

AN ABSTRACT OF THE DISSERTATION OF

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Title: Adolescent Sexual Initiation: A Predictor of Adult Female Romantic Attachment?

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There is a knowledge gap concerning the outcomes of early adolescent sexual initiation (ASI). In particular, the influence of early ASI upon adult attachment is unknown. A multiple regression study was conducted to address this knowledge gap. Adult partner/spouse attachment was the criterion variable, and the predictor variables included both ASI and factors known to interact with early ASI (i.e., age of menarche, neuroticism, extraversion, and socioeconomic status). The participants were female heterosexual undergraduates who had experienced: (a) consensual first coitus during adolescence, (b) an end to a relationship with their first coital partner, and (c) dating or marrying another person. ASI was not found to be a predictor of female adult attachment to a partner or spouse. Clinical and research implications of the results were discussed.

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Adolescent Sexual Initiation: A Predictor of Adult Female Romantic Attachment?

by

April R. Waggoner

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I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

April R. Waggoner, Author

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CONTRIBUTION OF AUTHORS

Dr. Tim Bergquist of Northwest Christian College contributed to chapter 3 by conducting statistical analysis on the data and assisting in interpreting the data. Dr. Michelle Cox assisted in formatting and editing throughout the writing process. Dr. Cass Dykeman contributed to chapter 3.

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Chapter 1: General Introduction

Overview

The purpose of this dissertation study was to demonstrate scholarly work by using the manuscript style dissertation format as outlined by the Oregon State University Graduate School. In this format, chapter 1 provides explanations that thematically tie the two journal-formatted manuscripts found in chapters 2 and 3 and supports the way they build toward research conclusions that are pertinent to the field of developmental psychology in understanding adolescent sexual development and its association with future attachment relationships. Therefore, chapter 2 is a literature review titled “A Review of the Literature on Adolescent Sexual Initiation, Attachment, and Development,” and chapter 3 presents quantitative research in a manuscript titled, “The Relationship Between Early Adolescent Sexual Initiation and Female Adult Romantic Attachment.” The purpose of the study described in chapter 3 was to determine whether the timing of consensual heterosexual early adolescent sexual initiation (ASI) predicts adult dating, partner, or spouse anxious or avoidant attachment in college-aged women. Chapter 4 is a summary providing the conclusion of this dissertation study.

The experience of ASI is a major life transition that is significant, meaningful, and multidimensional (Cate, Long, Angera, & Draper, 1993; Collins, Welsh, & Furman, 2009; Sprecher, Barbee, & Schwartz, 1995). ASI affects cognitive, behavioral, and emotional processes and impacts self-perception (Cate et al., 1993; Collins et al., 2009; Sprecher et al., 1995). The intensity of adolescent connections and the meaning attached to those interactions influence the relationships that follow (Collins et al., 2009). Harden (2012) identified the timing of ASI as a predictor of the quality and stability of romantic

relationships in college-age emerging adults. Early ASI is defined as consensual initiation of sex (vaginal, anal, or oral) before the age of 16 (Huibregste, Bornovalova, Hicks, McGue, & Lacono, 2011).

Empirical evidence suggests that early ASI is related to negative physical and psychological symptoms for females as this first event is laden with personal and social meaning (Madkour, Farhat, Halpern, Godeau, & Gabhainn, 2010). Stressful life events and major changes that occur when an individual is still immature have the capacity to divert emotional and physical development from an optimum pathway to a suboptimum pathway, changing attachment security to insecurity or vice versa (Bowlby, 1973, 1988). Attachment is defined as a caring, responsive, and supportive interaction that begins when caregivers create emotional bonds with children, strengthening their feelings of safety and security through maintaining proximity (Allen & Land, 1999; Bowlby, 1982; Collins & Sroufe, 1999; Collins et al., 2009). Bowlby (1982) remarked that attachment behavior in females may be heavily affected by the endocrine system and sexual behavior.

Initially attachment bonding is regulated chemically through the release of dopamine and oxytocin; thus relationships have the ability to change the brain as the biochemical process becomes entrained with social interactions (Cozolino, 2006). Neuroscience supports the idea that the brain creates new neuropathways (neuroplasticity) in response to physical and emotional experiences that impact attachment (Siegel, 2010). One of the features of healthy sexuality is the successful

integration of sexual and interpersonal domains, the combining of emotions, cognitions, and behaviors (Bukowski, Sippola, & Brender, 1993; Collins et al., 2009).

Because “adolescence is a time period critical to healthy sexual development” (Aarestad, 2000, p. 87), this dissertation focused on the constructs of early ASI and attachment for the purpose of understanding the types of events associated with attachment (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000) such as the Experiences in Close Relationships-Relationship Structures (ECR-RS) questionnaire assessed anxiety and avoidance across several distinct relationships (Fraley, Waller, & Brennan, 2000) and the Big Five Inventory assesses personality trait dimensions related to interpersonal relations (Shaver & Brennan, 1992; Srivastava, 2011). Data analysis of the two stepwise forward selection multiple regression analyses provided sufficient evidence supporting the null hypothesis, indicating there was not a relationship between certain predictor variables (socioeconomic status [SES], menarche, personality, early ASI, and parental attachment) and the criterion variables (current adult dating, partner, or spouse anxious attachment and current adult dating, partner, or spouse avoidant attachment). The manuscripts included in this dissertation thematically converge as they describe, explain, and predict that some of the common risk factors that influence current female adult dating, partner, or spouse attachment.

Importance to the Profession of Counseling

Broadening the current knowledge base about consensual heterosexual early ASI and current female adult dating, partner, or spouse attachment is relevant to those working with individuals and couples, including premarital counselors; counselor

educators who train future clinicians, counselors, therapists, and social workers; and school counselors working with adolescent students in areas such as counseling, sexual education, risk assessment. The nature, degree, and timing of sexual debut has been linked to problems with future sexual behavioral patterns, sexually transmitted infections, depression, academic outcomes, and relationship quality impacting an individual's life (Collins et al., 2009).

Attachment insecurity can be perpetuated in future generations, impacting potential relationship functioning and influencing interpersonal happiness as well as overall mental health (Mohr, Cook-Lyon, & Kolchakian, 2010). The poor quality of relationships, in turn, impacts development, satisfaction, longevity, trust, and additional factors including increased casual sexual encounters and alcohol use (Cate et al., 1993; Owen & Fincham, 2012; Owen, Rhoades, & Stanley, 2010). As researchers have identified that attachment style can change as a result of neuroplasticity and that typically adolescents transfer attachment from their parents to their peers, deeper understanding of the dynamic aspect of ASI and attachment trajectories could impact training practices and therapeutic interventions (Cozolino, 2006; Fraley, Vicary, Brumbaugh, & Roisman, 2011; Siegel, 1999).

Rationale

Empirical research shows psychopathology and physiological resiliency are impacted by the degree and strength of attachment through social relationships (Dozier, Stovall, & Albus, 1999). Female adult relational attachment patterns are rooted in adolescence and impacted by evaluation of one's first sexual encounter (Senn & Carey,

2011; Tolman & McClelland, 2011). Early ASI has been linked to risky adult sexual behavior (RASB) (Huibregste et al., 2011). Recognizing attachment strengthens biopsychosocial health, wellness, and relational satisfaction, defining the relationship between attachment and early ASI could broaden the conceptual framework of adolescent development and adult romantic relationship development (Dozier et al., 1999).

Interest in motivations and risks involved in early ASI continues to increase. Cognitive, emotional, and behavioral processes; individual characteristics and traits; family of origin; and the surrounding environment are contextual influences on development and therefore adolescent sexual relationships (Collins et al., 2009). Within these contextual influences, early puberty, drug and alcohol use, parent-child relationships, psychopathology, peer influence, and low SES are common risk factors contributing to early ASI and increased RASB (Huibregste et al., 2011). However, there is a gap in the literature with respect to identifying the relationship between ASI and attachment-related outcomes.

Research Question

The research question for the research study was, What is the predictive strength of early ASI timing on adult romantic attachment in heterosexual college-aged women? This research question fills the gap in the literature because most research examines ASI through the lens of sexual education. Researchers are interested in trying to identify why adolescents engage in sex, the resulting sexual behavioral patterns (Dawson, Shih, de Moor, & Shrier, 2008), and the connection ASI has with RASB (Huibregste et al., 2011). To this researcher's knowledge, research is lacking in addressing the long-term relational

impact and ramifications of early ASI and the relationship with adult female, dating, partner, or spouse attachment.

Hypotheses

The hypotheses were as follows:

1. H₀: After accounting for SES, menarche, personality, and parental attachment, there is no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse anxious attachment in college-aged heterosexual women.
2. H₀: After accounting for SES, menarche, personality, and parental attachment, there is no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse avoidant attachment in college-aged heterosexual women.

Glossary of Terms

Attachment: a caring, responsive, and supportive interaction that begins with caregivers creating emotional bonds and strengthening a child's feeling of safety and security by maintaining proximity to the child (Allen & Land, 1999; Bowlby, 1982; Collins & Sroufe, 1999; Collins et al., 2009).

Adolescent sexual initiation: the initiation of sex (vaginal, anal, or oral) before the age of 16 (Huibregste et al., 2011).

Big Five Inventory: a self-report inventory designed to measure five dimensions of personality: openness, conscientiousness, extraversion, agreeableness, and neuroticism (John & Sirvastava, 1999).

Experiences in Close Relationships—Relationship Structures (ECR-RS)

Questionnaire: an instrument used to assess individual differences in attachment orientation across several distinct relationships (Fraley et al., 2000).

Internal working model: The cognitive-emotional attitudes or beliefs of one's value and worth (Schmitt et al., 2004).

Neuroplasticity: the capacity for the brain to create new neural pathways in response to experiences (Seigel, 2010).

Risky adult sexual behavior: adult behavior including an increased number of lifetime sexual partners, frequency of sex under the influence of drugs or alcohol, and probability of contracting sexually transmitted diseases (Huibregste et al., 2011).

Organization

The organization of the dissertation follows a thematic review of the literature focusing on all the constructs described in the research question in chapter 2. The themes include (a) ASI and related cognitive, emotional, and behavioral effects; (b) attachment behaviors, patterns, internal working models, stability, and biological factors; and (c) the role of personality in attachment. Chapter 3 is a research study focusing on the predictive strength of consensual early ASI in terms of adult dating, partner, or spouse anxious and avoidant attachment in heterosexual women. Chapter 4 offers general conclusions, including the results of the research, limitations, and suggestions for further research.

Chapter 2

A Review Of The Literature On Adolescent Sexual Initiation,
Attachment, And Development

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Abstract

This article reviews the literature on the relationship between adolescent sexual initiation, attachment, and development. An individual's psychopathology and physiological resiliency are impacted by the degree and strength of attachment through social relationships (Dozier, Stovall, & Albus, 1999). Adult relational patterns in terms of attachment are rooted in adolescence and impacted by the evaluation of one's first sexual encounter (Tolman & McClelland, 2011). Adolescence is a time of self-discovery and challenge when young people are learning about themselves and others, negotiating changing relational dynamics, managing varying levels of intimacy, and validating their sense of self-worth (O'Sullivan, Cheng, Harris, & Brooks-Gunn, 2007; Tolman & McClelland, 2011). Typically adolescent romantic relationships are intense, affectionate, intimate, and important to their development and well-being (Collins, Welsh, & Furman, 2009). The sexual behavior of adolescents is formative, initiating the development of interpersonal scripts (i.e., their meaning and interpreting of the event) and perceptions impacting future relational, sexual, behavioral, and cognitive contexts (Schubotz, Rolston, & Simpson, 2004; Senn & Carey, 2011). This review of the literature lays the groundwork needed to further investigate the relationship between consensual early adolescent sexual initiation and adult romantic attachment in heterosexual women.

Search Parameters for Review:

Adolescence; Adolescent Sexual Initiation; Attachment

A Review of the Literature on Adolescent Sexual Initiation, Attachment, and Development

Introduction

Current research indicates attachment-related stressful life events before the age of 18 are connected to the likelihood of a secure child becoming insecure in early adulthood (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). According to Bowlby (1982), attachment representations remain open to revision in light of real experiences throughout childhood and adolescence. The types of events that might be associated with change in attachment and the underlying mechanisms of such change require further investigation (Waters et al., 2000). Whereas multiple factors influence attachment continuity and change, questions remain regarding how interpersonal events, such as an adolescent's sexual initiation might affect romantic attachment later in life.

Adolescent perceptions of self and internal working models (Bowlby, 1988) fluctuate over time, potentially influencing types of attachment after first coitus (Davila, Karney, & Bradbury, 1999). In terms of how adolescent sexual experiences relate to attachment continuity and stability, it may be that adolescents transfer attachment functions to peers, which may contribute to attachment insecurity undermining adult romantic attachment (Udell, Sandfort, Reitz, Bos, & Dekovic, 2010; Waters et al., 2000). The interrelationship between attachment and experience is reciprocal and is associated with various personality constructs such as warmth, reliance, and autonomy (Hazan & Shaver, 1992; Shaver & Brennan, 1992; Thompson, 1999).

The five domains of personality (openness, conscientiousness, extraversion, agreeableness, and neuroticism) affect interpersonal relations and predict attachment styles (Costa & McCrae, 1985; Shaver & Brennan, 1992). Environment and biology influence and shape personality (Srivastava, 2011). Additional biological factors affecting attachment include the response, release, and rate of neurotransmitters within the brain and the neurocircuitry connection responses to relational interactions (Berger, 2001; Schore, 1994). How people interpret and make meaning of their experiences impacts the schema and scripts that follow (Davila et al., 1999; Pinquart, 2010).

Attachment formation, development, and instability are complex processes that occur simultaneously (Davila et al., 1999). Because there are many possibilities and trajectories involved when assessing and understanding attachment and development, exploring each component can give further insight into the relationship between early ASI and female adult dating, partner, or spouse attachment (Huibregste, Bornovalova, Hicks, McGue, & Lacono, 2011).

Adolescent Sexual Initiation

Researchers have been interested in adolescent sexual initiation (ASI) and have explored the age of first sexual initiation (Senn & Carey, 2011); gender differences related to why adolescents engage in sex and resulting sexual behaviors (Dawson, Shih, de Moor, & Shrier, 2008); adolescent psychological and physiological satisfaction (Higgins, Trussell, Moore, & Davidson, 2010; Sprecher et al., 1995); adolescent levels of ambivalence (Pinquart, 2010), psychosocial outcomes (Udell et al., 2010); and adolescent normative sexual development (Tolman & McClelland, 2011). In regard to long-term

outcomes, little research outside of exploring the relationship between ASI and risky adult sexual behavior (RASB) exists (Huibregste et al., 2011). Assessing the predictive strength of early ASI timing in terms of adult romantic attachment in heterosexual women will fill the gap in the current research regarding the correlation between early ASI and long-term relationship attachment.

History and background. Early ASI typically refers to the initiation of sex (vaginal, anal, or oral) before the age of 16 (Huibregste et al., 2011). The majority of the research available portrays early ASI in negative terms, associating first sexual coitus with deviant or risky behaviors (Huibregste et al., 2011; Senn & Carey, 2011). However, it is important to recognize that ASI is also a normative part of development including sexual and relational identity (Pinquart, 2010; Tolman & McClelland, 2011). Sexual awakening and activity during adolescence align with Erikson's views of age-appropriate developmental tasks, consistent with the desire for independence and autonomy (Erikson, 1968; Udell et al., 2010). First sexual coitus is an important one-time event that may be viewed positively or negatively and may influence other sexual and relational encounters (Senn & Carey, 2011; Tolman & McClelland, 2011).

There are common risk factors (e.g., early puberty, drug and alcohol use, parent-child relationships, psychopathology, peer influence, and socioeconomic status) associated with early ASI and RASB (Huibregste et al., 2011). Early ASI is a significant milestone with many personal, biological, cultural, and social influences and implications that impact the outcome and reflection process (Hawes, Wellings, & Stephenson, 2010; Tanner, Hensel, & Fortenberry, 2010). Identifying the other factor(s) that influence

sexual behavior allows for better understanding, explanation, and prediction of healthy adolescent sexual development and attachment (Dawson et al., 2008; Dickson, Paul, Herbison, & Silva, 1998; Madkour, Farhat, Halpern, Godeau, & Gabhainn, 2010).

Fundamental elements. There are many factors related to how individuals view their first sexual encounter both during and after the event. For ASI, the timing (e.g., the chronological age of both partners), context (e.g., physiological, psychological, social, and educational factors), circumstances (e.g., nature of the first sexual partner, motivation, planning, and intention), experience (e.g., orgasm, pain, disappointment), and readiness (e.g., personal development, sexual competence, maturity) impact the meaning made of the event and future recollection of such an event (Guggino & Ponzetti, 1997; Hawes et al., 2010; Skinner, Smith, Fenwick, Fyfe, & Hendriks, 2008; Sprecher et al., 1995). Adolescence is the stage during which many females learn to engage and manage various relational building blocks (e.g., coupling, hand holding, kissing, petting, personal disclosure, etc.), contributing to development of adolescent social, romantic, and sexual relationships (Higgins et al., 2010; O'Sullivan et al., 2007).

Females tend to be drawn to emotional (e.g., love) and relational factors (e.g., boyfriend relationships) when they agree to engage in first intercourse (Hawes et al., 2010). This desire and need for intimacy and closeness (connection) may impact the reflection process as expectations of the setting, emotional tone, perceived commitment, relationship stability, and longevity of the relationship affect the meaning made of the encounter and the context from which the experience is recalled (Sprecher et al., 1995). How adolescents evaluate and make meaning of first coitus and how these evaluations

and reflections influence romantic adult attachment is of importance as this information may lead to a better understanding of the deeper dimensions within an adolescent's sexual development and provide insight into encouraging healthy development (Tolman & McClelland, 2011).

Attachment

Origins. Attachment theory posits that during infancy and early childhood children are responsive to the quality of interactions with others, beginning with caregivers. Comforting, responsive, and supportive interactions create emotional bonds strengthening feelings of safety and security (Allen & Land, 1999; Bowlby, 1982; Collins & Sroufe, 1999; Collins, Welsh, & Furman, 2009). Positive attachment experiences provide an emotional base from which feelings of confidence, trust, worthiness, and personal value are established as an individual's internal working model (e.g., beliefs about self and others) (Bowlby, 1973, 1980; Gentzler & Kerns, 2004; Schmitt et al., 2004). The internal working model (IWM) is thought to become part of an individual's core personality, operating at an unconscious level and affecting how individuals interpret, interact with, and relate to others (e.g., family and friends). This influences their thoughts, feelings, and behaviors (Bowlby, 1988; Crowell & Treboux, 1995; Schmitt et al., 2004).

Personality. Personality is the emotional, behavioral, and experiential characteristics people demonstrate, setting them apart from others (Allport & Odbert, 1936; John, Naumann, & Soto, 2008). According to Thompson (1999), attachment formation influences the developing personality of an infant, affecting aspects of

“sociability, emotional predispositions, curiosity, self-esteem, independence, cooperation, and trust” (p. 269). Attachment formation also affects personality organization “because features of personality are likely to be influenced in concert by attachment security” (Thompson, 1999, p. 269). As one acquires and maintains social skills (positive and adaptive or negative and maladaptive), these skills and predispositions are eventually generalized to other situations and relationships (Thompson, 1999).

The generally stable personality descriptors or traits that individuals possess fall into five broad categories or dimensions: openness, conscientiousness, extraversion, agreeableness, and neuroticism (John et al., 2008). Openness relates to curiosity and being receptive to new ideas and experiences. Conscientiousness addresses personal controllability. Extraversion measures sociability and energy level. Agreeableness measures interpersonal style. Neuroticism relates to emotional stability (John et al., 2008; Miller et al., 2004).

Neuroticism and agreeableness are associated with feelings and behaviors in close relationships (i.e., attachment) (Shaver & Brennan, 1992). “Neuroticism measures emotional adjustment and stability” whereas “agreeableness relates to an individual’s interpersonal style and strategies” (Miller et al., 2004, p. 1613). Neuroticism and agreeableness tend to co-occur in an individual’s self-description (e.g., self-identification as calm and trustworthy instead of as nervous and hostile) (Srivastava, 2011). Within the neuroticism and agreeableness dimensions there are six specific, respective facets providing better understanding of how personality relates to sexual experiences (Miller et al., 2004). The six facets of neuroticism are “unhappiness, anxiety, dependence,

hypochondria, guilt, and obsessiveness,” (Slaughter & Kausel, 2009, p. 273) and the six facets that make up agreeableness are “trust, straightforwardness, altruism, compliance, modesty, and tendermindedness” (Miller et al., 2004, p. 1613). Those prone to neuroticism may be more likely to experience unpleasant and disturbing emotions, and those high in agreeableness demonstrate selfless concern for others, trusting, and generous statements impacting or reflecting secure or insecure attachment (Shaver & Brennan, 1992).

When reviewing the Big Five personality dimensions, it is important to understand how the degree (high or low) of one dimension works in combination with another dimension to influence an individual’s behavior (John et al., 2008). The linking of profiles can give insight into potential developmental, academic, and relational adjustment problems that one might encounter (John et al., 2008). An example of this dimensional interaction is found in adolescents who are low in agreeableness and conscientiousness, which are predictors of “delinquency and externalizing problems,” or who are high in neuroticism and low in conscientiousness, which are predictors of “internalizing problems such as depression and anxiety” (John et al., 2008, p. 142). The Big Five Inventory labels and organizes the dimensions of personality in a manner that provides insight into how different traits are related to behavioral, social, and emotional outcomes (John et al., 2008).

When looking at the connection between personality, attitudes, and sexual relations, Eysenck (1976) identified women with a higher degree of neuroticism experience greater amounts of nervousness about sex, become sexually excited sooner,

experience less sexual satisfaction, and have a higher degree of sexual inhibition. The findings of Heaven, Fitzpatrick, Craig, Kelly, and Sebar (1999) generally supported prior research identifying the connection between females who rate highly on the neuroticism scale and sexual guilt, low sexual satisfaction, and sexual nervousness.

Miller et al. (2004) explored the role of personality and sexual risk taking. Their findings indicated that low levels of agreeableness and high levels of extroversion influence an individual's number of sex partners and age of sexual debut. Adolescents and young adults with high extraversion, low agreeableness, and low conscientiousness have been associated with drug and alcohol use in conjunction with sex (Miller et al., 2004). Miller et al. also identified the specific personality facets that were involved with the high-risk behaviors and found that the number of sexual partners was related specifically to "low warmth (Extraversion), high gregariousness (Extraversion), and low trust (Agreeableness)" (p. 1619). Substance use in conjunction with sex included two facets: "low straightforwardness (Agreeableness) and high activity (Extraversion)" (Miller et al., 2004, p. 1619). Having sex with someone other than one's primary partner is a high-risk sexual behavior associated with "low trust and low straightforwardness (Agreeableness)" (Miller et al., 2004, p. 1620). In relation to early sexual debut, the facet of high excitement seeking (Extraversion) was involved (Miller et al., 2004). A female with poor attachment experiences may have low trust. If she happens to be an extrovert, it is more likely that she will engage in risky sexual behavior. This is an example of how various personality constructs impact high-risk behavior.

Although Miller et al. (2004) concluded that neuroticism was not a factor in high-risk sexual behavior their findings are inconsistent with most previous studies. Goodboy and Booth-Butterfield (2009) indicated partners who desired more closeness were higher in neuroticism and partners who desired less closeness were lower in agreeableness. When trying to make sense of behavior, motivations and relational closeness, understanding the multiple dimensions of personality, and specific behavioral facets, as well as attachment, are important components to include (Miller et al., 2004).

Attachment patterns. Patterns of attachment are characterized as being secure or insecure (avoidant or anxious ambivalent). An individual's attachment style is impacted by multiple dynamics such as individual characteristics, relational variables, and environmental factors (Ainsworth, Blehard, Waters, & Wall, 1978; Crowell & Treboux, 1995). Whereas the caregiver relationship facilitates attachment formation and is one-sided, romantic relationships have been identified as part of the attachment process, reflecting reciprocal interactions (Aarestad, 2000; Bowlby, 1982; Hazan & Shaver, 1987).

For children, secure attachment is related to appearing happy, relaxed, and adventuresome and later in life relationally reflecting a desire for intimacy, trustworthiness, warmth, and a sense of reliability (Aarestad, 2000; Ainsworth et al., 1978; Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, 2006). Children with attachment avoidance are more likely to be indifferent, distant, and withdrawn; later in life this attachment style is distinguished by feelings of distrust, a deep need for independence, and a lack of commitment (Aarestad, 2000; Ainsworth et al., 1978; Birnbaum et al.,

2006). Children demonstrating attachment anxiety are more hesitant to explore and more clingy; later in life their attachment is characterized by worrisome behaviors relating to perceived lack of partner availability, anticipated abandonment, obsessive tendencies, and bouts of jealousy (Aarestad, 2000; Ainsworth et al., 1978; Birnbaum et al., 2006). As individuals engage in relationships with caregivers and others, they learn how relationships operate and they begin to expect certain responses based on these early experiences, which affect their IWMs, guide their behavior, and influence their expectations and relational strategies used in later relationships (Waters et al., 2000).

Biology. When trying to comprehend the functional anatomy of social relationships, it is imperative to understand the role of two neurochemicals: oxytocin and dopamine (Cozolino, 2006). Oxytocin, a neuropeptide hormone, is significantly involved in mammalian attachment (MacDonald & MacDonald, 2010). Oxytocin is released in response to a variety of social behavioral and stress responses such as warm contact, trust and trustworthiness, anxiety, and sexual arousal (Carter, 1992; MacDonald & MacDonald, 2010). Oxytocin release can become conditioned and released a variety of cognitive stimuli or mental imagery, social interactions, and psychological states (Carter, 1992; Cozolino, 2006).

Carter (1992) hypothesized that the release of oxytocin during or after coitus influences the development and reinforcement of social bonds. Hazan and Zeifman (1999) reported that oxytocin was a factor in inducing attachment bonds through sexual climax, similar to the process that occurs with mother-infant pairs during breastfeeding. They believed that repeated physical contact between the infant and the caregiver builds a

relational bond or attachment (Hazan & Zeifman, 1999). The dopamine reward system works as a motivator of bonding and attachment by activating the pleasure centers (Cozolino, 2006). This system reflects neural plasticity of learning by responding to what one finds rewarding and then adjusting when the reward values change (Cozolino, 2006). Relationships have the ability to change the social brain. Bonding is initially regulated by the biology of reward through the release of dopamine. Thus, “relationships come to regulate us as these biochemical processes become entrained with social interactions” (Cozolino, 2006, p. 121).

Attachment is not only based on collaborative communication (e.g., one person signaling to another and then the other responding to the signal, two individuals being in tune with each other’s needs and feelings, making a connection) but also on the stimulation, growth, and connectivity of neural networks throughout the brain (Berger, 2001; Schore, 1994). The verbal and nonverbal patterns of communication resulting from attachment relationships shape the structure of the brain by encoding experiences within the memory (Newman, Harris, & Allen, 2011; Siegel, 1999). As patterns are repeated, they produce a marked effect on the developing mind by creating organized strategies in relationships and influencing emotional reactions, and behavioral responses become ingrained (Lapides, 2011; Siegel, 1999). Interpersonal relationships influence “the emotional experiences in the moment” and affect “the ability to regulate emotion in the future” (Siegel, 1999, p. 285). Neuropathways are created as people connect with each other mentally and physically, wiring the brain together (Cozolino, 2006; Lapides, 2011). A child’s attachment experience impacts later adult relationships in regulating emotions,

feeling connected to others, establishing an autobiographical story, and moving through life with a sense of vitality (Siegel, 1999). In adults, romantic relationships reorganize the brain's neural circuits, enhancing attachment (Lapides, 2011). Adolescence is a time of rapid biopsychosocial development impacted by changing environmental and social demands, which can be emotionally overwhelming and confusing, and may influence attachment (Schoore, 2003).

Stability and change. During adolescence, there is a shift in the attachment-related secure base and safe-haven functions away from the caregiver to peers (e.g., friends and partners). This bond becomes highly important and influential (Collins et al., 2009; Feinstein & Ardon, 1973; Furman & Wehner, 1997; Udell et al., 2010).

Anxiously-attached adolescents are more likely to transfer attachment quickly as a result of their tendency to fall in love rapidly whereas avoidant-attached adolescents demonstrate transference more slowly because they resist relational closeness (Hazan & Shaver, 1992). In studies looking at adolescent attachment transfer, older adolescents involved in romantic relationships demonstrate a stronger transfer in their attachment from their parents to their partners (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006). This is consistent with Hazan and Zeifman's (1994) findings that sexual activities are a strong facilitator of romantic attachment formation. The interplay of relational dynamics and emotional significance at this stage of development seems important as new relationships begin to alter working models and affect attachment (Davila, Karney, & Bradbury, 1999).

Attachment stability has also been linked to adolescents' age at the time of sexual initiation. O'Beirne and Allen (1996) reported that insecurity was linked to adolescents who engaged in first coitus before the age of 16. Moore (1997) found those adolescents whose first coitus was at an early age were more likely to use dismissive attachment strategies. At the same time, both anxiously and avoidant-attached adolescents have been found to be less likely to have had sexual intercourse or be sexually active with their romantic partner than securely attached adolescents (Aarestad, 2000; Feeney, Noller, & Patty, 1993). This also reflects the findings of Fraley and Davis (1997) that securely attached adolescents demonstrate a high degree of attachment transfer from parents to peers because they are more likely to initiate relational contact, which in turn promotes attachment formation (Hazan & Shaver, 1987).

Lewis, Feiring, and Rosenthal (2000) indicated what occurs in adolescents' environment affects their attachment behaviors; if the environment is consistent, then the attachment is consistent. Aikins, Howes, and Hamilton (2009) examined whether an adolescent's new cognitive abilities and desire for autonomy allow for reevaluation of attachment representations. It is possible that new cognitive abilities and skills, coupled with insufficient judgment, reasoning, and regulation skills when dealing with stressors and negative life events (e.g., academic changes, first romantic breakups) contribute to the discontinuity and unresolved attachment representations commonly found in adolescents (Aikins et al., 2009; Weinfield, Whaley, & Egeland, 2004). Stability and change in attachment continue to be of interest to and explored by researchers trying to

identify the specific factors influencing and impacting attachment behaviors (Waters et al., 2000).

It appears that IWM is a work in progress, adjusting in response to differing relationships (Fraley, Vicary, Brumbaugh, & Roisman, 2011). Waters et al. (2000) confirmed Bowlby's (1982) findings, "Throughout childhood, attachment representations remain open to revision good in light of real experience" (p. 687), which is consistent with other findings reporting attachment change in approximately 30% of people at different times throughout their life span (Baldwin & Fehr, 1995). When infants experience stressful events, their attachment style classification is likely to change just as significant interpersonal conflict or romantic relationship functioning may affect attachment style over time (Bowlby, 1973, 1988; Davila, Burge, & Hammen, 1997; Kirkpatrick & Hazen 1994; Waters et al., 2000).

Some individuals experience stressful life events and maintain their attachment status over time (Waters et al., 2000). Bowlby (1982) hypothesized that attachment change could be influenced by new emotional relationships and developmental progress as adolescents' cognitive abilities change, allowing them to reflect and reevaluate the meaning they attach to past and present events (Waters et al., 2000). Researchers (Fuller & Fincham, 1995; Kirkpatrick & Hazen, 1994) continue to demonstrate that earlier interpersonal circumstances and current interpersonal and relational situations affect attachment style because of individuals' working model and ability to accommodate and assimilate new information (Davila et al., 1999).

Relationship experiences and the brain's circuitry interface and may be responsible for activating different attachment models in the future (Siegel, 1999). Some believe these fluctuations in or modifications to one's working model are a result of being prone to stable vulnerability factors (e.g., history of family dysfunction, psychopathology) or contextual factors (e.g., a breakup, satisfaction) (Davila et al., 1999). Because attachment stability and change are multifaceted, it is important to look closely at emotional, cognitive, and behavioral elements such as current thinking; stable vulnerability factors; contextual factors; relational circumstances; past and present experiences; and the emotional significance of those experiences (Davila et al., 1999; Mercer, 2011). This idea is in line with Bowlby's (1969) belief that attachment change is a complex process taking place on many levels in response to numerous intrapersonal and interpersonal experiences (Davila et al., 1999).

Schema. There seems to be a reciprocal process between attachment and interpersonal experiences as individuals construct meaning about their life experiences and respond to life's circumstances (Davila et al., 1999). Self-schemas influence the way people cognitively process information, which may influence the experience and reflection of love, sexual relations, and bonding (Aarestad, 2000; Anderson & Cyranowski, 1994). A schema is a framework used to organize and interpret information. The manner in which the mind establishes meaning or the way in which it places value and significance on an experience is shaped by emotional and interpersonal processes (Siegel, 1999). Relationship experiences have a dominant effect on the brain because the circuits responsible for social perception are connected to those integrating the creation of

meaning, regulating bodily states, modulating emotion, and organizing memory (Siegel, 1999). Significant emotionally arousing events are more likely to be recalled (Siegel, 1999) and may account for momentary fluctuations in attachment or changes in an individual's present state of mind about attachment relationships (Davila et al., 1999).

Similar to the process used for organizing and interpreting information, sexual scripts are cognitive schematic representations that help to facilitate understanding of sexual experiences and contribute to how individuals enact sexual behavior (Pinquart, 2010; Seal, Smith, Coley, Perry, & Gamez, 2008). Sexual scripts develop as adolescents work to make meaning of the sexual situations and experiences they encounter (Gagnon & Simon, 1987; Krahe, Bieneck, & Scheinberger-Olwig, 2007; Pinquart, 2010).

An adolescent's sexual behavior may influence the development of interpersonal scripts as they guide current behavior and affect future sexual behaviors and relationships (Senn & Carey, 2011). These sexual scripts encompass normative beliefs, perceptions, motivations, and expectations, helping to organize sexual acts while making sense of and assessing the appropriateness of the encounter (e.g., positive, negative, pleasurable) (Else-Quest, Hyde, & DeLamater, 2005; Krahe et al., 2007). In addition, the level of perceived control over timing and context influences adolescents' feelings of satisfaction or disappointment with their personal readiness and affects their positive or negative recollection of their first-time event (Skinner et al., 2008). Adolescents' sexual and cognitive scripts give insight into the internal and external motivations of their sexual behavior, providing a better understanding of the physical, emotional, and cognitive realms of adolescent sexual development.

Summary

There are many influences and possible trajectories involved when looking at adolescent sexual development and attachment outcomes including the relational context of first coitus, biopsychosocial characteristics, age, and casual factors (e.g., multiple partners, drug and alcohol use) (Huibregste et al., 2011; Tolman & McClelland, 2011). The specific factors influencing and impacting female attachment after the initial sexual encounter (e.g., internally) are important to identify. Being that women typically view intercourse as a means for emotional closeness, the relational intensity (emotions, intimacy, and experience) of that first early sexual encounter, coupled with the common relational fallout, may be too much for an adolescent's attachment system to negotiate (Cate, Long, Angera, & Draper, 1993). The literature indicates a need for further research to assess the predictive strength of consensual heterosexual early ASI and adult dating, partner, or spouse attachment in women.

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Chapter 3

The Relationship Between Early Adolescent Sexual Initiation And Adult Female
Romantic Attachment

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Abstract

There exists a knowledge gap concerning the outcomes of early adolescent sexual initiation (ASI). In particular, the influence of early ASI upon adult attachment is unknown. To begin to address this gap, two multiple regression analyses were conducted. One analysis was with adult partner/spouse anxious attachment as the criterion variable. The other analysis was with adult partner/spouse avoidant attachment as the criterion variable. The predictor variables for both analyses included both ASI and factors known to interact with early ASI (i.e., age of menarche, neuroticism, extraversion, and socioeconomic status). The participants were female heterosexual undergraduate students that had experienced: (a) consensual first coitus during adolescence, (b) an end to a relationship with their first coital partner, and (c) dating or marrying another person. ASI was not found to be a predictor of either type of female adult attachment to a partner or spouse. Clinical and research implications of the results were discussed.

Keywords: Adolescence; Adolescent Sexual Initiation; Attachment; Personality

The Relationship Between Early Adolescent Sexual Initiation and Adult Female Romantic Attachment

The motivation and risks involved in early adolescent sexual initiation (ASI) continue to be a source of substantial interest for researchers (Wellings et al., 2001). The characteristics of sexual debut have been linked to problem behaviors including future sexual behaviors, emotional stability, academic success, impaired relationship quality, and increased risk of infections and diseases (Collins, Welsh, & Furman, 2009; Wellings et al., 2001). Attachment insecurity is often maintained in future generations, impacting intrapersonal and interpersonal functioning, happiness, and mental well-being (Mohr, Cook-Lyon, & Kolchakian, 2010). Adolescent sexual relationships are complex and influenced by emotional, cognitive, and behavioral processes; personal characteristics; family of origin; and environmental conditions—all of which are interconnected and affect attachment (Collins et al., 2009).

In addition, early menarche, substance use, parent-child relationships, socioeconomic status, peer effect, and psychopathology have been identified as risk factors contributing to the timing of early ASI and increasing risky adult sexual behavior (RASB) (Huibregste, Bornoalova, Hicks, McGue, & Lacono, 2011). The experience of early ASI is a major life transition that is significant and meaningful and impacts one's view of self and others (Cate, Long, Angera, & Draper, 1993; Collins et al., 2009; Sprecher, Barbee, & Schwartz, 1995). The factors previously identified increasing the likelihood of females to encounter early ASI, and the resulting immediate consequences of early ASI timing (e.g., sexually transmitted infections, pregnancy, academic success,

delinquency) are commonly a focus of research literature (Harden, 2012; Huibregste et al., 2011). The timing of ASI has been thought to be formative influencing future relational patterns however; very little detail of the nature of these occurrences is available (Karney, Beckett, Collins, & Shaw, 2007). The ability to form and maintain attachment relationships across the lifespan results from the interaction of the internalized working model and experiences (Bowlby, 1973, 1980, Siegel, 2013). This to say, “even the most secure models of intimacy can be shattered by a negative romantic experience, just as an anxious or avoidant model may be soothed by a positive experience” (Karney, Beckett, Collins, & Shaw, 2007, p. 31). With so much literature being focused on the timing of ASI impacting physical and psychological wellbeing, and ASI predicting the quality and stability of future relationships, one wonders to what degree ASI might be associated with attachment-related outcomes (Dozier et al., 1999; Harden, 2012). Secure relational attachment strengthens overall health, emotional wellness, and relational satisfaction (Dozier et al., 1999). Understanding the relationship between attachment and early ASI can help broaden the conceptual framework of both adolescent development and adult romantic relationship development (Dozier et al., 1999).

An individual’s psychopathology and physiological resiliency are impacted by the degree and strength of attachment through social relationships (Dozier et al., 1999). Female adult relational attachment patterns are rooted in adolescence and impacted by their self-evaluation of the first sexual encounter (Senn & Carey, 2011; Tolman & McClelland, 2011). Bowlby (1982) stated that attachment behavior in women could be elicited in response to changes in the endocrine system and sexual behavior. Sexual

behavior during adolescence helps lay the foundation for the development of interpersonal scripts (i.e., the meaning and interpretation of an event), affecting future relational, sexual, behavioral, and cognitive contexts (Schubotz, Rolston, & Simpson, 2004; Senn & Carey, 2011). Whereas the literature suggests there is a connection between early ASI and RASB, research is limited regarding female adult relational outcomes (Huibregste et al., 2011). Early ASI alone may not be the catalyst for future unhealthy female adult outcomes, suggesting the need for further research (Udell, Sandfort, Reitz, Bos, & Dekovic, 2010).

Timing of Adolescent Sexual Initiation

ASI occurring after the age of 16 most often represents the sexual norm for when sexual intercourse is considered appropriate (Hawes, Wellings, & Stephenson, 2010). Early ASI (sexual relations before the age of 16) has been identified as possibly contributing to poor health status, low educational attainment, unplanned conception, and low sexual competence (Caminis et al., 2007; Huibregste et al., 2011; McGue & Iacono, 2005; Wellings et al., 2001; Zimmer-Gembeck & Helfand, 2007). Early ASI occurs before the age of 16 and increases the risk of adverse outcomes as adolescents are less likely to use contraceptives, more likely to have regret regarding the event, and less likely to experience life stability in the cognitive, emotional, and physical domains (Wellings et al., 2001). An early age at first intercourse for females has been linked to the early onset of menarche (before the age of 13) (Huibregste et al., 2011; Wellings et al., 2001).

Age of Menarche

The early onset of puberty (before the age of 12 for females) has been identified as a potential predictor of early ASI (Downing & Bellis, 2009; Kim & Smith, 1999). At a biological level, acceleration of the age of menarche can occur in response to stress within the family environment such as limited access to resources, reduced parental supervision, divorce, father's absence, conflict within the home, insecure parental attachment, and poor coping skills (Hawes et al., 2010; Karney, Beckett, Collins, & Shaw, 2007; Kim & Smith, 1999). Early menarche has also been associated with having an older partner, which is another predictor for ASI (Hawes et al., 2010; Kim & Smith, 1999).

Attachment

Decreased adolescent and parental cohesion and insecure attachment (lack of trust, decreased confidence, and low personal worth) have been associated with risky sexual behavior (Bowlby, 1973, 1980; Gentzler & Kerns, 2004; Schmitt et al., 2004; Udell et al., 2010). Attachment is characterized as secure or insecure (avoidant or anxious ambivalent) (Ainsworth, Blehard, Waters, & Wall, 1978). Secure attachment is characterized by feelings of value, the belief that others are safe, and maintenance of proximity (Bowlby, 1973, 1980). Avoidant attachment is characterized by resistance to bonding and the feeling that relationships are not important whereas anxious attachment is typified by worry or concern about being abandoned (Ainsworth et al., 1978). Adolescence is a time when peer relations (e.g., friends and partners) become more important as there is a shift in attachment away from the caregiver, making the peer bond

highly important and influential (Collins et al., 2009; Feinstein & Ardon, 1973; Furman & Wehner, 1997; Udell et al., 2010). Older adolescents involved in romantic relationships demonstrate a stronger transfer in their attachment from their parents to their partners (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006). When sexual relations are a part of the union, the interplay of relational dynamics and emotional significance at this stage of development alters an individual's internal working model or attachment system (Davila, Karney, & Bradbury, 1999; Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006; Hazan & Zeifman, 1994). Therefore, it is important to understand how an adolescents' sexual experience relates to their attachment development and stability.

Personality Factors

There is a reciprocal interrelationship between attachment, personality, and experience (Hazan & Shaver, 1992; Shaver & Brennan, 1992; Thompson, 1999). The emotional, behavioral, and experiential characteristics that set one person apart from another are known as personality (Allport & Odbert, 1936; John, Naumann, & Soto, 2008). Personality is generally stable, and the descriptors or traits that individuals possess usually fall into five broad categories or dimensions: openness, conscientiousness, extraversion, agreeableness, and neuroticism (John et al., 2008). Openness relates to curiosity, being receptive to new experiences and ideas. Conscientiousness reflects personal controllability. Extraversion measures energy level and sociability. Agreeableness assesses interpersonal style and strategies. Neuroticism addresses emotional stability (John et al., 2008; Miller et al., 2004). Various personality constructs

such as warmth, reliance, trust, and autonomy have been found to be a part of these five domains of personality, affecting interpersonal relations and predicting attachment styles (Costa & McCrae, 1985; Shaver & Brennan, 1992).

Within the Big Five personality traits, the degree (high or low) of each dimension works in combination with the other dimensions to “flesh out some of the detailed nuances of the different forms of attachment insecurity” (John et al., 2008; Nofle & Shaver, 2006, p. 200). Neuroticism and agreeableness have been positively correlated with attachment-related anxiety and avoidance (Shaver & Fraley, 2010). Attachment-related avoidance involves feelings of distrust, a deep need for independence, and a lack of commitment whereas attachment-related anxiety is characterized by worrisome behaviors relating to perceived lack of partner availability, anticipated abandonment, and obsessive tendencies affecting the context of close relationships (Aarestad, 2000; Ainsworth et al., 1978; Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, 2006; Nofle & Shaver, 2006). Attachment-related anxiety has been strongly related to neuroticism, and attachment-related avoidance has been related to agreeableness (Nofle & Shaver, 2006). Neuroticism has been connected with a range of negative emotions and insecurity (Nofle & Shaver, 2006).

For the neuroticism and agreeableness dimensions, there are six specific facets that each give a better understanding of how personality relates to sexual experiences (Miller et al., 2004). The six facets of neuroticism (anxiety, hostility, self-consciousness, depression, impulsiveness, and vulnerability) have been linked with attachment-related anxiety whereas self-consciousness, depression, and vulnerability have been linked to

attachment-related avoidance (John et al., 2008; Nofle & Shaver, 2006; Shaver & Brennan, 1992). Of the six facets of agreeableness (altruism, compliance, trust, tender mindedness, straightforwardness, and modesty), low scores in trust and altruism have been associated with avoidant-related attachment (John et al., 2008; Nofle & Shaver, 2006). When assessing attachment related to other outcomes, the empirical overlap between individual differences in attachment and the Big Five personality traits makes it is useful to consider these personality traits while holding the individual differences constant (Shaver & Fraley, 2010).

Socioeconomic Status

Early sexual behavior is associated with the family's social structure commonly referred to as socioeconomic status (SES). A low SES usually indicates a lower income environment which can limit the options available impacting development (Caminis, Henrich, Ruchkin, Schwab-Stone, & Martin, 2007; Hawes et al., 2010; Huibregste et al., 2011). SES is often assessed by looking at the family structure, parental education, and economic status (Caminis et al., 2007; Madkour, Farhat, Halpern, Godeau, & Gabhainn, 2010). Adolescents who live with both parents and who have mothers with increased education are less likely to engage in early ASI (Caminis et al., 2007). Those who are socially disadvantaged or who experience deprivation associated with housing, education, or employment are more likely to engage in early ASI (Hawes et al., 2010).

Hypotheses

The objective of the present study was to examine the strength of ASI in predicting levels of attachment for heterosexual college-aged women in their dating, partner, or

spousal relationship. In order to do this, adult women who had experienced consensual heterosexual ASI and who had been in additional relationships outside of their first coital relationship were studied. It was predicted that there was a relationship between consensual heterosexual ASI and female adult dating, partner, or spouse attachment. The two hypotheses were as follows:

1. H_0 : After accounting for SES, menarche, personality, and parental attachment, there is no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse avoidant attachment in college-aged heterosexual women.
2. H_0 : After accounting for SES, menarche, personality, and parental attachment, there is no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse anxious attachment in college-aged heterosexual women.

Method

Research design. The researcher used a multiple-regression design to analyze the predictive strength of the eight predictor variables and the criterion variable. The predictor variables were (a) the timing of ASI (early/not early), (b) neuroticism, (c) agreeableness, (d) anxious attachment to father, (e) anxious attachment to mother, (f) avoidant attachment to father, (g) avoidant attachment to mother, (h) SES (free/reduced lunch status of family of origin, status of parental education), and (i) age at menarche (early/not early). The criterion variable for Hypothesis 1 was female adult

romantic/marital partner avoidant attachment. The criterion variable for Hypothesis 2 was female adult romantic/marital partner anxious attachment.

Participants. General psychology instructors invited their students to participate in the study, explaining that participants would receive extra credit in their class for their involvement. Once permission was obtained, 214 participants in a classroom setting during scheduled meetings were given a seven-page take-home survey instrument that was comprised of three parts containing a total of 71 items as a means to identify the constructs of the study and demographic information. Figure 1 (p. 67) represents the criteria for eligibility for the study. A subsample was selected of female heterosexual participants who had experienced consensual first coitus during adolescence, who were no longer dating or married to their first coital partner, and who had dated or married a different partner.

The original data set ($N = 214$) was reduced to a sample size of 84 female participants (39.2% of original sample). There were 65 male participants (30.3% of the original sample) excluded from this study because the study specifically addressed female adult attachment. There were 65 participants (30.3% of the original sample) excluded from the study because they either did not meet the specified study parameters (i.e., their first sexual encounter was not consensual and heterosexual) or they left responses blank. Of these 65 excluded participants, 31 (14.4% of the original sample) reported that their first sexual encounter was nonconsensual, nine (4.2% of the original sample) left the survey item regarding the consensual nature of their first sexual encounter blank, 15 (7% of the original sample) reported their first sexual encounter was

not heterosexual, two participants (less than 1% of the original sample) left the survey item regarding the heterosexual nature of their first sexual encounter blank, and eight participants (3.7% of the original sample) were excluded for failing to respond to the demographic responses.

The final sample consisted of 84 female undergraduate students enrolled in a general psychology course at a community college in the northwestern United States. Participants were divided into four current age categories: 35.7% were between the ages of 18 and 21 ($n = 30$), 20.2% were between the ages of 22 and 25 ($n = 17$), 9.5% were between the ages of 26 and 30 ($n = 8$), and 34.5% were over the age of 31 ($n = 29$). Among the participants, 63% were White/non-Hispanic ($n = 53$), 7.1% were Asian ($n = 6$), 1.1% were Native Hawaiian/Pacific Islander ($n = 1$), 5.9% were Black/African American ($n = 5$), 10.7% were Hispanic/Latino ($n = 9$), and 11.9% were two or more races ($n = 10$).

The family structure of the participants consisted of 29.7% single-parent homes ($n = 25$), 15.4% stepfamily homes ($n = 13$), 39.2% two-biological-parent homes ($n = 33$), and 11.9% other homes ($n = 10$). The participants' lunch status in school was 22.6% free lunch ($n = 19$), 5.9% reduced lunch ($n = 5$), and 69% no lunch assistance ($n = 58$). The highest level of the mother's education as reported by participants was 17.8% lower than high school ($n = 15$), 3.5% GED ($n = 3$), 35.7% high school ($n = 30$), and 42.8% college ($n = 36$). The highest level of the father's education as reported by participants was 16.6% lower than high school ($n = 14$), 3.5% GED ($n = 3$), 45.2% high school ($n = 38$), and 30.9% college ($n = 26$). Participants' current relationship status was 21.4% single (n

= 18), 39.2% dating ($n = 33$), 19% cohabitating ($n = 16$), 9.5% married ($n = 8$), and 8.3% other ($n = 7$). Participants' onset of puberty was 33.3% before the age of 12 ($n = 28$) and 66.6% after the age of 12 ($n = 56$). Participants were divided into two groups regarding timing of sexual initiation, 42.8% engaged in early sexual initiation ($n = 36$) and 57.1% engaged in late sexual initiation ($n = 48$).

Measures

Demographic items. The demographic items assessed were race, sex, age, relationship status, and onset of puberty. Family of origin structure referred to the living environment that the participant was raised in. Participants identified as being raised in a single-parent home, in a stepfamily home, with two biological parents, or under a different structure. Participants' current relationship status was single, dating, cohabitating, married, or in another situation.

Socioeconomic status. SES was a composite score of participants' self-report of (a) family of origin and free/reduced lunch status, (b) mother's educational attainment, and (c) father's educational attainment. This composite score followed the guidelines set forth using McDonough's (1997) formula. Participants assessed their free/reduced lunch status in school during Grades K–12 by identifying if they had participated in their school's free lunch program, participated in their school's reduced lunch program, or received no school lunch assistance. Participants assessed their parents' highest level of education by selecting one from the following options: *lower than high school*, *GED*, *high school*, or *college*.

Adolescent sexual initiation status (ASI). Self-reported age of sexual initiation was categorized based upon the literature: early was below age 16 and not early was at age 16 or above.

Adult attachment. Past and present attachment patterns were assessed using the Experiences in Close Relationships-Relationship Structures (ECR-RS) questionnaire, a contextual self-report inventory designed to assess anxiety and avoidance across several distinct relationships with a test-retest reliability of .65 for the domain of romantic relationships and .80 for the parental domain (Fraley, 2011; Fraley, Heffernan, Vicary, & Brumbaugh, 2011). Participants rated nine items in three domains (mother, father, and current/last partner) for a total of 27 items using a Likert scale of 1–7. Response prompts ranged from 1 to 7 with 1 indicating *strong disagreement* and 7 indicating *strong agreement* with each statement (e.g., “It helps to turn to this person in times of need”) (Fraley et al., 2011).

Participants who score on the high end of the attachment-related avoidance dimension are generally individuals who are uncomfortable with closeness and dependency (e.g., “I prefer not to show this person how I feel deep down”) whereas those scoring on the low end are more comfortable with using others as a secure base (Fraley et al., 2011). Participants scoring on the high end of the attachment-related anxiety dimension are those who display worrisome behaviors (e.g., “I often worry that this person doesn’t really care for me”) (Fraley et al., 2011).

Personality traits. The 44-item Big Five Inventory (John, Donahue, &

Kentle, 1991; John et al., 2008; Srivastava, 2011) is a self-report inventory designed to measure five broad factors, dimensions, or core traits of personality—openness, conscientiousness, extraversion, agreeableness, and neuroticism—by responding to short phrases under the heading of “I see myself as somebody who ...” (e.g. “... does a thorough job”). Participants answered using a Likert scale response of 1–7 indicating the strength of their agreement with each statement (John et al., 1991; John et al., 2008; Srivastava, 2011). Response prompts ranged from 1 to 7 with 1 indicating *strong disagreement* and 7 indicating *strong agreement* with each statement as they felt appropriate (e.g., “I see myself as somebody who ... is inventive”) (John et al., 1991; John et al., 2008; Srivastava, 2011). “Extraversion has 8 items, of which 3 are reverse-scored, with .86 reliability; Agreeableness and Conscientiousness are each represented by 9 items, including 4 reversals for each scale, with .79 and .82 reliability; Neuroticism has 8 items, with 3 reversals, with .87 reliability; Openness has 10 items, with 2 reversed, with .83 reliability” (Mahoney & Stasson, 2005, p. 208).

Procedures

After reviewing and signing an informed consent document, participants anonymously completed a seven-page take-home survey instrument comprising three parts with a total of 71 items as a means to identify personal demographics, sexual orientation, age of puberty, age of first sexual initiation, if first sexual initiation was consensual, if first sexual initiation occurred under the influence of drugs or alcohol, involvement with first coital partner, involvement in a dating relationship or marriage, and how many intimate relationships participants had been involved with since their

sexual initiation. Included within the single survey were the two instruments: the ECR-RS questionnaire (Fraley et al., 2011) and the Big Five Inventory (John et al., 1991; John et al., 2008). Those wishing to participate returned the take-home surveys at the next scheduled class meeting, where the researcher collected the survey packets.

Informed consent. Participants were told the purpose of the study was to gain knowledge about the relationship between ASI and adult attachment behavior. The take-home survey was distributed using the same instructions and in the same order for each classroom presentation setting. Participants were told the study was voluntary and that they were free to withdraw at any time without jeopardizing their relationship with their class or school. Participants were told their responses were completely anonymous and that they could skip any question they did not want to answer. Participants were also told that their individual results would not be reported and any data provided would not have a link to their identity. Participants learned of the potential risks of participation in the study and received directions on how to proceed if they experienced any psychological discomfort. Finally, participants were told they would receive extra-credit compensation for their participation. Completion of the questionnaire constituted participants' consent to participate in the study.

Survey instructions. Participants were instructed to answer all the questions only if they felt comfortable doing so. They were told they could decline to participate at any time. For the demographic portion of the survey, participants were instructed to circle the number they believed to be the most accurate response. For the ECR-RS portion, participants were instructed to assess how they felt about the important people in their life

by circling the number that best described their experience. For the Big Five Inventory portion, participants were to assess their self-perceptions in various situations by circling the number that best fit their level of agreement. The take-home survey instrument took participants about 20–40 minutes to complete. Men and women were both assessed. The data accumulated for the women were used for this study and the data for the men will be used for a different study in the future.

Data Analysis

Two stepwise forward selection multiple-regression analyses were performed in order to determine the amount of unique variance in female adult romantic partner or marital partner attachment predicted by ASI status (early/not early) while accounting for any possible influence of (a) neuroticism, (b) agreeableness, (c) anxious attachment to father, (d) anxious attachment to mother, (e) avoidant attachment to father, (f) avoidant attachment to mother, (g) SES (a composite score of family of origin, free/reduced lunch status, and status of parental education), and (h) age at menarche (early/not early). One regression analysis utilized the predictor variables with the criterion variable (anxious partner/spouse attachment). The second regression analysis utilized the predictor variables with the criterion variable (avoidant partner/spouse attachment).

For the two regressions, the predictor variables were sequentially entered in the order of the highest positive or negative correlation with the criterion variables. For each variable in the model, the *t* statistic was computed for its estimated coefficient. Then it was squared. The entry criterion was at the *F* statistic level of $\alpha < .05$. The predictor variable not in the equation that had the largest partial correlation was considered next.

The procedure stopped when there were no predictor variables meeting the entry criteria. Variables were added based on the statistical significance of the correlation coefficient at $p < .05$.

Results

Preliminary data analysis. A preliminary review of the data included an examination of the means, standard deviations, and intercorrelations among the predictor and criterion variables. Pearson product-moment correlation was used to assess the interdependence between the eight predictor variables and both criterion variables—partner/spouse avoidant attachment (see Table 1) and partner/spouse anxious attachment (see Table 2). The bivariate correlations shown in Table 1 suggest higher levels of mother-related anxiety were associated with partner avoidance ($r = .241, p < .05$). Mother-related avoidance was associated with ASI ($r = -.261, p < .05$). Mother-related anxiety and mother-related avoidance were associated ($r = .568, p < .05$) as were father- and mother-related anxiety ($r = .347, p < .05$). Father-related anxiety and father-related avoidance were also associated ($r = .543, p < .05$). There was a strong negative correlation between agreeableness and neuroticism ($r = -.419, p < .05$).

The bivariate correlations shown in Table 2 suggest father-related avoidance was associated with partner anxiety ($r = .217, p < .05$). Father-related anxiety was associated with partner anxiety ($r = .327, p < .05$), and mother-related avoidance was associated with ASI ($r = -.261, p < .05$). Mother-related anxiety and mother-related avoidance were associated ($r = .568, p < .05$) as were father- and mother-related anxiety ($r = .347, p < .05$). Father-related anxiety and father-related avoidance were also associated ($r = .543, p$

< .05). There was a strong negative correlation between agreeableness and neuroticism ($r = -.419, p < .05$). It is important to note five of the significant associations identified were repeated in both matrices reflected in Table 1 and Table 2.

Multiple-regression analyses. Multiple-regression analyses were conducted in order to determine the amount of unique variance in female adult romantic or marital partner attachment predicted by ASI status (early/not early) while accounting for any possible influence of (a) neuroticism, (b) agreeableness, (c) anxious attachment to father, (d) anxious attachment to mother, (e) avoidant attachment to father, (f) avoidant attachment to mother, (g) SES (i.e., free/reduced lunch status of family of origin), and (h) age at menarche (early/not early). The results of the regression study for Hypothesis 1 stating that after accounting for SES, menarche, personality, and parental attachment, there was no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse avoidant attachment in college-aged heterosexual women was supported. The results of the regression study for Hypothesis 2 stating that after accounting for SES, menarche, personality, and parental attachment, there was no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse anxious attachment in college-aged heterosexual women was supported.

Discussion

The goal of this study was to analyze the predictive strength of the timing of ASI, personality (neuroticism and agreeableness), SES, attachment to parents, and age at menarche on female adult dating, partner, or spouse anxious or avoidant attachment. The

results supported the two null hypotheses: (a) there was no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse avoidant attachment in college-aged heterosexual women, and (b) there was no predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse anxious attachment in college-aged heterosexual women.

In this study, ASI timing did not predict insecure female adult attachment. These findings are supported by developmental theory and attachment theory. The adolescent's capacity to think abstractly and conceptually may allow for the integration of emotions, cognitions, and behaviors associated with the sexual self as compared to concrete and logical thinking dealing with a more present focus found in middle childhood (Bukowski, Sippola, & Brender, 1993; Collins et al., 2009; Madkour et al., 2010; Siegel, 2013). As adolescents experience changes in their cognitive abilities they are better able to reflect and reevaluate the meaning they attach to past and present events (Bowlby, 1982; Waters et al., 2000). Attachment theory proposes attachment representations remain open in response to experiences supporting the stability of one's internal working model (Bowlby, 1982; Waters et al., 2000). These internal working models facilitate unconscious remembering of feelings, thoughts, behaviors, and how we connect with others throughout life (Siegel, 2013). Attachment theory proposes individuals are capable of maintaining several different models of attachment as attachment relations vary, and are context dependent (Ross & Spinner, 2001; Siegel, 2013).

This study indicated the timing of ASI was not significant to attachment leading one to speculate if the meaning attached to the one-time event might be a more

appropriate focus. Significant emotionally arousing events may account for attachment fluctuations as one's experience, creation of meaning, and memories are integrated (Davila et al., 1999; Siegel, 1999). Factors that shape the meaning making of ASI include perceived level of personal control over the timing and context of first coitus, which creates a positive or negative reflection process; one's social and cultural norms, which impact one's level of internalized guilt or satisfaction; and the degree that one experiences acceptance or rejection (Higgins, Trussell, Moore, & Davidson, 2010; Skinner, Smith, Fenwick, Fyfe, & Hendriks, 2008). Deeper understanding of the influences on adolescent perceptions and meaning making related to sexual initiation creates deeper understanding of the reciprocal process between attachment and interpersonal experiences.

Several conclusions were drawn based on the results of the data analysis of the predictive strength of ASI timing and adult dating, partner, or spouse attachment. Overall, the findings indicated there was no relationship between ASI and adult romantic dating, partner, or spouse anxious or avoidant attachment in heterosexual college-aged women. In addition, this study produced statistically significant results unrelated to the two hypotheses: father-related anxious attachment predicted female adult romantic dating, partner, or spouse anxiety, and mother-related anxious attachment predicted female adult romantic dating, partner, or spouse avoidant attachment. These findings are consistent with attachment theory in that we use connections with others to soothe internal distress. Without appropriate nurturing we learn to either hold tightly, clinging to others, or rely on self, and go it alone (Siegel, 2013). The different relational experiences one

encounters early on wires the brain for what connection “feels like” and we use these experiences and associations to predict what to expect from others (Siegel, 2013).

There were additional correlations consistent with attachment theory, personality theory, and known influences of early sexual behavior resulting from this study. The relationship between father- and mother-related anxiety was consistent with other findings indicating the quality of attachment to one parent is associated with the other parent (Doyle, Lawford, & Markiewicz, 2009). Both mother-related anxiety and mother-related avoidance were positively correlated, and father-related anxiety and father-related avoidance were positively correlated demonstrating the independent dimensions of anxiety and avoidance where different combinations (high and low) of each dimension creates a different aspect of security (i.e., secure, low on both dimensions) or insecurity (e.g., fearful-avoidant, high on both dimensions) (Locke, 2008). A positive correlation between attachment avoidance and anxiety reflect self-protective behaviors reinforcing anxiety fears (Collins, Cooper, Albino & Allard, 2002). It is not uncommon for females to feel as though their fathers are less available and less emotionally equipped to provide comfort, and taking the resulting anxiety into another close experience is consistent with the positive correlation identified between father avoidance and partner anxiety (Hitchcock, 2011; Lieberman, Doyle & Markiewicz, 1999; Paterson, Field, & Pryor, 1994; Youniss & Smollar, 1985). Mother avoidance was negatively correlated with ASI. Adolescents with an avoidant maternal attachment are more likely to become sexually intimate earlier than the age of 16. Although females with an avoidant attachment are more likely to dismiss the importance of sex, be more self-reliant, work to suppress

feelings of neediness, when sexual encounters do occur they are more likely to be short-term casual encounters allowing one to remain psychologically distant (Brassard, Shaver & Lussier, 2007; Collins, Cooper, Albino & Allard, 2002). Avoidant adolescents typically experience sexual relations less frequently (Bogaert & Sadava, 2002; Gentzler & Kerns, 2004). Although neuroticism and agreeableness are often uncorrelated (John & Srivastava, 1999), there was a negative correlation between agreeableness and neuroticism. This may reflect the interaction of feelings and behaviors in close relationships (i.e., attachment) as agreeableness relates to interpersonal style and neuroticism relates to emotional stability (John et al., 2008; Miller et al., 2004; Shaver & Brennan, 1992).

Limitations

This study had several limitations. Regression techniques allow researchers to ascertain relationships but do not explain the underlying causal mechanisms. Self-report surveys requiring retrospective means are prone to errors, as with the passage of time, memories become less accurate (Seal, Smith, Coley, Perry, & Gamez, 2008; Sprecher et al., 1995). The use of college students is another limitation of this study as this sample of convenience may provide skewed findings compared to a sample of individuals who decided not to attend college. In the future, it would be beneficial to broaden the sample.

Another limitation of this study was the restricted number of the attachment relationships assessed. Failure to assess attachment to one's first sexual partner / close friend in conjunction with parental attachment and current partner attachment would have provided a means of domain-specific comparison as the level of attachment in

relationships has been found to be context specific (Ross & Spinner, 2001).

Implications for Practitioners and Counselor Educators

The results of this study are relevant to those working with adolescents, individuals, couples, or families. In working with clients who present with the issues of problematic attachment to their spouse/partner, the findings of this study suggest that the timing of ASI does not need to be addressed *a priori*. ASI timing only needs to be addressed when the client manifests dysfunctional thoughts such as “I had sex at 14, which means I am such a slut and unworthy of a good relationship.” Such feelings of shame and doubt resulting from unresolved issues around early sexual experiences are critical to the view of self and impact romantic relationships.

The results of this study support previous findings related to adolescent attachment insecurity influencing adult relationships. Because parental anxious attachment is a possible predictor of partner/spouse insecure attachment, counselor educators must ensure that counselors in training possess attachment conceptualization and assessment skills. Recognition of ongoing attachment patterns can enable clinicians to assist adolescents, individuals, and couples in understanding how their attachment orientations impact their relationships. The majority of research available addresses the negative aspects of adolescent sexual development, behaviors, and outcomes, suggesting a need to explore more normative and positive perspectives. The developmental implications of attachment insecurity and the potential impact over an individual’s lifespan demonstrate the importance for greater understanding within this field of interest and further research.

Suggestions for Future Research

The relationship between ASI and attachment relationships had not been examined prior to this present study. Future studies could extend this research by employing a longitudinal design, utilizing a larger sample, and including additional variables for women and men. The two significant relationships uncovered in the regression analyses were between mother-related anxious attachment and current partner/spouse avoidant attachment and between father-related anxious attachment and current partner/spouse anxious attachment. A study exploring whether these relationships are real or just the result of chance would be a contribution to the literature.

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Figure 1. Flow of participants in a single survey study.

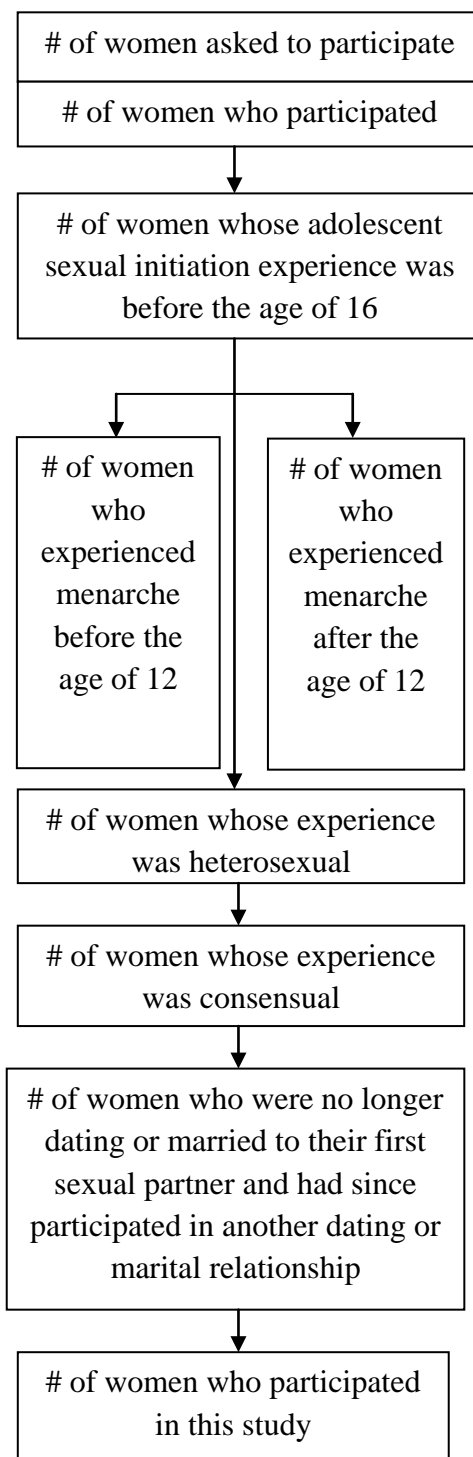


Table 1

Partner Avoidance Zero Order Correlation Matrix (n = 84)

	ASI	SES	Pub-F	M-Av	M-Ax	F-Av	F-Ax	Agre	Neur	P-Av
ASI	1									
SES	.123	1								
Pub-F	.153	.069	1							
M-Av	-.261*	-.049	-.055	1						
M-Ax	-.129	-.066	.055	.568**	1					
F-Av	-.009	-.093	-.044	-.057	.026	1				
F-Ax	-.003	.042	.035	.020	.347**	.543**	1			
Agre	.177	.064	.010	-.091	-.004	-.099	.064	1		
Neur	-.082	-.065	-.024	.084	-.078	.021	.058	-.419**	1	
P-Av	.118	.028	-.132	.112	.241*	.148	.198	-.181	-.025	1

Note. Bivariate correlations for female participants ($n = 84$) are presented above. ASI represents the timing of sexual initiation; SES represents family structure, parental education level, and free or reduced lunch status in school; Pub-F represents the timing of menarche; M-Av represents mother avoidance; M-Ax represents mother anxiety; F-Av represents father avoidance; F-Ax represents father anxiety; Agree represents agreeableness; Neur represents neuroticism; and P-Av represents partner avoidance.

* $p < .05$. ** $p < .001$.

Table 2

Partner Anxiety Zero Order Correlation Matrix (n = 84)

	ASI	SES	Pub-F	M-Av	M-Ax	F-Av	F-Ax	Agre	Neur	P-Ax
ASI	1									
SES	.123	1								
Pub-F	.153	.069	1							
M-Av	-.261*	-.049	-.055	1						
M-Ax	-.129	-.066	.055	.568**	1					
F-Av	-.009	-.093	-.044	-.057	.026	1				
F-Ax	-.003	.042	.035	.020	.347**	0.543**	1			
Agre	.177	.064	.010	-.091	-.004	-0.099	.064	1		
Neur	-.082	-.065	-.024	.084	-.078	0.021	.058	-.419**	1	
P-Ax	-.128	.076	-.025	.063	.208	0.217*	.327**	-.104	.144	1

Note. Bivariate correlations for female participants ($n = 84$) are presented above. ASI represents timing of sexual initiation; SES represents family structure, parental education level, and free or reduced lunch status in school; Pub-F represents the timing of menarche; M-Av represents mother avoidance; M-Ax represents mother anxiety; F-Av represents father avoidance; F-Ax represents father anxiety; Agre represents agreeableness; Neur represents neuroticism; and P-Av represents partner avoidance.

* $p < .05$. ** $p < .001$.

Chapter 4: Summary

General Conclusion

In this study, two manuscripts thematically linked in the examination of consensual heterosexual ASI as a predictor for female adult romantic dating and marital partner attachment. The first manuscript included an examination of the literature related to ASI and attachment. The review of the literature provided strong support for future research identifying if there is a relationship between ASI and female adult dating, partner, or spouse attachment.

The second manuscript provided an empirical investigation of a predictive relationship between the timing of consensual early ASI and current adult dating, partner, or spouse anxious or avoidant attachment in college-aged heterosexual women. The findings indicated that such a relationship did not exist. Due to the lack of studies looking at aspects of adolescent sexual development and the relationship between adult attachment, this study supports the need for further research.

Limitations

There were several limitations to this study. A modified stepwise analysis can only ascertain relationships but cannot explain cause and effect. Self-report surveys are prone to errors as the reflection process is not completely accurate with the passage of time. Utilizing a sample of convenience may provide skewed findings. The sample ($n = 84$) limited the depth of the findings, potentially hindering the preciseness of the correlations. The restricted scope of the attachment relationships assessed (i.e. parents and current partner) only provided a context-specific comparison.

Recommendations for Future Research

Research to further understand the variables associated with adolescence and adult dating, partner, or spouse attachment is important for practitioners and counselor educators alike. Although men were not a focus of this study, the data collected on male participants during this study could be informative and should be examined. Another important recommendation would be to conduct longitudinal research with a larger male and female sample assessing a variety of attachment relationships as this may provide significant findings including additional variables outside of common risk factors. The two significant relationships uncovered in the regression analyses were between parental anxious attachment and current partner/spouse insecure attachment. A study exploring whether these relations are real or the result of chance would make an important contribution to the literature.

Implications of this study are relevant to individuals working with adolescents, individuals, couples, or families in disciplines such as counseling, school counseling, and counselor education. The findings support the idea that adolescent attachment insecurity influences adult relationships. Poor relationship quality influences overall health and wellness, leading individuals to seek clinical support and resources. These findings can help clinicians conceptualize the origins of attachment insecurity. With greater attachment education and training, clinicians learn how to assess ongoing attachment patterns and assist adolescents, individuals, and couples in understanding how their attachment orientations impact their relationships. The literature and research accumulated during this study evidence how attachment insecurity can have far-reaching

implications across an individual's lifespan, demonstrating the importance of further research and greater understanding within this field of interest.

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APPENDICES

Appendix A; Submission Target for Manuscripts 1 and 2

Broadening the current knowledge base around consensual heterosexual adolescent sexual initiation (ASI) and female adult romantic attachment is of interest to a wide range of disciplines including psychology, sociology, anthropology, family studies, and child development. The research findings of the two articles, “A Review of the Literature on Adolescent Sexual Initiation, Attachment, and Development” and “The Relationship Between Adolescent Sexual Initiation and Adult Female Romantic Attachment” are relevant to these fields. Both articles can advance professional understanding of adolescent development and adult relational outcomes for therapists working with individuals and couples, premarital counselors, counselor educators training future therapists, and school counselors working with adolescent students (e.g., counseling, sexual education, risk assessment, etc.).

Adolescent sexual relationships impact cognitive, emotional, and behavioral processes and development. These relationships are influenced by contextual factors such as an individual’s characteristics and traits, family of origin, and environment. Because researchers, clinicians, school counselors, and educators are interested in understanding why adolescents engage in sex, their resulting sexual behavioral patterns, and the long-term relational impact and ramifications of ASI, “A Review of the Literature on Adolescent Sexual Initiation, Attachment, and Development” will be submitted to the *Journal of Personal Relationships*. This journal seeks to inform its readers about romantic or intimate partner relationships and the influences on relational outcomes and relationship processes. The *Journal of Personal Relationships* reaches a broad range of

disciplines including psychology, sociology, family studies, child development, and social work. Knowing the predictive strength of ASI timing in terms of adult attachment in heterosexual women is of importance and impacts training practices in counselor education and current therapeutic interventions, which is of interest to researchers, educators, and clinicians.

“The Relationship Between Adolescent Sexual Initiation and Adult Female Romantic Attachment” is well suited for the *Journal of Adolescence*. This journal focuses on adolescent development between puberty and early adulthood and desires to enhance theory, research, and clinical practice regarding adolescent functioning, interventions, and treatment. It targets psychiatrists, psychologists, social workers, and primary and secondary educators.

Appendix B: Oregon State IRB Approval

Appendix C: Single Survey with Informed Consent

Questionnaire Part 1

Instructions: Circle the number you believe to be the most accurate response.

#	Item	Response (<i>circle one</i>)
A	Your gender	1 = female 2 = male 3 = other
B	Your race/ethnicity	1 = American Indian/Alaska Native 2 = Asian 3 = Hispanic/Latino 4 = Native Hawaiian/Pacific Islander 5 = Black/African American 6 = White/non-Hispanic 7 = two or more races 8 = other/unknown
C	Your age range	1 = aged 18–21 2 = aged 22–25 3 = aged 26–30 4 = 31+
D	Family structure	1 = single parent home 2 = stepfamily home 3 = two-biologic-parent home 4 = other
E	Lunch status in school	1 = free lunch 2 = reduced lunch 3 = no lunch assistance
F	Mother's highest education level	1 = lower than high school 2 = GED 3 = high school 4 = college
G	Father's highest education level	1 = lower than high school 2 = GED 3 = high school 4 = college
H	Current relationship status	1 = single 2 = dating 3 = cohabitating 4 = married 5 = other
I	Onset of puberty—females	1 = before the age of 12

		2 = after the age of 12
J	Onset of puberty—males	1 = before the age of 13 2 = after the age of 13
K	Age at first sexual experience (either oral, anal, or vaginal)	1 = at the age of 12 or earlier 2 = at the age of 13 3 = at the age of 14 4 = at the age of 15 5 = at the age of 16 or later
L	Did you consent to your first sexual experience (either oral, anal, or vaginal)?	1 = yes 2 = no
M	Was your first sexual partner experience (either oral, anal, or vaginal) heterosexual?	1 = yes 2 = no
N	Were you under the influence of drugs or alcohol at first sexual experience (either oral, anal, or vaginal)?	1 = yes 2 = no
K	How many intimate relationships have you had since your first sexual experience (either oral, anal, or vaginal)?	1 = none 2 = 1–3 3 = 4–10 4 = 11+

Appendix D: Demographic Information

Background Variable	Total	Male	Female
Gender	214		
Male	82	82	
Female	123		123
Race/Ethnicity			
American Indian/Alaska Native	0	0	0
Asian	19	10	9
Hispanic/Latino	20	8	12
Native Hawaiian/Pacific Islander	2	1	1
Black/African American	9	3	6
White/Non-Hispanic	132	60	72
Two or More Races	20	8	12
Other/Unknown	4	3	1
Age (years)			
18–21	81	42	39
22–25	39	14	25
26–30	28	15	13
31+	58	22	36
Family Structure			
Single Partner	64	15	41
Stepfamily Home	28	9	15
Two Biological Parents	81	28	40
Other	33	13	17
Lunch Status in School			
Free Lunch	42	9	19
Reduced Lunch	13	4	5
No Lunch Assistance	147	52	58
Mother's Highest Education			
Lower than High School	30	6	21
GED	11	4	4
High School	69	26	38
College	94	29	49
Father's Highest Education			
Lower than High School	32	5	21
GED	15	6	6
High School	70	21	44
College	84	33	38
Current Relationship Status			
Single	75	46	29
Dating	75	32	43

Cohabiting	21	4	17
Married	22	10	12
Other	10	0	10
Onset of Puberty Females			
Before age 12	41		39
After age 12	82		74
Onset of Puberty Males			
Before age 13	45	34	
After age 13	37	31	
Age of First Coitus			
12 or earlier	21	12	9
13	16	6	10
14	21	6	15
15	33	15	18
16+	105	44	61
Status of First Coitus			
Consensual	166	73	93
Nonconsensual	31	11	20
Sexual Partner Experience at First Coitus			
Heterosexual	172	70	102
Homosexual	24	4	20
Conditions of First Coitus			
Under the influence of drugs or alcohol	29	10	19
Not under the Influence of drugs or alcohol	170	76	94
Subsequent Intimate Relationships			
None	26	15	11
1–3	46	17	29
4–10	61	21	40
11+	66	33	33
Participants Included			
Female			84
Heterosexual			84
Consensual First Intercourse			84
First Coitus Before Age 16			36
First Coitus After Age 16			48
Not Married or Dating First Coitus Partner			84
Participants Excluded			
Male	65		

Homosexual	15	4	11
Nonconsensual First Coitus	31	11	20
Left Blank Answers	19		
