feelings, and behaviors, as has been shown in previous research regarding sexual guilt and negative outcomes aforementioned (e.g., D'Augelli & Cross, 1975; Gerrard, 1987; Moore & Davidson, 1997). Thus, as guilt can lead to negative physical and psychosocial outcomes, it is important to understand how factors related to the FSI experience relate to sexual guilt. In particular, how the individual views the FSI emotionally.

Present Dissertation

The current dissertation addressed the question: To what degree does an individual's attitude toward his/her FSI experience affect his/her current level of sexual guilt? Previous literature in this area has been limited by inadequate measures of FSI emotional response, the participants examined, and unsophisticated analytic strategies. To extend the literature the current dissertation provides a detailed and structured review of the literature on FSI emotional response, uses this information to create and validate a new measure of FSI emotional response, and finally uses structural equation modeling (SEM) to test a model of FSI emotional response on current sexual guilt.

The present dissertation is organized into five distinct sections/chapters, with Chapters II-IV written as manuscripts that will serve as independent pieces to be submitted for publication in peer-review journals. Below is a description of each chapter:

- Chapter I: Provides an overall introduction to the dissertation as a whole including a purpose and rationale for the project in its entirety and for each chapter separately. The topic of the project is discussed to provide an understanding of the meaning and importance of concepts of FSI emotional response and sexual guilt.
- Chapter II: A systematic review of the existing literature examining FSI emotional response is examined. This chapter focuses primarily on the nature of how FSI emotional response is measured across studies, and the major findings among the literature. Twenty-five studies were found to examine FSI emotional

response, published between 1962 and 2009. It was determined that the studies examined differed in how they operationalized FSI emotional response, the time point they examined, the participants used, and in the purpose and research findings of the study. Despite methodological differences, most findings across studies were somewhat consistent. The chapter discusses the limitations of the current literature and discusses future directions, highlighting the need for a consistent and valid measure of FSI emotional response. This chapter represents the first journal article.

- Chapter III: A new measure of FSI emotional response is presented. Previous literature in this area has focused on separate gender samples, a somewhat limited number of primarily negative emotional responses, and a single retrospective time point. Six hundred seventy two participants were enrolled in two and four year universities and colleges throughout Texas. Participants were mostly female (81.7%, $N = 492$), and ranged from 18-57 years ($M = 21.16$, $SD = 4.22$). FSI emotional response was examined by asking participants to rate 19 emotions in regard to how they felt in response to his or her FSI experience both currently and retrospectively at the time of the event. Exploratory and confirmatory factor analysis was used to determine the factor structures of these two sets of reference points in time, and measurement equivalence between them was tested using factorial invariance. Results suggested that individuals were able to make a distinction between these two reference points in time with retrospective accounts encompassing a stronger and more complex factor

structure, compared to current ratings of emotions. The implications of this finding as well as proposed directions for future research are discussed. This chapter represents the second journal article.

- Chapter IV: An analysis of the relationship between FSI emotional response and current sexual guilt is presented. Previous literature has suggested that one reason for the increases in STIs and teenage pregnancies is the decline in age at FSI. However, a limited number of studies have attempted to challenge this assertion by looking beyond age at FSI to examine the context of the FSI experience in regard to negative sexual health outcomes. With a sample of 418 sexually experience, college aged individuals, the current chapter extends the work of these previous researchers by using SEM to examine the role of emotional response to FSI on an individual's current level of sexual guilt. Results showed that how an individual emotionally responded to their FSI experience was more determinant of current sexual guilt than his or her age at the time of the experience. This finding has implications for the current direction of research and interventions which typically target age at FSI as a vehicle to reduce later unintended sexual outcomes. This chapter represents the third journal article.
- Chapter V: General conclusions and implications of the project as a whole are presented. Future directions for the field of research on FSI and sexual health are also presented. Appendices, including search, selection, and retrieval of articles,

participant recruitment documents, and the code book for the measures used, are included following this chapter.

CHAPTER II

A HISTORY OF UNDERSTANDING EMOTIONAL RESPONSE TO SEXUAL INITIATION: A REVIEW SYNTHESIS

Sexual initiation is an important developmental milestone for many individuals (Else-Quest et al., 2005; Koch, 1988). As sexual initiation can be one component of an individual's identity exploration (Clark et al., 2004), as well as a signal that the individual is entering adulthood (Ku et al., 1993), it is important to understand this event. Researchers over the last five decades have attempted to quantify and describe the first sexual intercourse (FSI) experience, and to understand how the event relates to other aspects of the individual's current and subsequent mental, physical, and sexual health. The current review describes what we currently know about how individuals view their FSI experience, focusing on a discussion of the differences in focus, results, and methodology among studies, as well as limitations of these works and possible future directions for the field.

Researchers have found that FSI itself is a memorable and important event in most people's lives (Harvey et al., 1986; Jessor et al., 1983). Sawyer and Smith (1996) asked undergraduate students how well they remembered their FSI. On a scale of 1-10, with ten indicating "vividly", respondents scored a mean of 7.8 ($SD = 2.3$). These findings indicate the prominence of this event in an individual's memory, and the salience of the event itself. According to symbolic interactionism (Blumer, 1969) an individual ascribes meaning of the FSI experience prior to engaging in it, this meaning is

the product of interactions the individual has had with others and in society. Following sexual initiation this meaning is either confirmed or refuted. This degree of dissonance between their initial and subsequent meaning has the potential to influence the emotional response toward their FSI event. The event may be regarded as a positive event by the individual, which could lead to self-affirmation and enjoyment, or it could be regarded as a negative event and be disappointing to the individual, with feelings of regret or guilt (Kilman, 1984). This emotional response is what researchers have been attempting to describe.

An exhaustive search of the literature found 25 studies which have previously examined the emotional response to FSI. See Appendix A for a detailed description of the search procedures used. The remainder of this review will concern these 25 studies, first examining the focus and results of the research, followed by a discussion of the methods used and limitations among studies, and finally concluding with a summary and proposal for future directions.

Previous Findings Regarding FSI Emotional Context

Studies examining the FSI emotional context differ on the purpose of the study. Some studies are simply descriptive in nature to depict the FSI experience, while others attempt to either examine gender differences, differences among cultural groups, determine what predicts this emotional context, or to use the context to predict later mental, physical, or sexual health and behavior outcomes.

Descriptive Studies

A major objective of studies examining the FSI experience is to provide a description of both the event and how the individual reacts to the experience emotionally. Nine studies were found whose major findings included a descriptive component. Table 2.1 presents the major findings from the descriptive studies. Christensen and Johnson (1978) first described this experience, and these authors found that the majority of participants held a dichotomous response to their FSI experience. More specifically, these authors found that participants typically selected either completely negative or completely positive emotions from a list of possible choices. The results of Thompson's (1990) qualitative study seem to support these findings as she found two major "shared stories" that existed to describe FSI. Some participants reported that "it was something that just happened," a more negative response in that the event was unplanned and unexpected, while the remaining reported having pleasure after the event, believing that sexual exploration is acceptable. However, Thompson did not provide information as to how many youth shared these stories. Mitchell & Wellings (1998) also examined themes of FSI experiences and found that youth varied between four responses and degrees of planning from a) *unanticipated*, leading to feelings of shock, confusion, and fear, b) *unanticipated, but not shocked*, leading to dissatisfaction, c) *anticipated, but not wanted*, leading to feeling confused and isolated, or d) *planned*, with most feeling positive and having little regret.

Both Weis (1983) and Smiler and colleagues (2005), expanded this idea of dichotomous and qualitative responding to conduct an exploratory factor analysis of

Table 2.1. Major Findings among Descriptive Studies

Author/Year	Major Findings
Christensen & Johnson 1978	Most participants described their FSI as either positive or negative (checking only one type of item).
Weis 1983	Created 3 factors to describe FSI emotions: Anxiety, Guilt, and Pleasure.
Thompson 1990	Author reports that most youth report one of two stories regarding their FSI experience: 1) Little knowledge of how the event occurred, frequently stating “it was something that just happened”. 2) Pleasure after the event, believing that sexual exploration is an acceptable set of behaviors.
Moore & Davidson 1997	20.1% (<i>N</i> = 115) women reported “frequently”, 18.4% (<i>N</i> = 105) women reported “occasionally”, 23.5% (<i>N</i> = 134) “seldom”, and 38% (<i>N</i> = 217) “never” having guilt toward their FSI.
Rosenthal et al. 1997	85% stated that they were “too young” at FSI, while 15% stated that their age was “just right.”
Mitchell & Wellings 1998	Communication was found to play an important role between FSI anticipation and experiences of wantedness, protection, and enjoyment. Much of this communication was found to be non-verbal. Four major themes emerged to describe FSI communication: a) FSI is completely unexpected, with responses of shock, confusion, and fear. b) Unanticipated, but not shocked, with most feeling dissatisfied with the experience. c) Anticipated, but not wanted, leading to feeling confused and isolated afterward. d) Planned, with most feeling the event was positive with little regret.
Wight et al. 2000	Two fifths of participants stated that FSI was at the right time. About 30 % reported it was too early.
Cotton et al. 2004	Found that no youth identified as being “too old” at the time of their FSI. Most (78%) said they were “too young” at FSI.
Smiler et al. 2005	Created 4 factors to describe FSI emotions: Positive, Empowered, Loving, and Negative.
Wight et al. 2008	Most youth (81%) reported no pressure at FSI; however, 30% had regret toward FSI.

emotional responses. Weis found three emotion factors (anxiety, guilt, and pleasure), while Smiler and colleagues found four emotion factors (positive, empowered, loving, and negative). Other researchers who abandoned specific emotional feelings, and instead examined perceptions of FSI timing, found somewhat mixed results. Rosenthal, Burklow, Lewis, Succop, and Biro (1997) and Cotton, Mills, Succop, Biro, and Rosenthal (2004) found a heavy majority of their participants to report that they were “too young” (85% and 78%, respectively), while Wight and colleagues found more conservative numbers of 30% of respondents feeling they were “too young”. In each of these studies few to no participants reported being “too old” during FSI. Other authors have attempted to measure feelings of pressure and regret/guilt regarding the FSI experience. Mitchell and Wellings (1998) examined how communication plays a role in FSI experiences and found that a lot of FSI communication was non-verbal. Wight and colleagues (2008) found that the majority of youth (81%) reported not feeling any pressure at FSI; however, these authors and Moore and Davidson (1997) also found low to moderate levels of sexual regret/guilt (30% and 60%, respectively).

Overall, the findings among these descriptive studies began by suggesting that individuals primarily experienced either positive or negative responses, giving support to the belief that individuals’ can be separated into these two polarities of experience. However, these conclusions were based on dichotomous responding, and when researchers allowed individuals to rate their degree of emotional experience, a more varied picture was shown. These results found that individuals report both positive and

negative emotional responses, suggesting a more complex response to FSI than previously thought.

Studies Examining Gender Differences

Fourteen studies were found to have major findings centering on gender differences. Table 2.2 presents the major findings from these studies. The majority of these studies concluded that males and females typically have divergent responses to their sexual initiation. Christensen and Carpenter (1962) were the first to find evidence that the majority of males held positive responses to FSI, while the majority of females held negative responses. This finding has been supported by subsequent research (Bettor, 1990; Christensen & Carpenter, 1962; Christensen & Gregg, 1970; Christensen & Johnson, 1978; Darling et al., 1992; Guggino & Ponzetti, 1997; Holland et al., 2000; Koch, 1988; Sawyer & Smith, 1996; Smiler et al., 2005; Sprecher et al., 1995; Wight et al., 2000; Wight et al., 2008; Woody, D'Souza, & Russel, 2003). However, this finding was only present for their U.S. sample (see *Studies Examining Cultural Differences* below for more information). Along these lines Koch (1988) found that a third of females reported that their FSI event was a disappointment or disaster. However, more recent studies suggest that despite being less likely than males to report positive emotions, females are still more likely to report positive rather than negative emotional responses (Smiler et al., 2005). The issue may be further complicated by the possible responses open to the participants to evaluate; for example, Sawyer and Smith (1996) found that while males reported more physical satisfaction compared to males there was no gender difference in regard to emotional satisfaction. It has also been suggested that

females may simply be more likely to report all feelings in response to FSI compared to males (Guggino & Ponzetti, 1997). A further example of the complicated nature of gender differences is that some studies report gender differences of individual emotions, while others report factor component scores. For example, while other studies examined anxiety as a possible emotional response, Sprecher and colleagues (1995) examined this variable separately and found that males actually reported experiencing more anxiety than females. Factor structure as well may be playing a role in some of the gender discrepancies. Guggino and Ponzetti (1997) conducted EFAs separately for each sex across 12 emotion responses and found that males' responses were captured by four factors, while females only necessitated three factors. This suggested that males were more likely to differentiate feelings of romance from feelings of pleasure, compared to women.

In regard to timing of FSI, Dickson and colleagues (1998) found that females were three times as likely to feel that they should have waited longer before engaging in FSI compared to males. Further, these authors found that 11% of males, compared to 1% of females, felt they "should not have waited so long." Wight and colleagues (2000) also found evidence to suggest that females are more likely than males to feel their FSI should have never happened.

When examining factors that led to positive FSI emotional responses, researchers have also found that these factors differ between genders. Smiler and colleagues (2005) found that for females positive responses were associated with: planning of FSI, longer relationships with FSI partner, use of contraception during FSI, having heard positive

Table 2.2. Major Findings among Studies Examining Gender Differences

Author/Year	Major Findings
Christensen & Carpenter 1962	More males than females selected pleasant responses to describe their FSI experience in the U.S. sample, but no gender differences were present in the Danish sample.
Christensen & Gregg 1970	Females experienced more pressure to have FSI, and more guilt or remorse, compared to males.
Christensen & Johnson 1978	More than half of all U.S. males had positive feelings while more than half of U.S. females indicated negative feelings. A larger divergence between males and females existed for the southern Black participants. In Swedish sample, both males and females had higher positive feelings.
Koch 1988	FSI experiences were more negative for females than for males. 1/3 of females regarded FSI as a disappointment or disaster.
Bettor 1990	Males FSI experience was found to have a greater influence on their later love and sex attitudes than females. Females more likely to express sexual guilt. Males with positive response to FSI more likely to report increases in sexual knowledge and sexual self-esteem. Females with negative response to FSI more likely to report guilt, need for therapy, promiscuous sexual attitude, sexual dysfunction, and future abusive relationships.
Darling et al. 1992	Females experienced feelings of guilt more often than males. More males perceived FSI as both more physiologically and psychologically satisfying.
Sprecher et al. 1995	Males reported experiencing more pleasure and anxiety than females. Females experienced more guilt than males.
Sawyer & Smith 1996	Males reported greater physical satisfaction during FSI, compared to females. No differences existed between genders on emotional satisfaction. Men were more likely to describe FSI with a positive word, compared to females.
Guggino & Ponzetti 1997	Males reported they were more satisfied with FSI experience than females. Females were more likely to report feeling most of the 12 emotions, compared to males. For males pleasure and romance were distinct factors, while females only had one factor. Fear of being discovered led to anxiety for both sexes, but also to guilt and pleasure/romance for females. Pressure was related to stronger emotional responses of all type for females. Sexual satisfaction increased emotional responses for both sexes.
Dickson et al. 1998	16% of males and 54% of females reported they “should have waited longer before having sex with anyone”. 11% of males and 1% of females reported that they “should not have waited so long”.
Holland et al. 2000	Found that FSI is experienced differently for males and females. Females are more likely to be ambivalent towards FSI and responses usually concern managing loss. For males FSI is more likely to be empowering and lead to identity formation.
Wight et al. 2000	13% of females and 5% of males said it should not have occurred at all. For males, feeling they had exerted pressure on their FSI partner was associated with greater regret. For females feeling pressured, exerting pressure on their FSI partner, not having planned for FSI, and high parental monitoring was associated with greater regret.

Table 2.2 Continued

Author/Year	Major Findings
Woody et al. 2003	Males experienced a greater degree of positive emotional response to FSI.
Smiler et al. 2005	<p>For females, positive and loving descriptions of their FSI were more common than negative experiences. For males, feelings about FSI were more positive, empowered, and loving than they were negative. Males were more likely to report positive responses toward FSI than females.</p> <p>More positive responses in females were associated with planning of FSI, longer relationships with FSI partner, use of contraception during FSI, having heard positive parental messages regarding sexual behavior, holding more non-traditional gender roles, and having satisfaction with body image.</p> <p>More positive responses in males were associated with use of contraception during FSI and longer relationship with FSI partner, holding more masculine and traditional gender traits, and having greater satisfaction with physical attractiveness and upper body strength.</p>
Wight et al. 2008	Females reported more feelings of pressure and regret toward FSI, compared to males.
Martino et al. 2009	Exposure to sexual content on television was associated with FSI regret for males, but not for females. FSI regret was also related to older age at FSI for males only.

parental messages regarding sexual behavior, holding more non-traditional gender roles, and having satisfaction with body image. For males, these factors differed and positive responses were associated with: use of contraception during FSI and longer relationship with FSI partner, holding more masculine and traditional gender traits, and having greater satisfaction with physical attractiveness and upper body strength. Wight and colleagues (2000) found that males who exerted pressure on their FSI partner was related to later regret, while for females later regret was associated with feeling pressured, exerting pressure on their FSI partner, not having planned for FSI, and high parental monitoring during the time of FSI. Finally, Martino and colleagues (2009) found that exposure to sexual content on television was related to FSI regret for males only. These authors also found a positive correlation between age and FSI regret for males only, such that those youth with older ages at FSI held greater regret.

Bettor (1990) examined how gender impacts the relationship between FSI emotional responses and later sexual outcomes. She found that the FSI experience of males was more predictive of later love and sexual attitudes compared to females. She also found that Males with a positive FSI response stated that this event increased their sexual knowledge and self-esteem. On the other hand, females who reported a more negative FSI response reported that they felt it led them to have later guilt, need for therapy, a more promiscuous attitude, sexual dysfunction, and future abusive relationships.

Of these studies examining the effects of gender, it was unanimously found that gender differences exist among U.S., and similar cultural group, samples, suggesting that

males typically experience a more positive and satisfying response to FSI, while females experience a more negative experience. Further, gender appears to be playing a role in the factors leading to these responses, and the effects these responses have on later mental, physical, and sexual health. These findings may provide support for the existence of a sexual double standard existing between genders in U.S. culture (e.g., Gentry, 1998); where males are given more freedom and support to explore their sexual behavior than females.

Studies Examining Cultural Differences

Beyond simply gender, four studies examined cultural differences in FSI emotional context by exploring differences among country of origin and degree of sexual restriction between groups. The major findings of these studies are presented in Table 2.3. Christensen and Carpenter (1962) examined differences between university students from Denmark, Midwestern U.S., and an Intermountain region of the U.S. The authors suggested that these three groups differed in their degree of sexual restriction from permissive (Denmark) to highly restrictive (Midwestern United States, due to its high number of individuals from the Mormon religion). Their findings suggested that the permissive cultural group had higher rates of voluntary FSI and reported more pleasant FSI responses compared to the other cultures. Further, while these authors found gender differences in FSI response for the U.S. samples, they did not find a gender difference for the Denmark sample, suggesting that gender may play less of a role in sexual response for permissive cultures. This finding was supported by

Table 2.3. Major Findings among Studies Examining Cultural Differences

Author/Year	Major Findings
Christensen & Carpenter 1962	The Danish sample had the highest rates of voluntary FSI, compared to the U.S. groups. A majority of the Danish sample, while only a minority of the U.S. groups reported pleasant responses after FSI. More males than females selected pleasant responses to describe their FSI experience in the U.S. sample, but no gender differences were present in the Danish sample.
Christensen & Gregg 1970	Pressure at FSI and later regret was more likely in restrictive cultures, compared to permissive cultures, and was also more likely in 1958 than in 1968.
Christensen & Johnson 1978	More than half of all U.S. males had positive feelings while more than half of U.S. females indicated negative feelings. A larger divergence between males and females existed for the southern Black participants. In Swedish sample, both males and females had higher positive feelings.
Schwartz 1993	Compared to the Swedish females, U.S. females expressed significantly more negative emotion. No significant differences were found between the groups on any of the positive emotional response items.

subsequent research (Christensen & Johnson, 1978). Christensen and Greg (1970) expanded on these findings showing how cultural groups with more sexually restrictive norms were also more likely to feel pressure and regret in response to FSI, a finding which was also supported when examining changes in permissiveness over a ten year span. While these studies suggest that cultural differences exist among these groups, Schwartz (1993) found evidence to suggest that these groups may only differ on some FSI responses. He examined female participants from Sweden and the U.S. and found that while these groups differed in regard to negative emotion responses, with greater negative responses among the U.S. females, these groups did not differ on positive emotion responses. Overall, these results suggest that culture is an important element to examine when exploring the FSI experience, and that these cultural differences are likely due to varying degrees of sexual restriction among the norms of each culture.

Studies Predicting FSI Emotional Context

Thirteen studies were found which attempted to predict emotional response by examining factors related to the individual at the time of FSI. Table 2.4 presents the major findings from these studies. Weis (1983) was the first to examine this and found a relationship for female participants between positive FSI emotion responses and older age at FSI, more stable and loving relationship with the FSI partner, rehearsal of sexual activities, obtaining an orgasm/sexual satisfaction during FSI, low levels of pain, having FSI partner who was aware that the experience was the individual FSI experience, having FSI in a safe environment, and not using alcohol or drugs, and more liberal sexual attitude. These findings have been supported by subsequent research (Cotton et

al., 2004; Martino et al., 2009; Moore & Davidson, 1997; Smiler et al., 2005; Wight et al., 2008). While Weis found that age at FSI was related to an individual's response, Sawyer and Smith (1996) found that feelings of immaturity and not being emotionally ready were also related to negative FSI responses. Rosenthal and colleagues (1997) suggested that these feelings of emotional unreadiness are related to not understanding risks of pregnancy and/or STIs, poor judgment and decision making, lack of information about sex, pressure from partner and/or peers, and previous history of rape or sexual abuse. This feeling of pressure being related to negative FSI responses was supported by subsequent research (Wight et al., 2000; Wight et al., 2008). However, Guggino and Ponzetti (1997) found that pressure was also related to more positive FSI responses as well for females. This finding along with their finding that females also experienced greater pleasure and romance when they had a fear of being discovered during FSI, suggests that some anxiety may actually increase sexual satisfaction among females. Other variables related to the individual FSI event have been found to be related to more positive FSI responses, including positive emotions prior to engaging in FSI (Woody et al., 2003), using a contraceptive (Smiler et al., 2005), holding non-traditional gender roles for females and traditional gender roles for males, greater body image satisfaction (Smiler et al., 2005), being less religious (Martino et al., 2009; Wight et al., 2008), ability to communicate about sex with FSI partner (Wight et al., 2008), and less exposure to sexual content on television (Martino et al., 2009).

Table 2.4. Major Findings among Studies Predicting Emotional Context

Author/Year	Major Findings
Weis 1983	Older age at FSI, more stable and loving relationship with the FSI partner, rehearsal of sexual activities, obtaining an orgasm during FSI, low levels of pain, having FSI partner who was aware aware that the experience was the individual FSI experience, having FSI in a safe environment, and not using alcohol or drugs, and more liberal sexual attitude are all related to more positive FSI emotion responses among female participants.
Sawyer & Smith 1996	Of those reporting negative experiences feelings of immaturity, not being ready, and being too young were listed as the most common reason for their negative experience.
Guggino & Ponzetti 1997	Fear of being discovered led to anxiety for both sexes, but also to guilt and pleasure/romance for females. Pressure was related to stronger emotional responses of all type for females. Sexual satisfaction increased emotional responses for both sexes.
Moore & Davidson 1997	Greater guilt was associated with a more casual FSI partner, younger age at FSI, use of alcohol at FSI, family dysfunction, and lack of psychological sexual satisfaction and comfort.
Rosenthal et al. 1997	Participants stated they were “too young” because they couldn’t appreciate risk of pregnancy and/or STI, poor judgment and decision making, lack of information about sex, pressure from partner and/or peers, and previous history of rape or sexual abuse.
Dickson et al. 1998	Being “curious about what it would be like” was the most common reason for both sexes to engage in FSI.
Wight et al. 2000	For males, feeling they had exerted pressure on their FSI partner was associated with greater regret. For females feeling pressured, exerting pressure, not having planned for FSI, and high parental monitoring was associated with greater regret.
Woody et al. 2003	Prior emotions and gender were most predictive of emotional responses after FSI.
Cotton et al. 2004	Factors related to having “just right” time of FSI were younger current age, older age at FSI, being “in love” at FSI, greater indirect parental monitoring, higher level of education for mothers.
Smiler et al. 2005	More positive responses in females were associated with planning of FSI, longer relationships with FSI partner, use of contraception during FSI, having heard positive parental messages regarding sexual behavior, holding more non-traditional gender roles, and having satisfaction with body image. More positive responses in males were also associated with use of contraception during FSI and longer relationship with FSI partner, holding more masculine and traditional gender traits, and having greater body satisfaction.

Table 2.4 Continued

Author/Year	Major Findings
Wight et al. 2008	<p>Experiencing pressure at FSI was related to being female, older (currently), 13 or younger at FSI, and having an older FSI partner, after controlling for circumstantial variables related to FSI.</p> <p>Experiencing regret toward FSI was related to being female, religious, 13 or younger at FSI, not living with both parents, not planning on having FSI, being drunk or stoned, and feeling pressure from partner, after controlling for circumstantial variables related to FSI. Youth anticipating easy partner communication about sex, and those that had a steady boy/girlfriend had reduced levels of FSI regret.</p>
Skinner et al. 2008	<p>Six themes were found in the data: a) “See what the big deal is,” stemming from curiosity; b) “everyone else was doing it,” stemming from perceived peer norms; c) “sex will help me grow up,” stemming from desires to establish identity; d) “when you’re drunk you just do it,” stemming from substance use excusing their regretted initiation; e) “I was ready for sex,” stemming from feelings of emotional readiness; finally, f) “I did it to keep him happy,” stemming from feelings of pressure from FSI partner.</p>
Martino et al. 2009	<p>Exposure to sexual content on television was associated with FSI regret for males, but not for females. FSI regret was also related to termination of the FSI relationship prior to survey, not having mainly older friends, viewing religion as important to them, not intending to have sex, and older age at FSI (for males only).</p>

Parent and family related variables have also been examined. Moore and Davidson (1997) found that youth who came from dysfunctional families were more likely to report feelings of guilt toward FSI, compared to individuals from non-dysfunctional families. This finding was also supported by Wight and colleagues (2008) who found that youth from intact families had more positive FSI response, compared to those from single parent families. Wight and colleagues (2000) also found that youth who had a high degree of parental monitoring had greater FSI regret than those youth with lower levels of monitoring. Cotton and colleagues (2004) suggested that indirect parental monitoring may be more beneficial for youth, as those with higher levels of this type of monitoring were more likely to report their FSI timing was “just right”. Parental socialization toward healthy sexual behavior may also be beneficial as Smiler and colleagues (2005) found that female youth who heard positive parental messages held more positive FSI responses than did youth who did not hear these messages.

Skinner and colleagues (2008) examined the reasons individuals initiate sexual behavior and found six themes were expressed during qualitative interviews with female participants. These authors found that a) curiosity led to a desire to “see what the big deal is”, b) perceived peer norms led to a belief that “everyone else was doing it”, c) identity exploration led to “sex will help me grow up”, d) substance use led to “when you’re drunk you just do it”, e) emotional readiness led to “I was ready for sex”, and f) pressure from FSI partner led to “I did it to keep him happy”. The themes of curiosity and identity exploration have been supported by others (Dickson et al., 1998; Sawyer & Smith, 1996).

In line with Skinner and colleagues (2008) study, common themes were also found among these studies suggesting that several situational criteria are likely to be predictive of an individual's FSI response. The most common elements among these studies were the degree of planning for the FSI event, emotional readiness for FSI to occur, parent/family factors, and perceived peer norms/pressure.

Studies Predicting Later Sexual Health and Behavior

Finally, four studies were found which examined the relationship between FSI response and later sexual health and behaviors. Table 2.5 presents the findings from these studies. Bettor (1990) found that FSI response was related to later love and sex attitudes, sexual knowledge, and sexual self-esteem. She found that females who experienced a negative response reported greater guilt, held more promiscuous sexual attitudes, were more likely to report sexual dysfunction, and abusive relationships subsequent to FSI. Some females also reported that they required several years of therapy to recover from their experience. For males, Bettor found that those with positive responses had greater sexual knowledge and higher sexual self-esteem. Koch (1988) supported Bettor's finding that negative FSI responses led to sexual dysfunction, but found this relationship for both sexes. Moore and Davidson (1997) found that guilt toward FSI was related to greater numbers of lifetime sexual partners. Finally, Else-Quest and colleagues (2005) found that FSI context was a greater predictor of later sexual outcomes than was age at FSI. These authors found that youth who had a negative FSI context (as evidenced through the event being forced, with a blood relative, paid for, pressured by peers or with alcohol or drugs, victim of CSA, and/or for females

Table 2.5. Major Findings among Studies Predicting Later Sexual Health and Behavior

Author/Year	Major Findings
Bettor 1990	Males FSI experience more influential on later love and sex attitudes than females. Males with positive response to FSI more likely to report increases in sexual knowledge and sexual self-esteem. Females with negative response to FSI more likely to report guilt, need for therapy, promiscuous sexual attitude, sexual dysfunction, and future abusive relationships.
Koch 1988	Males and Females who had reported negative responses to FSI were more likely to experience later sexual dysfunction.
Moore & Davidson 1997	Greater guilt was associated with greater number of future sexual partners, greater current sexual guilt, and more likely to experience physiological and psychological sexual dissatisfaction.
Else-Quest et al. 2005	FSI context was a greater predictor of outcomes than age or relationship type at the time of FSI. Negative FSI context was related to several negative adult outcomes including greater sexual dysfunction, greater sexual guilt, poorer health, more STIs, and less life satisfaction.

only, partner was a stranger, just met, or not known well) were more likely to report sexual dysfunction, sexual guilt, poor health, STI diagnosis, and low life satisfaction.

While several studies examined factors leading to FSI response, only four examined how FSI response predicts later mental, physical, and/or sexual health. The consensus of this limited research, however, suggests that negative FSI responses can have a lasting negative effect on each of these health outcomes. Further, the importance of examining FSI response was established by Else-Quest and colleagues (2005) when they showed that FSI context was more predictive of these outcomes than was age at FSI alone.

Measurement of FSI

While several studies have examined this construct, the methodology of such examinations is varied. Such measures of the FSI emotional context have varied in the nature of how emotional context is operationalized, the time point which is examined, and the participants who were examined.

Operationalization of FSI Emotional Response

Regarding the nature of questioning, studies have examined this context through qualitative interviews, as one or a few item measures, by examining the situational context in which the FSI experience occurred, through a series of possible dichotomous emotions, and/or by examining a series of semantic differential responses to the FSI experience.

Qualitative Interviews. While researchers did not use qualitative interviewing when initially studying FSI response, it can be seen as a good foundation for this field of

Table 2.6. Studies Examining FSI Response through Qualitative Interviewing

Author/Year	FSI Measurement	Time Point of FSI Measurement	Sample
Bettor 1990	Qualitative component where participants discussed their FSI response and perceptions of how it has affected current sexual experiences	Both time points	166 youth aged 22 years or less, with no report of ethnicity or sexual orientation
Thompson 1990	Qualitative interviews discussing participants' FSI experience	Both time points	400 adolescent females, including mixed ethnicity (70% white) and both hetero and homosexual participants
Mitchell & Wellings 1998	Qualitative interviews discussing participants' FSI experience	Both time points	29 participants aged 16-29, including mixed sexual orientation, with no report of ethnic group membership
Holland et al. 2000	Qualitative descriptions of participants' FSI experiences	Both time points	Participants are from the <i>Women, Risk and AIDS Project</i> and the <i>Men, Risk and AIDS Project</i> No information was provided on participant demographics
Skinner et al. 2008	Qualitative interviews discussing participants' FSI experience	Both time points	68 females aged 14-19, including mixed ethnicity (68% white), with no report of sexual orientation

Note. Both time points = examining both retrospective and current FSI emotional response

study as it has provided a deep picture of some individuals' experiences. Five studies were found which utilized qualitative methods. Bettor (1990) used qualitative interviewing as a follow up to a series of questions assessing the situational context of the FSI experience. During the qualitative questioning, Bettor asked participants to rate their FSI experience in their own words, the context in which it occurred, and how they feel it has affected their later sexual experiences. Thompson (1990) used individual's stories to depict the major themes of how individuals describe their sexual initiation, which she referred to as "same stories". A similar process was also completed by Skinner and colleagues (2008). Mitchell and Wellings (1998) used qualitative interviewing to examine the role of communication in sexual initiation. Finally, Holland and colleagues (2000) asked participants to describe their FSI experience, focusing on what they called "narratives of loss and gain". See Table 2.6 for a full description of the measurement used by these studies.

Qualitative studies have provided a deep and rich picture of some individuals' feelings toward the FSI event, how these feelings create meaning of the event, and some of the factors leading up to and subsequent to the FSI experience. However, these studies are limited because of the relatively small number of individuals used, and by their lack of similarity across qualitative studies. In other words, each qualitative study stands alone, and is not fully supported by other studies because similar questions are not asked in each study.

One/Few Item Measures. Around the time that qualitative questioning was examining the FSI experience, several researchers began attempting to study this

experience using one or a few items. Such studies may be viewed better as proxy measures of the FSI experience as these one/few item studies do not give a broad picture of the experience. Ten studies were found which used this type of strategy in measuring FSI response. Koch (1988) used a single item asking participants to evaluate their FSI experience on a 6-point Likert-type scale from *a disaster* to *terrific/fantastic*. This type of questioning may force the individual to aggregate their complex emotional experience into a single, not terribly descriptive, adjective. Such a representation of the experience may be beneficial though as this total aggregated experience may be a realistic picture of the individual's subjective experience. Moore and Davidson (1997) examined guilt specifically and had participants rate how often they feel guilt about their FSI experience. Several researchers have also examined the individual item of perceived timing of sexual initiation, asking participants to rate whether they felt they were "too young", "too old", or "just right" when they engaged in the event (Cotton et al., 2004; Dickson, Paul, Herbison, & Silva, 1998; Rosenthal et al., 1997; Wight et al., 2000). Wight and colleagues (2008) examined feelings of pressure and regret at FSI. Martino and colleagues (2009) combined different questions which assessed perception of timing of the event, to examine what they labeled as regret toward FSI.

Other researchers examined more than a single emotional responses, including Christensen and Greg (1970) who asked respondents to indicate whether they felt pressure, guilt, or remorse during FSI using a dichotomous yes/no response. Darling, Davidson, and Passarello (1992) went somewhat more in depth by examining feelings of

Table 2.7. Studies Examining FSI Response through One or Few Items

Author/Year	FSI Measurement	Time Point of FSI Measurement	Sample
Christensen & Gregg 1970	Participants reported feeling pressure, guilt or remorse during FSI	Retrospective	1656 undergraduate students from universities in Denmark, the Midwestern U.S., and the Intermountain region of the U.S., with no report of ethnicity or sexual orientation
Koch 1988	Participants evaluated their FSI on a 6 point Likert-type scale from <i>a disaster</i> to <i>terrific/fantastic</i>	Not specified	412 unmarried heterosexual undergraduate students Mean age 20.7 (<i>SD</i> = 2.0), with mixed ethnicity (96% white)
Darling et al. 1992	Feelings of guilt and physiological and psychological sexual satisfaction during FSI	Retrospective	304 Never-married undergraduates Mean age females was 21.6 Mean age of males 21.4, with no report of ethnicity or sexual orientation
Moore & Davidson 1997	Examined the degree of guilt toward the FSI experience	Current responses	571 never-married female heterosexual undergraduate students, aged 18-23, with no report of ethnic group membership
Rosenthal et al. 1997	Perceived timing of FSI	Current responses	174 heterosexual female adolescents from an urban-based adolescent clinic (70 sexually experienced) Mean age of 14.5 (<i>SD</i> = 1.01), with mostly black (76%) participants
Dickson et al. 1998	Perceived timing of FSI	Current responses	1037 heterosexual youth age 18 (at time one of a three year study) with no report of ethnic group membership
Wight et al. 2000	Perceived timing and regret of FSI	Current responses	1,237 heterosexual youth aged 13 to 14 years, with no report of ethnic group membership
Cotton et al. 2004	Perceived timing of FSI	Current responses	174 adolescent females, aged 12 to 15 years (at time one of three year study), with mostly black (88%) participants and no report of sexual orientation
Wight et al. 2008	Quality of FSI was examined through feelings of pressure and regret	Both time points	11,625 heterosexual youth aged 13-14 years (at time one of a two year study) with mixed ethnicity (90% white)

Table 2.7 Continued

Author/Year	FSI Measurement	Time Point of FSI Measurement	Sample
Martino et al. 2009	Regret toward FSI was assessed by asking participants four questions assessing perceived timing of FSI	Current responses	981 sexually active heterosexual youth aged 12-17 (at time one of a three year study), of mixed ethnicity (73% white)

Note. Retrospective = how the individual felt during or right after FSI; Current = how the individual felt at the time of the study; Both time points = examining both retrospective and current FSI emotional response

guilt, physiological and psychological satisfaction during FSI, allowing participants to rate their degree of these emotions. The emotions examined in these studies are likely important in describing this experience; however, they may be too limiting for the individual, and neglect other complex emotions that may have existed. While these studies on their own fail to provide a complete understanding of the FSI experience, combined they do provide a limited picture of this complex phenomenon. However, having said this, the mix of measurement type across studies limits the ability to make comparison between them. Further, several studies use either dichotomous responses, or small Likert-type scales (four or fewer points) which limits the room for variability between individuals, and thus provides a more coarse view of the experience. See Table 2.7 for a full description of the measurement used by these studies.

One/few item measures have been beneficial not just due to individual studies, but because a combination of these results may provide a substantial understanding of the FSI event. Further, asking participants about single/few items of the FSI experience may force them to summarize their entire experience, which may be a useful portrait of their complex experience. However, with this being said, these items do not allow the individual to have a multi-dimensional response to their FSI, which may not allow individuals to express the full complexity of their experience.

Situational Context of FSI. While not only measuring emotional response, several authors have used descriptions of the situational context of the FSI experience to expand the knowledge of the FSI experience. As with the one/few item measures previously discussed, such categorizations of the experience can serve as proxy

Table 2.8. Studies Examining FSI Response through Situational Context of FSI

Author/Year	FSI Measurement	Time Point of FSI Measurement	Sample
Bettor 1990	10 items examining FSI experience	Retrospective	166 youth aged 22 years or less, with no report of ethnicity or sexual orientation
Sawyer & Smith 1996	19 questions assessed the situational and attitudinal context of FSI	Retrospective	332 undergraduate students Mean age was 21, with both heterosexual and homosexual participants of mixed ethnicity (76% white)
Else-Quest et al. 2005	Categorized participants as having a negative or positive FSI context based off several situation contexts related to FSI experience	Retrospective	3,432 adults aged 18 to 59, of mixed ethnicity (71% white) and no report of sexual orientation, obtained from the <i>National Health and Social Life Survey</i>

Note. Retrospective = how the individual felt during or right after FSI

measures of the individual's emotional experience as these authors either examined each item individually or categorized individuals as having a positive or negative response based on their scores. Three authors were found to use this method. Bettor (1990) began her study by examining ten items, measuring both the physical and emotional context in which the FSI occurred (e.g., age at FSI, length of FSI relationship, whether the FSI experience was satisfactory). Sawyer and Smith (1996) also examined FSI response using a series of situational and emotional contexts. These authors used 19 items to describe the event (e.g., relationship type, location, being "in love," pressure to have FSI, being at the "ideal" age for FSI). Else-Quest and colleagues (2005) expanded on this rationale by using several criteria to label an individual as having a negative or positive FSI context. These authors categorized individuals as having a negative FSI context if they: (a) were forced by their partner to have FSI, (b) had FSI with a blood relative, (c) had a partner pay them for FSI, (d) had a main motivation for FSI due to peer pressure or the influence of drugs or alcohol, and/or (e) were victims of childhood sexual abuse (CSA). Furthermore, for women only, the authors labeled FSI as negative if (f) the partner was a stranger, just met, or not known well. See Table 2.8 for a full description of the measurement used by these studies.

Examining the situational context in which FSI occurred may be beneficial because several aspects of *how* the FSI occurred are likely to affect the individual's emotional response to it. Categorizing these events as positive or negative based on these criteria may serve as a quick and objective method to understand the FSI experience. However, such methods also do not allow for individual difference in

response to these criteria, nor are they based on existing evidence that such events actually produce negative or positive responses. It may be that some individuals are more resilient than others and are thus not as affected by a “negative” situational context compared to others.

Dichotomous Emotion Lists. As with the previous measurement type, dichotomous questioning does not provide a rich picture of the FSI experience because it limits the variability among individual items. However, this was the first method researchers used to examine the FSI experience, and they were able to reduce this limitation by examining several emotional items. Three studies were found that used this type of measurement. Christensen and Carpenter (1962) was the first study found which examined FSI response. These authors asked participants to select responses, from a list of possible emotions, they remember feeling the day after their FSI experience. Twelve possible items were available for the participant to select, and participants were categorized as having either a pleasant (3 possible choices) or unpleasant (9 possible choices) response based on their selection. Conquest, disgust, and fear of religious punishment are examples of the included items. Christensen and Johnson (1978) also examined a similar list of 12 emotions, but included one possible neutral statement, three possible positive statements, and eight possible negative responses. Indifference, happiness, guilt, and fear of disease are examples of the included items. Woody and colleagues (2003) utilized a similar method of dichotomous questioning, including ten possible emotions. The response possibilities included by these authors consisted of six negative and four positive emotions. Sexually turned on,

Table 2.9. Studies Examining FSI Response through Dichotomous Questioning

Author/Year	FSI Measurement	Time Point of FSI Measurement	Sample
Christensen & Carpenter 1962	Participants reported if FSI was voluntary and also placed a check next to items that described how they felt about their FSI experience they day after it occurred (12 possible items to check) and were classified as having a pleasant or unpleasant response based on their selection	Retrospective	758 undergraduate students from universities in Denmark, the Midwestern United States, and the Intermountain region of the United States, with no report of ethnicity or sexual orientation
Christensen & Johnson 1978	Participants placed a check next to items that described how they felt about their FSI experience the day after it occurred (12 possible items to check)	Retrospective	1,976 youth from a Southern Black college, a Midwestern white university, and a Swedish university, of mixed ethnicity (73% white) and no report of sexual orientation
Woody et al. 2003	Participants placed a check next to items that described how they felt about their FSI experience the day after it occurred (10 possible items to check)	Retrospective	106 heterosexual youth aged 18-21 years, with mixed ethnicity (83% white)

Note. Retrospective = how the individual felt during or right after FSI

affectionate, scared, and revengeful are examples of the items included. See Table 2.9 for a full description of the measurement used by these studies.

Use of dichotomous responses to emotional responses may be positive in that these studies opened the door to the examination of several emotional items, and to the examination of FSI emotional response in general. However, the findings from these studies are limited as they did not allow participants to quantify any degree of emotional response. Thus, respondents may have been forced to select either *sadness* or *happiness*, for example, despite actually feeling varying degrees of both emotions.

Series of Semantic Differential Responses to FSI. Building off Christensen and colleagues' (1962; 1978) work researchers began to include more than simple dichotomous responses. These studies used similar lists of emotions, but allowed respondents to determine the strength of each emotion, not merely its presence. This method allows for variability in responses among items and may provide the most comprehensive picture of the FSI experience. An argument may be made that qualitative questioning is the broadest picture, but the studies utilizing a series of semantic differential responses utilize greater sample sizes and are more accessible for larger scale projects. Five studies were found to use this method. Weis (1983) was the pioneer of this method, providing the first list, consisting of eleven emotional responses to FSI. He instructed participants to rate each emotion using a 7-point Likert-type scale. Weis' emotion list consisted of four positive and seven negative emotions, including pleasure, nervousness, and sadness. This method allowed participants to not only identify the emotions they experience, and did not experience, but also to provide a

Table 2.10. Studies Examining FSI Response through a Series of Semantic Differential Responses to FSI

Author/Year	FSI Measurement	Time Point of FSI Measurement	Sample
Weis 1983	Participants evaluated their response to FSI across 12 emotions	Retrospective	130 heterosexual female undergraduate students aged 18 to 23, with mixed ethnicity (85% white)
Schwartz 1993	Participants evaluated their response to FSI across 13 emotions	Retrospective	217 U.S. and 186 Swedish female undergraduate students aged 18 to 25 years, with mixed ethnicity (85% white) and no report of sexual orientation
Sprecher et al. 1995	Participants evaluated their response to FSI across the 3 emotions identified as factors by Weis (1983)	Retrospective	1,659 heterosexual undergraduate students aged 17 years and older, with mixed ethnicity (85% white)
Guggino & Ponzetti 1997	Participants evaluated their response to FSI across the original 12 emotions of Weis (1983)	Retrospective	209 college aged participants of mixed ethnicity (85% white) and no report of sexual orientation Mean age females was 19.9 Mean age of males was 20.1
Smiler et al. 2005	Participants evaluated their response to FSI across 21 emotions	Not specified	335 undergraduate students who reported consensual coital experience and identified as “predominantly” or “exclusively” heterosexual, of mixed ethnicity (68% white) Aged 13-23 ($M = 17.4$)

Note. Retrospective = how the individual felt during or right after FSI

description of the strength of that emotional response. From this emotion list Weis was able to explore the factor structure, ascertaining three emotional factors to explain the FSI experience: Guilt, Anxiety, and Pleasure. Weis' work was later replicated and expanded on by several researchers. Schwartz (1993) expanded Weis' original list of eleven items to include 13 responses. Sprecher and colleagues (1995) used the three factor analyzed emotions that Weis found and asked participants to rate those three emotions. Guggino and Ponzetti (1997) included the original eleven emotions from Weis. Finally, Smiler and colleagues (2005) examined 21 emotions. While this work at measuring FSI emotional response is the most promising, it is not without limitation. First, the majority of these studies appeared to focus more on negative emotional responses, as the number of negative emotions outweighed the positive emotions. In addition, these studies were limited in the time point they examined and the participants who were studied. See Table 2.10 for a full description of the measurement used by these studies.

Use of a series of semantic differential responses with Likert-type scales may prove to be the most practical and useful methodology for understanding FSI emotional response. Such responses allow individuals to describe not only what emotions they experience, but also to what degree. While several studies utilized such a methodology these studies were limited by examining primarily negative emotions, using a single gender sample, and/or examining only retrospective feelings.

Time Point of FSI Measurement

Two different time periods have been examined when looking at the FSI response. Tables 2.6 through 2.10 include a description of the time point examined for each study. The most common time point was retrospective ($N = 12$) where researchers asked participants to look back at the time during and/or immediately after their FSI experience and then rate how they remember feeling at the time (Bettor, 1990; Christensen & Carpenter, 1962; Christensen & Gregg, 1970; Christensen & Johnson, 1978; Darling et al., 1992; Else-Quest et al., 2005; Guggino & Ponzetti, 1997; Sawyer & Smith, 1996; Schwartz, 1993; Sprecher et al., 1995; Weis, 1983; Woody et al., 2003). Other researchers ($N = 6$) asked participants to examine their current responses to the FSI event (Cotton et al., 2004; Dickson et al., 1998; Martino et al., 2009; Moore & Davidson, 1997; Rosenthal et al., 1997; Wight et al., 2000). Six studies examined both time points, which was especially prevalent in those using qualitative methods, as they asked participants to speak on their complete views of the FSI experience (Bettor, 1990; Holland et al., 2000; Mitchell & Welling, 1998; Skinner et al., 2008 Thompson, 1990; Wight et al., 2008). Two studies were unclear as to the time point they were having participants assess, but were likely examining the retrospective responses (Koch, 1988; Smiler et al., 2005).

While the time point examined may appear trivial at first glance, such a discrepancy may prove important to understand, especially considering these studies are requiring participants to recall emotional experiences. Robinson and Clore (2002) stated that “an emotional experience can neither be stored nor retrieved” (p. 935), suggesting

that we do not have emotional *memories* as we do for thoughts or actions. However, research has also shown that an individual's perceptions of an event may be more powerful and predictive than what actually occurred (e.g., Chassin, Presson, Rose, Sherman, Davis, & Gonzalez, 2005). Thus, even if the individual is biased in their accounting of their retrospective emotion it may be the case that this biased recollection still has an effect on their current functioning. Further, as mentioned previously, the FSI experience is typically a salient emotional experience that the individual is able to recall fairly well (Sawyer & Smith, 1996). As these emotions are complex, it may prove especially beneficial to pay attention to both time points to get a clear understanding of the FSI experience.

Participants Examined

A final major difference among studies which examined FSI emotional response is the sample in which the study investigated. Several studies examined only female participants ($N = 7$; Cotton et al., 2004; Moore & Davidson, 1997; Rosenthal et al., 1997; Schwartz, 1993; Skinner et al., 2008; Thompson, 1990; Weis, 1983), and no study solely examined males. Some studies examined adolescent participants ($N = 8$; Cotton et al., 2004; Dickson et al., 1998; Martino et al., 2009; Rosenthal et al., 1997; Skinner et al., 2008; Thompson, 1990; Wight et al., 2000; Wight et al., 2008), and one study examined an adult sample (Else-Quest et al., 2005). One study examined a mixed age sample (Mitchell & Wellings, 1998), one study did not report participant information (Holland et al., 2000). The remaining studies examined college aged youth ($N = 14$).

Studies also differed on ethnic group membership and sexual orientation of participants. The majority of studies included mixed ethnic groups, dominated by white participants ($N = 14$; Christensen & Johnson, 1978; Koch, 1988; Else-Quest et al., 2005; Guggino & Ponzetti, 1997; Martino et al., 2009; Sawyer & Smith, 1996; Schwartz, 1993; Skinner et al., 2008; Smiler et al., 2005; Sprecher et al., 1995; Thompson, 1990; Weis, 1983; Wight et al., 2008; Woody et al., 2003) with a range of 68% to 96% white participants across these studies. Two studies examined mixed ethnic groups with primarily Black respondents (Cotton et al., 2004; Rosenthal et al., 1997). The remaining nine studies did not report statistics on ethnic group membership. Few studies reported examining both heterosexual and homosexual individuals ($N = 3$; Thompson, 1990; Mitchell & Wellings, 1998; Sawyer & Smith, 1996). Many only examined heterosexual individuals, or those only reporting about heterosexual experiences (i.e., penile-vaginal penetration; $N = 11$; Dickson et al., 1998; Koch, 1988; Martino et al., 2009; Moore & Davidson, 1997; Rosenthal et al., 1997; Smiler et al., 2005; Sprecher et al., 1995; Weis, 1983; Wight et al., 2000; Wight et al., 2008; Woody et al., 2003). The remaining eleven studies did not report statistics on sexual orientation.

These discrepancies are important to note because they may induce biases in reporting. For instance, studies which only examine a single gender sample are unlikely to generalize to male participants, furthermore the study findings and measurement strategies may not operate the same for mixed gender samples. Additionally, different ages may prove to hold different results. For example, studies examining an adolescent sample may produce more accurate findings as these participants do not have to think

back as far to recall their sexual initiation as older participants may. However, it may also be the case that these adolescent samples may not be as representative as older aged participant samples, as participants were excluded from these studies if they had not yet initiated sexual behavior, leaving out youth who initiate coitus after their adolescent years.

Summary, Limitations of Previous Studies, and Suggestions for Future Research

The current review attempted to detail the literature on FSI emotional response with a specific concentration on the focus, results, and methodology of previous research. It was found that studies differed on their focus or purpose, with five major types: a) describe the FSI emotional experience, b) examine gender differences in responses, c) examine cultural group differences among responses, d) predict emotional responses given situational criterion, and e) predict outcomes given an emotional response. These major research findings can be summarized as follows:

- 1) FSI emotional response can be viewed as both positive and negative by an individual.
- 2) Gender differences exist among FSI emotional responses for U.S. and related cultures, such that males are more likely to view their experiences as positive, and females are more likely to view their experiences as negative.
- 3) Cultural differences exist among FSI emotional response with more sexually restrictive cultures having increased numbers of individuals experiencing mostly negative FSI responses.

- 4) FSI emotional response is influenced by the degree of planning for the FSI event, emotional readiness for FSI to occur, parent/family factors, and perceived peer norms/pressure.
- 5) How an individual responds to their FSI can predict their later mental, physical, and/or sexual health, such that those who had a more negative emotional response are more likely to have negative future outcomes, compared to those who had more positive responses.

The current review of the literature was found to be limited by the methodological differences that exist between studies. This may not allow for direct and reliable comparison between studies. As shown in this review, studies differed on how FSI emotional response was measured, when it was measured, and the samples which it was measured upon. These studies also differed in the analytic strategies used in quantifying their research findings. It was noted how FSI emotional response has been measured qualitatively, with one/few item measures, through the situational context of FSI, with several dichotomous emotional response items, and through a series of semantic differential responses. While some of these methods may provide richer and more meaningful pictures of individual experience, it is likely that each has provided a contribution to the literature base. The limitations of each methodology can be summarized as follows:

- 1) Qualitative studies examined small sample sizes and lack substantial structure to compare with other qualitative studies.

- 2) One/few item measures deny the ability for the individual to express multiple responses to their FSI which may be comprised of both positive and negative responses.
- 3) Situational context does not allow for individual resiliency, and instead relies on unfounded generalizations of what negative contexts are.
- 4) Dichotomous emotion lists do not allow for quantification of how much of each emotion an individual experienced, and may lose important information when comparing individuals.
- 5) A series of semantic differential responses is likely the best option; however, most studies examined primarily negative retrospective emotions among females, and may be missing important information.

As stated, studies differed on the time point in which they examined. Most studies examined retrospective feelings, while some examined current or both time points. No studies which used a series of semantic differential responses with Likert-type responses included both time points. It may be that individuals are able to make a distinction between their feelings at these time points, with different responses at each time point. However, individuals may also respond to each time point equally; thus, a measure including both time points is needed to clarify these points.

Examining participants used among the studies, it was found that the majority of studies utilized a female college sample. However, several studies went beyond this to examine both genders, as well as adolescents and adults. It may be important to clarify and dissect research findings more carefully given that gender differences have been

found to be prevalent and important when examining FSI. Further, the length of time between the FSI event and when the individual is asked to recall their feelings may affect an individual's accuracy of reporting the meaning given to FSI. Further, it was also found that the many studies examined predominately heterosexual and white participants, with many studies neglecting to provide this demographic information. It is important to understand how both culture and sexual orientation affects an individual's first sexual intercourse experience. Given the current literature, we may understand less about individuals from ethnic and sexual orientation minority groups, and thus more research should examine these groups and whether their experience differs from their majority group counterparts.

Finally, differences exist among these studies in regard to how the data is analyzed. It was not deemed important to provide rich detail about these varying methods as the focus of this review was on the measurement of FSI emotional response. However, understanding analytic strategy is important when comparing research findings of these studies. The strategies utilized by these authors ranged from simple correlational examinations (e.g., Bettor, 1990) to examination of the factor structures among items using exploratory factor analysis (EFA; e.g., Weis, 1983) to the use of discriminant analysis and canonical correlations (Schwartz, 1993). Such differing strategies make comparisons across studies difficult.

From these findings we can see the importance of examining FSI emotional response. It has been found that an individual's response to his/her FSI experience has the potential to lead to later negative mental, physical and sexual health outcomes, and

may be more predictive of these outcomes than factors that are traditionally examined in the literature such as age at FSI. However, despite the knowledge that has been gained from this past research it is limited in several degrees. Primarily, the lack of methodological consistency does not allow for direct comparison between studies.

From this review it can be viewed that the literature would be stronger with greater consistency among studies. If a single measure of FSI response was created that minimized the limitations of previous measures it could be used in future research to better understand what factors lead to and stem from an individual's FSI response. Based on this review, such a measure should be created utilizing a series of semantic differential responses with Likert-type scales, which has been shown to provide the most substantial picture of an individual's FSI response. However, this measure should include more positive emotional responses and ask participants to report their emotions both retrospectively and currently. Finally, the measure should be validated on a mixed gender sample of participants to ensure that it can be used with both groups.

CHAPTER III
DEVELOPMENT AND VALIDATION OF A MEASURE OF EMOTIONAL
RESPONSE TO FIRST SEXUAL INTERCOURSE: EXAMINING RETROSPECTIVE
FEELINGS *LOOKING BACK* AND *RIGHT NOW*

It has been stated by researchers that the transition to sexual behavior signifies an important developmental milestone (Else-Quest et al., 2005; Koch, 1988). This step has been described as indicating a desire to take on increased autonomy and responsibility (Jessor & Jessor, 1975), an attempt to create a unique identity (Clark et al., 2004), and a sign of entering adulthood (Ku et al., 1993). Although this transition can be seen as a positive developmental step, it is not without consequences, and requires that the individual must be ready to make crucial decisions (Baumrind & Moselle, 1985; Reiss 1967). This transition also comes with the onset of risks associated with both unwanted pregnancy and sexually transmitted infections (STIs), including HIV/AIDS.

As youth enter sexual maturity at younger ages, the time period between the point when an individual is physically able to engage in sexual intercourse and when youth marry is increasing (Duke et al., 1980; Miller & Heaton, 1991). This has been attributed as one of the potential factors explaining increases in teenage sexual intercourse over the last few decades (e.g., Abma et al., 1997; Terry & Manlove 2000). With many youth engaging in FSI prior to graduating high school (Eaton et al., 2008), STIs on the rise (Centers for Disease Control and Prevention [CDC], 2008a), and teenage pregnancy at a high rate (Martin et al., 2009), it is not surprising that many

researchers have attempted to establish an association between age at FSI and later young adult sexual outcomes (e.g., Baldwin & Baldwin, 1988; Koyle et al., 1989; Resnick et al., 1997; Miller & Heaton, 1991). However, age at FSI may only be showing a limited picture of this complex developmental transition. Research has found evidence to suggest that how the FSI event occurs and the subsequent response the individual has toward FSI may be more powerful at explaining later sexual outcomes than the age in which the event occurred (e.g., Else-Quest et al., 2005).

Researchers have attempted to expand the understanding of these statistics by looking beyond age at FSI, examining the context of the FSI experience through emotional responses toward it (e.g., Guggino & Ponzetti, 1997; Schwartz, 1993; Smiler et al., 2005; Sprecher et al., 1995; Weis, 1983). However, these studies are not without limitation and may not be effectively measuring this emotional response (see Chapter II for a full review). The current study examines a new measure of an individual's response toward his/her FSI experience by examining his/her retrospective attitudes toward the FSI as it occurred as well as his/her current feelings toward the event.

Emotional Response

It is typically believed that the FSI event is an important and memorable event in most people's lives (Harvey et al., 1986; Jessor et al., 1983). Sawyer and Smith (1996) asked participants to indicate how well they remembered their FSI on a 10-point Likert-type scale from 1= "not at all" to 10 = "vividly". On average, participants scored 7.8 ($SD = 2.3$), indicating a high salience of the event in the individuals memory. Symbolic interactionism (Blumer, 1969) posits that individuals ascribe some meaning of the FSI

experience prior to engaging in it. Whether positive, negative, or ambivalent, an initial meaning of the FSI experience is present in the individual prior toward the act itself, and this subjective value is a product of the interactions the individual has had in society and with individuals whom they deem important to them. Examples of such interactions include peer relationships and perceived peer norms for sexual behavior, family relationships, religious involvement, and general cultural involvement. Following the FSI experience, the individual will have some degree of dissonance between their meaning after and that which they originally ascribed prior to the event.

According to cognitive theory and appraisal-based models of emotions, emotions are created based on interpretations or appraisals of a physiologically arousing situation (Fox, 2008; Izard, 1977). Thus, depending on the individual's initial meaning of the event and their level of dissonance between prior and subsequent meanings of the event, an emotional response toward FSI is created. It has been stated that there is a distinction between state and trait emotions (Izard, 1977). As the emotional response to the FSI experience produces these state emotions, it is important to create a distinction between emotions at the time of the event and current emotions. However, there is currently a debate as to whether emotional experience itself can actually be remembered (e.g., Levine, Safer, & Lench, 2006; Robinson & Clore, 2002). Robinson and Clore (2002) state that "an emotional experience can neither be stored nor retrieved" (p. 935), which would invalidate the need for examining retrospective emotions at the time of the FSI experience. However, Levine and colleagues (2006) state that both implicit and explicit emotional memory can be retrieved if a similar event is experienced or a vivid memory

is recalled. As the FSI event is a salient event for most individuals, an emotional memory should be able to be invoked. Even if emotional memories can be made, it has been theorized that these memories are likely inaccurate and overestimate the intensity of past emotions (Safer and Keuler, 2002). However, Levine and colleagues (2006) state that these reconstructed memories may be more meaningful than the actual emotional experience as reconstructed memories incorporate new goals and values of the individual. Further, research has shown that individual's perception of events or actions may be more important than what actually occurred (e.g., Chassin et al., 2005), much like the adage "perception is reality". With this in mind, even biased accounts of how an individual remembers feeling about their FSI experience may be important as this biased reflection of how they felt is what they hold regarding this event, which will likely have an impact on their current functioning. Therefore, it seems the case that both reference points in time should be examined to determine if individuals report differing sets of emotions.

Researchers have typically found that gender differences exist among responses to FSI (e.g., Dickson et al., 1998; Sprecher et al., 1995; Wight et al., 2008). These studies suggest that females are more likely than males to hold negative responses of their FSI experience, including feelings of guilt, pressure, and that they should have waited longer to engage in FSI. However, Smiler and colleagues (2005) reported that females were more likely to rate positive responses to FSI than negative responses, suggesting that despite having more negative responses than males, females are still likely to hold positive responses overall. Further, while the majority of studies suggest

that for males the typical response involves positive feelings of pleasure and physical satisfaction (e.g., Sawyer & Smith, 1996; Woody et al., 2003) Sprecher and colleagues (1995) found that males were also more likely to report more feelings of anxiety than females. Further, examining cultural differences in FSI, Christensen and colleagues (Christensen & Carpenter, 1962; Christensen & Johnson, 1978) found that gender differences were only present in samples of more sexually restrictive societies such as the US. This information suggests that gender differences exist among responses to FSI, and that these differences may be more complex than typically reported. However, the current literature is also limited as many measures of FSI emotional response were constructed using only a female sample (e.g., Schwartz, 1993; Weis, 1983). While gender differences occur, these differences may be primarily in magnitude and not reflective of differences in how genders interpret or respond to the items. Similar emotion measures, though not examining the FSI experience, have been created using both genders (e.g., Izard, 1972; Nowlis, 1965; Zuckerman, 1960) suggesting the appropriateness of constructing such a measure to examine FSI emotional response among both genders.

Previous Measures of FSI Response

Weis (1983) was the first to attempt to describe the emotional response to FSI across a range of emotions, using a semantic differential. Previous versions of such work included short qualitative interviews, one/few item measures, by examining the situational context in which the FSI occurred, and/or through a series of possible dichotomous selections (see Chapter II for a full review). Weis examined the responses

of two hundred female undergraduate students asked to recall the degree that they felt each of 12 emotions during the time of their FSI, using a 7-point Likert-type scale. Weis identified three factors among responses using eleven of his 12 emotions: *pleasure*, *anxiety* and *guilt*. Subsequent to Weis' original study, researchers have attempted to expand the understanding of FSI response. Schwartz (1993) examined female undergraduate students from both US and Swedish samples using 13 emotions. Sprecher and colleagues (1995) examined the three emotions that Weis identified as factors among his results on a mixed gender undergraduate sample. Guggino and Ponzetti (1997) replicated Weis' study on a mixed gender sample of undergraduates. Finally, Smiler and colleagues (2005) examined 21 emotions among a mixed gender sample.

These studies are limited due to several factors. With the exception of Smiler and colleagues (2005), these studies used a small number of emotions, particularly positive emotions, with a range of one to six positive emotion items. This may artificially skew the results to reflect a greater degree of negative emotions, simply due to the smaller number of positive emotions. Secondly, among all studies, only a single reference point in time was examined, which relied on retrospective memories of how the individual felt at the time of their FSI. While it has been suggested that an individual's FSI is a salient experience in his/her memory, it may be that experiences subsequent to this event bias their recall of emotions. Thus, it may prove important to examine current responses to their FSI to examine differences in how individuals report these two reference points in time of information. Third, most studies examining mixed genders, examined the differences among these groups, instead of focusing on how to

explain both groups. It is important that a single measure is created that can be asked of both genders to be used in subsequent research examining factors related to FSI response. Finally, the statistical analyses of these studies were lacking in sophistication. While several utilized exploratory factor analysis (EFA), none cross-validated their interpreted factor scores utilizing confirmatory factor analysis (CFA). CFA serves to assess the stability and replicability of the factors across different samples. CFA ensures that each item loads onto the hypothesized factors and constrains the relationship between each item and non-target factors to zero (Brown, 2006). Further, CFA provides a greater amount of information regarding individual factor loadings and the overall quality of the measure, including the addition of factor loading error variances and model fit.

Current Study

The present study is an attempt to build off previous measures of FSI emotional response to reduce the limitations of these measures. As such, a new response format was not developed, but instead the basic semantic differential format initially used by Weis (1983) was expanded with additional items and measurement of two reference points in time. Two research questions were addressed: Can an individual's emotional response to FSI be adequately measured among a mixed gender sample? And, do differences exist in this response when an individual is asked to recall his/her emotions at the time of the event (*looking back*), as well as his/her current emotional response (*right now*)? The current study examined a mixed gender sample using a high number of positive and negative emotional responses ($n = 19$), two reference points in time of

measurement, and is tested through advanced psychometric analyses which both explore and confirm the structure of the emotion items, as well as test the equivalence of the two reference points of measurement.

As a result, four specific steps were used to respond to the research questions: (1) the factor structure of the retrospective *looking back* emotion items was examined to explore the nature of the data for a mixed gender sample. (2) This factor structure was cross-validated using structural equation modeling to confirm that the factor structure adequately represented the data. (3) The equivalence and validity of the discovered *looking back* factor structure with the current *right now* emotional response items was tested. (4) If the *looking back* and *right now* items did not contain equivalent factor structures, the factor structure of the *right now* items would be explored and confirmed as done in steps 2 and 3.

Methods

Participants

The current study was part of a larger project looking at the context of FSI and its effects on adolescent and young adult sexual functioning, and all participants completed the Davis First Coital Behavior Survey (D-FCBS). Participants were enrolled in two and four year universities and colleges throughout Texas. Recruitment was conducted from May through December 2008 and initiated by emails to faculty. Faculty who approved the study were asked to deliver an information sheet to their students which announced the web-based survey. Interested students logged onto the survey and completed it anonymously at their leisure. As an incentive for completing the survey, students had to

option to enter into a lottery drawing for one of four \$50 gift cards. Data was obtained from 672 participants, who were mostly female (81.7%, $N = 492$). The participants identified as being Hispanic or Latino (52.5%, $N = 310$), white (26.8%, $N = 158$), African American (11.4%, $N = 67$), Asian (2.2%, $N = 13$), or other/mixed ethnicity (7.1%, $N = 42$). The average age of participants was 21.16 years ($SD = 4.22$) ranging from 18 to 57 years (with only 7.6% of participants aged 26 and older). Most participants (89.9%, $N = 532$) were never married, and completed an average of 2.83 years of college ($SD = 1.78$).

Measures

FSI response was examined by asking participants to rate 19 items in regard to how they felt in response to his or her FSI experience. A critical review of the literature (see Chapter II) was used as a guide in the creation of the current measure. As physiological sensations are determinants of emotions (Izard, 1977), many measures of emotional response include physiological and behavioral indicators among items (Fox, 2008); thus these items were also included in the present measure. The list of emotions was primarily based on Weis' (1983) original list, with additional emotions added, focusing primarily on adding positive items. Further, Weis' original 7-point semantic differential scale was retained, where participants reported experiencing a high amount of the emotion to no amount of the emotion. Beyond previous measures of FSI emotional response, participants were asked to evaluate their response in two contexts. First participants were asked "*Looking back*, how much of the following emotions did you feel immediately after or during your first sexual intercourse experience?" Second,

participants were asked “*Right now*, how much of the following emotions do you feel about your first sexual intercourse experience?” As stated previously, measures of emotional response have been previously developed similar to the *looking back* question of the current study (Guggino & Ponzetti, 1997; Schwartz, 1993; Smiler et al., 2005; Sprecher et al., 1995; Weis, 1983).

Results

We began by examining the psychometric properties of the *looking back* FSI response variables using EFA and CFA. Conducting both an EFA and a CFA on a single sample can lead to bias in measurement (Thompson, 2004), therefore a random 50% split of the data was conducted to create separate samples of individuals for both procedures ($N_{EFA} = 337$; $N_{CFA} = 335$). To ensure the equality of the split halves, demographic and emotional response variables were compared between groups using independent samples *t*-tests or chi-square tests where appropriate.

Tables 3.1 and 3.2 show the means and standard deviations or frequencies and percents for demographic and *looking back* item variables. Group differences between the random samples of participants were first examined to ensure the groups were equal before analyses were conducted. Results show that no statistically significant group differences were found between the two randomly selected groups on the variables age, number of years in college, gender, sexual orientation, current dating/marriage status, or ethnicity. Examination of the 19 *looking back* items found one statistically significant group difference suggesting that the EFA sample had lower scores on physical satisfaction ($Mean = 3.86$, $SD = 2.04$) compared to the CFA sample ($Mean = 4.36$, $SD =$

2.08; $t [df = 405] = 2.47, p = .014$). Despite this finding, it was concluded that the groups were equivalent enough to allow subsequent model testing.

Exploratory Factor Analysis of *Looking Back* Variables

Table 3.3 shows the EFA factor loadings, h^2 communality statistics, and internal consistency alpha statistics for the *looking back* variables. The EFA of the *looking back* response variables was conducted to determine the underlying factor structure inherent in the data. The EFA was computed using SPSS v. 17 using principal axis factoring and oblimin rotation. Oblimin rotation was used to allow relationships to exist between factors, as it is hypothesized that these relationships are inherent in the data. The number of factors was determined using four criteria: 1) eigenvalues greater than one, 2) examination of the scree plot, 3) only interpretable factors were included, and 4) only items that made conceptual sense within their cluster were included. Three factors were suggested to adequately explain the relationships of the 19 items. The three proposed factors explained 58.03% of the total item variance. The cutoff value for the loading of the factors was set to .50 to produce strongly related factors. Factor 1 was composed of ten items and accounted for 39.12% of the total variance. These items were thought to measure *negative emotion* toward FSI. Factor 2 was composed of three items and accounted for 14.14% of the total variance. These items were thought to measure positive emotion toward FSI with an relational and romantic focus, and the factor was named *relational positive emotion*. Finally, Factor 3 was composed of five factors and accounted for 4.77% of the total variance. These items were also thought to measure positive emotion toward FSI but with a more societal and situational focus, and the

Table 3.1. Demographic Statistics for Both Random Split-Half Samples

Item	Exploratory Factor Analysis		Confirmatory Factor Analysis	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	21.16	4.46	21.16	3.96
Number years in college	2.88	1.82	2.78	1.74
	Freq.	%	Freq.	%
Female	254	84.1	238	79.3
Sexual Orientation				
Heterosexual	294	96.4	280	93.0
Homosexual	7	2.3	13	4.3
Bisexual	4	1.3	8	2.7
Current dating status				
Single	128	43.1	107	37.7
Casual relationship	29	9.4	29	10.2
Serious relationship	111	37.4	112	39.4
Cohabiting/Engaged	10	3.4	16	5.6
Married	20	6.7	20	7.0
Ethnicity				
Asian	6	2.0	7	2.4
African American	40	13.4	27	9.2
Hispanic	141	47.3	169	57.9
White	89	29.9	69	23.6
Mixed or Other	22	7.4	20	6.9

Note. Group differences were examined using independent sample *t*-test or chi-square where appropriate. No statistically significant group differences were found.

Table 3.2. Descriptive Statistics for Both Random Split-Half Samples of the *Looking**Back Variables*

Item	Exploratory Factor Analysis		Confirmatory Factor Analysis	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Confusion	3.48	1.97	3.58	2.07
2. Emotional Satisfaction	4.14	1.91	4.18	1.95
3. Physical Satisfaction*	3.86	2.04	4.36	2.08
4. Anxiety	3.76	2.00	3.70	1.95
5. Guilt	3.35	2.14	3.71	2.26
6. Romance	4.01	2.02	4.25	2.13
7. Pleasure	4.21	2.10	4.58	2.11
8. Sorrow	2.36	1.78	2.51	1.93
9. Relief	3.14	1.93	3.46	1.83
10. Exploitation	2.32	1.77	2.32	1.70
11. Happiness	4.32	1.78	4.59	2.04
12. Tension	3.16	1.92	3.17	1.97
13. Embarrassment	2.73	1.81	2.95	2.03
14. Excitement	4.52	1.93	4.62	1.97
15. Fear	3.37	2.11	3.36	2.08
16. Pressure	2.76	2.02	3.08	2.15
17. Love	4.17	2.17	4.43	2.26
18. Regret	2.98	2.16	3.22	2.27
19. Respect	3.98	2.01	4.23	2.08

Note. Group differences were examined using independent sample *t*-test* $p < .05$.

Table 3.3. Principle Axis Factor Analysis Results for *Looking Back* Emotional responseVariables ($N = 188$)

Dimension	Item	Factor 1	Factor 2	Factor 3	h^2
Relational Positive Response ($\alpha = .83$)	17. Love	.036	.904	-.074	.741
	6. Romance	.006	.819	.065	.725
	19. Respect	-.130	.582	.097	.472
Societal Positive Response ($\alpha = .90$)	7. Pleasure	.058	.092	.908	.875
	3. Physical Satisfaction	.067	.059	.827	.694
	14. Excitement	-.141	.182	.644	.674
	9. Relief	-.095	-.097	.551	.306
	11. Happiness	-.010	.484	.534	.787
Negative Response ($\alpha = .90$)	12. Tension	.781	-.025	.079	.575
	5. Guilt	.741	.031	-.157	.653
	4. Anxiety	.729	.050	.030	.499
	15. Fear	.694	.109	-.016	.461
	10. Exploitation	.681	-.031	.146	.411
	16. Pressure	.669	-.093	.082	.443
	8. Sorrow	.652	-.006	-.126	.511
	18. Regret	.617	-.145	-.216	.636
	13. Embarrassment	.614	-.079	-.039	.433
	1. Confusion	.597	.056	-.165	.441
Problem Item	2. Emotional Satisfaction ^a	-.142	.388	.491	.689
Eigenvalue Variances (%)		7.82 (39.12)	3.08 (14.14)	1.27 (4.77)	

Note. Pattern matrix presented after Oblimin with Kaiser Normalization rotation. ^a Item failed to load .50 or higher on any variable.

factor was named *societal positive emotion*. Item 2 (*emotional satisfaction*) was not found to load onto any factor at .50 and thus was dropped from the measure and not included in the CFA model. While item 11 (*happiness*) was determined to load on the factor *positive societal response*, it was near to loading onto the additional factor *positive relational emotion*. However, *happiness* fails to load at the a priori level of .50, established prior to the EFA. Further, one of the inclusion criteria is that factors had to be interpretable, *happiness*' loading on *positive societal response* makes greater interpretable sense that it's loading on *positive relational emotion*. Despite this it may be the case that in a different sample this item is better fit in both of these factors, and future research should examine this. Internal consistency was examined for each of the three factors using alpha reliability coefficients. Results found high internal consistency for negative emotion, relational positive emotion, and societal positive emotion ($\alpha = .90$; $\alpha = .83$; $\alpha = .90$, respectively).

Confirmatory Factor Analysis of the *Looking Back* Variables

Figure 3.1 shows the results of the CFA model with standardized path coefficients. The CFA was conducted to confirm that the structure found by the EFA and ensure that the solution fit the data adequately. CFA analyses were computed using Mplus 5.2 with full information maximum likelihood estimation (FIML). Model fit of the CFA model was examined using Chi-square test of model fit (χ^2). Due to sensitivity to sample size in the χ^2 other fit indices were also examined, including the normed chi-square (NC), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR).

Interpretation of model fit indices was completed using Kline's (2005) recommendations. NC scores less than 3 were considered to have adequate fit. CFI scores above .90 and .95 were considered to indicate adequate or good model fit, respectively. For RMSEA and SRMR, scores at or below .08 indicated adequate fit, while those at or below .05 were considered good fit.

It was determined that the original model without covariances between error variances was not able to adequately fit the model ($\chi^2 [N = 207, df = 132] = 714.98, p < .001$; NC = 5.42; CFI = .870; RMSEA = .104; SRMR = .066). Modification indices suggested that covariances between error variances were necessary in the model. Brown (2006) states that error covariance are appropriate when they are theoretically and statistically justifiable. As the items of the measure are responded to in the same way by participants they are thought to have related errors. For example, *guilt* and *regret* are both asking about similar emotions, a feeling of remorse or social inappropriateness that an individual may wish they could undo. Individuals are likely to answer these items similarly, causing the items to have similar degrees of error in responding. Thus, as these items are theoretically similar it was deemed appropriate to correlate their error variances. Only four theoretically justifiable covariances were included in the final model. As such, the error variances of *guilt* and *regret* ($\beta = .345$), *love* and *romance* ($\beta = .554$), *pleasure* and *physical satisfaction* ($\beta = .760$), and *physical satisfaction* and *happiness* ($\beta = -.264$) were included in the model. The inclusion of these covariances led to a substantial increase in model fit. The corrected, best fit model was determined to have adequate model fit across all fit indices except χ^2 ($\chi^2 [N = 207, df = 128] =$

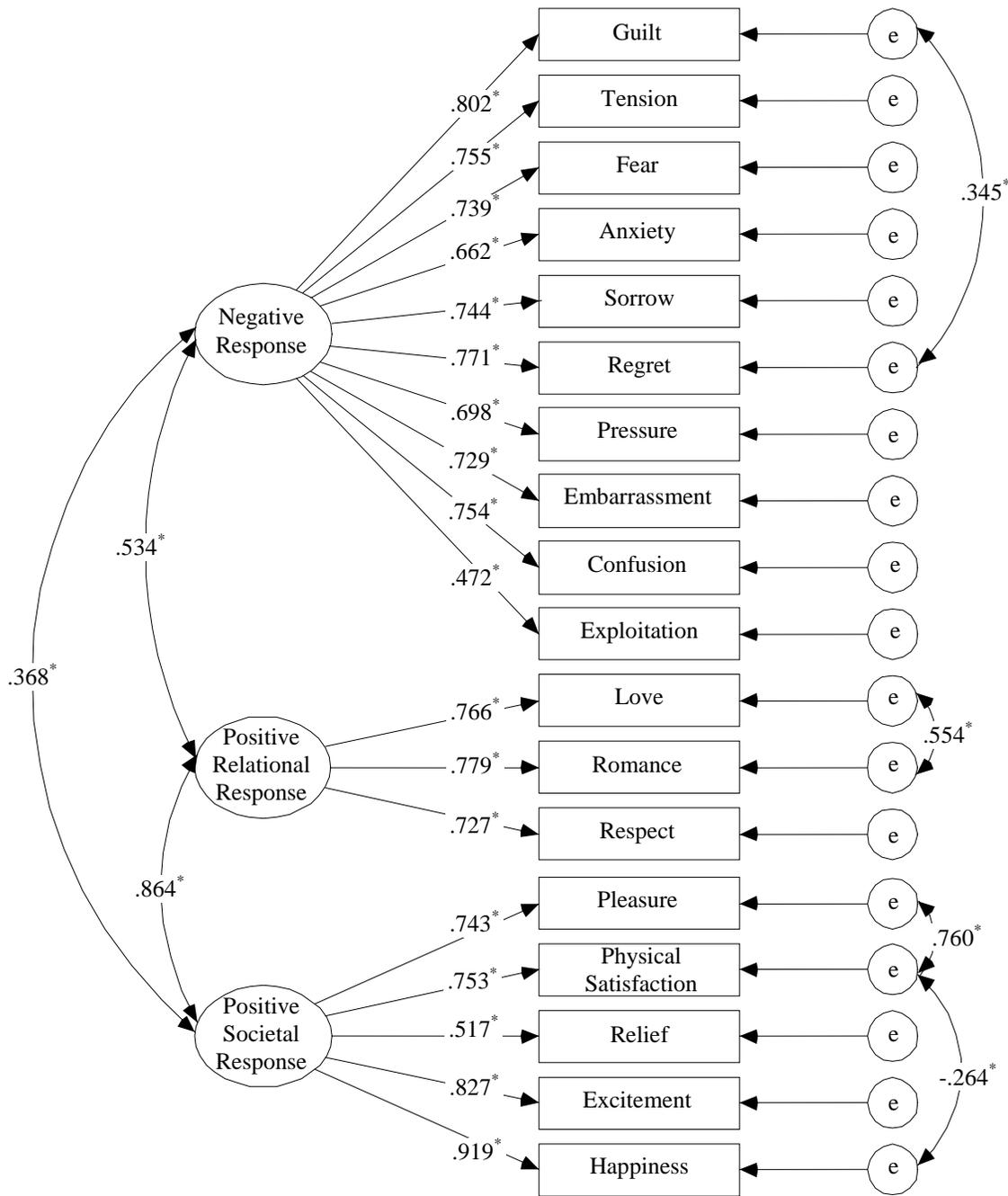


Figure 3.1. Confirmatory Factor Analysis Model Results for *Looking Back* Variables.
 Note. $N = 207$; Statistics presented are standardized path coefficients. * $p < .05$.

303.91, $p < .001$; NC = 2.37; CFI = .930; RMSEA = .080; SRMR = .059). However, as stated earlier χ^2 can be biased by several factors including sample size, thus as the remaining fit indices suggested adequate fit of the data it was determined that the EFA results of a three-factor structure of FSI emotional response could accurately explain the data for the total sample.

Factorial Invariance of *Looking Back* and *Right Now*

To examine the equivalence of participant responding between the *looking back* and *right now* FSI response items, factorial invariance was tested using Mplus version 5.2 with the same estimation and model fit indices as above. As a first step to test factorial invariance, structural equivalence was examined. Structural equivalence, also known as configural invariance, determines the degree of similarity between the two sets of items in regard to how the variables organize onto latent factors (Byrne & Watkins, 2003). If the two sets of items were found to have structural equivalence then measurement equivalence would be examined next. Measurement equivalence examines the degree to which each set of items was interpreted and responded to similarly by the participants. Measurement equivalence is determined using three separate model tests. First, metric invariance constrains the factor loadings of both sets of items to be equal. Second, strong invariance constrains both the factor loadings and intercepts of both sets of items to be equal. Finally, strict invariance constrains the factor loadings, intercepts and error variances for both sets of items to be equal. Each successive model is compared to the previous using the χ^2 difference test to ensure a statistically significant decrease in model fit does not occur.

It was found that the responses from the *looking back* and *right now* reference points in time did not meet the requirements for structural equivalence as evidenced by the fit indices ($\chi^2 [N = 395, df = 257] = 1481.64, p < .001$; NC = 5.76; CFI = .871; RMSEA = .110; SRMR = .531). Measurement invariance is only tested if the basic assumptions of structural invariance are met; therefore there was no need for further invariance testing. As invariance was not supported the findings suggest that individuals interpreted and/or responded to the two types of items differently, and therefore these item scores cannot be appropriately compared to each other.

Exploratory Factor Analysis of *Right Now* Variables

Table 3.4 shows the EFA factor loadings, h^2 communality statistics, and internal consistency alpha statistics for the *right now* variables. It was determined that because the *right now* and *looking back* variables did not contain the same factor structure that it was important to investigate the factor structure of the *right now* items. Using the same process as before: 1) eigenvalues greater than one, 2) examination of the scree plot, and 3) only interpretable factors were included, the EFA with principal axis factoring method suggested two factors were needed to explain the relationships of the 19 items. The two proposed factors explained 61.86% of the total item variance. The cutoff value for the loading of the factors remained at .50 to produce strongly related factors. Factor 1 was composed of nine items and accounted for 36.39% of the total variance. These items were thought to measure *positive emotional response* toward FSI, and encompassed both relational and societal factors. Factor 2 was composed of ten items and accounted for 25.47% of the total variance. These items were thought to measure *negative emotional*

response toward FSI. Further, item 2 (emotional satisfaction) was found to have a factor loading sufficient to remain in the model (as part of positive emotional response).

Internal consistency was examined for the two factors using alpha reliability coefficients. Results found high reliability for positive emotional response and negative emotional response ($\alpha = .95$; $\alpha = .92$, respectively).

Confirmatory Factor Analysis of the *Right Now* Variables

Figure 3.2 shows the results of the CFA model with standardized path coefficients. It was determined that the original model without covariances between error variances was not able to adequately fit the model ($\chi^2 [N = 209, df = 151] = 504.52$, $p < .001$; NC = 3.34; CFI = .883; RMSEA = .106; SRMR = .082). Modification indices suggested that covariances between error variances were necessary in the model. As with the *looking back* model, it was deemed theoretically and statistically justifiable to include these because of the similarity in item questions (Brown, 2006). Only four theoretically justifiable covariances were included in the final model. As such the error variances of guilt and regret ($\beta = .496$), love and romance ($\beta = .552$), pleasure and physical satisfaction ($\beta = .462$), and emotional satisfaction and physical satisfaction ($\beta = .311$) were found to be interrelated. With the exception of the covariance between love and respect, these covariance paths corresponded with the *looking back* model. The inclusion of these covariances led to a substantial increase in model fit. The corrected, best fit model was determined to have adequate model fit across all fit indices except chi-square ($\chi^2 [N = 207, df = 147] = 334.29$, $p < .001$; NC = 2.27; CFI = .938; RMSEA = .078; SRMR = .082). From this and the EFA results it was determined that the two-

Table 3.4. Principle Axis Factor Analysis Results for *Right Now* Emotional ResponseVariables ($N=203$)

Dimension	Items	Factor 1	Factor 2	h^2
Positive Response ($\alpha = .95$)	2. Emotional Satisfaction	.907	-.062	.838
	11. Happiness	.895	-.108	.833
	6. Romance	.882	.055	.771
	17. Love	.851	.000	.725
	7. Pleasure	.850	.031	.718
	14. Excitement	.845	.024	.710
	3. Physical Satisfaction	.818	-.041	.677
	19. Respect	.759	-.075	.594
	9. Relief	.590	.123	.348
Negative Response ($\alpha = .92$)	12. Tension	.101	.836	.692
	5. Guilt	-.173	.809	.713
	4. Anxiety	.042	.782	.606
	8. Sorrow	-.134	.781	.650
	1. Confusion	.012	.722	.520
	15. Fear	.169	.706	.503
	18. Regret	-.317	.673	.597
	13. Embarrassment	-.199	.649	.487
	10. Exploitation	.077	.623	.384
16. Pressure	.139	.621	.387	
Eigenvalue Variances (%)		7.22	5.24	
		36.39	25.47	

Note. Pattern matrix presented after Oblimin with Kaiser Normalization rotation.

factor structure of FSI emotional response could accurately explain the data for the total sample.

Looking Back vs. Right Now

Due to the differing factor structures of the *looking back* and *right now* items a direct comparison between factors could not be completed. Therefore an initial analysis was conducted examining total scores across all items with negative scores reversed so that higher scores indicated a more positive response. Both sets of total scores were also divided by the number of items so that scores for each would range from 1 (not at all positive) to 7 (completely positive). A paired-samples *t*-test was conducted to test for differences between these two sets of responses. Scores indicated that participants did not respond differently *right now*, compared to *looking back* ($t[371] = .322, p = .748$; $M_{looking\ back} = 4.57 [1.29]$ $M_{right\ now} = 4.56 [1.33]$). This finding corresponded to a Cohen's *d* effect size of .008. A pooled standard deviation of the two groups was used to calculate *d* (Cohen 1988, p. 44). To examine whether this lack of difference existed in both the positive and negative emotions both reference points in time were also examined on each set of emotions separately. Again total scores were divided by the number of items in each set of emotions, but negative items retained their original scale so the higher the score the more negative the experience for negative emotions. Results found a statistically significant difference for both sets of emotions between reference points in time. Individuals were more likely to report negative emotions when *looking back* compared to *right now* ($t[379] = 11.949, p < .001$; $M_{looking\ back} = 3.09 [1.49]$; $M_{right\ now} = 2.42 [1.48]$), and were also more likely to report positive emotions *looking back*

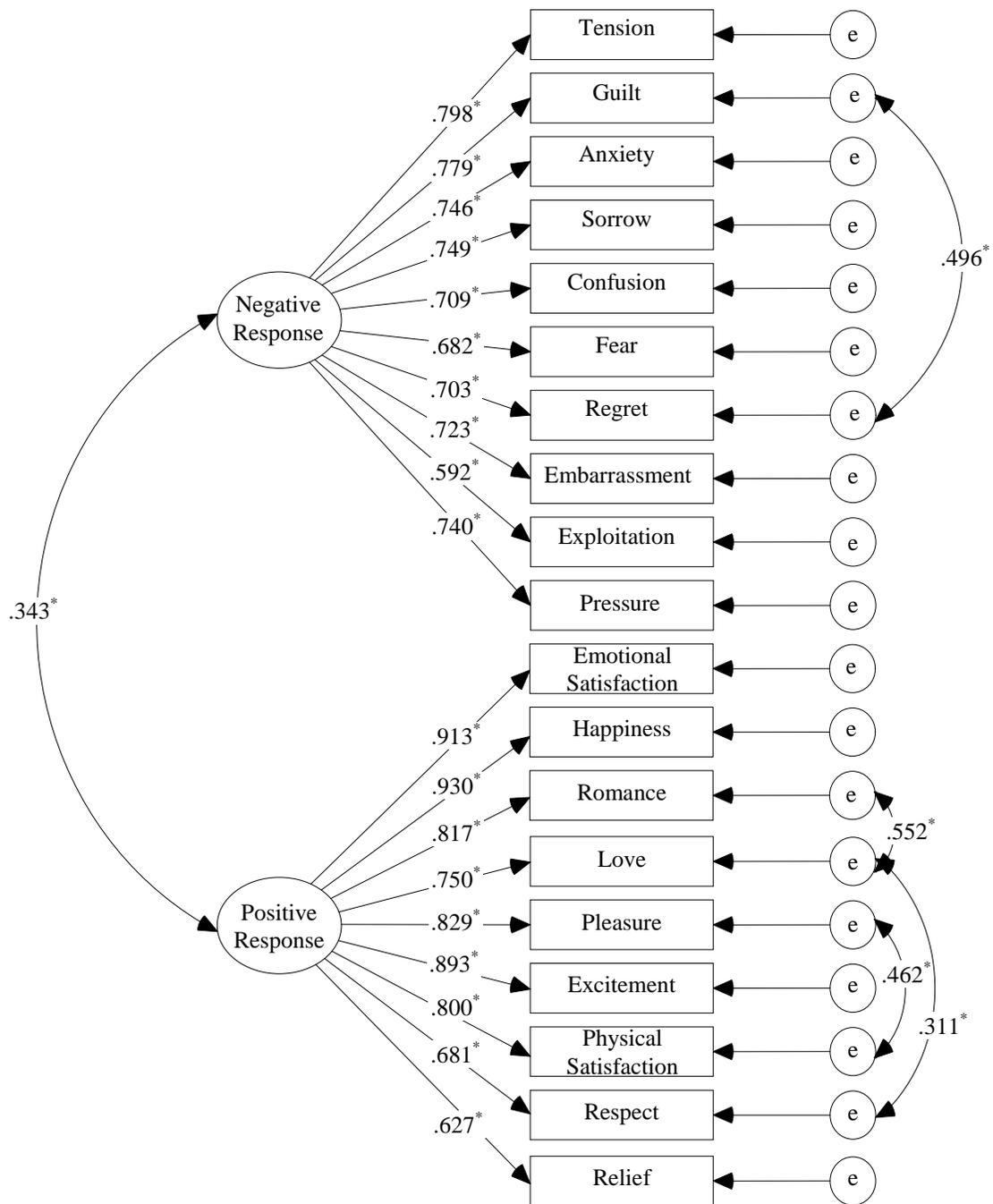


Figure 3.2. Confirmatory Factor Analysis Model Results for *Right Now* Variables.
Note. $N = 209$; Statistics presented are standardized path coefficients. * $p < .05$.

compared to *right now* ($t[385] = 11.421, p < .001$; $M_{looking\ back} = 4.14 [1.57]$; $M_{right\ now} = 3.43 [1.90]$). These findings corresponded to $d = .45$ and $.41$, respectively. These statistics suggested that participants presented a more exaggerated picture of their FSI experience, with more heightened positive and negative emotions, when they reflected on how they remember feeling at the time of the event.

Discussion

The results of this study provided answers for both of its primary research questions. Regarding question one: can an individual's emotional response to FSI be adequately measured among a mixed gender sample? The factor structure of the items was examined using EFA and cross-validated through CFA analyses on random split halves of the sample. It was found through these analyses that three factors existed for participants when *looking back* at the time during and immediately after their FSI experience. Two factors reflected positive emotional sets of items (relational and societal positive emotions), and one reflected negative emotional items. These results support the validity of the current measure, created using both male and female participants. Further, the model fit statistics presented in the CFA analyses suggest that the factor structure adequately accounts for the relationships between items.

Regarding the second research question: do differences in response exist when an individual is asked to recall their emotions at the time of the event (*looking back*), and to assess their current emotional response (*right now*)? Results from the factorial invariance test provided evidence that different factor structures were needed to understand an individual's emotional response for each of these reference points in time.

While three factors were present at the *looking back* reference point, two factors were sufficient when participants were asked to rate their current emotions. This finding is thought to indicate that individuals responded to and interpreted the items differently depending on whether they were asked to look back or judge their current emotions. Examining the means of items between these reference points in time provided evidence to show that individuals reported greater overall emotion responses *looking back* compared to *right now*. This distinction between emotions at both reference points in time may have several implications for understanding emotional and sexual development.

When a respondent was asked to look back at their FSI experience it appears as though a more complex emotional response is made, as such the responses of these individuals are encompassed by three factors. Two of these factors concern positive emotions (relational and societal), while one factor concerns negative emotions. This finding is in contrast to Weis' (1983) original measure where he found two negative emotion factors (anxiety and guilt) and a single positive emotion factor. This discrepant finding is likely due to Weis' limited range of positive emotions, but may also suggest differences in how youth conceptualize emotional responses to FSI in the last two and a half decades. These conclusions may also be supported by Smiler and colleagues (2005) who found four factors, three positive and one negative, among their 21 items. These authors utilized a greater number of positive emotions as well as examined participants within the last decade.

However, when a respondent is asked to judge their current response to their FSI experience, their ratings of emotion seem to be more simple and dichotomous. As such, only two emotional factors were present for these items, with one factor comprising negative emotions and the other including positive emotions. The lack of distinction between relational and societal positive emotions may suggest that as youth age and continue in their sexual exploration, the line between positive sexual experiences as interpersonal romance (i.e., love, romance, respect) and positive experiences as situational pleasures (e.g., pleasure, physical satisfaction) appears to blur and no longer matter. However, this finding may also be dependent on an individual's memory of the event, and simply suggest a difference between the memory of the event and current emotional feelings. Regardless of the rationale for this finding, what is important is that individuals do make a distinction between these two reference points in time with retrospective emotions being stronger and more complex. This may suggest that research which examines the impact of only one reference point in time (retrospectively *looking back*) may be missing important relationships. This suggestion is supported by previous research on emotional memory which states that individuals may be able to remember emotions, but that these emotional memories are likely biased by changing goals and values of the individual since the time of the event (Levine et al., 2006). Yet these biased memories are not invalid as they represent an individual's perception of their FSI event, and research has shown that an individual's perception of events or actions may have more predictive power than what actually occurred (e.g., Chassin et al., 2005). Therefore, it seems the case that both reference points in time are likely

important in understanding an individual's response to FSI, and future research should examine the differing effects of these reference points in time on later mental, physical, and sexual health.

Limitations and Suggestions for Future Research

Although the present study provided evidence for the appropriateness of a measure of FSI emotional response, it is not without limitations. Of primary concern is the cross-sectional and retrospective nature of the data. With all the measures completed at a single time period, examining current and past feelings, it may be the case that an individual's current level of sexual functioning taints the memory of how they felt at the time of the event (Levine et al., 2006). In this sense an individual who has had a positive sexual life experience, but began their sexual practices with a negative FSI experience, may be more likely to skew this event in their mind and rate it more positively than they would have at the time of the event. On the other hand, an individual who had a negative sexual development, brought on by a negative FSI event, may be more likely to look back and rate this event even more negatively than they would have at the time of the event. This possible recall bias cannot be directly addressed in the current study. However, the results of the current study do provide some evidence to suggest a limited degree of recall bias in that individuals were able to make a distinction between their emotional responses currently and at the time of their FSI experience. From these differing factor structures we can speculate that most individuals should be able to recall, with some validity, their FSI experience; however, to adequately ensure that recall bias

does not play a role, future studies would need to employ a longitudinal design to capture emotional responses toward FSI as they occur.

Additionally, it may be the case that the order of items may be biasing participant responses. All participants completed the measure by first responding to their *looking back* emotions, followed by those *right now*. It may be that if participants responded to these in the opposite order a different number of factors may be found. Future research should examine this possible limitation.

Finally, while the following measure was found to have some evidence of construct validity, other forms of validity were not assessed. It may be beneficial to examine the relationship between the current measure and previous measures of FSI emotional response. Future research should examine this by including multiple measures of FSI emotional response and comparing their findings.

Conclusion

The current study attempted to test the psychometrics of a measure examining emotional response toward an individual's FSI experience. This study expanded the literature by utilizing a mixed gender sample, asking participants to rate emotions currently and at the time of the event, and using more sophisticated statistical analyses than previous research. Results provided evidence for the appropriateness of the measure as well as support for utilizing both reference points in time of questioning (*looking back* and *right now*). It was found that individuals were able to make a distinction between these two reference points, providing separate and distinct factor structures. When an individual was asked to look back they provided a stronger and

more complex emotional response, compared to their responses when asked to rate their current emotions. Future research is needed to directly investigate how these differing emotional responses relate to current sexual behaviors, attitudes, and other aspects of psychosocial functioning.

CHAPTER IV

EXAMINING THE RELATIONSHIP BETWEEN FEELINGS TOWARD SEXUAL INITIATION AND CURRENT SEXUAL GUILT

Engaging in sexual behavior brings with it many potential consequences for an individual. These consequences can be physical, such as acquiring a sexually transmitted infection (STI) or becoming pregnant. Much research has examined factors leading to these physical outcomes, and intervention research attempts to prevent these consequences. However, consequences of sexual behavior can also be emotional and psychological. Less research has examined these emotional/psychological consequences, and few interventions beyond psychological counseling have concern with reducing these consequences. One potential serious emotional/psychological consequence is guilt. The following is an examination of how a particular sexual encounter, sexual initiation, relates to later sexual guilt.

Age at First Sexual Intercourse

The age in which an individual initiates sexual behavior has received considerable attention in the literature. Several studies have pointed to earlier ages of first sexual intercourse (FSI) as a risk factor for negative sexual health outcomes including STI diagnosis (Kaestle, Halpern, Miller, & Ford, 2005), pregnancy, as well as frequent sexual intercourse episodes while being intoxicated (O'Donnell, O'Donnell, & Stueve, 2001) and a high number of sexual partners (Sandfort, Orr, Hirsch, & Santelli, 2008). In 2007 less than half (48%) of all high school students reported engaging in first

sexual intercourse (FSI) behavior, reflecting a decrease from 54% in 1991 (Eaton et al., 2008). Despite this increase in age at FSI the Centers for Disease Control and Prevention (CDC; 2008a; 2008b) continues to report increasing numbers of STIs, including Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) for individuals aged 15-24 years. Further, the National Center for Health Statistics (NCHS) has reported an increase in youth pregnancy in 2006 (Martin et al., 2009). If age at FSI was as predictive of negative sexual outcomes, as previous researchers have suggested, would not this relationship be inversed? Some research has surfaced suggesting that age at FSI may not be as predictive of these negative sexual outcomes as previously thought. Kaeslte et al. (2005) found that while younger age at FSI was associated with increased odds of later STIs, this relationship disappeared among older youth. This suggested that given enough time to contract an STI these groups were equivalent. This has been supported by previous researchers who have found no association between age at FSI and STI diagnosis (Wellings et al., 2001).

Emotional Context of Sexual Initiation

Due in part to the mixed findings discussed, several researchers have begun to examine the context of the FSI experience beyond age at FSI alone, describing the emotional responses individuals have toward the event (e.g., Guggino & Ponzetti, 1997; Schwartz, 1993; Smiler et al., 2005; Sprecher et al., 1995; Weis, 1983). Because the FSI experience is often memorable and significant, and has the potential to shape an individual's sexual and individual identity (Clark et al., 2004; Koch, 1988; Ku et al., 1993), it is not surprising that researchers have examined the relationship of FSI context

to later young adult sexual health and behavior outcomes. What is surprising, however, is the relatively small number of studies which have examined this issue (Bettor, 1990; Else-Quest et al., 2005; Koch, 1988; Moore & Davidson, 1997). However, these studies are not without limitation and may not be adequately measuring the emotional response. None of these studies utilized a validated measure of FSI emotional response. Two studies used single item measures to assess an individual's attitude toward their FSI experience (Koch, 1988; Moore & Davidson, 1997), one examined FSI context by examining the situational components instead of emotional (Else-Quest et al., 2005), and one study examined FSI through both situational components and qualitative questioning (Bettor, 1990). Further, these studies suffered from statistical inadequacy, relying on analyses of group differences and simple correlations (see Chapter II for a full review).

Sexual Guilt

An individual's FSI experience has been found to be related to later sexual guilt (Bettor, 1990; Else-Quest et al., 2005; Moore & Davidson, 1997). As Lewis (1971) described, situations evoke guilt when the experience violates the individual's own internalized set of moral standards. Therefore, an FSI experience that is negative or dissatisfying may lead to feelings of guilt, which can then impact future sexual satisfaction (Moore & Davidson, 1997). The concept of general guilt due to sexuality has been modified by Mosher to examine the concept of sexual guilt specifically (1966; 1968; Mosher & Cross, 1971). Mosher and Cross (1971) defined sexual guilt as a personality disposition which is characterized by a "generalized expectancy for self-mediated punishment for violating or for anticipating violating standards of proper

sexual conduct” (p. 27). The authors went on to state that such guilt is likely to be revealed through resistance of sexual temptation or behaviors and a lack of sexual knowledge. However, this definition is somewhat different from that provided by Lewis (1971) and may better reflect social norms of sexual behavior.

The hypotheses of Mosher and Cross (1971) have been supported by a vast literature base which has shown that sexual guilt is related to a variety of negative sexual outcomes, including: (a) having a negative attitude toward contraceptives (Alden & Crowley, 1995; Fisher et al., 1983; Gerrard et al., 1983), (b) less consistent contraceptive use, or use of unreliable methods (Fisher et al., 1988; Geis & Gerrard, 1984; Strassberg & Mahoney, 1988), (c) less sexual and contraceptive knowledge (Alden & Crowley, 1995; Lewis et al., 1986; Mendelsohn & Mosher, 1979), and (d) stronger belief in sexual myths (Mosher, 1979). However, sexual guilt can also be thought of as a protective factor in that it is also associated with sexual outcomes that can be considered more positive, such as decreased levels of sexual activity (D’Augelli & Cross, 1975; Gerrard, 1987; Love et al., 1976) and less permissive sexual attitudes (Mosher & Cross, 1971). Due to these findings, researchers have thought of sexual guilt as an inhibitory mechanism (D’Augelli, & Cross, 1975; Galbraith & Mosher, 1968), because, as suggested, individuals with high sexual guilt show a denial of sexuality through a lack of sexual knowledge, and a decrease in unrestrictive sexual attitudes and behaviors across most domains of sexuality.

Sexual guilt is an important mechanism to examine for several reasons. According to symbolic interactionism (Blumer 1969), an individual attributes some

meaning toward the FSI experience before it occurs. This meaning is the product of the interactions the individual has had in society and with individuals they deem important to them. After the FSI experience, this meaning is either confirmed or refuted, and those with a high dissonance (i.e., a negative response) may be more likely to experience guilt regarding sexuality later in life. Further, according to psychodynamic principles, guilt has the power to influence our later thoughts, feelings, and behaviors as has been shown in previous research regarding sexual guilt and negative outcomes (e.g., Alden & Crowley, 1995; Fisher et al., 1988; Mosher, 1979). Thus, as guilt can lead to negative physical and psychosocial outcomes, it is important to understand how factors related to the FSI experience relate to sexual guilt. In particular, how the individual experienced the FSI emotionally.

Ethnic Identity, Gender, and Years in College

Several additional factors are also hypothesized to affect an individual's emotional response to their FSI experience. It has previously been shown that an individual's ethnicity or race may play a critical role in determining how they engage in and respond to their FSI experience (e.g., Christensen & Johnson, 1978; Regan, Durvasula, Howell, Ureño, & Rea, 2004). However, Helms, Jernigan, and Mascher (2005) state that it may be inappropriate and inaccurate to simply examine race and ethnicity through a single polytomous variable. A related and possibly more appropriate psychological construct is ethnic identity.

Ethnic identity was first defined by Tajfel (1981) who stated it was one aspect of an individual's social identity stemming from his/her knowledge of their social group(s)

membership. Phinney (1992) expanded this definition to include the extent to which one identifies and has a sense of belonging with a particular ethnic group(s). Ethnic identity may be important when examining emerging adults as this is a time when identity formation is most occurring (Erikson, 1968). Further, ethnic identity can be separated into two factors which stem from Erikson's model of identity development: a) exploration of an individual's ethnic group, and b) commitment to that group. Currently there is only limited research being conducted that takes into account the ethnic identity in regard to understanding sexual behavior (e.g., Hines & Caetano, 1998; Snoden & Hines, 1997). Ethnic identity is likely to affect how an individual responds to his or her FSI experience as previous research has shown that stronger commitment to an individual's heritage culture can serve as a protective factor against engaging in risky sexual behaviors (e.g., Belgrave, Matin, & Chambers, 2000). Some have attributed this to the relationship between ethnic identity and greater psychological wellbeing (Lewis-Trotter & Jones, 2004; Ong, Phinney, & Dennis, 2006; Phinney, 1992), which may lead to healthier sexuality (Espinosa-Hernández & Lefkowitz, 2009). Thus, greater ethnic identity may serve as a protective factor against negative FSI emotional response. However, it may also be the case that strong commitment to some ethnic cultures may produce a negative response to an individual's FSI. Traditionally, some ethnic minority cultures have more sexually restrictive values than dominant American culture, which may limit the ability for an individual to obtain an adequate understanding of FSI prior to the event (e.g., Guilamo-Ramos et al., 2006; O'Sullivan, Meyer-Bahlburg, & Watkins, 2001). Such individuals may not enter into the FSI event emotionally ready and thus

may have greater negative emotional responses of regret or guilt following the event. It is important to examine this relationship to understand how an individual's commitment to their heritage culture affects their FSI response.

Gender is also an important factor to examine when concerning attitudes about sexual behavior. It has been shown by several researchers that males and females have differing responses to FSI (Smiler et al., 2005; Woody et al., 2003; Wight et al., 2008), thus these relationships need to be explored in a model of FSI attitudinal response. Finally, the number of years an individual has attended college is important to examine as it provides a description of how many years an individual has been exposed to the socializing forces of college.

Current Study

The present study addressed two research questions: Does an individual's current and retrospective emotional response to FSI affect their current levels of sexual guilt? And, does this relationship hold after including age at FSI as a predictor of both guilt and FSI emotional response? Previous literature in this area has utilized inadequate measures of FSI emotional response and unsophisticated analytic strategies. This study extends the literature by examining a sample of mixed gendered adults, utilizing validated measures of FSI emotional response and sexual guilt, and uses structural equation modeling (SEM) to approximate casual inferences and ascertain model fit. Further, the measure of FSI emotional response is unique as it includes responses toward FSI which occurred at the time of the FSI, measured retrospectively, and those the participant is currently experiencing.

To examine these questions two structural equation models were tested. In the first model it was hypothesized that both current and retrospective FSI emotional response variables would be related to current sexual guilt, such that more negative responses would lead to increased sexual guilt, and more positive emotions would be related to decreased sexual guilt. Ethnic identity and demographic variables were also included in this model. In the second model age at FSI was introduced as a predictor of sexual guilt. It was believed that in this model the previous relationships found between FSI emotional response and sexual guilt would be retained. Further it was hypothesized that in this model age at FSI would not be significantly related to current sexual guilt nor any of the FSI emotional response variables. Overall it was hypothesized that the first model without age at FSI would be a better fit and more parsimonious model.

Methods

Participants

The current study is part of a larger project examining how the context of FSI affects adolescent and young adult sexual functioning. All participants completed the Davis First Coital Behavior Survey (D-FCBS), see Chapter III for a description of participant recruitment. Data was obtained from 672 participants. The majority of participants identified as being female (81.7%, $N = 492$) and Hispanic or Latino (52.5%, $N = 310$) or white (26.8%, $N = 158$), with others identifying as African American (11.4%, $N = 67$), Asian (2.2%, $N = 13$), or other or mixed ethnicity (7.1%, $N = 42$). Participants were on average 21.16 years ($SD = 4.22$), ranging from 18 to 57 years (with only 7.6% of participants aged 26 and older). On average, participants reported their

sexual initiation occurred 4.58 ($SD = 4.77$) years prior to participation in the current study. Most participants (89.9%, $N = 532$) were never married, and completed an average of 2.83 years of college ($SD = 1.78$). Participants who reported never engaging in sexual intercourse were excluded from analyses, leading to a final sample size of 418.

Measures

Demographics. Participants were asked questions to assess their age at FSI, gender, number of years in college, and race/ethnicity.

Ethnic Identity. In order to expand on the understanding of the individual's race/ethnicity, a measure of ethnic identity was also examined. The Multigroup Ethnic Identity Measure – Revised (MEIM-R; Phinney & Ong, 2007) was used to understand how an individual defines themselves in regard to their ethnic group and their degree of belonging to their group. The original MEIM “was designed to meet the need for a general measure that could assess ethnic identity across diverse ethnic groups” (Phinney & Ong, 2007, p. 275). The MEIM-R examines two aspects of ethnic identity: exploration and commitment, with each factor consisting of three items. Confirmatory Factor Analysis (CFA) found high model fit for the two correlated latent variable structure of the measure and showed standardized path estimates between .66 and .81. The authors also report an overall alpha of .81, suggesting good internal consistency. For the current study the two factors will be analyzed separately to examine the individual effects of exploring and committing to an ethnic group which present different stages of ethnic identity development. Among the current sample high internal

consistency was found for each subscale of the MEIM-R ($\alpha_{\text{exploration}} = .86$, $\alpha_{\text{commitment}} = .88$).

FSI Emotional Response. Emotional response an individual has toward their FSI experience was examined by asking participants to rate 19 emotions as to how they felt in response to his or her FSI experience. Response choices were based on a seven-point Likert-Type scale from 0 = *no emotion* to 6 = *high degree of that emotion*. Participants were asked to evaluate their response in two contexts: a) participants were asked “*Looking back*, how much of the following emotions did you feel immediately after or during your first sexual intercourse experience?” and b) participants were asked “*Right now*, how much of the following emotions do you feel about your first sexual intercourse experience?” It was found in a concurrent study (Chapter II) that when examining the *looking back* items, 18 items loaded onto three latent factors, which describe the individual’s emotional response. These factors represented the individual’s (a) *negative emotion* (e.g., anxiety, confusion), (b) *relational positive emotion* (e.g., love, romance), and (c) *societal positive emotion* (e.g., pleasure, excitement) responses. In Chapter III evidence was found for good internal consistency for these three factors ($\alpha = .90$, $\alpha = .83$, $\alpha = .90$, respectively). When examining these variables *right now* these authors found evidence for all 19 items loading onto two factors: positive and negative emotion responses. Good reliability was also found for these items ($\alpha = .95$, $\alpha = .92$, respectively; see Chapter III).

Sexual Guilt. An individual’s current level of sexual guilt was assessed using two scales: (a) The sex-guilt subscale of the Revised Mosher Guilt Inventory (SG-MGI;

Mosher, 1998), and (b) the guilt subscale of the Personal Feelings Questionnaire-2 (PFQ2; Harder & Zalma, 1990), which was revised for the current study to assess sexual guilt specifically. The original Mosher Forced Choice Guilt Inventories (Mosher, 1966; 1968; Mosher & Cross, 1971) were created using responses to sentence completion items. The SG-MGI is a revised version of this inventory containing 25 item pairs which the respondent rates on a seven-point Likert-type scale from *not at all true* to *extremely true* for them. Item pairs are designed to have a guilty and non-guilty item to assist the participant in selecting answers. For example, the following item pair contains a guilty item: “Sex relations before marriage...are wrong and immoral,” and a non-guilty item: “Sex relations before marriage...should be permitted”. Reliability estimates from one external study found the SG-MGI to have good internal consistency ($\alpha = .93$; Shulman & Horne, 2006). This finding was also confirmed in the current study ($\alpha = .93$).

The guilt subscale of the PFQ2 contains six items assessing generalized guilt. Items were adapted to reflect sexual guilt specifically. For example, the item “Worry about hurting or injuring someone” was changed to “Worry about hurting or injuring someone sexually.” Participant responses were based on a five-point Likert-type scale from *continuously or almost continuously* to *never*. Reliability estimates for the PFQ2 guilt subscale have been found to be high ($\alpha = .93$; Harder & Zalma, 1990). The revised version of the PFQ2, henceforth referred to as PFQ2-S, used in the current study was also found to have evidence of high internal consistency ($\alpha = .88$). Researchers have

also found evidence for construct validity of the PFQ2 guilt subscale (Averill, Diefenbach, Stanley, Breckenridge, & Lusby, 2002; Harder, Rockart, & Cutler, 1993).

Results

Table 4.1 presents the means, standard deviations, and correlations among all variables in the subsequent analyses. For all analyses statistical significance will be examined at both the one-tail and two-tail level, with greater reliance on the findings reaching two-tail significance. This rationale was chosen because of the relatively small sample size of the current study ($N = 418$), the complexity of the analyses, and the hypothesized direction of the relationships.

Using a repeated measures analysis of variance (ANOVA) it was found that when participants looked back at their FSI experience they had higher retrospective positive emotion and fewer negative current emotions ($F(372, 1.78) = 795.69^1, p < .001$). Pairwise comparisons of the FSI emotion variables determined that mean differences occurred across all emotion variables such that individuals were most likely to have positive relational or positive societal response *looking back* ($M_{\text{positive relational}} = 4.18, SD = 1.85; M_{\text{positive societal}} = 4.17, SD = 1.65$), followed by positive emotion *right now* ($M = 3.43, SD = 1.90$), negative emotion *looking back* ($M = 3.07, SD = 1.49$), and finally, being least likely to report negative emotion currently ($M = 2.44, SD = 1.48$). Because the two sex guilt scales utilized different scales of measurement (seven-point vs. five-

Table 4.1. Means, Standard Deviations, and Correlations among FSI Emotional Response, Sexual Guilt, and Demographic

Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. L negative emotion	--	-.329***	-.447***	.743***	-.345***	.385***	.402***	-.064	-.059	-.206**	.114 ^t	-.022
2. L relational positive emotion		--	.651***	-.280***	.722***	.000	-.024	-.198**	-.242***	-.036	-.047	.213**
3. L societal positive emotion			--	-.312***	.710***	-.116 ^t	-.089	-.059	-.084	.336***	-.129*	.169**
4. R negative emotion				--	-.267***	.434***	.385***	-.059	-.011	-.141*	-.011	-.046
5. R positive emotion					--	-.042	-.116 ^t	-.121 ^t	-.140*	.134*	-.174**	.207**
6. SG-MGI total						--	.463***	-.066	-.105 ^t	-.125*	.024	.039
7. PFQ-S total							--	.000	-.021	.050	-.024	.117 ^t
8. MEIM exploration								--	.589***	.121 ^t	-.094	-.085
9. MEIM commitment									--	.106 ^t	-.040	-.049
10. Male										--	-.119 ^t	-.063
11. Years in college											--	.179**
12. Age FSI												--
<i>Mean</i>	3.14	4.15	4.12	2.44	3.40	149.06	10.36	2.30	1.97	.17	3.00	16.86
<i>Standard Deviation</i>	1.49	1.84	1.61	1.47	1.93	38.21	4.31	.67	.60	.38	1.86	2.20

Note. $N = 250$. Listwise deletion used. SG-MGI total = total score from the sex-guilt subscale of the Revised Mosher Guilt Inventory L = *Looking back*; R = *Right now*. ^t $p < .05$, one-tailed. * $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed.

point for the MGI-SG and PFQ2-S, respectively) participant scores were converted to z-score format for comparison. A paired samples *t*-test of these measures found that there was no statistically significant difference between participants scores ($t[328] = .623, p = .534$).

Model Evaluation

To examine relationships between an individual's FSI emotional experience and their current level of sexual guilt SEM was used. The SEM model was tested in Mplus V. 5.2 using Full Information Maximum Likelihood (FIML) estimation, which accounted for missing data. To test the model fit of our *a priori* model five fit indices were used: (a) chi-square test of model fit (χ^2), (b) normed chi-square (NC), (c) comparative fit index (CFI), (d) root mean square error of approximation (RMSEA), and (e) standardized root means square residual (SRMR). The RMSEA and SRMR were used as a measure of absolute fit, and the CFI was used to measure incremental fit (Hu & Bentler, 1995). NC scores below 3 were considered to indicate adequate fit (Kline, 2005). CFI scores of above .90 are usually considered an indication of adequate fit between the model and the data, and good fit is indicated if they are above .95 (Kline, 2005). For RMSEA and SRMR scores below .08 typically indicate adequate fit, and scores below .05 indicate good fit (Kline, 2005).

Due to the relatively small sample size a full structural model with all individual items loading on their respective factors was not appropriate because it would require the estimation of more parameters than the sample size would allow. As an alternative, item-parceling was used. Item-parceling is a technique which combines two or more

items to be included in a latent variable (Hall, Snell, & Foust, 1999). Previous researchers have recommended parceling over standard path analysis using total scores, as parcels allow for the modeling of error variance (Coffman & MacCallum, 2005). Using a fully aggregated measure assumes the scale was measured without error; however, this can bias the parameter estimates of the tested model if error is present which is not modeled (Coffman & MacCallum, 2005). To construct item-parcels exploratory factor analysis (EFA) was conducted and found that all proposed constructs were measured with single factors. The unidimensional scale of all measures allowed for item-parcels to be constructed randomly (Coffman & MacCallum, 2005), combining items to produce three parcels for each factor, see Figure 4.1. Appendix B includes a list of the items used in each parcel.

The model for the total sample is presented in Figure 4.1. It was hypothesized that an individual's emotional response *looking back* on their FSI experience would have a direct impact on their current levels of sexual guilt, as captured by the SG-MGI and PFQ2-S. More specifically, it was hypothesized that higher levels of negative emotional response both *looking back* and *right now* would lead to higher levels of sexual guilt. In contrast, it was hypothesized that higher levels of both relational and societal positive emotional response *looking back* and positive emotional response *right now* would serve as protective factors, leading to lower levels of current sexual guilt.

Chi-square test of model fit for the model was found to be statistically significant, which suggested that the model did not fit the data perfectly, $\chi^2(N = 418, df = 337) = 863.98, p < .001$. However, this test is especially sensitive to small sample

sizes, and this rejection of model fit is expected (Kline, 2005). The NC, CFI, RMSEA and SRMR (2.56, .943, .061, and .047, respectively) were all found to indicate adequate fit. Based on these results it was determined that the model had adequate fit, which allowed for appropriate interpretation of the path coefficients.

Model Findings

Figure 4.1 does not include the covariance relationships between the factors in order to provide a simpler and more readable model presentation; however, full covariance statistics appear in Table 4.2. Results suggested that the item-parceling created successful factors with strong factor loadings throughout the model, with standardized path coefficients (β) ranging from .686 to .990. Several relationships were found between the demographic variables and the FSI emotional response factors. Individuals who had more actively explored their ethnic identity (MEIM-R exploration) were statistically significantly less likely to experience positive relational emotion *looking back* ($\beta = -.162, SE = .078$). Males were found to be statistically significantly less likely to experience negative emotion *looking back* and *right now* ($\beta = -.176, SE = .052; \beta = -.139, SE = .051$, respectively), as well as to experience less positive societal response *looking back* ($\beta = -.122, SE = .053$), compared to females. However, males were also found to be statistically significantly more likely to experience positive relational affect *looking back* ($\beta = .256, SE = .048$). Individuals who completed fewer years of college were statistically significantly more likely to experience negative emotion *looking back* and *right now* ($\beta = -.118, SE = .049; \beta = -.122, SE = .051$, respectively), compared to individuals completing more years of college. Individuals

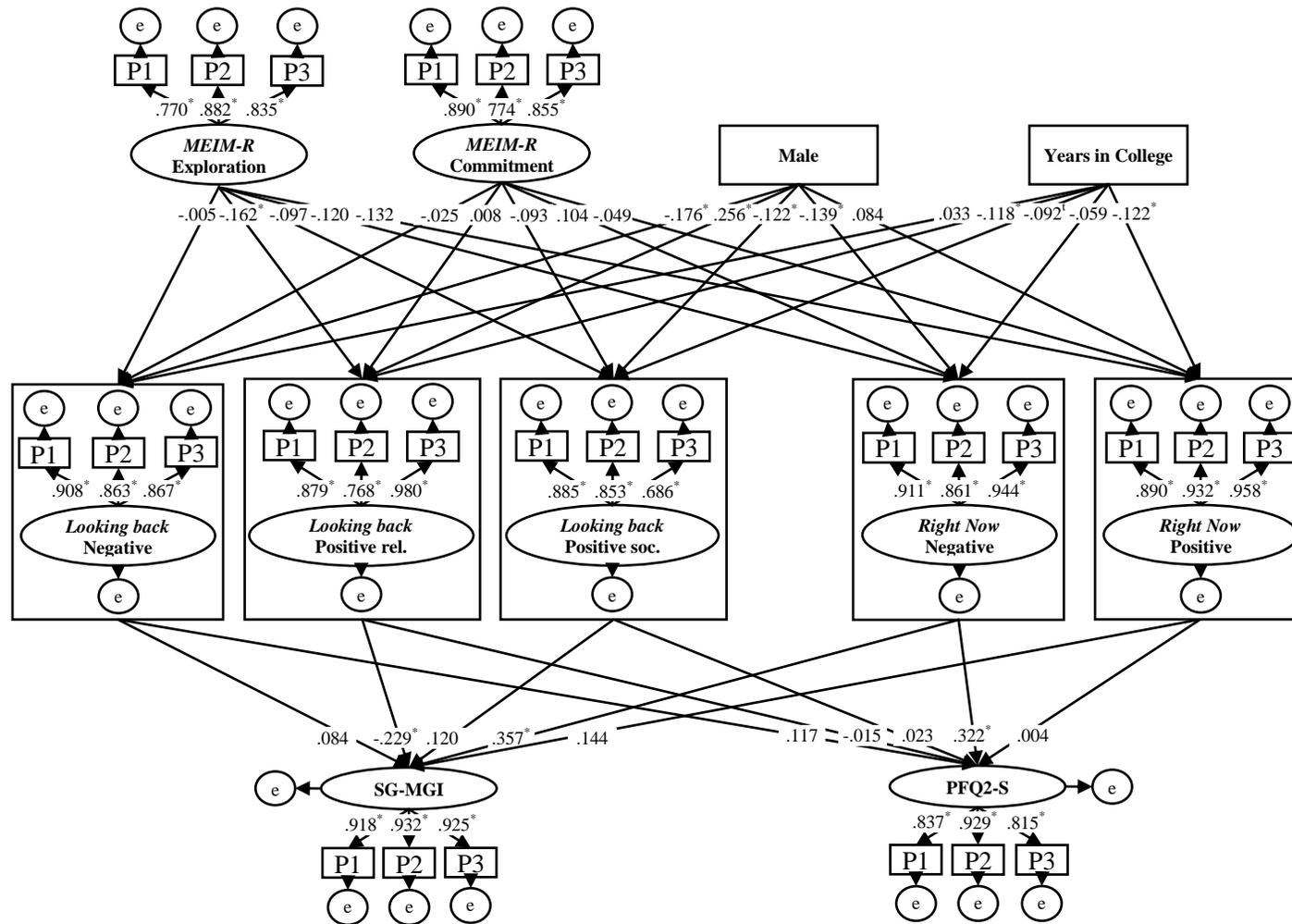


Figure 4.1. Structural equation model of FSI emotional response on current sexual guilt. *Note.* Rel. = relational response; Soc. = societal response. Covariance paths are not presented in figure, see Table 4.2 for statistics. Standardized coefficients are presented. e's are associated errors. † $p < .05$, one-tailed. * $p < .05$, two-tailed.

who completed fewer years of college were also statistically significantly, at the one-tail level, more likely to experience positive relational emotion *looking back* ($\beta = -.092$, $SE = .053$). Ethnic identity commitment (MEIM-R commitment) was not found to be statistically significantly related to any of the FSI emotional response variables.

Findings from this model provide limited support for the *a priori* research model's expected relationships. Examining the results regarding sexual guilt, using the latent factor of the SG-MGI, suggests that negative emotion *right now* and positive relational emotion *looking back* are statistically significant predictors of current levels of sexual guilt ($\beta = .357$, $SE = .090$; $\beta = -.229$, $SE = .085$, respectively). These findings suggested that individuals who report feeling less positive emotion regarding the connection between themselves and their partner (relational in focus), at the time of the event (*looking back*), and greater levels of negative feelings currently, report greater levels of current sexual guilt. Regarding the second sexual guilt measure, PFQ2-S, the model suggested that only current negative emotion responses toward FSI were statistically significantly related to higher levels of sexual guilt ($\beta = .322$, $SE = .092$). For ease of presentation, Figure 4.2 presents only the statistically significant findings from this model.

The total effects of the model accounted for 21% of the variance in the latent variable SG-MGI ($R^2 = .214$) and 18% of the variance in the latent variable PFQ2-S ($R^2 = .176$). Further, the model accounted for 3% to 10% of the variance in the latent FSI emotion variables. Specifically, these variables accounted for 3% of negative emotion *looking back* ($R^2 = .033$), 5% of positive relational emotion *looking back* ($R^2 = .054$),

Table 4.2. Covariance Path Coefficient Estimates of Structural Equation Models

Path	Figure 4.1		Figure 4.3	
	β	SE	β	SE
MEIM-R explore ↔ MEIM-R commit	.688*	.033	.689*	.033
L negative emotion ↔ L relational positive emotion	-.422*	.045	-.418*	.045
L negative emotion ↔ L societal positive emotion	-.350*	.051	-.346*	.051
L negative emotion ↔ R negative emotion	.792*	.024	.791*	.024
L negative emotion ↔ R positive emotion	-.337*	.048	-.331*	.049
L relational positive emotion ↔ L societal positive emotion	.764*	.026	.758*	.027
L relational positive emotion ↔ R negative emotion	-.320*	.048	-.313*	.048
L relational positive emotion ↔ R positive emotion	.723*	.027	.716*	.027
L societal positive emotion ↔ R negative emotion	-.280*	.049	-.270*	.050
L societal positive emotion ↔ R positive emotion	-.286*	.052	-.276*	.052
R negative emotion ↔ R positive emotion	.772*	.026	.760*	.028
SG-MGI ↔ PFQ2-S	.389*	.050	.387*	.050

Note. $N = 418$. β = standardized estimates; L = *Looking back*; R = *Right now*.
* $p < .05$, two-tailed.

10% of positive societal response *looking back* ($R^2 = .104$), 3% of negative emotion *right now* ($R^2 = .031$), and 5% of positive emotion *right now* ($R^2 = .051$).

Age at FSI Model

To test hypotheses two, that FSI emotional response would remain a statistically significant predictor of current sexual guilt when age at FSI was included in the model, a second model was examined, see Figure 4.3. Figure 4.3 does not include the covariance relationships in order to provide a simpler and more readable model presentation; however, full covariance statistics appear in Table 4.2. Figure 4.3 includes the item-parcels, factors, and paths used in Figure 4.1, but also includes paths from Age FSI to both of the factors for SG-MGI and PFQ2-S, as well as to all the FSI emotion variable factors. It was also hypothesized that the age an individual engages in FSI would not be related to either current sexual guilt or any of the emotional responses surrounding their FSI experience. Like the previous model, this model was found to adequately fit the data ($\chi^2 [N = 418, df = 359] = 924.20, p < .001$; NC = 2.57; CFI = .940; RMSEA = .061; SRMR = .047).

The results of the model supported the hypothesis that the relationships between FSI emotional response and sexual guilt would hold despite the addition of age at FSI as a predictor variable. In the model results presented in Figure 4.3, all the relationships found in Model 4.1 were retained with little variability. Only two paths were found to change in regard to statistical significance: a) the path between years in college and positive societal response *looking back* grew to achieve statistical significance at the

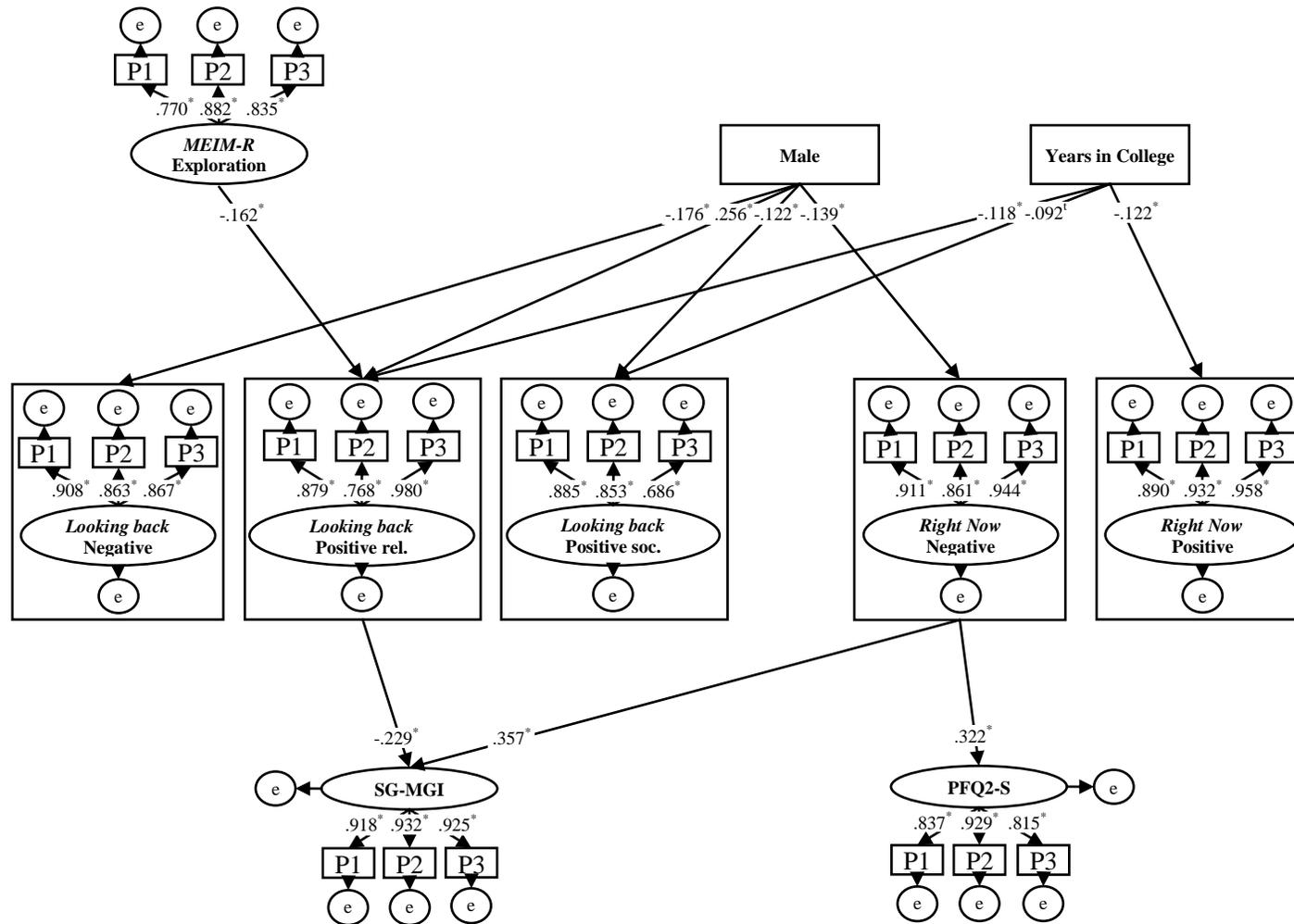


Figure 4.2. Structural equation model of statistically significant paths from Model 4.1. *Note.* Rel. = relational response; Soc. = societal response. Standardized coefficients are presented. e's are associated errors. [†] $p < .05$, one-tailed. * $p < .05$, two-tailed.

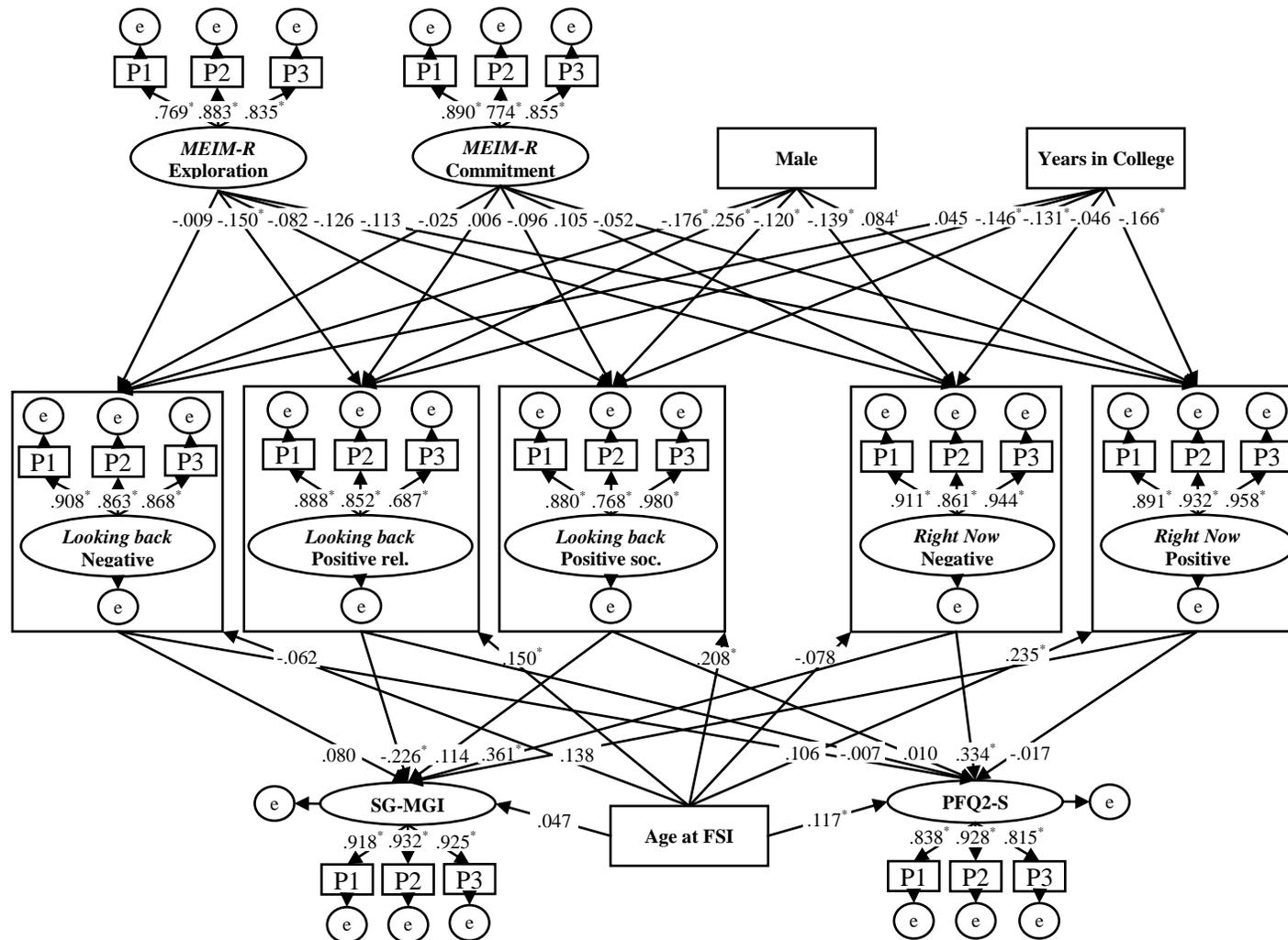


Figure 4.3. Structural equation model of FSI emotional response on current sexual guilt with age at FSI. *Note.* Rel. = relational response; Soc. = societal response. Covariance paths are not presented in figure, see Table 4.2 for statistics. Standardized coefficients are presented. e 's are associated errors. $^{\dagger}p < .05$, one-tailed. $^*p < .05$, two-tailed.

one-tail level ($\beta = -.134, SE = .053$), and b) the path between male and positive emotion *right now* increased to one-tail statistical significance ($\beta = .084, SE = .050$).

Regarding the effects of age at FSI on the emotional response variables, age at FSI was found to be statistically significantly related to positive relational and societal emotion *looking back* and positive emotion *right now* ($\beta = .150, SE = .048$; $\beta = .208, SE = .051$; $\beta = .235, SE = .048$, respectively). Neither current nor retrospective negative FSI emotion was related to age at FSI. When examining the sexual guilt variables, age at FSI was found to be statistically significantly related to the latent factor PFQ2-S ($\beta = .117, SE = .049$), but was not related to the latent factor SG-MGI. Finally, an examination of the indirect effects between age at FSI and the sexual guilt factors through FSI emotion, found that age at FSI did have a statistically significantly indirect effect on SG-MGI, through positive relational emotion *looking back* ($\beta = -.034, SE = .017$). While small, this finding suggested that younger participants were less likely to rate positive emotion *looking back*, which then led to higher sexual guilt. No other statistically significant indirect effects were found. For ease of presentation, Figure 4.4 presents only the statistically significant findings from this model.

However, despite these statistically significant relationships the changes in R^2 suggest little change in the magnitude of the variance accounted for in sexual guilt by adding age at FSI as a predictor in the model. Changes in R^2 for the sexual guilt variables correspond to $\Delta R^2 = .002$ and $.012$ for the SG-MIG and PFQ2-S, respectively. While still small, age at FSI was found to provide a more substantial increase in variance accounted for among the current and retrospective positive emotion variables, but not

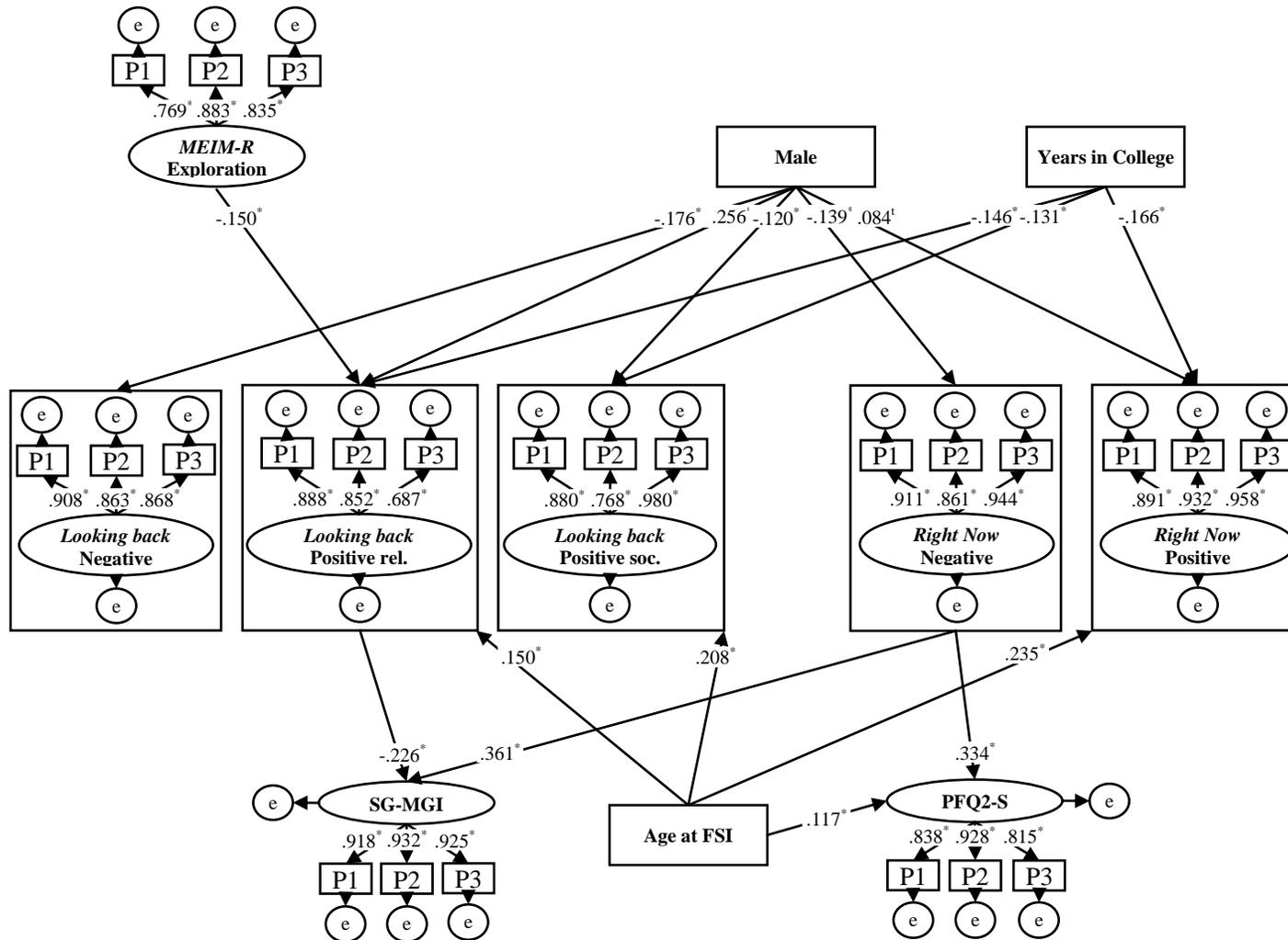


Figure 4.4. Structural equation model of statistically significant paths from Model 4.3. *Note.* Rel. = relational response; Soc. = societal response. Standardized coefficients are presented. e's are associated errors. [†] $p < .05$, one-tailed. * $p < .05$, two-tailed.

surprisingly led to small changes among the current and retrospective negative emotion variables. Changes in R^2 for the positive FSI emotion variables correspond to $\Delta R^2 = .048$, $.027$ and $.063$ for the positive relational emotion *looking back*, positive societal response *looking back*, and positive emotion *right now*, respectively. Finally, Changes in R^2 for the negative FSI emotion variables correspond to $\Delta R^2 = .005$ for both the *looking back* and *retrospective* negative emotion variables.

Comparison of Models

Comparing the model fit of the two models, including the NC (χ^2/df), there was not a significant difference between models (Model 1: $\chi^2[N = 418, df = 337] = 863.98$, $p < .001$; NC = 2.56; CFI = .943; RMSEA = .061; SRMR = .047; Model 2: ($\chi^2 [N = 418, df = 359] = 924.20$, $p < .001$; NC = 2.57; CFI = .940; RMSEA = .061; SRMR = .047). Further, as mentioned previously, Model 2 did not add a substantial degree of predicted variance in sexual guilt to that which was found in Model 1. From this it was determined that the more parsimonious model (Model 1) was the more appropriate model, thus providing greater evidence to show the lack of need for age at FSI to understand sexual guilt.

Discussion

The results of the current study provided moderate support for most of the initial hypotheses. The results of the SEM model suggested that current sexual guilt was related to current negative emotion towards an individual's FSI experience, and retrospective positive FSI emotion, which was relational in nature. These relationships were in the directions initially hypothesized, with greater negative FSI emotion leading

to greater sexual guilt, and greater positive FSI emotion reducing sexual guilt. However, the limited predictive power of the remaining FSI emotional response variables (*looking back* negative, *looking back* positive societal, *right now* positive) was surprising. These findings suggested that what was most important regarding feelings toward FSI are those which are currently negative and thinking back on how the individual thinks they connected with their partner, at least when predicting sexual guilt. Previous measures of emotional response have focused exclusively on retrospective sets of emotions, while the results of the current study suggest that both current and retrospective feelings are important, but in different ways. It may be the case that important relationships were ignored in previous studies that did not examine current emotions.

It is also important to note that in the current sample participants had higher levels of positive emotion, both currently and retrospectively, compared to their corresponding levels of negative emotion. This finding is in support of Smiler et al. (2005) who showed this same relationship held among both male and female participants. These authors stated that their results “suggest that emphasizing the negative outcomes of sex...presents an image of sexuality that is inconsistent with adolescents’ experiences” (p. 51).

The second major research agenda of the current study centered on investigating the effect of adding age at which an individual engaged in first coitus on the overall model. It was found that while age at the time of FSI did add some predictive quality to the model it did not affect the relationships between the factors from the model without age at FSI. The FSI emotion variables remained as predictors of sexual guilt, while age

at FSI was found to predict one of the sexual guilt outcome variables. However, the added predictive value of age at FSI was minimal, suggesting that FSI emotional response was more important than age at FSI in predicting sexual guilt. This being said, age at FSI was not an unimportant variable. The results indicated that age at FSI had a relationship with both current and retrospective positive emotion. Older ages at sexual initiation were associated with higher levels of positive emotion about the FSI event. However, age at FSI was not found to be related to either current nor retrospective negative emotion, which suggests that younger ages at FSI were not related to a more negative FSI response as many previous studies have alluded to (Martino et al., 2009; Moore & Davidson, 1997). While age at FSI was found to impact sexual guilt through positive relational emotion that the individual remembers experiencing at the time of their FSI event, this effect was again minimal, highlighting the importance of examining emotional response and not physical age at the time of FSI.

This finding is in contrast to countless articles which place age at FSI in the forefront of determining later sexual health risk outcomes (e.g., Kaestle et al., 2005; O'Donnell et al., 2001; Sandfort et al., 2008). While this previous literature has focused on the reduction of negative sexual health outcomes through increasing the age at FSI, the current study suggests that age at FSI may not be a key predictor of negative sexual health outcomes as previous thought, or at least the picture is more complicated. Further, many intervention studies use delay of sexual initiation as an outcome variable to provide evidence of intervention effectiveness (e.g., Aarons et al., 2000; Jemmott, Jemmott, & Fong, 2010). According to the current results, age at FSI may not be a good

indicator of intervention effectiveness. These findings instead imply that a focus on the emotional readiness for FSI of the individual may be more important. However, an important caveat is that age at FSI was related to more positive FSI emotional responses which may benefit youth in other ways beyond sexual guilt, thus these effects should be examined in future research with other sexual, physical, and mental health outcomes.

A further implication of the current findings may help inform practitioners. The current research suggests that a more comprehensive understanding of an individual's FSI experience may be important. Practitioners who have previously relied on limited items or a simple biological age at the time of FSI may not be adequately assessing the patient's experience and thus may limit their ability to sufficiently treat the patient. Findings from the current study suggest that an understanding of the patient's emotional response to the FSI event should be obtained from the practitioner, in addition to other information, to provide a wider perspective on the patient's experience.

Other factors were also found to be related to FSI response in the current study. Ethnic identity was found to be related to positive FSI emotional response that was more relationally focused *looking back* on the time of the event. However, this relationship was only for exploration of ethnic identity and not for commitment to heritage culture. Those individuals who were actively exploring their ethnic identity were less likely to recall experiencing positive emotions which were more focused on the relationship with their FSI partner. This suggests that greater ethnic identity exploration may actually serve as a risk factor for having less positive FSI emotional responses. It may be the case that greater ethnic identity itself is a risk factor, as exploration is one piece of the

larger identity, or that perhaps individuals who are developmentally not at the commitment stage of ethnic identity development, which occurs subsequent to exploration, may be more at risk. However, what is interesting to note is that ethnic identity exploration was not related to any other FSI emotional response variables, and ethnic identity commitment was unrelated to all emotional response variables. Thus, few assumptions about these relationships should be taken from this study and future research should examine these relationships to flesh out their meaning and importance.

Gender and number of years the participant has been in college were also found to be related to FSI response. In line with previous research it was found that males were less likely to report negative FSI responses, and more likely to report positive relational FSI responses, compared to females (e.g., Bettor, 1990; Guggino & Ponzetti, 1997; Koch, 1988; Smiler et al., 2005; Wight et al., 2008). However, it was also found that males were less likely to report societal positive emotion retrospectively, compared to females. This finding is in contrast to previous research which did not separate relational and societal positive emotion, but may simply reflect the small number of males in the current sample. Future research should be conducted to replicate this result with a greater number of males. It was also found that more years of college completed by participants was related to greater current and retrospective positive emotion; however, years of college was not related to negative emotion. This finding may suggest that older individuals have a greater gap between their FSI event and when they responded to the current measure, with longer lengths of time biasing their responses in a positive direction. However, this finding may also suggest an important effect of college

on FSI emotional response. Future research is needed to better understand why longer years in college increase an individual's positive FSI experience.

Limitations and Suggestions for Future Research

Although the present study suggests some important linkages between an individual's emotional response to his/her FSI experience and his/her current level of sexual guilt, it is not without limitations. Of primary concern is the cross-sectional and retrospective nature of the data. With all the measures completed at a single time period, examining current and past feelings, it may be the case that an individual's current level of sexual experience taints the memory of their FSI. Future longitudinal studies may find different patterns of emotional response at the time of the FSI event.

Secondly, the demographic makeup of the sample may decrease generalizability. Over 80% of the sample is female, and the presented relationships may be biased towards a single gender. However, gender relationships in the data conformed to the findings of previous research which suggest that the relationships are likely to hold for both genders. The sample is also primarily composed of youth who identify as being from a Hispanic origin (52.5%). Again this may limit generalizability to other populations. Future research in this area should encourage greater participation of both males and individuals from other ethnic groups.

Lastly, the study could be labeled as limited in scope because it only focuses on a single outcome measure (i.e., sexual guilt). However, as mentioned earlier, sexual guilt has been found to be theoretically and empirically related to later negative sexual, physical, and psychological health outcomes, and thus is important to understand.

Despite this, further research is needed to investigate the impact of sexual guilt on sexual behaviors and other sexual health outcome variables.

Conclusion

An individual's emotional response to his/her sexual initiation experience was found to be associated with his/her current degree of sexual guilt. For the current sample, it was found that current negative emotions and retrospective positive emotions were related to current sexual guilt. Despite previous research suggesting the importance of the individual's age at FSI, it was found in the current study that this FSI emotional response was more strongly related to sexual guilt than age at FSI. Further, while age at FSI was related to an individual's FSI emotional response, it was only related to his/her degree of positive emotional response, with older ages reflecting greater positive responses. The results highlight important relationships that must be further explored to better understand how youth and young adults respond emotionally to their sexual initiation and how this impacts their later sexual, physical, and mental health.

CHAPTER V

CONCLUSION

The present dissertation project attempted to examine how an individual's sexual initiation event impacts their later degree of sexual guilt. This was accomplished through a systematic review of the current knowledge on FSI emotional response, creation of a new measure to examine FSI emotional response, and through structural equation modeling (SEM) of FSI emotional response and sexual guilt.

Chapter II provided a thorough review of the current literature. Through this systematic review of research examining FSI emotional response it was found that studies differed in how they defined and operationalized FSI emotional response, the time point they examined, and the participants they used. Further, the focus of these studies was varied, but produced somewhat consistent results. Despite the knowledge that has been gained from this past research it was determined to be limited for several reasons. Primarily, the lack of methodological consistency did not allow for direct comparison between studies. From this it was determined that a single measure of FSI response was needed which minimized the limitations of previous measures and could be used consistently in future research to better understand what factors lead to and stem from an individual's FSI emotional response.

Using past research as a guide, a measure of FSI emotional response was created utilizing a series of semantic differential responses with Likert-type scales, which was shown in the systematic review to provide the clearest picture of an individual's FSI

response. The creation and validation of this measure was discussed in Chapter III. The new measure included more positive emotional responses than has been typically used in previous research. Finally, this new measure also asked participants to report their FSI emotional response both retrospectively and currently. The psychometrics of this measure were examined and the results supported the validity of the current measure, created using both male and female participants. Further, the model fit statistics presented in the CFA analyses for the retrospective FSI response items suggested that the determined factor structure adequately accounted for the relationships between items.

Results from a factorial invariance test between current and retrospective FSI response provided evidence to suggest different factor structures were needed to understand an individual's emotional response for each of these reference points. While three factors were present at the retrospective time point, two factors were sufficient when participants were asked to rate their current emotions. This finding is thought to indicate that individuals responded to and interpreted the items differently depending on whether they were asked to look back or judge their current emotions. Examining the means of items between these reference points in time provided evidence to show that individuals reported greater positive and negative responses retrospectively, compared to current report. This distinction between emotions at both reference points in time may have several implications for understanding emotional and sexual development, and therefore, it seemed the case that both reference points in time are likely important in understanding an individual's response to FSI.

Chapter IV examined an SEM model which included this new measure of FSI emotional response and current levels of sexual guilt. The results of this model suggested that current sexual guilt was related to current and retrospective negative emotional response towards an individual's FSI experience. There was also some evidence to suggest that retrospective positive FSI emotional response, which was relational in nature, was related to current sexual guilt as well. These relationships were in the directions that were initially hypothesized with greater negative FSI emotion leading to greater sexual guilt, and greater positive FSI emotion reducing sexual guilt. However, the limited predictive power of the remaining FSI emotional response variables was surprising. These findings suggested that what was most important regarding feelings toward FSI are those which are currently negative and thinking back on how the individual thinks they connected with their partner, at least when examining sexual guilt. Previous measures of emotional response have focused exclusively on retrospective sets of emotions, while the results of the current study suggest that both sets of items are important, but in different ways. It may be the case that important relationships were lost among previous samples that did not examine these current emotions.

As age at FSI has been believed to be an important factor in determining later sexual health in past research, this variable was added to the model. In this new model it was found that while age at the time of FSI did lend some predictive quality to the model it did not remove any from other variables. The FSI emotional response variables remained significant predictors of sexual guilt, while age at FSI was only found to be

related to one of the sexual guilt outcome variables. However, the added predictive value of this relationship was minimal, suggesting that FSI emotional response was more important than age at FSI in understanding sexual guilt. It was determined through the results that age at FSI had a relationship with both current and retrospective positive emotion. Older ages at sexual initiation were associated with more positive response to the FSI event. However, age at FSI was not found to be related to either current nor retrospective negative emotion, which suggests that younger ages at FSI were not related to a more negative FSI response as many previous studies have alluded to (Martino et al., 2009; Moore & Davidson, 1997). While age at FSI was found to impact sexual guilt through positive relational emotion that the individual remembers experiencing at the time of their FSI event, this effect was again minimal, highlighting the importance of examining emotional and not physical age at the time of FSI.

Although the present dissertation provided evidence for the appropriateness of a measure of FSI emotional response and its importance in determining later sexual guilt, it is not without limitations. Of primary concern is the cross-sectional and retrospective nature of the data. With all the measures completed at a single time period, examining current and past feelings, it may be the case that an individual's current level of sexual functioning taints their previous responses. This possible recall bias cannot be directly addressed with the current study. Results suggest that individuals in the current study were able to make a distinction when reporting their emotional responses currently and at the time of their FSI experience. These differing attitudinal structures may suggest that individuals were able to look beyond their recall bias to respond accurately to both

types of questions. From this we can speculate that most individuals should be able to recall, with some validity, their FSI experience; however, to adequately ensure that recall bias does not play a role, future studies would need to employ a longitudinal design to capture emotional responses toward FSI as they occur.

Secondly, the demographic makeup of the sample may decrease generalizability to other populations. Over 80% of the sample is female, and the presented relationships may be unique to this gender. However, gender relationships in the data conformed to the findings of previous research which suggest that the relationships are likely to hold for both genders. The sample is also primarily composed of youth who identify as being from a Hispanic origin (52.5%). Again this may limit generalizability to other populations. Future research in this area should encourage greater participation of both males and individuals from other ethnic groups.

Lastly, the study could be labeled as limited in scope because it only focuses on a single outcome measure (sexual guilt). However, as mentioned earlier, sexual guilt has been found to be theoretically and empirically related to later negative sexual, physical, and psychological health outcomes, and thus is important to understand. Despite this, further research is needed to extend these findings onto behaviors and other health outcome variables.

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APPENDIX A

SEARCH, RETRIEVAL, AND SELECTION OF STUDIES

In the initial phase of our literature search, we reviewed previously published quantitative and narrative reviews on sexual initiation identify study keywords and terms. We then searched PsycINFO, MEDLINE, ERIC, and Sociology databases. In our search of journal articles, dissertations, and book chapters, we used the terms *first sex**, *first coitus*, *sex* initiat**, combined with *emotion**, *context*, *experience*, *percept* timing*, or *perciev* timing*. Designed to capture any relevant sources, the search terms resulted in an initial pool of 489 abstracts.

The primary author reviewed the abstracts from each study and applied inclusion criteria. Studies were included that (a) investigated the first sexual intercourse experience or sexual initiation, (b) appeared to be psychologically sound and presented results in a structured and organized manner so that conclusions could be intuited, (c) were conducted in English only, and (d) were either published studies, dissertations, conference proceedings, or edited book chapters. Case studies or narratives were excluded. This process yielded a subgroup of 18 studies that met the criteria. Reference sections of this subgroup were hand searched for additional studies, which resulted in 7 additional studies. Finally, each main author was searched in for additional studies and no studies were included from this process.

APPENDIX B
CREATION OF ITEM PARCELS

The following is a description of the process for completing the item-parcels in Chapter IV. Prior to parcel construction all constructs were examined through EFA analysis. Due to the unidimensional scales of all constructs, it was determined that random assignment to three parcels per construct was appropriate (Coffman & MacCallum, 2005). Below is a listing of the items for each parcel tested in the model. Item numbers correspond to those found in Appendix F.

MEIM-R Items

Exploration

$$P1 = B8$$

$$P2 = B11$$

$$P3 = B12$$

Commitment

$$P1 = B9$$

$$P2 = B10$$

$$P3 = B13$$

Affect Items

Looking Back Negative

$$P1 = (E45h + E45p + E45d)/3$$

$$P2 = (E45e + E45r + E45a)/3$$

$$P3 = (E45o + E45l + E45m + E45j)/4$$

Looking Back Positive Relational

$$P1 = E45f$$

$$P2 = E45q$$

$$P3 = E45s$$

Looking Back Positive Societal

$$P1 = E45g$$

$$P2 = (E45i + E45n)/2$$

$$P3 = (E45k + E45c)/2$$

Right Now Negative

$$P1 = (E46e + E46o + E46m)/3$$

$$P2 = (E46h + E46a + E46j)/3$$

$$P3 = (E46l + E46d + E46p + E46r)/4$$

Right Now Positive

$$P1 = (E46i + E46k + E46n)/3$$

$$P2 = (E46q + E46s + E46g)/3$$

$$P3 = (E46c + E46f + E46b)/3$$

Sexual Guilt Items

PFQ2-S

$$P1 = (C17a + C18a + C19b + C21a + C22b + C24a + C25b + C27a + C28b + C30a + C31b + C33a + C34b + C36a + C37b + C39a)/16.$$

$$P2 = (C17b + C18b + C20a + C21b + C23a + C24b + C26a + C27b + C29a + C30b + C32a + C33b + C35a + C36b + C38a + C39b)/16.$$

$$P3 = (C19a + C20b + C22a + C23b + C25a + C26b + C28a + C29b + C31a + C32b + C34a + C35b + C37a + C38b + C40a + C40b + C41a + C41b)/17.$$

SG-MGI

$$P1 = (C42a + C42f)/2$$

$$P2 = (C42c + C42e)/2$$

$$P3 = (C42b + C42d)/2$$

APPENDIX C

FACULTY CORRESPONDENCE AND STUDENT RECRUITMENT

Dear Dr. XXXX,

My name is Matthew Davis and I am a Doctoral student in the Counseling Psychology program at Texas A&M University. I am requesting your help in recruiting people to take an online survey examining first sexual intercourse and its relation to current sexual feelings. ****Important:** participants *do not* need to have had sex to complete the survey.

This research study has been reviewed by the Human Subjects' Protection Program and/or the Institutional Review Board at Texas A&M University. For research-related problems or questions regarding your rights as a research participant, you can contact these offices at (979) 458-4067 or irb@tamu.edu. Participants will also be provided a referral to the Boys Town National Hotline at 1-800-448-3000 should any stress arise due to participation.

Each participant will receive the opportunity to enter a drawing for one of **four \$50 gift** certificates to Wal-Mart. If you feel that this research is of interest to your students, please forward on this announcement.

Thank you for your time and help.

Sincerely,

Matthew J. Davis, M. S.

Doctoral Student, Counseling Psychology

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APPENDIX D

RESEARCH ANNOUNCEMENT

Hello,

My name is Matthew Davis and I am a Doctoral student in the Counseling Psychology program at Texas A&M University. I am conducting a research project that examines first sexual intercourse and its relation to current sexual feelings. ****Important:** participants *do not* need to have had sex to complete the survey. **By completing this survey, you are helping researchers at Texas A&M University to study the effects of first sexual intercourse on later sexual development. It takes approximately 30-45 minutes to complete the survey.** The survey is anonymous.

To complete the survey, [Click Here](#)

In return for your participation, you will be given the opportunity to enter a drawing for one of **four \$50 gift certificates** to Wal-Mart. The drawing will take place at the conclusion of the study.

This research study has been reviewed by the Human Subjects' Protection Program and/or the Institutional Review Board at Texas A&M University. For research-related problems or questions regarding your rights as a research participant, you can contact these offices at (979) 458-4067 or irb@tamu.edu. Participants will also be provided a referral to the Boys Town National Hotline at 1-800-448-3000 should any stress arise due to participation.

I also would greatly appreciate it if you would forward this link to other participants over 18 years old.

Thank you for your time and help.

Sincerely,

Matthew J. Davis, M.S.
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Counseling Psychology
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APPENDIX E
CONSENT FORM

Hello:

You are invited to participate in our survey examining the first sexual experience. In this survey, approximately 400 people will be asked to complete a survey that asks questions about their first sexual experience. It will take approximately 45 minutes to complete the questionnaire. For taking the survey you will be eligible to enter a prize drawing for one of **4 \$50 gift cards**. Please read the following consent document before continuing.

Introduction:

The purpose of this form is to provide you information that may affect your decision as to whether or not to participate in this research study. If you decide to participate in this study, this form will also be used to record your consent, however your name or contact information will NOT be linked in any way to the information you provide.

You have been asked to participate in a research project studying first sexual intercourse. The purpose of this study is to examine how first sexual intercourse affects an individual's current sexual feelings. You were selected to be a possible participant because you are enrolled in a college or university.

What will I be asked to do?

If you agree to participate in this study, you will be asked to respond to several questions regarding your first sexual experience and your current functioning. Your name or contact information will NOT be linked in any way to the information you provide. This study will take approximately 30-45 minutes to complete.

What are the risks involved in this study?

The risks associated in this study are minimal, and are not greater than risks ordinarily encountered in daily life. However, you will be asked for sensitive information regarding your past and current sexual experiences, which may cause emotional distress. If at any time you feel emotionally distressed while taking the survey please contact The Boys Town National Hotline at 1-800-448-3000.

What are the possible benefits of this study?

You will receive no direct benefit from participating in this study; however, the information obtained from you will lend to a greater understanding of how first sexual intercourse affects an individual's sexual feelings. This will help researchers create interventions to decrease many negative sexual, emotional, and relationship difficulties in young adults.

Do I have to participate?

No. Your participation is voluntary. You may decide not to participate or to withdraw at any time without your current or future relations with Texas A&M University being affected.

Will I be compensated?

Your participation will make you eligible for one of 4 \$50 gift cards to Wal-Mart raffled to participants. Disbursement will occur at the end of the data collection period, and participants will be informed through email that they have won. Again NO contact information will be linked with your responses.

Who will know about my participation in this research study?

This study is anonymous. Your email address will be requested on a separate link and the purpose of the email is to be eligible for the prize drawing, but may be omitted at your discretion if you do not wish to be eligible for the prize drawings. Your email address will NOT be linked to the information you provide.

Whom do I contact with questions about the research?

If you have questions regarding this study, you may contact Matthew Davis at matthew.j.davis@tamu.edu.

Whom do I contact about my rights as a research participant?

This research study has been reviewed by the Human Subjects' Protection Program and/or the Institutional Review Board at Texas A&M University. For research-related problems or questions regarding your rights as a research participant, you can contact these offices at (979)458-4067 or irb@tamu.edu.

Signature:

Please be sure you have read the above information, asked questions and received answers to your satisfaction. You may print a copy of the consent form for your records. By clicking continue below you consent to participate in this study.

APPENDIX F

CODE BOOK

A) Demographics:

- 1) What is your current age? _____
- 2) Are you:
 - female = 0
 - male = 1
- 3) How many years have you been in college? _____
- 4) Are you:
 - heterosexual = 1
 - homosexual = 2
 - bisexual = 3
 - other = 4
- 5) Are you:
 - single = 0
 - married = 1
 - dating (serious relationship) = 2
 - dating (casual relationship) = 3
 - cohabitating = 4
- 6) How many times have you been married? _____

B) Race and Ethnic Identity:*****the Multigrove Ethnic Identity Measure-Revised (MEIM-R)**

Instructions: In this country, people come from many different countries and cultures, and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Hispanic or Latino, Black or African American, Asian American, Chinese, Filipino, American Indian, Mexican American, Caucasian or White, Italian American, and many others. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

- 7) In terms of ethnic group, I consider myself to be _____.
- 8) I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.
 - strongly agree = 4
 - agree = 3
 - disagree = 2
 - strongly disagree = 1
- 9) I have a strong sense of belonging to my own ethnic group.
 - strongly agree = 4

- agree = 3
 - disagree = 2
 - strongly disagree = 1
- 10) I understand pretty well what my ethnic group membership means to me.
- strongly agree = 4
 - agree = 3
 - disagree = 2
 - strongly disagree = 1
- 11) I have often done things that will help me understand my ethnic background better.
- strongly agree = 4
 - agree = 3
 - disagree = 2
 - strongly disagree = 1
- 12) I have often talked to other people in order to learn more about my ethnic group.
- strongly agree = 4
 - agree = 3
 - disagree = 2
 - strongly disagree = 1
- 13) I feel a strong attachment towards my own ethnic group.
- strongly agree = 4
 - agree = 3
 - disagree = 2
 - strongly disagree = 1
- 14) My ethnicity is:
- Asian or Asian American, including Chinese, Japanese, and others. = 1
 - Black or African American = 2
 - Hispanic or Latino, including Mexican American, Central American, and others = 3
 - White, Caucasian, Anglo, European American; not Hispanic = 4
 - American Indian/Native American = 5
 - Mixed; Parents are from two different groups = 6
 - Other
- 15) My father's ethnicity is:
- Asian or Asian American, including Chinese, Japanese, and others. = 1
 - Black or African American = 2
 - Hispanic or Latino, including Mexican American, Central American, and others = 3
 - White, Caucasian, Anglo, European American; not Hispanic = 4
 - American Indian/Native American = 5
 - Mixed; Parents are from two different groups = 6
 - Other
- 16) My mother's ethnicity is:
- Asian or Asian American, including Chinese, Japanese, and others. = 1
 - Black or African American = 2

- O Hispanic or Latino, including Mexican American, Central American, and others = 3
- O White, Caucasian, Anglo, European American; not Hispanic = 4
- O American Indian/Native American = 5
- O Mixed; Parents are from two different groups = 6
- O Other

C) Sexual Guilt

****The sex-guilt subscale of the Revised Mosher Guilt Inventory (SG-MGI)

Instructions: The following items are arranged in pairs of responses written by college students in response to sentence completion stems such as “When I have sexual dreams...” You are to respond to each item as honestly as you can by rating your response on a 7-point scale from 0, which means *not at all true of (for) me* to 6, which means *extremely true of (for) me*. Ratings of 1 to 5 represent ratings of agreement-disagreement that are intermediate between the extreme anchors of *not at all true* and *extremely true* for you. The items are arranged in pairs of two to permit you to compare the intensity of a *trueness* for you. This limited comparison is often useful since people frequently agree with only one item in a pair. In some instances, it may be the case that both items or neither item is true for you, but you will usually be able to distinguish between items in a pair by using different ratings from the 7-point range for each item.

Rate each of the following items from 0 to 6 as you keep in mind the value of comparing items within pairs.

	Not at all true						Extremely true
17) “Dirty” jokes in mixed company ...							
a) do not bother me.	0	1	2	3	4	5	6
b) are something that make me very uncomfortable.	0	1	2	3	4	5	6
18) Sex relations before marriage...							
a) should be permitted.	0	1	2	3	4	5	6
b) are wrong and immoral.	0	1	2	3	4	5	6
19) Sex relations before marriage...							
a) ruin many a happy couple.	0	1	2	3	4	5	6
b) are good in my opinion.	0	1	2	3	4	5	6
20) Masturbation...							
a) is wrong and will ruin you.	0	1	2	3	4	5	6
b) helps one feel eased and relaxed.	0	1	2	3	4	5	6
21) Unusual sex practices...							
a) might be interesting.	0	1	2	3	4	5	6
b) don’t interest me.	0	1	2	3	4	5	6

	Not at all true						Extremely true
22) When I have sexual dreams...							
a) I sometimes wake up feeling excited.	0	1	2	3	4	5	6
b) I try to forget them.	0	1	2	3	4	5	6
23) "Dirty" jokes in mixed company...							
a) are in bad taste.	0	1	2	3	4	5	6
b) can be funny depending on the company.	0	1	2	3	4	5	6
24) Petting...							
a) I am sorry to say is becoming an accepted practice.	0	1	2	3	4	5	6
b) is an expression of affection which is satisfying.	0	1	2	3	4	5	6
25) Unusual sex practices...							
a) are not so unusual.	0	1	2	3	4	5	6
b) don't interest me.	0	1	2	3	4	5	6
26) Sex...							
a) is good and enjoyable.	0	1	2	3	4	5	6
b) should be saved for wedlock and childbearing.	0	1	2	3	4	5	6
27) "Dirty" jokes in mixed company...							
a) are coarse to say the least.	0	1	2	3	4	5	6
b) are lots of fun.	0	1	2	3	4	5	6
28) When I have sexual desires...							
a) I enjoy it like all healthy human beings.	0	1	2	3	4	5	6
b) I fight them for I must have complete control of my body.	0	1	2	3	4	5	6
29) Unusual sex practices...							
a) are unwise and lead only to trouble.	0	1	2	3	4	5	6
b) are all in how you look at it.	0	1	2	3	4	5	6
30) Unusual sex practices...							
a) are OK as long as they're heterosexual.	0	1	2	3	4	5	6
b) Usually aren't pleasurable because you have preconceived feelings about their being wrong.	0	1	2	3	4	5	6

	Not at all true						Extremely true
31) Sex relations before marriage...							
a) in my opinion, should not be practiced.	0	1	2	3	4	5	6
b) are practiced too much to be wrong.	0	1	2	3	4	5	6
32) As a child, sex play...							
a) is immature and ridiculous.	0	1	2	3	4	5	6
b) was indulged in.	0	1	2	3	4	5	6
33) Unusual sex practices...							
a) are dangerous to one's health and mental condition.	0	1	2	3	4	5	6
b) are the business of those who carry them out and no one else's.	0	1	2	3	4	5	6
34) When I have sexual desires...							
a) I attempt to repress them.	0	1	2	3	4	5	6
b) they are quite strong.	0	1	2	3	4	5	6
35) Petting...							
a) is not a good practice until after marriage.	0	1	2	3	4	5	6
b) is justified with love.	0	1	2	3	4	5	6
36) Sex relations before marriage...							
a) help people adjust.	0	1	2	3	4	5	6
b) should not be recommended.	0	1	2	3	4	5	6
37) Masturbation...							
a) is wrong and a sin.	0	1	2	3	4	5	6
b) is a normal outlet for sexual desire.	0	1	2	3	4	5	6
38) Masturbation...							
a) is all right.	0	1	2	3	4	5	6
b) is a form of self-destruction.	0	1	2	3	4	5	6
39) Unusual sex practices...							
a) are awful and unthinkable.	0	1	2	3	4	5	6
b) are all right if both partners agree.	0	1	2	3	4	5	6
40) If I had sex relations, I would feel...							
a) all right, I think.	0	1	2	3	4	5	6
b) I was being used not loved.	0	1	2	3	4	5	6
41) Masturbation...							
a) is all right.	0	1	2	3	4	5	6
b) should not be practiced.	0	1	2	3	4	5	6

***** The revised version of the PFQ2 (PFQ2-S)**

Instructions: For each of the following listed feelings, to the left of each item number, please place a number from 0-4 reflecting how common the feeling is for you in regard to your sexuality. A “4” means that you experience the feeling continuously or almost continuously; a “3” means you experience the feeling frequently but not continuously; a “2” means that you experience the feeling some of the time; a “1” means that you experience the feeling rarely; and a “0” means that you never experience the feeling.

42) In general, how often do you experience the following feelings regarding your sexuality

	Continuously or almost continuously	Frequently	Some of the time	Rarely	Never
a. Mild sexual guilt	4	3	2	1	0
b. Worry about hurting or injuring someone sexually	4	3	2	1	0
c. Intense sexual guilt	4	3	2	1	0
d. Regret about sexuality	4	3	2	1	0
e. Remorse about sexuality	4	3	2	1	0
f. Feeling you deserve criticism for what you did sexually	4	3	2	1	0

D) Demographics continued

43) Have you had sexual intercourse?

no = 0

yes = 1

44) At what age did you first have sexual intercourse? _____

E) FSI Emotional Response

Instructions: The following items are a number of emotions you may have experienced immediately after or during your first sexual intercourse experience. Think back to the time right after your experience and try to remember how you felt at the time. For each item choose the amount you experienced each emotion on the 7-point scale provided, where “1” indicates that you experienced none of that emotion, and “7” indicates you experienced a lot of that emotion.

45) Looking back, how much of the following emotions did you feel immediately after or during your first sexual intercourse experience?

	None			Somewhat			A lot
a. Confusion	1	2	3	4	5	6	7
b. Emotional satisfaction	1	2	3	4	5	6	7
c. Physical satisfaction	1	2	3	4	5	6	7
d. Anxiety	1	2	3	4	5	6	7
e. Guilt	1	2	3	4	5	6	7
f. Romance	1	2	3	4	5	6	7
g. Pleasure	1	2	3	4	5	6	7
h. Sorrow	1	2	3	4	5	6	7
i. Relief	1	2	3	4	5	6	7
j. Exploitation	1	2	3	4	5	6	7
k. Happiness	1	2	3	4	5	6	7
l. Tension	1	2	3	4	5	6	7
m. Embarrassment	1	2	3	4	5	6	7
n. Excitement	1	2	3	4	5	6	7
o. Fear	1	2	3	4	5	6	7
p. Pressure	1	2	3	4	5	6	7
q. Love	1	2	3	4	5	6	7
r. Regret	1	2	3	4	5	6	7
s. Respect	1	2	3	4	5	6	7

Instructions: The following items are a number of emotions you may have experienced immediately after or during your first sexual intercourse experience. This time respond to the item with how you feel about the experience today. For each item choose the amount you experienced each emotion on the 7-point scale provided, where “1” indicates that you experienced none of that emotion, and “7” indicates you experienced a lot of that emotion.

46) Right now how much of the following emotions do you feel regarding your first sexual intercourse experience?

	None			Somewhat			A lot
a. Confusion	1	2	3	4	5	6	7
b. Emotional satisfaction	1	2	3	4	5	6	7
c. Physical satisfaction	1	2	3	4	5	6	7
d. Anxiety	1	2	3	4	5	6	7
e. Guilt	1	2	3	4	5	6	7
f. Romance	1	2	3	4	5	6	7
g. Pleasure	1	2	3	4	5	6	7
h. Sorrow	1	2	3	4	5	6	7

	None			Somewhat			A lot
i. Relief	1	2	3	4	5	6	7
j. Exploitation	1	2	3	4	5	6	7
k. Happiness	1	2	3	4	5	6	7
l. Tension	1	2	3	4	5	6	7
m. Embarrassment	1	2	3	4	5	6	7
n. Excitement	1	2	3	4	5	6	7
o. Fear	1	2	3	4	5	6	7
p. Pressure	1	2	3	4	5	6	7
q. Love	1	2	3	4	5	6	7
r. Regret	1	2	3	4	5	6	7
s. Respect	1	2	3	4	5	6	7

VITA

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