Missing Piece of the Puzzle: Creating a General Meaning of Sex Measure

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Missing Piece of the Puzzle: Creating a General Meaning of Sex Measure

Veronica R. Hanna-Walker

A thesis submitted to the faculty of Brigham Young University in partial fulfillment of the requirements for the degree of Master of Science

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ABSTRACT

Missing Piece of the Puzzle: Creating a General Meaning of Sex Measure

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The presence of and/or search for meaning has divergent and salient outcomes for individuals’ physical, mental, and emotional well-being. Although numerous domains of meaning have been examined, the literature on the meaning of sex is sparse and lacks a quantitative measure. In this study, I aimed to validate a general Meaning of Sex (MOS) Measure that captured the presence of (MOS-P) and search for (MOS-S) the meaning of sex that predicted salient relational and sexual outcomes (i.e., relationship stability and satisfaction and sexual satisfaction). The MOS measure was based off of the Meaning in Life Questionnaire (MLQ) created by Steger and colleagues (2006), which also used the subscales of presence and searching. All participants (N = 856) reported engaging in what they considered to be sexual intercourse and were either single or in a relationship. The two subscales were distinct from one another and had good reliability. The MOS-S had a stronger (and negative) association with relationship stability and sexual satisfaction than the MOS-P. Further analyses revealed that there were significant interactions between the MOS-P and MOS-S. When individuals scored high on the MOS-P, searching for a meaning of sex no longer had a significant association with relationship stability or sexual satisfaction. Creating this measure is meaningful because it provides a more holistic picture of sexuality that has not been addressed in the literature.

Keywords: sexuality, meaning of sex, romantic relationships
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Missing Piece of the Puzzle: Creating a General Meaning of Sex Measure

Meaning is “one of [the] attributes that makes us distinctly human” (Krauss, 2005, p. 762) and is imperative to human well-being and flourishing (see Ryff & Singer, 1998 for a review). For instance, scholars have theorized and observed that having meaning in life is central to living a life well-lived (Becker, 1992; Frankl, 1988; Schnell, 2009), life satisfaction (Schnell, 2009; To & Sung, 2017), physical health (see Czekierda et al., 2017 for a review), and mental health (King et al., 2006; Ryff & Singer, 1998). In contrast, ascribing little to no meaning in life has been associated with depression and anxiety (Debats et al., 1993), a greater need for therapy (Battista & Almond, 1973), and thoughts of suicide and substance abuse (Newcomb & Harlow, 1986).

Congruent with these observations, Frankl (1988, 2006) developed a meaning-centered approach to psychotherapy called logotherapy. A core idea of logotherapy is that one must establish meaning for central areas of life in order to create hope and reasons for continuing with life (Foley, 1992). In the current literature, scholars have given attention to multiple aspects of meaning; such as life (Schnell, 2009; Steger, 2012), work (Crawford, 2017), trauma, (Lamis et al., 2019), and relationships (Hadden & Knee, 2018). Yet, sex, a central aspect of life (Vrangalova & Ong, 2014; Yabiku & Gager, 2009), has received sparse attention in the literature on meaning (for some exceptions, see Olmstead et al., 2017; Olmstead et al., 2013).

To explore the relevance of the meaning of sex, we must be able to measure if individuals ascribe meaning to that domain of life. Consequently, the goal of this thesis is to demonstrate reliability, and initial degrees of structural, divergent, and predictive validity for a meaning of sex measure that has been modified from the Meaning in Life Questionnaire (MLQ; Steger et al,
We briefly (a) define “meaning”, (b) discuss the MLQ and presence of and search for meaning in life subscales and how they translate to the measurement of the meaning of sex, (c) review the literature on the meaning of sex and why measuring meaning of sex is important, and (d) discuss the process of measurement development.

**Defining Meaning**

Cherry (1961) once described “meaning” as a “harlot among words” (p. 114) due to the ambiguous and slippery nature of the construct (Carlsen, 1988). The definitions of meaning differ slightly based on the domain being referred to (see Bering, 2003 for examples). For the purpose of this thesis, “meaning” is conceptualized as when individuals have placed value on or given significance to something (i.e., sexuality) that assists them in organizing that area in their life within their cognition. Because meanings and motivations have been used interchangeably in the current literature on sex (for examples, see Olmstead et al., 2017; Olmstead et al., 2013; Shaw & Rogge, 2017), it is important to distinguish between these two constructs.

Motivations are “the attribute[s] that move us to do or not to do something” (Broussard & Garrison, 2004, p. 106). Having sex *for* a reason is not meaning; it does not explain the value or significance of sex in an individual’s cognition. For example, one can be *motivated* to have sex with their partner to avoid conflict (Stephenson et al., 2011) but categorizing the *meaning* of sex as “avoiding conflict” does not capture the broader value the individual has given to sex. The meaning they have given to sex in their life could be far more encompassing than “avoiding conflict” that could help explain observed sexual and relational functioning and individuals’ reactions to diverse sexual outcomes (e.g., the presence or absence of orgasm) and sex in certain contexts (e.g., casual or committed). Another example of how motivation and meaning differ is that motivations incite one to *do* something (whether it be to participate in an activity or restrain
themselves; Broussard & Garrison, 2004). While meanings are theoretically a source of motivation (see White & Klein, 2008 for a review), meanings are conceptually concerned with how a particular domain in life is organized in one’s cognition (e.g., Gilmore & Durkin, 2001), rather than a specific motivation for a specific sexual experience or even the typical motivation for sexual experiences.

**The Meaning in Life Questionnaire**

The MLQ was created by Steger et al. (2006) and I adapted the MLQ to develop the Meaning of Sex (MOS) Measure. Steger and colleagues (2006) created the MLQ in response to concerns that existing meaning in life measures were tapping into multiple constructs (i.e., moods), were not structurally reliable from study to study (see Steger et al., 2006 for more information), and that existing measures did not allow participants to use their own criteria for what meaning in life could be. Steger and colleagues (2006) recognized that because Frankl’s (2006) work explicitly stated that each individual creates meaning for themselves, it was entirely possible to create a measure that put no limits on how individuals define meaning in their lives (Steger et al, 2006). Subsequently, using Frankl’s (2006) theoretical ideas, they created the 10-item MLQ that measured if individuals were searching for meaning in life (MLQ-S) or if they already had meaning in life (presence; MLQ-P) by analyzing structural, divergent, and discriminant validity in three separate studies.

The MLQ-P and MLQ-S are distinct subscales. The MLQ-P measured if individuals had a meaning in life and was a common construct in the literature (Brandstätter et al., 2012; Steger et al., 2006). The MLQ-S examined a different concept altogether; Steger and colleagues (2006) created the MLQ-S because Frankl’s (2006) work explicitly states that the primary motivation of humanity is to search for meaning in their life (i.e., “will to meaning”). If an individual is in a
state of meaninglessness, or a perpetual state of searching for meaning, they experience despair and hopelessness (Frankl, 2006). By creating these two subscales, Steger and colleagues (2006) tapped into the noun and verb aspects of meaning (see Carlsen, 1988 for an in-depth review). The MLQ-P captured the noun aspect of meaning by measuring if people currently possessed a meaning in life. In other words, did life already have significance and value that allowed for cognitive orientation and organization within the individual? The MLQ-S captured the verb aspect of meaning because it measured how much individuals were actively searching for a meaning of life (Carlsen, 1988; Steger et al., 2006); the MLQ-S measured to what degree were individuals trying to make meaning? Searching for meaning is not inherently bad; the main assumption of logotherapy is that the primary motivation for humanity is to search for meaning (Frankl, 2006). Yet, Steger et al. (2006) found that those who reported higher levels of MLQ-S also reported higher levels of negative outcomes (e.g., neuroticism, fear, sadness, and depression). They posited that searching for meaning was related to negative outcomes because it is characterized by frustration and distress, as suggested by Frankl’s (2006) logotherapy.

It is important to note that when an individual is searching for meaning it does not necessarily indicate that they are in a state of meaninglessness. Steger and colleagues (2006) observed that the MLQ-P and MLQ-S were distinct constructs and that some individuals scored high on both subscales. They speculated that these observations indicated that individuals might be trying to add additional meaning to their life, gain a better understanding of meaning they already had, and/or individuals could be seeking for new meaning because their current meaning was changing in value and significance (Steger et al., 2006). These findings have interesting implications for the meaning of sex. It may be possible that individuals have a general meaning of sex in their lives but are still searching and reaching for understanding about their sexual
experiences that will create more meaning. In sum, we are using the MLQ as a basic structure for the MOS measure because of the unique duality of meaning that it captures (i.e., the duality of noun and verb). Because logotherapy was used as the framework for the MLQ and is concerned with individuals finding meaning in various aspects of life (Foley, 1992), we will use it as our main theoretical framework.

**Literature on the Meaning of Sex**

Even though meaning is a unique and important part of being human, the literature on the meaning of sex is sparse. Those who have examined sexuality and meaning have helped move the conversation forward. For example, Olmstead and colleagues (2013) conducted a mixed-methods study where they analyzed the meanings of sex in a sample of 200 male college students. They asked, “What does sex mean for you?” and the participants responded in an open-ended format (Olmstead et al., 2013). They found that three specific categories of meaning surrounding sex emerged: **Committers, Recreationers, and Flexibles**. **Committers** were characterized by responding that sex was a “meaningful experience” and an expression of love (Olmstead et al., 2013, p. 566). **Recreationers** typically said that sex had no meaning or it was just for fun. **Flexibles** said that sex could be meaningful, could purely be about fun, or hold no meaning (Olmstead et al., 2013). Olmstead and colleagues (2013, 2017) observed that these groups were significantly different regarding race, gender, relationship status, religiosity, and number of sexual hookups.

However, Olmstead and colleagues (2013, 2017) measured meaning and motivations together. While they did integrate meaning into their conceptualization of **Committers, Recreationers, and Flexibles** (e.g., sex was meaningful, it had no meaning, or it could be meaningful but did not have to be; Olmstead et al. 2013), they also included having sex *for fun* or
to express love. This part of the conceptualization was pinpointing the reasons why people engaged in sex, the reasons that “moved” them.

Nevertheless, these findings help further the rational for creating a quantitative measure for the meaning of sex in multiple ways. First, Olmstead and colleagues (2013, 2017) observed that individuals do attribute meaning to sex in two separate studies. Second, they reported that individuals who gave meaning to sex and those who did not (i.e., Committers verses some of the Flexibles) were different from each other (Olmstead et al., 2017). These findings help support the theoretical ideas of logotherapy that meaning can be found in important domains of life (Foley, 1992) and that having meaning and having no meaning/searching for meaning look different from one another (Frankl, 2006). Nevertheless, the literature still lacks a way to measure the presence of or the search for the meaning of sex in one’s life.

In response to the lack of a measure for the meaning of sex, Shaw and Rogge (2017) used mixed methods to create the Meanings of Sexual Behavior Inventory (MoSBI). Although useful in furthering the discussion on the importance of measuring the meaning of sex, Shaw and Rogge (2017) conceptualized meanings and motivations of sex as the same construct and measured them as such. Participants were asked, “In your relationship, how often do you use sexual activity…” and “In your relationship, how often do you use withholding sexual activity…” (Shaw & Rogge, 2017). Shaw and Rogge (2017) had a similar issue as Olmstead et al. (2013); they were studying sexual motivations because they focused on how the participants used sex in their relationship; their measure was centered on the outcomes of sex.

However, the creation of a new measure is not justified simply because it has not been done before. It is important to examine the evidence for why humans need to make meaning and why measuring the meaning of sex is important to justify the creation of the MOS measure.
Therefore, I will briefly discuss the additional considerations of how the human brain is wired to make meaning, how meaning is important to religious and non-religious individuals, and how sexuality is a significant part of individuals’ lives to further denote the importance and necessity of a meaning of sex measure.

Additional Considerations

As previously discussed, a central tenet of logotherapy is that the main motivation of humanity is to search for and find meaning in life (Frankl, 2006). Support for this theoretical concept can be found in the physiology of the brain. The human brain appears to be organized to make meaning (Bering, 2003; Pulvermüller, 2013). The inferior frontal cortex, superior temporal cortex, inferior parietal cortex, and inferior and middle temporal cortex are all structures of the brain that have been observed through neuroimaging to be involved with general meaning processes that are more developed in humans than they are in most other mammals (for a review, see Pulvermüller, 2013).

More evidence supporting the primacy of meaning is that researchers and theoreticians have described how the peak of cognitive development is the ability to make meaning. For example, Kohlberg’s (1981) focus on moral development, Fowler’s (1981) theory of faith development, and Loevinger’s (as cited in Gilmore & Durkin, 2001) focus on ego development all conceptualize development as moving from an obedience to external authority towards a “universalizing or self-transcendent meaning system” (Bee, 1992, p. 395). This primacy of meaning in cognitive development research supports Frankl’s (1988, 2006) ideas that people must have meaning in order to be complete; without meaning, individuals have not reached their cognitive potential (Bee, 1992). In sum, the physiology and development of the human brain all lend support to the idea that an important part of life is the search for and creation of meaning.
When one thinks of meaning, religion and spirituality may quickly come to mind. Most religions (DeKoster, 2010) and Eastern philosophies, such as Buddhism (Ross, 2013), Shintoism (Nelson, 2015), and Confucianism (Jing, 2007) all emphasize how to help people find meaning in life. Some scholarly articles have observed that religious or spiritual individuals tend to ascribe meaning to life more than those who are non-religious (Berthold & Ruch, 2014; Hayward et al., 2016). The ubiquitous nature of religious or philosophical belief systems in society provides strong evidence for the centrality of meaning across multiple cultures.

Nevertheless, meaning is still important to those who are not spiritual or religious (Speed et al., 2018; Stuckey, 2003). Non-religious spousal caregivers of partners with dementia were just as likely to search for meaning during stressful times as religious and spiritual caregivers, although they did report finding meaning in different areas (e.g., caring for others, friendships, etc.; Stuckey, 2003). Stuckey’s (2003) findings support Frankl’s (1988, 2006) theoretical idea that humans (not just those who are religious) need to find meaning in different aspects of life. Furthermore, because finding meaning is part of our cognitive development and subsequently a “quintessential consequence of being human” (Speed et al., 2018, p. 1), this supports the idea that non-religious and religious individuals alike need meaning.

Sexuality is an important part of life for individuals within a wide range of relationship contexts. Because meaning is created through interactions (Blumer, 1969), sexuality is a rich area for the creation of meaning. For instance, sexual satisfaction in married couples has been observed to be a predictor of relationship stability (see Sprecher et al., 2004 for a short review). Low sexual frequency has been significantly associated with higher relationship dissolution in cohabitating couples (Yabiku & Gager, 2009) and single undergraduates who were sociosexually unrestrained (i.e., were willing to have casual sex) reported greater levels of well-being after
casual sex (Vrangalova & Ong, 2014). Consequently, we aim to create the MOS measure to fill in this salient gap in the literature that is applicable to individuals in multiple contexts.

**Measure Development**

As previously mentioned, we are basing our meaning of sex (MOS) measure on the previously developed and validated MLQ (Steger et al., 2006) by adapting the preamble of the measure and the specific questions to fit the area of sexuality. Because the MLQ has received extensive use and validation in over 2,000 studies, it is not necessary to go through all of the steps usually taken to validate a new measure that is developed from the ground up. Rather, it is most important to explore basic levels of reliability and validity to show that the MOS measure is distinct, but related to, the MLQ measure and that it is substantially associated with other aspects of sexuality and relationship outcomes to explore whether it is tapping into important elements of meaning that help explain sexual and relationship functioning.

We will utilize a confirmatory factor analysis to examine structural validity, and to explore divergent validity. We will evaluate whether the MOS measure is distinct from, but correlated with, meaning in life, religiosity, sexual beliefs, and sexual motivations. We include religiosity because, as previously mentioned, religions and Eastern philosophies help lead people to create meaning. Accordingly, it is important to examine if religiosity and the MOS measure are distinct because measuring those who have a meaning of sex may just be measuring those who are religious and tend to attribute meaning to domains in their lives due to their beliefs. The justification for including a meaning in life measure is similar to that of religiosity; those who have meaning in life (or those who are searching for meaning in life) may also naturally attribute meaning to sex and we could be measuring the same construct. We include sexual beliefs and sexual motivations because these two constructs tap into the related, but what we believe are
distinct, constructs of motivation and beliefs. For example, some have theorized that beliefs help create meaning (see Hall, 2006) and motivations stem from meaning (see White & Klein, 2008 for a review). It could be possible that what the MOS measure is tapping into is individual’s sexual beliefs and/or motivations.

To demonstrate predictive validity, we will explore the associations of the MOS measure with sexual satisfaction, relationship stability, and relationship satisfaction. We have included these variables because sexual constructs have been observed to be related to sexual and relational functioning (Impett et al., 2014). We will control for education, income, race, age, religiosity, sexual beliefs, meaning in life, and relationship status and length. We will also take gender differences into account. In addition to being controlled for in scholarship similar to ours (see Krause & Rainville, 2020; Olmstead et al., 2013; Shaw & Rogge, 2017; Steger et al., 2006), we are controlling for gender, education, income, race, and age because individuals that differ on these constructs have been observed to differ on sexual debut (Cavazos-Rehg et al., 2009), risky sexual behaviors (Raiford et al., 2016), sexual functioning (Nicolosi et al., 2004), and sexual activity (Orr et al., 2019). These different sexual experiences could result in differences on the MOS.

Because individuals who report having meaning in life are more likely to ascribe meaning to other areas of life (Steger & Dik, 2009) and beliefs are theorized to lead to meaning (Hall, 2006), we will control for meaning in life and sexual beliefs to capture the unique influence that the presence of or search for the meaning of sex has on our outcomes. We will also control for relationship status and length because research has observed that romantic relationships provide a unique context where meaning is created (Hamidi & Manshaee, 2013) and sexual (Bridges & Horne, 2007) and relationship (Montesi et al., 2011) satisfaction and
relationship stability (Ruffieux et al., 2014) have been observed to vary depending on relationship length. Because research on sexuality has indicated that there are gender differences for a variety of sexual variables (Elliott & Umberson, 2008; Katz-Wise & Hyde, 2014), it is important to also control for gender.

Steger et al. (2006) observed that individuals sometimes scored high or low on both subscales and called for further research on this interaction. In response, Park and colleagues (2010) analyzed this interaction with four different categories of presence of meaning in life (i.e., highest meaning, high meaning, low meaning, lowest meaning) and found that the association searching had on well-being differed depending on the levels of presence of meaning. To explore the possible nuances with presence and searching for meaning of sex, we will examine how searching is associated with sexual and relational outcomes at different levels of presence of meaning. It may be possible that individuals who report high levels of meaning and searching have better outcomes than those who report high levels of meaning and low levels of searching because they are actively trying to create more value and significance for sexuality.

**The Current Study**

In order to be able to understand human sexuality, we must better understand the meaning individuals have ascribed to sex. Therefore, we aim to measure if individuals have or are searching for the meaning of sex. We ask the following research questions:

RQ1: Does the MOS measure capture the presence of and search for the meaning of sex?

RQ2: Do the MOS-P and MOS-S have significant mean differences for common demographic variables (i.e., gender, race, income, and education)?

RQ3: Are the MOS-P and MOS-S subscales distinct from measures of religiosity, meaning in life, and sexual beliefs and motivations?
RQ4: Does the MOS-P and MOS-S significantly predict different levels of sexual satisfaction and relationship satisfaction and stability?

RQ5: Does an interaction between the two dimensions of meaning (i.e., presence and search) show the importance of having established a degree of meaning while still searching for meaning?

Methods

Sample and Procedure

The study was approved by the institutional review board (IRB). The sample consisted of 865 participants (462 were men, 398 were women, and 5 identified as transsexual). Participants were recruited using Amazon Mechanical Turk (MTurk), a web-based labor market tool developed so individuals may opt to participate in HITs (i.e., human intelligence tasks). The use of MTurk allows quality data to be gathered quickly and inexpensively (Weinberg et al., 2014). Samples from MTurk have been observed to be more demographically diverse than convenience samples (Buhrmester et al., 2011). Evidence suggests that MTurk samples are similar to samples collected by more conventional methods (Buhrmester et al., 2011; Paolacci et al., 2010). To be a part of the study, participants needed to be located in the United States. Before beginning the survey, participants were asked to read an informed consent document. Compensation for completing the survey was $1.00.

The MTurk sample originally had 1,525 participants. We removed those who missed two or more out of the four attention check questions (e.g., If you are reading this, please select “Strongly Disagree”). To improve the quality of our data, we ensured that there were no bots or duplicate data by studying patterns in IP addresses and GPS coordinates (Bai, 2018) and by continuously blocking the MTurk IDs of those who had taken the survey. With the clean data, we
had 1,206 participants. For the purpose of this thesis, we removed 341 individuals who reported that they had not had sexual intercourse.

Our sample size has an adequate number of individuals that allowed us to examine the associations of interest. The recommended number of individuals for each observed variable in a model is 10 (Kline, 2016). In our sample, 16% were single, 7% were occasionally dating, 14% were exclusively dating someone, 3% were engaged, 52% were married, 5% were divorced, and 1% were widowed. The majority of our sample were white (69%), 18% were African American (black), 5% were Asian, less than 1% were American Indian, 4% were Latino, 2% were mixed/biracial, and less than 1% reported a race different than the options provided. Regarding education and income, the majority of our sample reported having a 4-year degree (42%) and earning between $20,000-$39,999 or lower (45%). For more demographic information, see Table 1.

**Measures**

*Meaning of Sex*

The main measurement used in this study was the MOS measure we developed from Steger et al.’s. (2006) MLQ. The original MLQ had two subscales that measured the presence of meaning in life and the search for the meaning in life. The meaning of sex measure was constructed and measured in a similar fashion; we created two subscales (the presence of and searching for the meaning of sex) that were measured on a 7-point Likert scale (1 = *Strongly agree*; 4 = *Neither agree nor disagree*; 7 = *Strongly disagree*). The presence of and searching for the meaning of sex subscales each had 5 items and adequate reliability (MOS-P Cronbach’s alpha = .86; MOS-S Cronbach’s alpha = .93). See appendix A for the items for this measure.
**Meaning in Life**

The meaning in life was measured using the Meaning in Life Questionnaire (MLQ; Steger et al., 2006). The measure had two subscales (presence of meaning in life [MLQ-P] and searching for meaning in life [MLQ-S]) were measured on a 7-point Likert scale (1 = *Strongly agree*; 4 = *Neither agree nor disagree*; 7 = *Strongly disagree*). The MLQ-P and MLQ-S subscales each had 5 items adequate reliability (MLQ-P Cronbach’s alpha = .89; MLQ-S Cronbach’s alpha = .95). Sample items for this measure are “I am always looking to find my life’s purpose” and “I understand my life’s meaning”.

**Sexual Destiny/Growth Beliefs**

Sexual destiny and growth beliefs were measured on a 7-point Likert scale (1 = *Strongly disagree*; 7 = *Strongly agree*) and taken from the measures of sexual destiny and sexual growth beliefs from Maxwell and colleagues (2017). Three items were taken from the sexual destiny beliefs scale (“Troubles in a sexual relationship signify a poor match between partners”, “Experiencing sexual problems is a sure sign that a couple is not sexually compatible”, and “An unsatisfying sex life suggests that the relationship was never meant to be”), and three items were taken from the sexual growth beliefs scale (“Communicating about sexual issues can bring partners close together”, “Acknowledging each other’s differing sexual interests is important for a couple to enhance their sex life”, and “In order to maintain a good sexual relationship, a couple needs to exert time and energy. The Cronbach’s alpha for sexual destiny beliefs was .86 and .71 for sexual growth beliefs.

**Motivation Orientation**

Sexual motivations were measured using a modified version of Hill and Preston’s (1996) The Affective and Motivational Orientation Related to Erotic Arousal Questionnaire (AMORE).
The two subscales used from the AMORE were the value for partner (relational) subscale and pleasure and sensuality subscale. The scale was measured on a 5-point Likert scale (1 = Not at all true, 5 = Completely true). Each subscale consisted of four items (e.g., “A major reason I enjoy having sex with my partner is because I can communicate how much I care for and value him or her” and “I really value sexual activity as a way of enjoying myself and adding an element of adventure to my life”). The Cronbach’s alpha for relational motivations was .76 and .77 for pleasure/physical motivations. Higher values indicated higher levels of having sex because of value for partner and/or pleasure and sensuality.

**Relationship Stability**

Relationship stability was measured using three items from the RELATE study (Busby et al., 2001) on a 5-point Likert scale (1 = Never, 5 = Very often). The items were “How often have you thought your relationship (or marriage) might be in trouble”, “How often have you and your partner discussed ending your relationship (or marriage)?”, and “How often have you broken up or separated and then gotten back together?” Cronbach’s alpha was .84. Higher values indicate higher levels of relationship instability.

**Relationship Satisfaction**

Relationship satisfaction was measured with four questions from the four-item version of the Couple Satisfaction Index (Funk & Rogge, 2007). This instrument has extensive reliability and validity information and is considered one of the strongest short scales used for relationship satisfaction (Leonhardt et al., 2018). Respondents were asked to rate “how satisfied” they were in their relationship, “how rewarding” their relationships were, and whether or not they had a “warm and comfortable” relationship with their partner; these items were measured on a six-point scale from 0 (not at all) to 5 (completely). They were also asked to select their “degree of
happiness” on a scale from 1 (extremely unhappy) to 7 (perfect). Cronbach’s alpha was .92. Higher values indicated higher levels of relationship satisfaction.

**Sexual Satisfaction**

The Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1995) was used to measure overall sexual satisfaction. The GMSEX has been shown to have some of the strongest psychometric validity among similar measures (Mark et al., 2014). The GMSEX has a root question of “In general, how would you describe your sexual relationship with your partner?” The participants then respond to five separate items in reporting their overall sexual satisfaction: (1) Good-Bad, (2) Pleasant-Unpleasant, (3) Positive-Negative, (4) Satisfying-Unsatisfying, and (5) Valuable-Worthless. Cronbach’s alpha was .96. Each item was measured on a 7-point Likert scale.

**Controls**

As previously mentioned, for the regression analysis we controlled for gender, education, income, race, age, religiosity, sexual beliefs, meaning in life, and relationship status and length. Education was measured with a one-item question (“How much education have you completed?”) and was measured on a 7-point Likert scale (1 = Less than High School, 4 = 2-year degree [Associates, Technical, Professional Licensing, etc.], 7 = Doctorate [PhD., J.D., M.D., etc.]). Income was measured with one question (“What is your current personal yearly gross income?”) and was measured on a 12-point scale (1 = None, 6 = $80,000-$99,999, 12 = $300,000 or above). Race was coded so that participants were either white (0) or non-white (1). Age was measured with one open-ended question. Four items from the RELATE study (Busby et al., 2001) were used to assess global religiosity: “Spirituality is an important part of my life” (1 = never; 5 = very often), “How often do you pray (commune with a higher power)?” (1 = never; 5


= very often), “How important is your religious faith to you” (1 = not important; 5 = very important), “How often do you attend religious services?” (1 = never; 5 = weekly). Higher values indicated higher levels of religiosity. Relationship status was measured using one item (“What is your relationship status?”) and because we used it as a control for regressions predicting relationship variables, we recoded relationship status so that only those in committed relationships (i.e., seriously dating, engaged, or married) were included. Relationship length was measured with one open-ended question (“How many years and months have you been in a relationship with your partner?”). For our analyses, we converted years to months and added the two variables together to create a total relationship length variable.

**Data Analysis Plan**

**Research Question 1**

To determine if the subscale items of the MOS measure load onto two distinct constructs and have structural validity, we will run a confirmatory factor analysis to confirm the structure of the subscales (Kline, 2016).

**Research Question 2**

In order to analyze if the presence of (MOS-P) and search (MOS-S) for the meaning of sex subscales have significant mean differences for gender, race, income, and education we will run four separate MANOVAs.

**Research Question 3**

To examine divergent validity, we will assess if the subscales of the MOS measure are distinct from religiosity, meaning in life, sexual destiny and growth beliefs, and motivations, we will run bivariate correlations. We expect the MOS scales to be significantly correlated with
these scales but not so strongly, (i.e. above .75) as to suggest they are the same as these constructs.

**Research Question 4**

To analyze if the MOS subscales predict levels of sexual satisfaction and relationship satisfaction and stability, we will run ordinary least squares regressions (OLS) with the MOS subscales predicting each variable of interest while controlling for gender, education, income, race, age, religiosity, sexual beliefs, meaning in life, and relationship status and length. All of our analyses will be performed using Stata 15.1 (StataCorp, 2017).

**Research Question 5**

To determine if having established a degree of meaning while still searching for meaning is beneficial to individuals’ sexual and relationship satisfaction and relationship stability, we will create an interaction term between the MOS-S and a categorical version of the MOS-P and include it in an OLS regression that contains all of the variables used for research question 4.

**Results**

**Preliminary Analyses**

Descriptive statistics showed that our sample, on average, reported having a higher presence of the meaning of sex ($M = 5.74$) than searching for a meaning of sex ($M = 3.86$). For meaning in life, our sample reported relatively neutral on having a meaning in life ($M = 4.99$) and searching for a meaning in life ($M = 4.38$).

To prepare our demographic variables (e.g., gender, race, income, and education) to test mean differences in the MANOVAs, we removed all individuals who reported being transgender ($N = 5$) because we did not have enough for mean comparison. For education, race, and income, we created groups (three for education and race and 4 for income) in order to have enough individuals in each group for the MANOVAs.
For education, the first group contained individuals who reported some college or lower, the second group contained those who had completed two to four years of college, and group three contained individuals who reported having a master’s or doctorate. For race, the first group was made up of individuals who were black, group two was made up of a combination of different races (e.g., Asian, American Indian, biracial, Latino, etc.), and group three were white individuals. For income, the first group was made up of individuals who made $20,000 or less/no money, group two consisted of those who made between $20,000 - $39,999, the third group was made up of those who made between $40,000 - $59,999, and the final group was made up of those who made $60,000 or more.

Finally, to observe the interaction between the MOS-P and MOS-S, we created three categories for the MOS-P similar to the categories created by Park et al. (2010). The first group scored one standard deviation below the mean (i.e., No Meaning group), the second group scored in between a standard deviation below and above the mean (i.e., Neutral), and the third group scored a standard deviation above the mean (i.e., High Meaning). Again, we only used this categorical version of the MOS-P in the multiple regressions that included interactions between the MOS-S and MOS-P (research question 5). All other analyses (correlations, MANOVAs, and multiple regressions without interactions) used the continuous version of the MOS-P.

Research Question 1

The confirmatory factor analysis revealed that the MOS-P subscale, with all five items, had a Cronbach’s alpha of .79 and the MOS-S had a Cronbach’s alpha of .93. For the MOS-P, all factor loadings were above .71 except for one item, which had a factor loading of .31. The MOS-S items all had factor loadings above .72. It is important to note that the same item that had the lowest factor loading for the MOS-P also had the lowest factor loading for the MLQ-P. With all
five items, the MLQ-P had a Cronbach’s alpha of .89 and the MLQ-S had a Cronbach’s alpha of .95.

Going forward with our analyses, we used the MOS-P scale that had four items and higher reliability in our analyses. When we ran bivariate correlations between the MOS-P and MOS-S, the two subscales were not significantly correlated ($r = -.04, p = .27$), suggesting that the MOS-P and MOS-S are orthogonal constructs. This was consistent with the results for the MLQ created by Steger and colleagues (2006). See Table 3 for a complete report of correlations.

**Research Question 2**

We violated the Box’s test of equality of covariance for our MANOVA analyzing mean gender differences for the MOS-P and the MOS-S ($F(3, 447469782) = 5.20, p < .01$), therefore the results should be interpreted with caution. Multivariate tests were significant (Wilk's $\Lambda = 0.982; F(2, 857) = 7.69, p < .001; \text{partial } \eta^2 = .02$), suggesting that there were mean differences across gender. Levene’s test of the assumption of equal variances suggested that we violated this assumption for the MOS-P ($F(1, 858) = 4.36, p < .05$) but not for the MOS-S ($F(1, 858) = 1.19, p = .28$). Therefore, the results should be interpreted with caution. Univariate tests suggested that there were significant mean differences for both genders on the MOS-S ($F(1) = 15.38, p < .001; \text{partial } \eta^2 = .02$) but not for the MOS-P ($F(1) = .00, p = 1.00; \text{partial } \eta^2 = .00$). Men ($M = 4.06$) reported higher on searching for the meaning of sex in their lives than women ($M = 3.62$). It is interesting to note that men and women had the same average score on the MOS-P ($M = 5.74$), meaning that men and women both scored relatively high on having a meaning of sex in their lives.

For the MANOVA analyzing mean differences for different levels of education, we did not violate Box’s test ($F(6, 2897252) = 1.94, p = .07$). Multivariate tests were significant (Wilk's
\( \Lambda = 0.95; F (4, 1722) = 11.11, p < .001; \text{partial } \eta^2 = .03 \), suggesting that there were mean differences across levels of education. Levene’s test suggested that we violated this assumption for the MOS-S (\( F(2, 862) = 3.53, p < .05 \)) but not for the MOS-P (\( F(2, 862) = 1.22, p = .30 \)). The results should be interpreted with caution. Again, univariate tests suggested that there were significant mean differences for levels of education on the MOS-S (\( F(2) = 22.52, p < .001; \text{partial } \eta^2 = .05 \)) but not for the MOS-P (\( F(2) = .02, p = .98; \text{partial } \eta^2 = .00 \)). Bonferroni post hoc tests revealed that all levels of education were significantly different from each other (level 1: \( M = 3.39 \); level 2: \( M = 3.89 \); level 3: \( M = 4.48 \)), suggesting that the higher the level of education, the higher individuals scored on searching for the meaning of sex. See Table 2 for complete results.

Relatively similar patterns existed for different levels of income. We violated Box’s test (\( F(9, 6199973) = 2.67, p < .01 \)). Multivariate tests were significant (Wilk's \( \Lambda = 0.95; F (6, 1720) = 7.31, p < .001; \text{partial } \eta^2 = .03 \)), suggesting that there were mean differences across levels of income. Again, Levene’s test suggested that we violated this assumption for the MOS-P (\( F(3, 861) = 4.61, p < .01 \)) but not for the MOS-S (\( F(3, 861) = 1.08, p = .36 \)). Univariate tests suggested that there were significant mean differences for levels of income on the MOS-S (\( F(3) = 33.21, p < .001; \text{partial } \eta^2 = .04 \)) but not for the MOS-P (\( F(3) = 1.93, p = .12; \text{partial } \eta^2 = .00 \)). Bonferroni post hoc tests revealed that the lowest level of income (\( M = 3.26 \)) was significantly different from all levels of income; the second lowest level of income (\( M = 3.76 \)) was significantly different from the third level (\( M = 4.22 \)) but not the highest level of income (\( M = 4.01 \)); the third level was also not significantly different from the highest level of income. This pattern suggested that income mattered until the fourth level of the search for the meaning of sex. See Table 2 for complete results.
Finally, our fourth MANOVA examining mean differences for different races did reveal significant mean differences for both the MOS-S and the MOS-P. We violated Box’s test ($F(6, 945012) = 7.68, p < .001$). Multivariate tests were significant (Wilk's $\Lambda = 0.88$; $F(4, 1722) = 28.02, p < .001$; partial $\eta^2 = .06$), suggesting that there were mean differences across racial categories. Levene’s test suggested that we violated this assumption for the MOS-P ($F(2, 862) = 11.22, p < .001$) and the MOS-S ($F(2, 862) = 3.36, p < .05$). Univariate tests suggested that there were significant mean differences for racial categories on the MOS-P ($F(2) = 46.57, p < .001$; partial $\eta^2 = .10$) and MOS-P ($F(2) = 8.48, p < .001$; partial $\eta^2 = .02$). Post hoc tests suggested that all racial categories (black: $M = 4.93$; multiracial/mixed: $M = 3.96$; white: $M = 3.56$) were significantly different from each other on their scores for the MOS-S. For the MOS-P, post hoc tests revealed that black individuals ($M = 6.02$) had a significantly higher mean score from those in the white ($M = 5.72$) or multiracial/mixed ($M = 5.51$) category. White individuals were not significantly different from those in the multiracial/mixed category. See Table 2 for complete results.

Research Question 3

The highest correlations between the MOS-P and MOS-S and religiosity, meaning in life (MLQ-P and MLQ-S), sexual destiny and growth beliefs, and motivations (relational and physical pleasure) were between the MOS-S and MLQ-S ($r = .67, p < .001$) and the MOS-P and the MLQ-P ($r = .54, p < .001$); we expected these constructs to be highly related because they were both tapping into aspects of meaning and the sexuality questions were essentially altered versions of MLQ-S and P items. All other correlations were below .37, revealing modest to weak correlations. The MOS-P was significantly correlated with all variables of interest except sexual destiny beliefs ($r = .04, p = .28$) whereas the MOS-S was significantly correlated with all
variables except meaning in life ($r = .06, p = .07$). Important to note is that the MOS-S had a strong negative association with relationship stability ($r = -.52, p < .001$) and moderate negative association with sexual ($r = -.36, p < .001$) and relationship satisfaction ($r = -.23, p < .001$). MOS-P also had moderate associations with sexual ($r = .27, p < .001$) and relationship satisfaction ($r = .27, p < .001$), but no association with relationship stability ($r = .07, p = .09$). See Table 3 for a complete report of correlations.

**Research Question 4**

Before running the OLS regressions, we checked to see if the MOS-P and MOS-S had linear relationships with relationship stability and satisfaction and sexual satisfaction. Results indicated that the MOS-S had a quadratic relationship with relationship stability (see Figure 1) and sexual satisfaction (see Figure 3). The graphs indicate that the relationship between the MOS-S and relationship stability and sexual satisfaction were similar and were “decreasing at an increasing rate”. In other words, individuals who scored low or neutral on the MOS-S had relatively equal and high levels of relationship stability/sexual satisfaction. But, when values on the MOS-S increased (i.e., the search for meaning of sex increased), relationship stability/sexual satisfaction dramatically decreased in a nonlinear fashion.

The MOS-P had a quadratic relationship with only relationship satisfaction (see Figure 2). The graph of the association between the MOS-P and relationship satisfaction was “increasing at an increasing rate.” Said, differently, at the lowest levels of the MOS-P (i.e., individuals reported no presence of meaning of sex in their life), relationship satisfaction was at a medium level and moved to the lowest levels when individuals reported mid-range values on the MOS-P (i.e., individuals reported not being able to say if they did or did not have a meaning of sex). Relationship satisfaction dramatically increased as levels of the MOS-P increased,
indicating a strong presence of the meaning of sex (see Figure 2). Subsequently, a quadratic term for the MOS-S was included in the regressions predicting relationship stability and sexual satisfaction and a quadratic term for the MOS-P was used to predict relationship satisfaction.

The MOS-P did not predict relationship stability ($\beta = .03, p = .42$) whereas the quadratic MOS-S term had a significant negative association ($\beta = -.16, p < .001$), controlling for all other effects. For the meaning of life questionnaire, the MLQ-P had a significant positive association with relationship stability ($\beta = .15, p < .001$) and the MLQ-S did not significantly predict relationship stability ($\beta = -.04, p = .39$). Because beliefs have been theorized to lead to meaning (Hall, 2006), it is important to note that sexual growth beliefs did not predict an individual’s relationship stability ($\beta = .05, p = .17$) and sexual destiny beliefs did ($\beta = -.22, p < .001$), controlling for all other effects (see Table 5).

The MOS-S had a negative association with relationship satisfaction ($\beta = -.15, p < .05$). The quadratic term for the MOS-P in the complete model did not have a significant association with relationship satisfaction ($\beta = .07, p = .08$) whereas the linear MOS-P term did ($\beta = .22, p < .001$). This indicated that with all controls in the model, the MOS-P had a linear association with relationship satisfaction. The MLQ-P had a relatively equal association with an individuals’ relationship satisfaction ($\beta = .20, p < .001$) as the linear MOS-P term, but the MLQ-S had no significant association ($\beta = .02, p = .70$), controlling for all other effects. Both types of sexual beliefs predicted relationship satisfaction (destiny: $\beta = -.10, p < .05$; growth: $\beta = .18, p < .001$), controlling for all other effects. See Table 5 for complete results.

The MOS-P had a small, positive association with sexual satisfaction ($\beta = .24, p < .001$) and the quadratic term for the MOS-S had a negative association ($\beta = -.22, p < .001$). Meaning in life (MLQ-P: $\beta = .13, p < .01$; MLQ-S: $\beta = .02, p = .73$) had weaker or no association with
sexual satisfaction than the MOS subscales. Sexual growth beliefs ($\beta = .09, p < .05$) and sexual
destiny beliefs ($\beta = -.10, p < .05$) also predicted sexual satisfaction, controlling for all other
effects. See Table 5 for complete results.

**Research Question 5**

To address this research question, we first ran an interaction between the MOS-P and
MOS-S with both as continuous variables. This interaction was not significant. But, because Park
et al. (2010) found that there were significant interactions between the MLQ-S and a categorical
version of the MLQ-P, we created a categorical version of the MOS-P to see if there were
different thresholds where the interaction between the MOS-S and MOS-P existed. It is
important to note that because the quadratic term for the MOS-S was still a significant predictor
of relationship stability and sexual satisfaction when included in the complete model (see Table
5), we included the quadratic and linear term in the multiple regressions predicting relationship
stability and sexual satisfaction for this research question. We did not include a quadratic term
for the MOS-P in the multiple regression predicting relationship satisfaction for this research
question because it did not significantly predict relationship satisfaction while controlling for all
other variables in the model in research question 4 (see Table 5).

For relationship stability, the interaction between the MOS-S and group 1 of the MOS-P
(reported having no presence of meaning of sex, “No Meaning”) was not significantly different
from group 2 of the MOS-P (reported that they could not say that they did or did not have a
presence of meaning of sex, “Neutral”) ($\beta = -.06, p = .53$) or group 3 of the MOS-P (scored high
on having a presence of meaning of sex, “High Meaning”) ($\beta = .08, p = .25$) on relationship
stability. The Neutral and High Meaning groups were significantly different from each other
($F(1, 565) = 4.68, p < .05$) (see Table 6 and Figure 4). Simple slope tests revealed that the No
Meaning and Neutral groups were significantly different from zero. This indicates that, because the High Meaning group was not significantly different from zero, searching is not associated with relationship stability when individuals have a strong presence of the meaning of sex (see Figure 4). Only when individuals have no meaning of sex or are neutral is searching associated with relationship stability.

For relationship satisfaction, the interaction between the MOS-S and the No Meaning group was not significantly different from the Neutral group (β = .07, p = .58) or the High Meaning group (β = .16, p = .05). The Neutral and the High Meaning group were significantly different from each other (F(1, 569) = 11.11, p < .001) (see Table 6). However, only the Neutral group was significantly different from zero. Again, this indicated that when individuals had high levels of meaning of sex, searching had no association with relationship satisfaction.

For sexual satisfaction, the interaction between MOS-S and the No Meaning group was significantly different from the High Meaning (β = .17, p < .05) and Neutral (β = .26, p < .05) groups and the High Meaning and Neutral groups were also significantly different from each other (F(1, 549) = 5.42, p < .05). All groups were also significantly different from zero (see Table 6 and Figure 6). This indicates that searching still had a negative influence on sexual satisfaction when individuals had a high presence of meaning of sex, but individuals in this group started with higher levels of sexual satisfaction than the No Meaning group. The High Meaning group also had a decline in sexual satisfaction that was less steep than the No Meaning group as individuals’ search for meaning of sex increased (see Figure 6).

Discussion

This current study extends the literature on meaning because it is the first that provides a quantitative measure that captures the general meaning of sex and takes a more nuanced look
into the noun (i.e., presence) and verb (i.e., searching) dichotomy that is inherent in meaning. An additional way this study contributes to the current literature is it exhibits that the presence of and search for meaning of sex interact in unique ways that have salient implications for relational and sexual outcomes.

**Scale Development and Demographics**

Both the MOS-P and the MOS-S had high reliability and were distinct from but related to measures that capture similar and related constructs. Although seemingly two sides of the same coin, having a meaning of sex (MOS-P) and searching for a meaning of sex (MOS-S) were not significantly correlated. As previously mentioned, the subscales of the MLQ were also not statistically related (Steger et al., 2006). This intriguing result suggests that the presence and search for sexual meaning are unrelated to one another and are theoretically tapping into entirely different processes. While conceptually it seems difficult to understand how participants arrived at meaning without first having to search for meaning, it may be that for people with the characteristics of our sample, the two processes are now unrelated. The separation of the two processes may only become clear with longitudinal analyses.

We found it interesting that the MOS-P only had significant mean differences between some racial categories (i.e., black individuals had a significantly higher mean on the MOS-P than other races) and not between genders, levels of education, or levels of income. Our findings were consistent with that of Steger et al. (2006) for gender but not for race for the MLQ-P. It is important to note that Steger and colleagues’ (2006) samples consisted of college students who were not racially diverse, possibly explaining why they did not find racial differences.

The demographic differences for the MOS-S are novel and provide interesting insight into gender, educational, income, and racial differences. For our sample, men scored higher on
the MOS-S than women. Again, there were no gender differences on the MOS-P, so these results do not indicate that women have more meaning of sex in their life, but possibly suggest that women are more satisfied with the meaning of sex that they already have in their lives. Future research with actor/partner data would help clarify the reasons for these differences.

For education, those who reported they had some college, or were high school graduates, or less had a significantly lower mean on the MOS-S compared to those who reported two to four years of college or a master’s degree and higher. Those who had completed two to four years of college also scored significantly lower than those reporting a master’s degree or higher. In other words, those in higher categories of education scored higher on the MOS-S compared to those in the lower categories.

Arnett’s (2015) idea of identity development that emerging adults undertake in college is applicable here. Our results could be reflecting the idea that those who gained higher levels of education (or who were currently working toward these degrees) had more opportunities to develop their sexual identity and were more prone to continue searching and/or developing deeper meaning about sex. Income had a similar pattern as education with groups scoring significantly higher on the MOS-S as the level of income increased.

For race, black individuals had a higher mean score on the MOS-S than those in the multiracial/mixed category and white category. As previously mentioned, black individuals also had significantly higher mean scores than other racial categories on the MOS-P, meaning that black individuals, on average, had a presence of meaning and searched more for a meaning of sex than other races. Scholars have observed racial differences in regard to sexuality (e.g., time of sexual debut and number of casual sexual partner; cite), and one reason why could be the type of meaning of sex or how meaningful sex is to individuals of different races. As previously
mentioned, meaning is created through interaction and experiences. Because racial differences exist for numerous demographic variables (Cogneau & Grimm, 2006; Santelli et al., 2000), the diverse experiences that different races experience could be why there were significant mean differences found on the MOS-P and MOS-S. More research is needed to explore why this would be and if there are certain racial differences in past experiences that promote the creation or search for the meaning of sex.

Additionally, because of how education, income, and race have been observed to influence each other in the literature (Cogneau & Grimm, 2006; Santelli et al., 2000), it could prove useful for future research to examine the interaction between these demographic variables in a nationally representative sample of the United States and how this interaction influences relational and sexual outcomes.

Our results also revealed that the MOS-P and the MOS-S demonstrated divergent validity from the MLQ-P and MLQ-S. The correlation between these scales was not so high that the different constructs were measuring the same thing. These results support Steger and Dik’s (2009) findings that global meaning and domain specific meaning are related but distinct. The subscales on the MOS demonstrated distinction from the constructs of religiosity, sexual beliefs, and sexual motivations. These findings are important because they indicate that (1) having a presence of or searching for the meaning of sex is not the same as being a religious individual or the same as having/searching for a meaning in life, (2) although sexual beliefs may be related to sexual meaning, they are still distinct from one another, and (3) sexual motivations and sexual meaning are not the same construct and should not be treated as such conceptually or operationally.
Predicting Relationship Stability, Relationship Satisfaction, and Sexual Satisfaction

It makes sense that the association between the MOS-S and relationship stability and sexual satisfaction became more pronounced as individuals indicated that they were searching for a meaning of sex (i.e., the association was quadratic) because of the distress and frustration that accompany searching for meaning (Carlsen, 1988; Frankl, 1988; Steger et al., 2006). It is interesting that reporting neutral values on the MOS-S (i.e., the individuals cannot say if they are or are not searching for a meaning of sex) seems to have similar associations with relationship stability and sexual satisfaction that reporting not searching for a meaning of sex has (see Figure 1 and Figure 3). It seems that searching for a meaning of sex only has strong, negative outcomes when individuals are actively engaged in this pursuit. This may be because the desire to search for meaning commonly starts when an individual is no longer satisfied with the meaning they currently have (Carlsen, 1988). This may be a reflection of how their sexual relationship is no longer a significant or fulfilling source of meaning.

When interpreting our results, it is important to remember that our study was cross-sectional, and directionality cannot be determined. It is plausible that an unstable and dissatisfying relationship could lead to individuals searching for a meaning of sex or that satisfying relationships facilitate interactions that produce a meaning of sex instead of the other way around. For example, individuals who are unhappy in their relationships may be more prone to search for a meaning of sex because they are trying to understand why their relationship is not working or are searching for something that holds significance for them to hold onto. Of course, further longitudinal research is needed to establish the directionality of this association and provide more clarity on how searching for or the presence of the meaning of sex is associated with sexual and relational outcomes.
**Relationship Stability**

It is interesting to note that the MOS-P was not predictive of relationship stability whereas the quadratic MOS-S term was. This finding could have salient implications for couples. Relationship stability is concerned with if a relationship will endure and searching for a meaning of sex implies that individuals are missing a significant, cognitive organization about sex. Taken together, when individuals do not understand where sexuality fits into their life, and they are in a romantic relationship, they also are questioning whether that relationship will endure. It is highly likely that these two constructs synergistically influence one another such that when someone is searching for meaning about their sexuality it influences their feelings of stability and when the relationship feels unstable it influences their need to search for meaning in many areas of their relationship including sexuality.

It is worth noting that the MOS-S is capturing the search for a *general* meaning of sex, not about searching for meaning of sex within relationships, and yet it still has a strong association with relationship stability. If something is lacking in an intimate, romantic relationship (which is a salient area of meaning; Hadden & Knee, 2018), enough to facilitate the search for a *general* meaning of sex, it would make sense that individuals’ relationships would be unstable because their relationships are not providing them with a significant, cognitive organization of sex in general. But what aspects of individuals’ sexual life need to be missing in order to lead to searching for a meaning of sex and subsequently not knowing if a relationship will “make it”? Are individuals who have high levels of searching for a meaning of sex unsure in other salient areas of relationships that are associated with relationship stability, such as commitment? Further research is needed to examine if and how the search for the meaning of sex is associated with different levels of sexual constructs (i.e., sexual frequency, beliefs, desire,
and/or the levels of love felt during sexual intercourse) and different salient areas of relationships that could further explain the MOS-S’ association with relationship stability.

**Relationship and Sexual Satisfaction**

Regarding relationship and sexual satisfaction, the associations for both subscales were similar for relationship satisfaction, but the linear MOS-S term had a stronger and negative association with sexual satisfaction than the linear MOS-P term (see Table 5). A possible reason why we are seeing these results could be that the MOS-P only taps into a general presence of meaning. Different meanings of sex could influence sexual satisfaction in diverse, stronger ways, just as Sternberg and colleagues (2001) observed that the stories/meanings individuals assigned to love were associated with varying levels of relationship satisfaction.

It is important to note that searching for a meaning of sex is also a general construct (i.e., does not measure specific types of meaning of sex that individuals are searching for). However, literature suggests that regardless of the meaning that is being searched for (Carlsen, 1988), searching for meaning is associated with distress and frustration (Carlsen, 1988; Frankl, 1988; Steger et al., 2006). In other words, no matter the meaning of sex than an individual is searching for, they will experience distress and frustration simply because they are engaged in the search for meaning. Again, this could be a possible reason why the MOS-P had a weaker association with sexual satisfaction than the MOS-S.

However, it may be that searching for a meaning of sex has a stronger association with sexual satisfaction because of what searching represents in romantic relationships. As previously mentioned, typical precursors to searching for meaning are some type of conflict, a moment or series of moments that creates a need for new meaning because the old has lost significance (Carlsen, 1988). In light of this, searching for a meaning of sex could have a stronger association
with sexual satisfaction than having a meaning of sex because searching represents an individual’s perception that something is wrong with their sexual relationship. It may be that an individual who is searching for a meaning of sex feels they are not receiving something from their partner that they need, such as emotional and relational closeness or feelings of love during sexual experiences.

These findings of the MOS subscales, especially the MOS-S scales being more predictive of relationship stability than relationship satisfaction are consistent with an accumulating body of research that shows sexuality variables have stronger associations with relationship stability than satisfaction (Busby et al., 2010; Busby et al., 2013; Busby et al., 2019). Why this is so is still not clear, but this current study provides more specificity and hints at the possibility that those who are struggling to find meaning and are searching for how to make sense out of sexuality while they are in a relationship are prone to also find that their relationships are unstable, more than they are unsatisfying. Is meaning by its metacognitive nature more similar to evaluations of stability than satisfaction? It makes sense that this would be so as pondering whether to stay in a relationship is a summative question that appears to be more similar than simply answering whether an area of the relationship is satisfying.

**Interactions between the MOS-S and MOS-P**

The interactions between the MOS-S and the MOS-P provided interesting insight into the nature of the relationship between the presence of and searching for the meaning of sex on relational and sexual outcomes. Again, the MOS-S and MOS-P were not significantly correlated in our sample (see Table 3), suggesting that individuals could score high or low on both having and searching for a meaning of sex. Our analyses provided a more nuanced picture into how meaning is associated with relationship stability. Searching for a meaning of sex had no
association with relationship stability or satisfaction when individuals were in the High Meaning group, indicating that having a solid meaning of sex is a type of protective factor against the possible harmful associations of searching.

What would lead someone to search for more meaning when they already have a high presence of meaning in their life? It may be that this finding is tapping into individuals who are trying to deepen the meaning of sex within their relationship to strengthen their bond with their partner even though they are satisfied with the meaning they have. In Kleinplatz and colleagues (2009) study on optimal sexuality, participants reported eight common aspects of “great sex” (e.g., fantastic communication, vulnerability, being present, etc.) that all require effort to achieve and maintain. In a similar fashion, individuals who have a meaning of sex may be simply trying to maintain the significance of sex in their lives and relationship by deepening the meaning they already have. Further research is needed to examine what type of individuals search for more meaning when they already have a solid and significant meaning of sex. It is interesting that the No Meaning and Neutral groups were significantly different from zero, but not from each other, suggesting that the distress and frustration associated with searching for meaning is still prevalent even when individuals are neutral on having or not having a meaning of sex in their lives.

The interaction between the MOS-S and MOS-P and sexual satisfaction revealed that all groups were significantly different from each other and zero. Figure 6 indicates that searching for a meaning of sex still had a negative association with sexual satisfaction for all groups, but those in the High Meaning group had a higher initial value on sexual satisfaction than the No Meaning group. The High Meaning group also had less steep of a decline in sexual satisfaction than the No Meaning group as searching for meaning of sex increased. These results lend support
to the idea that having a meaning of sex acts as a sort of protective factor against the influence of searching for meaning. Having a high presence of meaning of sex may provide a foundation individuals can draw upon while they are searching for more meaning, subsequently lowering the levels of distress and frustration they experience (Park et al., 2010).

Our results are similar to those found by Park and colleagues (2010) where they observed that searching for a meaning in life was only positively associated with well-being when individuals had high levels of meaning in life; individuals who scored relatively neutral, low, or had no meaning in life had lower levels of well-being as searching for a meaning of life increased.

**Limitations and Further Directions**

This study it is not without limitations. Our sample was not nationally representative of the United States (e.g., the majority of the sample was white and reported a low income) and was not longitudinal. Another limitation is that we did not include individuals who had not engaged in sexual intercourse. As previously mentioned, meaning is created through interactions (Blumer, 1969), indicating that a meaning of sex can be created through sexual education (Gilbert, 2007), messages from the prevailing culture, and/or messages about sex from religious institutions (Mollen & Stabb, 2010). The meaning of sex and the search for the meaning of sex could look different for individuals who consider themselves virgins.

An additional limitation is that we only analyzed the influence the MOS-P and the MOS-S had on outcomes of romantic relationships (i.e., relationship stability, relationship satisfaction, and sexual satisfaction). Sex is an imperative aspect of individual’s lives in a wide variety of relational contexts (Vrangalova & Ong, 2014; Yabiku & Gager, 2009). It is important to examine if the presence of or search for the meaning of sex predicts salient behaviors and outcomes in the
lives of those who are single, such as contraceptive use, number of casual or committed sexual partners, and affective outcomes of engaging in certain sexual behavior. An additional area of future work is for scholars to discover what different types of meaning individuals ascribe to sex, where these meanings come from, and what salient developmental and relational outcomes they predict. This area of scholarship may have particular importance during emerging adulthood where individuals are developing their sexual possible selves (Anders & Olmstead, 2019).

Conclusion

Regardless of the limitations, this study is the first to create a measure to examine the general presence of and search for the meaning of sex in individual’s lives. Our findings were focused on those who were in romantic relationships and have important implications for individuals in this context. More research is needed to further understand the nuances between searching for and the presence of the meaning of sex, the associations of these constructs with relational and sexual outcomes, and to establish directionality. In sum, this study helps further the scholarly conversation about the meaning of sex and adds a more holistic view of sexuality to the current literature.
References


doi: 10.1016/j.contraception.2009.02.014


https://doi.org/10.1080/17437199.2017.1327325


https://doi.org/10.1080/10720537.2010.502400


StataCorp. (2017). *Stata statistical software: Release 15*. College Station, TX: StataCorp LLC.


https://doi.org/10.1111/j.1741-3737.2009.00648.x
Table 1

Descriptive Statistics

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Percent

Income
- None: 1%
- Under $20,000: 18%
- $20,000 - $39,999: 23%
- $40,000 - $59,999: 26%
- $60,000 - $79,999: 17%
- $80,000 - $99,999: 7%
- $100,000 - $119,999: 3%
- $120,000 - $139,999: 1%
- $140,000 or above: 3%

Education
- Less than High School: 1%
- High School: 9%
- Some College, No Degree: 19%
- 2-year Degree: 12%
- 4-year Degree: 40%
- Master’s Degree: 17%
- Doctorate: 2%

Relationship Status
- Single, not dating at all: 16%
- Occasionally dating: 7%
- Exclusively dating someone: 15%
- Engaged: 3%
- Married: 53%
- Divorced: 5%
- Widowed: 1%
Table 2

*Estimated means for gender and race, income, and educational categories*

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<td>4.48.Writer^XY</td>
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*Note.* Superscripts indicate a class that is significantly different than the reference class.
Table 3

Bivariate correlations between variables of interest

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<th>Sex Dest Bel</th>
<th>Rela Mot</th>
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*p < .05, **p < .01, ***p < .001

### Table 4

*Standardized factor loadings for the MOS and MLQ subscales*

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<th>Items</th>
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<th>MOS-S</th>
<th>MLQ-P</th>
<th>MLQ-S</th>
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<td>“I understand the ultimate purpose of sexuality in my life.”</td>
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<td>“I have discovered a satisfying purpose of sexuality.”</td>
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<td>“I am seeking a purpose or mission for my life.”</td>
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<td>.89</td>
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<tr>
<td>“I am searching for meaning in my life.”</td>
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<td>.88</td>
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</table>

*Note.* The preamble for the MOS and MLQ was, “Please take a moment to think about what makes (sexuality/life) feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers.”
Table 5

Multiple regressions predicting relational and sexual satisfaction and relationship stability

<table>
<thead>
<tr>
<th></th>
<th>Relationship Stability</th>
<th>Relationship Satisfaction</th>
<th>Sexual Satisfaction</th>
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<td>(0.06)</td>
<td>(0.05)</td>
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<tr>
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<td>(.04)</td>
<td>(.06)</td>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td>--</td>
<td>-0.22***</td>
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<tr>
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<td>0.02</td>
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<td>(0.04)</td>
<td>(0.04)</td>
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<td>-0.10*</td>
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<td>(0.03)</td>
<td>(0.03)</td>
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<td>0.01</td>
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<td>(0.10)</td>
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<td>(0.07)</td>
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<td>.06</td>
<td>.05</td>
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<td>(.09)</td>
<td>(.08)</td>
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<td>-0.14**</td>
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<td>(.05)</td>
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Standardized beta coefficients; Standard errors in parentheses.
* p < 0.05, ** p < 0.01, *** p < 0.001.
Table 6

Multiple regressions including interaction between MOS-P and MOS-S predicting relational and sexual satisfaction and relationship stability

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<th>Relationship Satisfaction</th>
<th>Sexual Satisfaction</th>
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<td>--</td>
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<td>MOS-S</td>
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<td>-0.27 (0.15)</td>
<td>-0.58** (0.15)</td>
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<td>MOS-S²</td>
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<td>-0.22* (0.15)</td>
</tr>
<tr>
<td>MOS-S # MOS-P</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>MOS-P (2)</td>
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<td>0.07 (0.16)</td>
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<tr>
<td>MOS-P (3)</td>
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<td>0.17* (0.16)</td>
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<tr>
<td>MLQ-P</td>
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<td>0.22*** (0.04)</td>
<td>0.17*** (0.04)</td>
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<tr>
<td>MLQ-S</td>
<td>-0.05 (0.03)</td>
<td>0.01 (0.04)</td>
<td>0.02 (0.04)</td>
</tr>
<tr>
<td>Sexual Destiny Beliefs</td>
<td>-0.22*** (0.02)</td>
<td>-0.09* (0.03)</td>
<td>-0.09* (0.03)</td>
</tr>
<tr>
<td>Sexual Growth Beliefs</td>
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<td>0.19*** (0.04)</td>
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<tr>
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<tr>
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<td>0.04 (0.02)</td>
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<td>Age</td>
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<td>-0.01 (0.00)</td>
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<td>-0.00 (0.10)</td>
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<tr>
<td>Gender</td>
<td>.01 (.07)</td>
<td>.09 (.05)</td>
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<td>Religiosity</td>
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<td>-0.03 (0.01)</td>
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<tr>
<td>Observations</td>
<td>583</td>
<td>586</td>
<td>567</td>
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<tr>
<td>R²</td>
<td>.42</td>
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<tr>
<td>Adjusted R²</td>
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<td>.27</td>
</tr>
</tbody>
</table>

Standardized beta coefficients; Standard errors in parentheses.

* p < 0.05, ** p < 0.01, *** p < 0.001.
Figure 1

*Quadratic relationship between relationship stability and MOS-S*
Figure 2

*Quadratic relationship between relationship satisfaction and MOS-P*
Figure 3

*Quadratic relationship between sexual satisfaction and MOS-S*
Figure 4

Simple slopes of MOS-S predicting relationship stability through categories of MOS-P
Figure 5

Simple slopes of MOS-S predicting relationship satisfaction through categories of MOS-P
Simple slopes of MOS-S predicting sexual satisfaction through categories of MOS-P
Appendix A

Meaning of Sex (MOS) Measure

MOS Please take a moment to think about what makes sexuality feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers.

1. I understand the meaning of sexuality in my life.
2. I am looking for something that makes my sexuality feel meaningful.
3. I am always looking to find my sexuality’s purpose.
4. I have a good sense of where sexuality fits into my life.
5. I understand the ultimate purpose of sexuality in my life.
6. I have discovered a satisfying purpose of sexuality.
7. I am searching for what makes sexuality meaningful.
8. I am trying to understand where sexuality fits into my life.
9. Sexuality has no clear purpose in my life.
10. I am searching for the meaning of sexuality in my life.

MOS measure syntax to create Presence and Searching subscales:

MOS-P (Presence) = 1, 4, 5, 6, & 9- reverse coded
MOS- S (Search) = 2, 3, 7, 8, & 10

Note. We removed item 9 from the MOS-P to improve reliability.