The Moderating Effects of Age and Sexual Attitudes on the Relationship Between Age-Related Stigma and Sexual Behavior in Older Adults

By

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Abstract

According to stereotype embodiment theory (Levy, 2009), age-related stigma (ARS) can cause the internalization of stereotypes in older adults, which is further associated with effects on health outcomes, life expectancy, and sexual behaviors. Sexual attitude measures have been shown to be associated with measures of ARS and sexual behaviors among older adults. This study investigated if sexual attitudes moderate the relationship between ARS and sexual behaviors. Secondary data analyses were collected from 422 participants aged 55 years and older using MTurk (Mean age = 59.00, SD = 4.69; White 83.4%, Black 11.8%, Hispanic/Latino/Latina 19.9%, Asian 1.4%, Other 1.2%) (Syme & Cohn, 2021). A moderation analysis was conducted using the PROCESS macro for SPSS (Hayes, 2013). Results indicated that sexual attitudes moderated the relationship between ARS and sexual behaviors among older adults, $F(1, 418) = 6.97$, $p = .015$, $\beta = -.120$. The main effect of ARS was significant, $F(1, 418) = 32.061$, $p < .001$, $\beta = -.171$, with lower levels of ARS associated with greater frequency of sexual behaviors. The main effect of sexual attitudes was significant, $F(1, 418) = 27.35$, $p < .001$, $\beta = +.244$, with more positive sexual attitudes associated with greater frequency of engaging in sexual behavior. The strength of the relationship between ARS and sexual behaviors was significantly stronger in individuals with more positive sexual attitudes. One clinical implication is that educational programs promoting lower levels of age-related stigma may result in greater frequency of sexual behaviors in older adults.

Keywords: age-related stigma, sexual attitudes, sexual behaviors, stereotypes, ageism, intimate behaviors, age, stereotype embodiment theory

Acknowledgements and Dedication

Thank you to my mother and grandfather for always encouraging me. Thank you to everyone that believed and supported me on my journey. I dedicate my dissertation to the important people throughout my life that helped me get to this point. Thank you to Dr. Pierce for volunteering to be my chair and helping me with my dissertation. Thank you, Dr. Cohn, for your support and providing the data for the project. Thank you to Dr. Tsai and Dr. Steele for being on my committee and guiding me through this process. Thank you to Dr. Barfield and Dr. Riding-Malon for supporting me and pushing me to be my best self. And thank you to my wonderful fur babies, Wiley, Daisy, and Luna.

And in loving memory of Little Brat, the cat in every zoom meeting, laying on every book, or in my lap when I was working.

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CHAPTER ONE

INTRODUCTION

Older adults are at increased risk of age-related stigma compared to younger or middle-aged adults (Syme & Cohn, 2021; Widrick & Raskin, 2010). With older adults, age-related stigma has a number of negative effects, including those on health outcomes (Estill et al., 2017; Levy, 2009), well-being (Graf & Patrick, 2014), and sexual behaviors (Ševčíková & Sedláková, 2020; Syme & Cohn, 2021).

Age-related stigma can cause negative perceptions or stereotypes of older adults about their sexuality, such as older adults are physically unattractive or asexual. For example, older adults that internalize negative stereotypes such as being repulsive will engage in fewer sexual behaviors. Regardless of the beliefs held by individuals regarding older adult sexuality, older adults are sexual beings (Marshall, 2012; Simpson et al., 2017; Syme & Cohn, 2021; Waite et al., 2009). Engagement in sexual behaviors has several physical and mental health benefits and can improve quality of life for older adults (Levy, 2009; Syme & Cohn, 2021). Existing research reflects that positive sexual attitudes impact sexual activity (Fischer et al., 2018; Guan, 2004). For instance, when older adults hold positive sexual attitudes, they have increased partnered sexual activity (Fischer et al., 2018). Fischer and colleagues' (2018) findings suggest that positive sexual attitudes can influence sexual activities among older adults.

Age-Related Stigma (ARS)

The United States (U.S.) population is aging; there are more than 46 million individuals in the United States who are 65 years and above, making up a more significant portion of the population (Colby & Ortman, 2015). External ageism is a form of age-related stigma and is how non-older individuals view older adults, while internal ageism refers to how older adults view

themselves. External and internal ageism can be explicit or implicit and can include negative or positive attitudes, perceptions, and stereotypes (Ayalon, 2020; Marquet et al., 2019; Syme & Cohn, 2016, 2021). Explicit ageism can be exhibited consciously through direct stereotyping (Iversen et al., 2009). For instance, healthcare policy during the COVID-19 pandemic engaged in direct stereotyping and disregard for older adults (Ayalon, 2020). Further, the masking mandates, social distancing, allocation of resources, and the view of older adults as their own group separate from society was a result of direct stereotyping (Ayalon, 2020). Implicit ageism consists of unconscious stereotypes and prejudice regarding age (Levy & Banaji, 2002).

Researchers have used a variety of terms to discuss negative beliefs about older adults. The concept of "attitudes" is often used to refer to multiple forms of ageism (e.g., stereotype and prejudice) (Ayalon et al., 2019). Perceptions are views of a person or concept that can be positive or negative (Chasteen et al., 2015). Stereotypes are "mistaken or exaggerated beliefs," and attitudes are associated with negative feelings about the outgroup (Palmore, 1999, p. 19).

External and Internal Forms of Ageism

External ageism is how people collectively view older individuals, and internal forms of ageism represent how individuals internalize stigmatic beliefs (Widrick & Raskin, 2010). External ageism consists of messages about old age in the media, language, stereotypes, and cultural, familial, and societal views/attitudes (Widrick & Raskin, 2010). Based on this body of work, scholars identified internalized stereotypes as ageist beliefs about oneself (Levy, 2009). As previously stated, views of aging can affect sexual behaviors and sexual attitudes.

Sexual Attitudes

Sexual attitudes can be described as "both a product and a cause of social and sexual experiences, choices, and behaviors" (Waite et al., 2009, p. 60). The American Psychological

Association (APA, 2020) defined sexual attitudes as a set of values and beliefs about sex derived from familial and cultural views of sex, sexual experiences, and sex education (APA, 2020). Sexual attitudes are based on experiences and knowledge (Graf & Patrick, 2014; Syme & Cohn, 2021). Sexual attitudes can influence age-related stigma and sexual behaviors among older adults. A growing body of research about sexual attitudes has found that positive sexual attitudes increased engagement in sexual behaviors, whereas negative sexual attitudes influenced a decline in sexual behaviors (Fischer et al., 2018). Positive sexual attitudes can be conceptualized as an openness or willingness to engage in a variety of sexual behaviors (Fallis et al., 2013). Sexual attitudes have also been found to become more liberal over time among the majority of Baby Boomers (born between 1946 to 1964; Syme & Cohn, 2016; U.S. Census Bureau, 1996; 2019), with older adults engaging in more sexual behaviors in recent years.

Sexual Behaviors

Sexual behaviors is an umbrella term capturing information regarding a variety of sexual activities (partnered and solo) and their frequency; behaviors include vaginal, oral, and anal sex. It also includes more intimate behaviors, which include fondling, cuddling, caressing, petting, and kissing (Syme & Cohn, 2021). Older adults engage in multiple sexual behaviors that vary in frequency (DeLamater & Karraker, 2009; Syme & Cohn, 2016). Instead of sexual intercourse, however, many older adults engage more often in intimate behaviors like fondling, kissing, cuddling, external stimulation, and other non-genital activities (DeLamater & Karraker, 2009). DeLamater and Sill (2005) found that if an older adult in a relationship viewed penetrative sex as the only acceptable form of sexual activity, their sexual lives would be extremely limited. Researchers have found that sexual behaviors are heavily influenced by culture, familial components, gender, health status, partner/relationship status, and age (DeLamater & Karraker,

2009). DeLamater and Karraker's (2009) findings indicate that older adults may engage in less sexual behavior due to 1) existing health conditions, 2) if their partner has a medical condition that impacts sexual activity, or 3) if they are unpartnered. Relationship status can be limited due to one partner not living as long as the other (DeLamater & Karraker, 2009).

Age-Related Stigma and Sexual Behaviors

Age-related stigma influences health outcomes, life expectancy, overall well-being, and sexual behaviors (Jackson et al., 2020; Levy, 2009; Syme & Cohn, 2021). Specifically, age-related stigma has been found to impact sexual behaviors by decreasing engagement and comfort levels with sexual behaviors and experiences (Levy, 2009). Age-related stigma can be internalized by older adults, causing a decrease in sexual behaviors (Estill et al., 2017). In particular, Estill and colleagues' findings suggest that older adults that feel older engage in fewer sexual activities. For instance, the older the respondents felt and the less positive their views of aging were, the less participants valued and engaged in sexual behaviors. Supporting the idea that younger-feeling older adults would engage in higher levels of sexual activity, Fischer et al. (2018) found that older adults that were more open to sexual changes due to aging experienced higher frequency of sexual intercourse. Age-related stereotypes, such as older adults being asexual, can be damaging (Marshall, 2012; Simpson et al., 2017; Syme & Cohn, 2021; Waite et al., 2009). In particular, stereotypes about older adults being asexual or incompetent impact 1) treatment decisions when working with medical providers, 2) the behavior of medical staff interacting with older adults in nursing homes, and 3) interactions between older and younger individuals. Moreover, internalization of such harmful stereotypes by older adults is detrimental to their sexual attitudes and sexual behavior (Levy, 2009; Syme & Cohn, 2021). In fact, many older adults engage in less sexual behavior because stereotypes regarding sexual behaviors are

internalized. DeLamater and Karraker (2009) indicated that older adults are more likely to experience a decrease in sexual behaviors in tandem with age-related stigma. Several findings point to possible moderators of the relationship between age-related stigma and sexual behaviors such as health status and relationship status (DeLamater & Karraker, 2009; Syme & Cohn, 2021). One possible moderator that shows promise to further clarify the relationship between age-related stigma and sexual behaviors is sexual attitudes (Fischer et al., 2018; Graf & Patrick, 2014; Syme & Cohn, 2021).

Sexual Attitudes as a Moderator of the Relationship Between Age-Related Stigma and Sexual Behavior

Sexual attitudes can be neutral, positive, or negative by drawing on experiences and knowledge (Graf & Patrick, 2014; Tobin, 2011). The research indicates that sexual attitudes can impact age-related stigma's influence on older adults by increasing or decreasing the extent of internalization of stereotypes (Graf & Patrick, 2014). Fischer et al. (2018) found a significant relationship between positive sexual attitudes toward age-related sexual changes and sexual activities, with findings indicating that negative sexual attitudes decrease engagement in sexual behaviors. Furthermore, Fischer et al. (2018) speculated that positive sexual attitudes could serve as a buffer against the effects of age-related stigma on sexual behaviors among older adults. Both positive and negative sexual attitudes have been found to influence the strength of the relationship between age-related stigma and sexual behaviors (Graf & Patrick, 2014).

Age as a Moderator

Daignault et al. (2021) found that age is a construct applied to a group of individuals who share a similar chronological age and who are experiencing similar life events and challenges. Bytheway (2005) and Hummert et al. (1997) suggested that old age begins at age 55 and older.

In fact, “old age” can be broken down into a number of subgroups: young old, 55-64; middle-old, 65-74; and 75 years of age and older (Bytheway, 2005; Hummert et al., 1997). Further, age has been found to influence sexual attitudes and sexual behaviors among older adults (Le Gall et al., 2002).

Stereotype Embodiment Theory

Stereotype embodiment theory (SET) asserts that stereotypical beliefs about aging derived from cultural definitions influence an individual’s health and functioning (Levy, 2009). Specifically, when a person ages, if they agree with aging stereotypes, these newfound beliefs will influence health and well-being (Levy, 2009; Seidler & Wolff, 2017). Further, if an older adult believes they will eventually have reduced cognitive functioning, they are more likely to report experiencing this (Seidler & Wolff, 2017). Recently, Fawsitt and Setti (2017) found that negative perceptions of aging are associated with declines in working memory and sustained attention. This comprises evidence that individuals’ perceptions of aging can affect overall future wellness. Moreover, research suggests that positive views toward aging can increase the likelihood of positive aging outcomes toward health (Levy, 2009). Researchers found that positive self-perceptions of aging lead to increased longevity and physiological functioning (Tully-Wilson et al., 2021). In addition, Tully-Wilson et al.’s (2021) findings suggest that participants with positive self-perceptions of aging demonstrated more flexible cognitive functioning than participants with negative self-perceptions of aging. In a similar vein, Syme and Cohn (2021) applied stereotype embodiment theory to older adult sexuality, finding that older adults that endorsed old age stereotypes engaged in less sexual behavior. In short, SET is a theoretical framework within which relationships among the variables of age, age-related stigma,

sexual attitudes, and sexual behaviors can be understood. Experiences of age and sexual attitudes influence the strength of the relationship between age-related stigma and sexual behaviors.

Current Study

The existing body of research has not yet examined the influence of sexual attitudes on the relationship between age-related stigma and sexual behaviors among older adults (55+). This study aimed to add to the existing literature by informing psychologists and interdisciplinary providers about older adults' needs, which can impact treatment. Moreover, the study explored the experiences of age-related stigma among the older adult population. If the moderation hypothesis is supported, the research could further the literature by providing more information about the relationships among age-related stigma, sexual attitudes, and sexual behaviors.

Hypotheses and Model

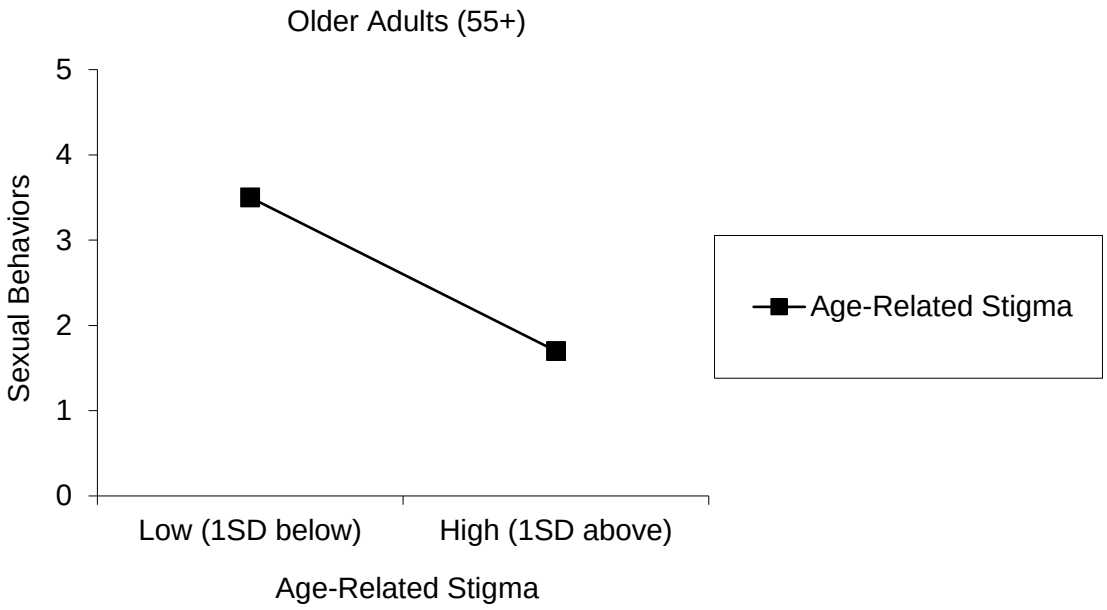
Based on the findings from the literature, the following hypotheses are proposed:

Hypothesis 1: Age-Related Stigma and Sexual Behaviors

There will be a negative relationship between age-related stigma and sexual behaviors among older adults. Older adults with higher amounts of age-related stigma will endorse fewer sexual behaviors when statistically controlling for education, relationship status, and socioeconomic status. Figure 1 displays the predicted pattern of the effect.

Figure 1

Hypothesis 1



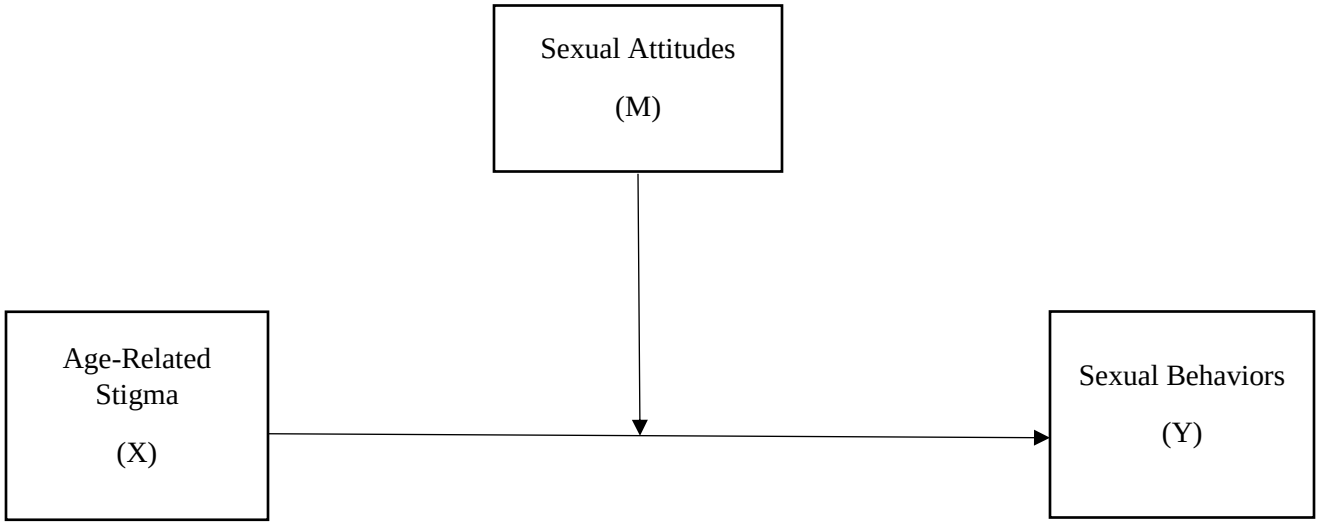
Note. The predicted pattern of results for Hypothesis 1: There will be a negative relationship between age-related stigma and sexual behaviors among older adults. Older adults with higher amounts of age-related stigma will endorse fewer sexual behaviors.

Hypothesis 2: Sexual Attitudes as a Moderator Variable

Sexual attitudes will moderate the strength of the relationship between age-related stigma and sexual behaviors among older adults. Older adults with negative sexual attitudes will display a stronger relationship between age-related stigma and sexual behaviors than will older adults with positive sexual attitudes. Figures 2 display the statistical model for the predicted moderation effect. Figure 3 displays the predicted pattern for this moderation effect.

Figure 2

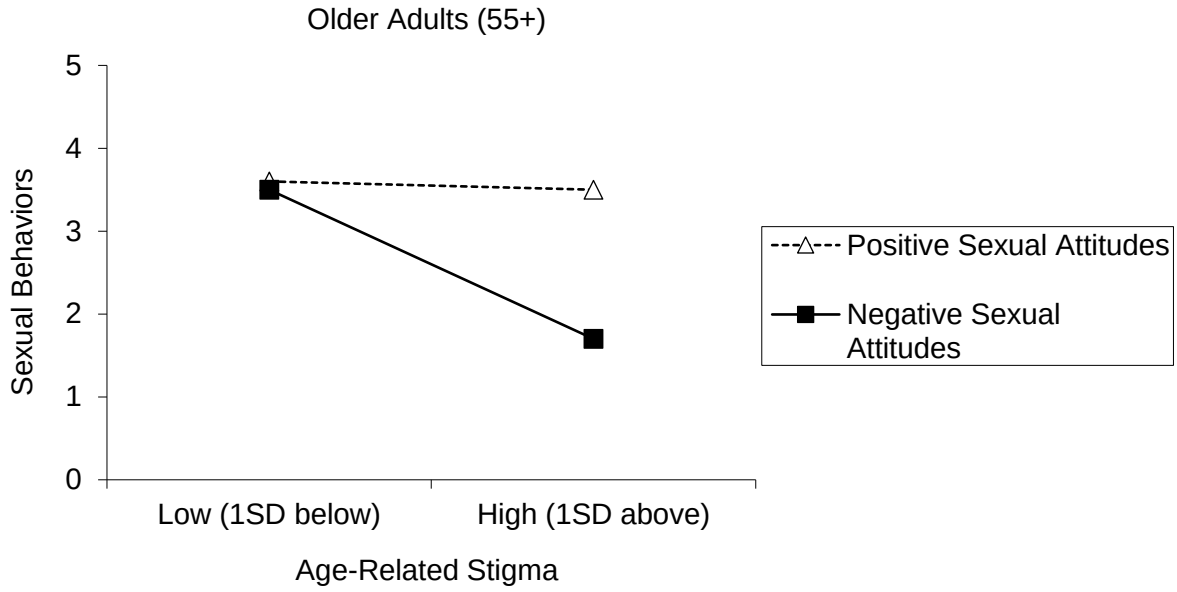
Moderation Model



Note. The conceptual model showing the moderation hypothesis.

Figure 3

Moderation Hypothesis



Note. The predicted pattern of results for Hypothesis 2: Sexual attitudes will moderate the strength relationship between age-related stigma and sexual behaviors among older adults. A negative relationship between age-related stigma and sexual behaviors for older adults with negative sexual attitudes. No relationship between age-related stigma and sexual behaviors will be observed for older adults with positive sexual attitudes.

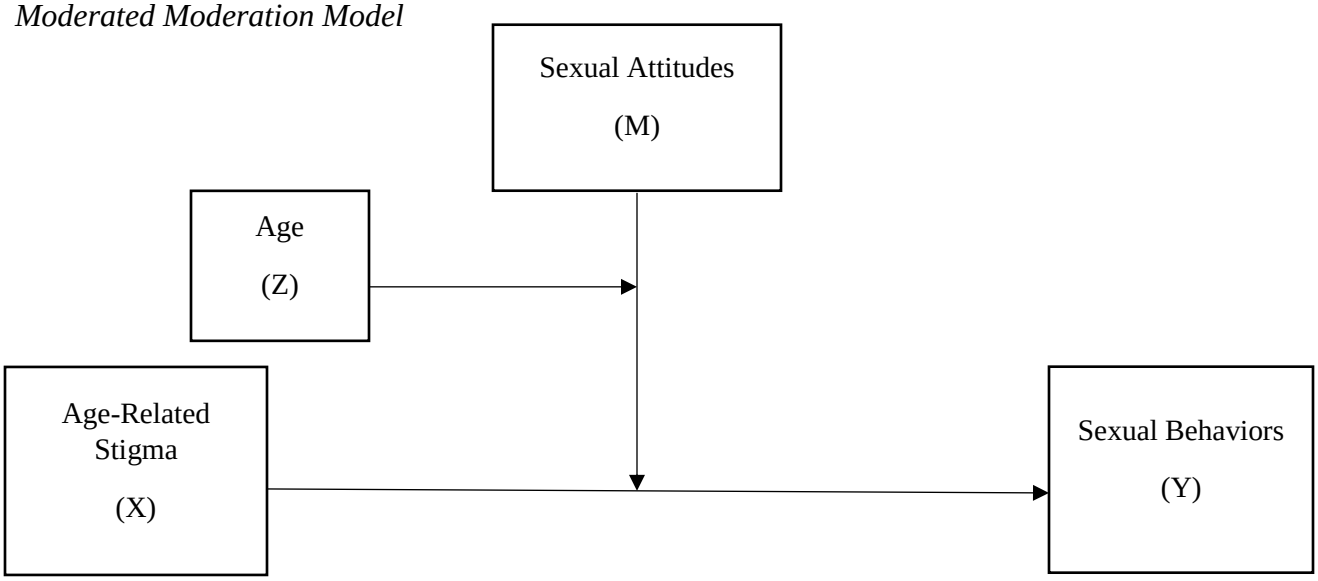
Hypothesis 3: Age as an Additional Moderator Variable

Age will moderate the strength of the moderation effect outlined in Hypothesis 2. Specifically, it is predicted that the moderation effect of sexual attitudes on the relationship between age-related stigma and sexual behaviors will be stronger in participants 65 years of age and older than in participants between the ages of 55 and 64. Figure 4 displays the conceptual

model for this predicted moderated moderation effect. Figure 5 displays the predicted pattern of results for the moderated moderation effect.

Figure 4

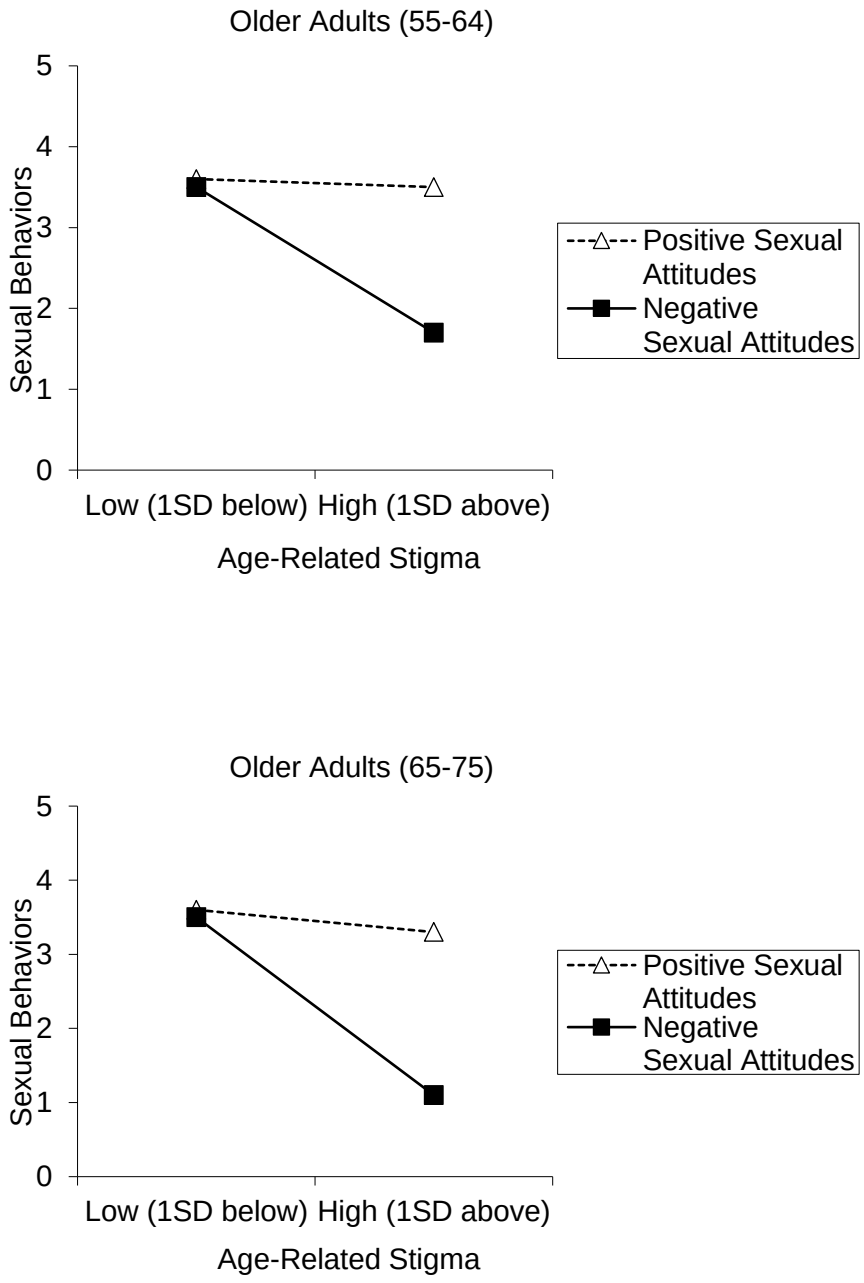
Moderated Moderation Model



Note. The conceptual model showing the moderated moderation hypothesis.

Figure 5

Moderated Moderation Hypothesis



Note. The predicted pattern of results model for the moderated moderation hypothesis: Age will moderate the ability of sexual attitudes to moderate the strength of the relationship between age-related stigma and sexual behaviors among older adults.

Method

Participants

The current study used a sub-sample of a larger sample of participants collected as part of a study on sexual attitudes, sexual behaviors, and age-related stigma among older adults (Syme & Cohn, 2021). Participants were excluded from the sample if they did not complete the entire questionnaire, failed to respond correctly to validity check items, or were not living in the United States.

Characteristics

For the current study, the sample (n = 422) consisted of adults aged 55-79. Of note, 62 participants were aged 65-79, and 360 were aged 55-64. The participants in the sample provided data regarding sexual attitudes, age-related stigma, and sexual behaviors. Participants' gender included 62.1% female; 37.9% were male. Most participants identified as White (83.4%), 11.8% identified as Black or African American, 1.4% identified as Asian, 0% identified as Native American or Pacific Islander, 0% identified as American Indian or Alaska Native, and 1.2% identified their race as "other." Additionally, 19.9% of the sample identified themselves as Spanish, Latino, or Hispanic origin. The majority of participants identified as heterosexual (79.9%), whereas 17.8% identified as bisexual, 1.7% identified as gay, 0.2% identified as lesbian, 0% identified as queer, 0.2% identified as other sexual identity, and 0.2% did not choose to disclose.

Of the participants, 8.5% identified as single, 74.9% identified as married, 10.4% identified as divorced, 0.7% identified as separated, 1.9% identified as widowed, 3.1% identified as living with a significant other (not married), 0.5% had a significant other (not living together). The participants' annual household income before taxes was between 0-1,500,000 (M = 79,194.67, median = 55,000.00, SD = 144,411.22).

Sampling Procedures

The study was determined to be exempt from Institutional Review Board (IRB) review by Radford University's IRB for Human Subjects Research. Data were collected over 10 days in April 2020 via Amazon Mechanical Turk (MTurk). MTurk is a crowd-sourcing marketplace that makes it more efficient for individuals to conduct research (Amazon, 2018; Sheehan, 2018). Data collected included variables related to age-related stigma, sexual attitudes, sexual behaviors, and demographics. Participation in the study was voluntary, and participants could decline participation even if the survey had been started. Participants received $3 for their participation in the study.

Measures

Demographic Items

Participants were asked to complete items assessing the following: age, gender identity, sexual orientation, race and ethnicity, relationship status, education, religious affiliation, household income, and age. See Appendix A, demographic items.

Sexual Behaviors

The sexual behaviors scale was adapted from a six-item measure used in the National Social Life, Health, and Aging Project (NSHAP), which assesses sexual behaviors among older adults (Waite et al., 2009). The NSHAP contains information on sexual activity, sexual attitudes,

sexual relationships, and sexual behavior in single and partnered adults (Iveniuk & Waite, 2018). The sexual behaviors scale is a six-item instrument developed to measure sexual behaviors (The Nonpartisan and Objective Research Organization at the University of Chicago [NORC], 2022). The measure includes six items measuring sexual behaviors in the last 6 months on a 6-point item response scale (1 = *None* to 6 = *Once a day or more*). Sample items include "Vaginal intercourse with a partner," "Foreplay behaviors (examples: hugging, kissing, fondling)," and "Sexual talk with a partner (examples: sexting, sexual flirting)." Scores can range from 6 to 36, with high scores reflecting increased sexual behaviors and low scores indicating decreased sexual behaviors. The six items were added to create an index score.

Reliability and Validity of a Modified Measure. The Sexual Behaviors Scale (SBS) has internal consistency, convergent validity, discriminatory validity, sensitivity, and specificity on the SBS are not well documented in the research, and this study offered information on reliability (Waite et al., 2009). The scale had good internal consistency (α = .96).

Sexual Attitudes

The Sexual Attitudes Scale (SAS) was developed by Graf and Johnson (2019), who expressed concern with the prevailing measure of sexual attitudes developed by White in 1982. The SAS is unique from other measures in that it examines complex sexual attitudes for a sexually diverse aging population. The SAS is a 51-question instrument developed to measure sexual attitudes and beliefs (Graf & Johnson, 2019). The measure includes 51 items measuring sexual attitudes on a 6-point Likert scale (1 = *absolutely inappropriate* to 6 = *absolutely appropriate*). Sample items include "Feel unashamed by their sexual thoughts, desires, or behaviors?" and "Seek sexual advice from the internet?" Scores can range from 51 to 306, with

higher scores reflecting more positive sexual attitudes and lower scores indicating more negative sexual attitudes. The 51 items were added together to create an index score.

Reliability and Validity of a Modified Measure. The SAS has high internal consistency (α = .80) (Graf & Johnson, 2019). The convergent validity, discriminatory validity, sensitivity, and specificity of the SAS are not well documented in the research, and this study offered information on reliability. The SAS had good internal consistency (α = .80).

Age-Related Stigma

Items from the German Ageing Survey (DEAS) were selected to measure age-related stigma. The German Ageing Survey is an 11-item instrument developed to measure age-related stigma on a 4-point Likert-type scale (1 = *strongly agree* to 4 = *strongly disagree*). Sample items are "Ageing means to me that I can still put my ideas into practice" and "As you get older, you are less useful." Scores can range from 11 to 44, with high scores reflecting increased age-related stigma and low scores indicating less age-related stigma. The DEAS had good internal consistency (α =.96). The items from the DEAS have been used by other researchers as a means of assessing age-related stigma (Baumbach et al., 2021; Buczak et al., 2019; Siedlecki et al., 2020). Item responses were summed to create an overall index score of age-related stigmas, where higher scores indicated more age-related stigma. This measure of age-related stigma has been previously used in several studies examining older adults and subjective well-being (Baumbach et al., 2021; Buczak et al., 2019; Siedlecki et al., 2020).

Procedure

Participants were recruited through the MTurk crowd-sourcing platform. Participants were divided into three age groups: 18 to 35 years of age, 36 to 54 years, and 55 years and older. The research suggests that older age groups can begin with 55-year-olds (Bytheway, 2005;

Hummert et al., 1997). For this study, adults aged 55 and older were examined. Participants were able to provide their informed consent through Qualtrics, and they were then redirected to the surveys. The survey was estimated to take about 15-20 minutes.

Power Analysis

A power analysis was performed to determine how many participants were needed to detect a small moderation effect. G*Power software was used with a priori power analysis with an alpha level of .05, the effect size of (f^2 = .02), and power of .80, suggesting a total sample size of 395 participants was necessary. A medium effect size (f^2 = .15) would require 55 participants and a large effect size (f^2 = .35) would require 25 participants.

Preliminary Analysis

IBM's Statistical Package for Social Sciences (SPSS) (version 28) was used to clean the data and conduct the analyses. Participants with missing data were excluded from further analyses. Descriptive statistics were collected on demographic information about the participants. Correlations among study variables were obtained and are presented in Table 2.

Analysis Plan

Hypothesis 1 was tested by obtaining the correlation coefficient between age-related stigma and sexual behaviors.

Hypothesis 2 was examined through a moderation analysis using Hayes' PROCESS macro for SPSS. The analysis assessed the degree to which sexual attitudes moderate the strength of the relationship between age-related stigma and sexual behaviors.

Hypothesis 3 was tested using the moderated moderation model in Hayes' PROCESS macro for SPSS. Age was used as a second-level moderator variable to determine if the degree of

moderation assigned to sexual attitudes in the test of Hypothesis 2 changed significantly as a function of the age of participants.

Results

In this chapter, descriptive statistics of the variables (e.g., sexual attitudes, age, sexual behaviors, and age-related stigma) and information regarding the psychometric properties of these variables using data from this study are presented. Then, the chapter examines correlations among the study variables of age-related stigma, sexual behaviors, and sexual attitudes. Next, the results from the multiple regression analyses are provided, examining whether age-related stigma significantly predicted sexual behaviors among older adults. Lastly, results for the tests of moderation and moderated moderation are presented.

Preliminary Analyses

Secondary analyses were conducted on data collected from 422 participants aged 55-79 years old (M = 58.95, SD = 4.61; White 83.4%, Black 11.8%, Hispanic/Latino/Latina 19.9%, Asian 1.4%, Other 1.2%) (Syme & Cohn, 2021). Means, standard deviations, and the range for study variables are reported in Table 1. Independent samples t-tests were used to determine if there were statistically significant differences for the three study variables (sexual attitudes, age-related stigma, and sexual behaviors) based on gender. There were differences between male and female participants for sexual attitudes, $t(418) = -2.25$, $p = .03$, Cohen's $d = -.226$; age-related stigma, $t(418) = -1.529$, $p = .13$, Cohen's $d = -.153$; and sexual behaviors, $t(418) = 4.357$, $p < .001$, Cohen's $d = .437$; but not for age, $t(418) = .123$, $p = .902$, Cohen's $d = .012$.

Table 1

Descriptive Statistics of Study Variables

Descriptive Statistics			
Variables	Mean	Standard Deviation	Range
Age	59.00	4.67	55-79
Sexual Attitudes	236.05	42.64	51-306
Age-Related Stigma	25.18	4.44	11-44
Sexual Behaviors	18.71	7.20	6-36

Note. This table displays descriptive statistics of the variables.

Measures

Sexual Attitudes

Sexual Attitudes Scale (SAS)

The Sexual Attitudes Scale (SAS) is a 51-question measure (M = 242.64, SD = 214.325) developed to measure sexual attitudes and beliefs (Graf & Johnson, 2019). This study determined the SAS has high internal consistency (α = .80) and reliability.

Age-Related Stigma (ARS)

The German Ageing Survey (DEAS) is an 11-item instrument developed to measure age-related stigma (M = 44.30, SD = 126.73). The German Ageing Survey had good internal consistency (α =.97) and scale reliability, as calculated using data from this study. This measure of age-related stigma has been previously used in several studies examining older adults and subjective well-being, which provided information on the validity of the measure (Baumbach et al., 2021; Buczak et al., 2019; Siedlecki et al., 2020).

Sexual Behaviors

The Sexual Behaviors Scale was adapted from a six-item measure used in the National Social Life, Health, and Aging Project (NSHAP), which assesses sexual behaviors among older adults (Waite et al., 2009). The Sexual Behaviors Scale is a six-item instrument (M = 30.27, SD = 71.36) used to measure sexual behaviors (NORC, 2022). The Sexual Behaviors Scale had good internal consistency (α =.96) and scale reliability, as calculated using data from this study. This measure of sexual behaviors has been previously used in several studies using the NSHAP project (Galinsky et al., 2014; Karraker et al., 2011). The NSHAP is a longitudinal, population-based study of health and social factors assessing older adults' sexual, physical, and social health and wellness displaying good construct validity (NORC, 2022).

Correlations Among Primary Study Variables

Correlations among scores from the sexual behaviors (SBS), age-related stigma (ARS), sexual attitudes (SAS) scales, and age are presented in Table 2. The correlations among the study's variables were weak to moderate in size. Age-related stigma had a negative correlation [r (418) = -.266, p < .001] with sexual behaviors and a positive correlation with age [r (418) = .147, p = .002]. Sexual attitudes were negatively correlated [r (418) = -.099, p = .043] with age and age-related stigma [r (418) = -.196, p < .001]. Sexual behaviors scores were negatively correlated with age-related stigma [r (418) = -.266, p < .001] and age [r (418) = -.338, p < .001] but positively correlated to sexual attitudes [r (418) = .281, p < .001].

Table 2

Correlations

		SBS	ARS	SAS	Age
Pearson Correlation	SBS	1.000	-.266	.281	-.338
	ARS	-.266	1.000	-.196	.147
	SAS	.281	-.196	1.000	-.099
	Age	-.338	.147	-.099	1.000
Sig. (2-tailed)	SBS	.	<.001	<.001	<.001
	ARS	<.001	.	<.001	.002
	SAS	<.001	<.001	.	.043
	Age	<.001	.002	.043	.

Note. *Correlation significant at the 0.05 level (2-tailed) and **Correlation significant at the 0.01 level (2-tailed).

Regression Analyses

Test of Hypothesis 1: The Ability of Age-Related Stigma to Predict Sexual Behaviors

A regression analysis examined whether experiences of stigma significantly predicted sexual behaviors among older adults. Age-related stigma accounted for a significant amount of variability in scores for the frequency of sexual behavior, $F(1, 418) = 19.98$, $p < .001$, $\beta = -.266$, $r^2 = .071$, with lower levels of age-related stigma associated with greater frequency of sexual behaviors among older adults. Age-related stigma accounted for 7.1% of the variability in scores of frequencies of sexual behaviors.

Test of Hypothesis 2: The Moderating Effect of Sexual Attitudes on the Relationship Between Age-Related Stigma and Sexual Behaviors

The PROCESS macro for SPSS (Version 4.1, Hayes, 2018) was used to test the ability of sexual attitudes to moderate the strength of the relationship between age-related stigma and sexual behaviors. As reflected in Table 3, the results indicated that sexual attitudes moderated the relationship between age-related stigma and sexual behaviors among older adults, $F(1, 418) = 6.97$, $p = .015$, $\beta = -.120$, r^2 change = .040.[1] The strength of the relationship between age-related stigma and sexual behaviors was significantly stronger in individuals with more positive sexual attitudes. Figure 2 displays the pattern of results for the moderation effect of sexual attitudes.

The main effect of sexual attitudes was significant, $F(1, 418) = 27.35$, $p < .001$, $\beta = +.244$, r^2 change = .038, with more positive sexual attitudes associated with greater frequency of engaging in sexual behavior. The main effect of age-related stigma was significant, $F(1, 418) = 32.061$, $p < .001$, $\beta = -.171$, r^2 change = .029. Figure 6 displays the moderating effect of sexual attitudes on the relationship between age-related stigma and sexual behaviors at the 16th, 50th, and 84th percentiles.

[1] Independently, the SAS and NSHAP held similar results including statistical significance and effect size.

Table 3

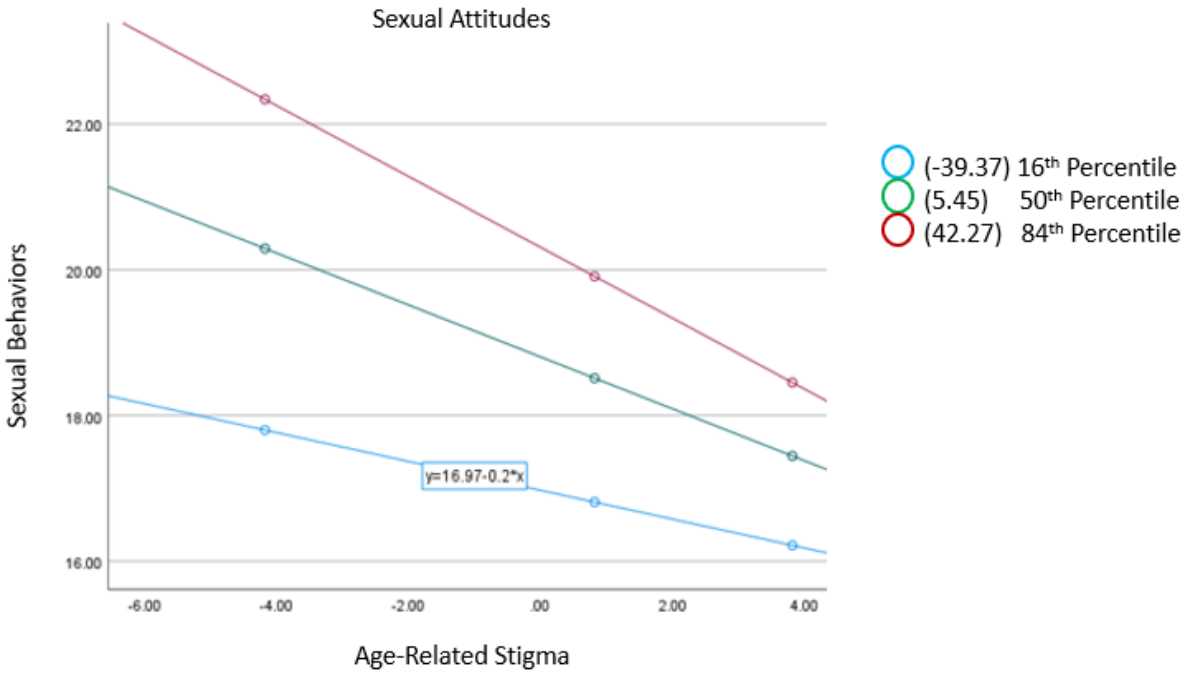
Test of Sexual Attitudes as a Moderator in the Relationship between Age-Related Stigma and Sexual Behaviors

Variable	B	SE B	β	*p*
SEXUAL ATTITUDES (SAS)	.041	.008	.244	<.001**
AGE-RELATED STIGMA (ARS)	-.277	.076	-.171	<.001**
ARSXSAS	-.003	.001	-.114	.015*

Note. *Represents a $p < .05$ and **indicates a $p < .01$.

Figure 6

The Relationship between Age-Related Stigma and Sexual Behaviors at the 16th, 50th, and 84th Percentiles of Sexual Attitudes



Note. Represents the moderating effect of sexual attitudes on the strength of the relationship between age-related stigma and sexual behaviors among older adults. Separate regression lines are plotted for sexual attitudes predicting sexual behaviors when participants score at the 16th, 50th, and 84th percentiles for sexual attitudes.

Test of Hypothesis 3: The Degree to Which the Moderating Effect of Sexual Attitudes on the Relationship Between Age-Related Stigma and Sexual Behaviors Varies as a Function of Age

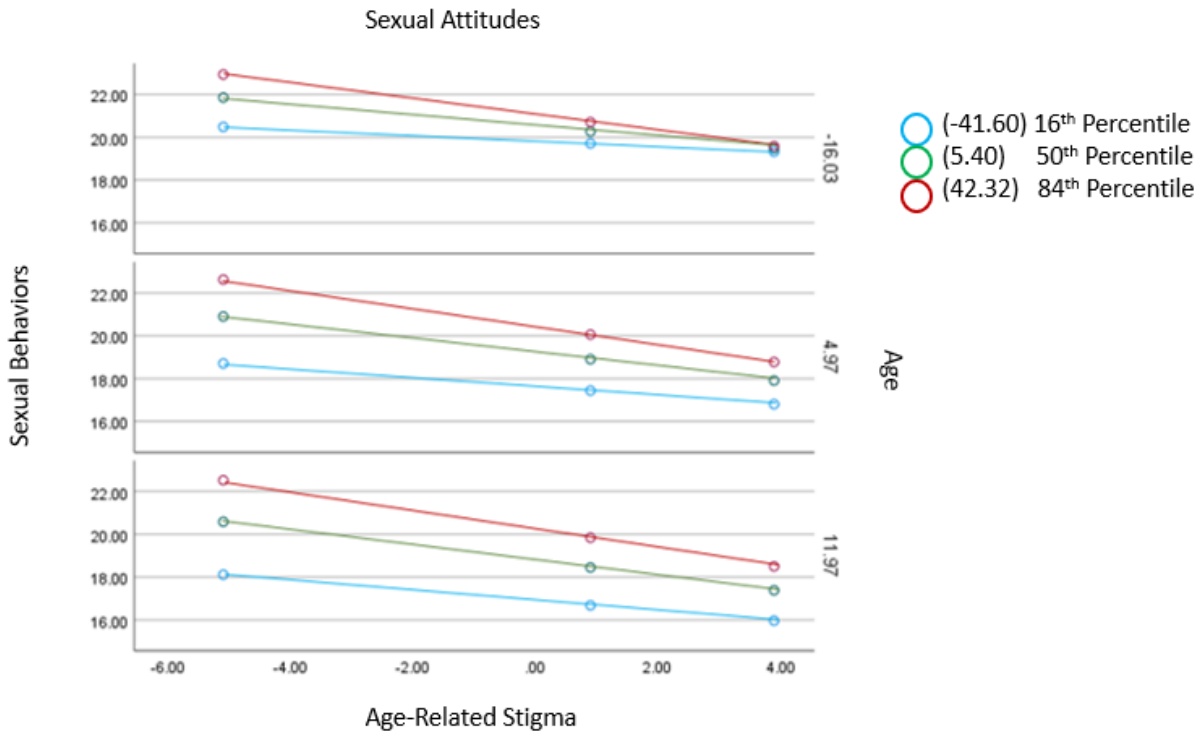
The results revealed that the extent to which sexual attitudes moderates the relationship between age-related stigma and sexual behaviors does not vary as a function of age, $F(1, 414) =$

.974, p = .324, β = .053, r^2 change = .002[2]. See Table 3 and Figures 7. Figure 7 displays the relationship between age-related stigma and sexual behaviors for the nine combinations of participants at the 16th, 50th, and 84th percentiles for age-related stigma and the 16th, 50th, and 84th percentiles for age. The interactive pattern between age-related stigma and sexual attitudes is described in the results for Hypothesis 2. The interaction between sexual attitudes and age was significant, F(1, 414) = .324, p = .043, β = -.094, r^2 change = .010, whereby the strength of the relationship between sexual attitudes and sexual behaviors was stronger among participants at the older end of the age range for this study. The interaction between age and age-related stigma was not significant, F(1, 414) = .324, p = .427, β = -.041, r^2 change = .022. The main effect of age was significant, F(1, 414) = .324, p < .001, β = -.292, r^2 change = .114. The older the participants were, the less frequently they engaged in sexual behaviors. Within the context of this model, the main effect of sexual attitudes was significant, indicating that more positive sexual attitudes are associated with a greater frequency of sexual activity, F(1, 414) = .324, p < .001, β = +.244, r^2 change = .038. The main effect of age-related stigma was significant, F(1, 414) = .324, p < .001, β = -.171, r^2 change = .029, indicating that lower levels of age-related stigma were associated with greater frequency of engaging in sexual behavior.

[2] The SAS and NSHAP when run separately showed consistent similar results regarding statistical significance and effect size.

Figure 7

Test of Age and Sexual Attitudes as Moderators of the Relationship Between Age-Related Stigma and Sexual Behaviors



Note. This figure represents the moderating effects of age and sexual attitudes. The three graphs from top to bottom are for participants at the 16th, 50th, and 84th percentiles for ages 55-79. Within each graph, the blue (bottom), green (middle), and red (top) lines correspond to participants at the 16th, 50th, and 84th percentiles for sexual attitudes.

Exploratory Analysis

An exploratory analysis was conducted examining the degree to which sexual attitudes mediate the strength of the relationship between age-related stigma and sexual behaviors. The PROCESS macro for SPSS, version 4.2 (Hayes, 2022) was used for the analysis. Scores for the independent variable (age-related stigma) accounted for a significant amount of variability in

scores for the dependent variable (sexual behaviors), β = -.2663, $t(420) = -5.66$, $p < .001$. Scores for the age-related stigma accounted for a significant amount of variability in scores for the mediator variable (sexual attitudes), β = -.1957, $t(420) = -4.09$, $p < .001$. When entered in a multiple regression equation with age-related stigma as a second predictor variable, sexual attitudes accounted for a significant amount of variability in scores for sexual behaviors, β = .2376, $t(419) = 5.10$, $p < .001$. When the mediator variable (sexual attitudes) was entered as a predictor in the same multiple regression equation, the independent variable (age-related stigma) accounted for a significant amount of variability in the dependent variable (sexual behaviors), β = -.2198, $t(419) = -4.72$, $p < .001$. Because the direct effect of age-related stigma is significantly greater than zero, no evidence in support of a full mediation effect was observed. The indirect effect of age-related stigma on sexual behaviors, working through the mediator variable of sexual attitudes was significant, however (β = -.0465, LLCI = -.0793, ULCI = -.0155), indicating that sexual attitudes partially mediates the relationship between age-related stigma and sexual behaviors.

Discussion

This chapter provides a summary of findings and a discussion of the implications of the results for the study of sexual behavior in older adults. In addition, this chapter includes the limitations of the study and recommended future research directions. Lastly, clinical implications are discussed, and an overall conclusion is provided.

Hypotheses

Hypothesis 1

As previously noted, this study tested three hypotheses. First, it was hypothesized that there would be a negative relationship between age-related stigma and sexual behaviors among

older adults, and a significant negative relationship between age-related stigma and sexual behaviors was observed. This effect is consistent with previous research. Although a qualitative study, Ševčíková and Sedláková (2020) found common themes of ageist beliefs and perceptions of age influencing sexual behaviors among older adults. Prior studies have reported both positive and negative relationships between age-related stigma and sexual behaviors (Graf & Patrick, 2014). For instance, negative age stereotypes influenced older adults' willingness to engage in sexual behaviors (Graf & Patrick, 2014). Graf and Patrick (2014) also found that age-related sexual attitudes significantly contributed to sexual well-being, and that women tended to hold more positive age-relative attitudes about sex. Similarly, Estill et al.'s (2018) results indicated that views of age and age stereotypes may influence the experience of sex in later life. Specifically, older adults that view themselves as older engaged in less sex and experienced lower quality of sexual experiences (Estill et al., 2018).

In addition, Widrick and Raskin (2010) found that age-related stigmatic beliefs held by older adults' influence views of self and subsequent behaviors of older adults. In their study, individuals consistently rated beliefs about age negatively (Widrick & Raskin, 2010). Further, Syme and Cohn (2021) indicated that understanding the relationship between sexual attitudes, age-related stigma, and sexual behaviors is essential in aiding older adults struggling with sexual issues medically and in their partnered relationship as an important aspect of overall well-being.

Hypothesis 2

The second hypothesis was that sexual attitudes would moderate the strength of the relationship between age-related stigma and sexual behaviors among older adults. The results indicated that negative sexual attitudes were accompanied by the presence of a stronger negative relationship between age-related stigma and sexual behaviors. Previous research has found

similar results. Graf and Patrick (2014) found the strength of the relationship between age-related stigma and sexual behaviors to be greater when older adults endorsed negative sexual attitudes. In a similar vein, Fischer et al. (2018) found that sexual activity and positive sexual attitudes were highly associated with partnered sexual activity. Explicitly, if older adults had a partner and held positive sexual attitudes they tended to participate in more frequent sexual behaviors (Fischer et al., 2018). Lastly, Syme and Cohn (2021) found that internalized age-stereotypes can be personified and taken on by the individual (Levy, 2009), which results in decreased engagement in sexual behaviors. In agreement with Fischer et al.'s (2018) study, Syme and Cohn (2021) also found similarities among their results across genders. The findings add to the existing literature by confirming that sexual attitudes do influence the relationship between age-related stigma and sexual behaviors and by clarifying the broad multi-dimensional ability of sexual attitudes to affect older adults.

Hypothesis 3

The third hypothesis was that the moderation effect of sexual attitudes on the relationship between age-related stigma and sexual behaviors would be stronger as the age of participants increased. The results did not support this hypothesized role for age in this moderated-moderation model. The degree to which the moderating effect of sexual attitudes on the strength of the relationship between age-related stigma and sexual behaviors changed as a function of age was not statistically significant. This suggests that being on the older end of the age range does not further amplify the negative effects of age-related stigma on the frequency of sexual behavior beyond the influence exerted by the presence of negative sexual attitudes.

Stereotype Embodiment Theory

The literature indicates several possible explanations for these findings. First, it is possible that stereotype embodiment theory (Levy, 2009) can explain the effects of sexual attitudes and age-related stigma on the frequency of sexual behaviors engaged in by older adults. Specifically, higher levels of perceived age-related stigma were associated with lower levels of engagement in both sexual and intimate behaviors among older adults. Stereotype embodiment theory has been defined as an occurrence when an individual's health and functioning become stereotypical to the aging process by the assimilation of cultural definitions (i.e., stereotypes) in which they have developed over time (Levy, 2009). Simply put, as an individual ages, if they maintain age stereotypes, they are more likely to develop or experience developmental declines that are consistent with these age stereotypes (Fawsitt & Setti, 2017; Levy, 2009; Seidler & Wolff, 2017). For example, if an individual believes that older adults have impaired cognitive ability or decreased sexual activity or functioning, then those individuals are more likely to experience a decline in cognitive ability and sexual activity compared to individuals who do not maintain those beliefs (Fawsitt & Setti, 2017; Levy, 2009; Seidler & Wolff, 2017; Syme et al., 2019; Tully-Wilson et al., 2021). Syme and Cohn (2021) reported similar findings. Stereotype embodiment theory (Levy, 2009) can account for some of the effects across age groups in the study's results. However, future research should determine 1) if individual perspectives or group perspectives have a more profound influence on age-related stigma and 2) what stigmatic beliefs are the most salient for older adults (Levy, 2009).

Covariates. Prior research suggested that individuals with higher educational attainment, higher socioeconomic status, and relationship status among older adults can impact the study's variables (Graf & Patrick, 2014; Syme & Cohn, 2021). However, the results were not

significantly different when the covariates were controlled for. Therefore, these variables should be controlled for on a case-by-case basis due to the variation in findings.

Demographics. One interesting finding was that 50.2% of the participants identified as Catholic Christians. Religious views have been shown to influence attitudes about sex (Le Gall et al., 2002). Moreover, it is important to note the disparity in religious/spiritual identities as a factor that limits the generalizability of the sample.

Exploratory Analysis

An exploratory analysis found that sexual attitudes partially mediates the relationship between age-related stigma and sexual behaviors. Because sexual attitudes are statistically significant in the roles of both moderator and mediator variable, further research is needed to best specify the role of sexual attitudes within causal models leading from age-related stigma as a root cause and sexual behaviors as the outcome variable.

Strengths of the Study

This study was a secondary analysis of preexisting data used in another study (Syme & Cohn, 2021). Bosma and Granger (2022) noted that research in general is subject to inaccurate interpretation and lack of reporting of study results due to bias, and decisions include a bias toward favorable results. Therefore, many psychologists do not fulfill their ethical responsibility of sharing their research data, which does not promote transparency (Bosma & Granger, 2022). The culture of transparency would also promote growth through secondary analyses that enhance existing data (Bosma & Granger, 2022). Bosnjak et al. (2022) also pointed out the need to report results even if they are not significant. Therefore, this study is publishing the results even if they are inconsistent with the prior hypotheses. Another notable strength of the study was the use of valid and reliable measures to prevent internal validity concerns. Further, participants were

randomly assigned to two groups receiving questionnaire measures in different orders to control for practice effects of fatigue and boredom, another threat to the internal validity of the study.

Limitations

One limitation of this study involved the use of an online self-report questionnaire. Individuals tend to be biased when reporting their own experiences (Chan, 2010). For example, older adults could have underreported their sexual attitudes and behaviors (Tourangeau & Yan, 2007). This difference could have influenced the data obtained by not fully capturing the true directions and strengths of relationships among the explored variables. However, participants were notified that the study would be anonymous. Also, because the data in this study were collected through a survey method, and the data collected were correlational, cause and effect relationships between variables cannot be determined. The data in this study can only describe associations between variables and explore which variables may significantly predict others. However, more research is needed in this area. This study aimed to examine older adults to provide insight into ways to prevent or intervene with the relationship between age-related stigma and sexual behaviors among older adults.

A significant limitation of the study is the use of a cross-sectional design. Whereas cross-sectional data is cost-effective, it lacks generalizability compared to longitudinal studies (Sedgwick, 2014). Cross-sectional studies are susceptible to sampling bias, a potential weakness of the study (Sedgwick, 2014). Furthermore, since the data were collected via MTurk, the results cannot be generalized because of the lack of a representative sample. The research suggests that using MTurk to enroll participants allows for a limited snapshot of the population based on education, computer access, and accessibility (Aruguete et al., 2019; Ford, 2017; Gleibs & Albayrak, 2021; Lovett et al., 2018). In particular, MTurk participants tend to have more

education, more accessibility to technology, and more comfort with technology (Aruguete et al., 2019; Ford, 2017). Another limitation is that the data collection period overlapped with an unprecedented worldwide pandemic, which significantly changed many lives and negatively affected individuals' mental health.

Future Directions

Future research should explore various methods for collecting information regarding sexual attitudes and sexual behaviors among older adults. Future studies should extend the correlational findings using experimental designs manipulating the amount and type of information older adults receive regarding sexuality in later life and assessing group differences in future sexual activity. As mentioned previously, a forced-choice measure may provide more specific results among the participants. However, currently, there is a lack of forced-choice measures that assess multiple domains of sexual behavior in an older adult population. Part of this future research will likely include creating such measures. Research should also continue to explore the relationship between age-related stigma and sexual behaviors during older age. Qualitative research could be beneficial in determining extraneous or other confounding variables influencing this population and the relationships among sexual attitudes, age-related stigma, and sexual behaviors. Ševčíková and Sedláková (2020) completed a qualitative study examining these factors and suggested further research to defuse the ambiguity of the complex relationships among ageist beliefs, sexual attitudes, and sexual behaviors. For instance, the layers existing amongst ageist beliefs, sexual attitudes, and sexual behaviors are plagued with nuances of culture, positive and negative attitudes, differences in demographics, physical abilities, and partner status (Ševčíková & Sedláková, 2020). In particular, one variable to consider is the health status of participants. For example, if a participant is struggling with a health condition, it can

influence their sexual behaviors, and age-related stigma has been shown to influence a variety of health outcomes in addition to just sexual behaviors (Levy, 2009). DeLamater and Karraker's (2009) research on sexual behaviors found that if an older adult's partner has a medical condition, it can influence sexual activity. Further, DeLamater and Karraker's (2009) suggested that partner status can also be beneficial to conceptualize the interaction between age-related stigma, sexual attitudes, and sexual behaviors. The potential of health outcomes and status to interact with age-related stigma and sexual attitudes is important to explore. Future research should also explore how age and sexual attitudes may moderate the relationship between age-related stigma and sexual behaviors. The interplay among sexual attitudes, age, and sexual behaviors should be deconstructed and explored further in future studies. Specifically, the relationships between holding conversative and liberal sexual attitudes and variables assessing sexual behaviors, intimate behaviors, and frequency across the lifespan can be identified. Along with this research, future studies should examine specific interventions that may be implemented to help prevent age-related stigma and negative sexual attitudes in older adults. Finally, more research on sexual attitudes among older adults is necessary; specifically, exploring the differences between sexual mores, religious beliefs, sexual attitudes, and/or preferences could be valuable in determining the overall effects of sexual attitudes on older adults, sexual behaviors, and the relationship between age-related stigma and sexual behaviors.

Clinical Implications

These findings can aid mental health professionals to better understand the unique experiences of older adults with regard to sexual behavior. In clinical settings, they could also be beneficial for exploring the connections between sexual attitudes and sexual behaviors with clients dealing with and without sexual concerns. In addition, clinicians may need to assess

specific mental health concerns associated with age-related stigmas, such as symptoms of depression and anxiety. Age-related stigma has been shown to influence health outcomes (Levy, 2009) and is an important variable to consider when working with older adults, and clinicians can benefit from working within an integrated health care team. The clinical implications include the need for educational programs that promote more positive attitudes regarding sexuality and greater levels of sexual behavior in older adults. For prevention efforts, knowing and understanding the connections among age-related stigma, sexual attitudes, and sexual behaviors provides information that should be included in everyday discussions aimed at the prevention of age-related sexual stigma. In particular, counseling psychologists, as part of their social justice advocacy, can provide education, present research, and lead discussion on the importance of positivity surrounding older adult sexuality and the necessity to decrease age-related stigma. Further, it may be helpful to include outreach in a community living environment that explains how experiences of age-related stigma may be associated with an increased risk of decreased sexual behaviors. Outreach may also address positive coping skills and other behaviors of individuals who have experienced age-related stigma. In addition, as a prevention effort, counseling psychologists can also educate young and middle-aged adults on how harmful age-related stigma can be to help them find ways to promote positive sexual attitudes and sex positivity among older adults.

Conclusion

Findings from the current study indicate that there does appear to be a complex set of relationships among sexual attitudes, age-related stigma, and sexual behaviors. This is important to consider when working with older adults who report that they have experienced age-related stigma. Future research should focus on 1) deconstructing and explaining the relationship

between experiences of age-related stigma, mental health concerns, and sexual behaviors and 2) exploring possible prevention strategies to reduce the consequences of age-related stigma.

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CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter will discuss the relationships among sexual attitudes, age-related stigma (ARS), and sexual behaviors in older adults. The purpose of the current study is to expand the counseling psychology literature by furthering understanding of the moderating effect of sexual attitudes among older adults and to better understand the relationship between ARS and sexual behaviors. The literature review will examine the definitions and types of ageism, both external and internal, as well as attitudes and perceptions of sexuality in later life.

Age-Related Stigma

Definitions and Terminology

The construct of age-related stigma (ARS) is used interchangeably with a number of other highly related terms, such as ageism, age discrimination, age-relative stigma, age prejudice, age bias, ageist beliefs and attitudes, and age stereotypes. For this study, I used the terms age-related stigma and ageism interchangeably, but ageism is not synonymous with age-related stigma. Historically, Lerner's (1957) book *America as a Civilization* was the first book to mention discrimination based on older age. Ageism was coined by Butler in 1969 as "a process of systematic stereotyping and discrimination against people because they are old" (1975, p. 12). Since 1969, many scholars have researched ageism, trying to understand the types, experiences, and internal processes. Woolf (1998a) acknowledged a broader definition of ageism that addresses the fact that everyone will experience ageism in their lives everyone ages (Durost, 2012). Furthermore, Cohen (2001) posited that ageism is complex and layered; specifically, he noted that ageism affects multiple generations and is ingrained in some cultural values and subsequently embodied by many older adults. Iversen et al. (2009) argued for a comprehensive

definition of ageism by including negative and positive stereotypes among older individuals. A more recent definition of ageism includes stereotypical ideas, prejudicial attitudes, and discriminatory actions (Hausknecht et al., 2020). Iversen et al. (2009) noted that individuals tend to categorize people along three dimensions: race, gender, and age (Nelson, 2009). Ageism can be characterized as a complex set of behaviors that include endorsement of both negative or positive stereotypes, expressions of prejudicial attitudes, and overt discrimination against older adults (Iversen et al., 2009). Although ageism can also be aimed at younger age groups, this review will be limited to dealing with late adulthood (Johnson & Bytheway, 1993; Larsen & Solem, 2007). Hausknecht et al.'s (2020) definition was used for this study because it is comprehensive and encompasses stereotypes, attitudes, and behaviors affecting older adults.

Theories of Ageism

A theory was not tested for this study, but the theoretical basis for studying age-related stigma is well-documented and is essential for conceptualizing the internalization of age-related stigma. Several theories—stereotype embodiment theory, the reverse golden hypothesis, the internalization hypothesis, and stereotype threat theory—have all been proposed to explain the impact of age-related stigma on older adults (Lamont et al., 2015; Levy, 2009; Levy et al., 2020; Marquet et al., 2019; Syme & Cohn, 2021; Widrick & Raskin, 2010). For the purposes of this study, stereotype embodiment theory was used as a theoretical framework within which to conceptualize and organize relationships among the variables examined in this study.

Stereotype Embodiment Theory

Stereotype embodiment theory asserts that negative and positive stereotypes toward older adults become internalized, affecting a person's thoughts, feelings, and behaviors (Levy, 2009; Levy et al., 2020; Syme & Cohn, 2021). Examples of negative and positive stereotypes are

"older adults are incompetent" and "older adults are wise." Internalizing stereotypes can cause physical effects such as poor health outcomes and decreased life expectancy (Levy, 2009). Furthermore, stereotypes are reinforced when an individual is repeatedly exposed to a positive or negative stereotype (Levy, 2003). In addition, reinforcement can occur through a variety of cognitive processes. Specifically, individuals use stereotypes to quickly process information and become a "cognitive miser" (Levy, 2003). A cognitive miser is a person that uses simple and quick ways to process information. Becoming a cognitive miser happens when a person continues to accept stereotypes that are processed daily through information (Bodenhausen et al., 1994; Levy, 2003; MacCrae et al., 1994). Empirical research supports the theory's prediction that at least some portion of physical, social, and cognitive changes associated with ageing are associated with the presence of stereotype embodiment in older adults (Fawsitt et al., 2021; Fawsitt & Setti, 2017; Levy, 2009; Levy et al., 2020; Syme & Cohn, 2021).

Reverse Golden Hypothesis

The reverse golden hypothesis (Widrick & Raskin, 2010) posited that individuals generally view older adults negatively. Widrick and Raskin (2010) conducted a study that assigned negative or positive ratings about age to older adults and found that 61.8% of the time, individuals assigned older adults a negative rating based on age. The authors' research highlights the fact that "labeling" creates stereotypes, and, through the consequences of societal and cultural stigmas, age-related stigma can influence older adults. Examples of labeling could be referring to older adults as "atypical, abnormal, needy, fragile, or flawed" (Widrick & Raskin (2010). In support of Widrick and Raskin (2010), González-Domínguez et al. (2018) and Montorio et al. (2002) suggested that age-related stigma results from societal and cultural beliefs about older adults, whereby older adults who believe they are of less value due to their age

develop a stigmatized identity and begin to believe and act on the stereotype. Moreover, it can be challenging to change the script individuals perpetuate in a society that idolizes youth (Widrick & Raskin, 2010).

Internalization Hypothesis

According to Marquet et al. (2019), the internalization hypothesis asserts that prolonged exposure to negative age stereotypes can cause endorsement of the stereotypes. Furthermore, these stereotypes can alter self-perceptions of aging, affecting cognitive, physical, and emotional well-being among older adults (Marquet et al., 2019). For example, if an older adult repeatedly hears a particular stereotype, such as "Older adults are incompetent," they will begin to believe it, causing the individual to believe it themself. Older adults may experience stereotypes differently based on their values, beliefs, and levels of exposure (Levy, 2009). The question then arises whether there is a similar pattern of ageism experienced among older adults.

Stereotype Threat

Lamont et al. (2015) highlighted the observation that stereotype threat effects arise when an individual feels at risk of confirming a negative stereotype about their group (e.g., older adults) and consequently underperforms on stereotype-relevant tasks (Steele & Aronson, 1995; 2004; Steele, 2010). Among older adults, underperformance on cognitive and physical tasks results, at least in part, from age-based stereotype threat because of negative age stereotypes regarding older adults' competence. Spencer et al. (2016) noted both the consequences of this situational predicament and the means through which society and stigmatized individuals can overcome the insidious effects of stereotype threat. Further, Steele and Aronson (2004) found that stereotype threat can be applied to various stereotypes, even beyond ageism to racism and sexism.

Experiences of Age-Related Stigma

Age-related stigma is experienced through cultural identities and societal norms and is expressed externally and internally (Widrick & Raskin, 2010). Therefore, experiences of age-related stigma can vary across cultural groups (Levy, 2009). Individuals can experience ageism based on being perceived as too young or too old (Bratt et al. 2018). However, the research on ageism globally has centered on ageism experienced by older adults. The research highlights that individuals are uncertain regarding the age at which one is considered to be "old." Moreover, individuals can experience age-related stigma in varying degrees across contexts and countries. Consequently, a variety of types of ageism may impact older adults' experiences of age-related stigma.

Types of Ageism

There are two types of age-related stigma: external and internal. External age-related stigma may be defined as how non-older individuals view older adults, while internal age-related stigma is how older individuals view themselves (Ayalon et al., 2019). External and internal ageism can be explicit or implicit and can include negative or positive attitudes, perceptions, and stereotypes (Ayalon, 2020; Marquet et al., 2019; Syme & Cohn, 2016; 2021). Explicit ageism can be exhibited consciously through direct stereotyping (Iversen et al., 2009). Implicit ageism consists of unconscious stereotypes and prejudice regarding age (Levy & Banaji, 2002). Solem's (2020) results suggest that counteracting stereotypes, prejudice, and age discrimination in working life will require a broad approach, including additional research on the affective component of ageism.

The different definitions of ageism can be systematized by their conceptual components. These conceptual components consist of 1) cognitive, affective, and behavioral factors, 2) the

valence of ageist belief, positive and negative aspects, 3) implicit and explicit levels of beliefs, and 4) micro, meso, and macrolevels of ageism (Iversen et al., 2009). Iversen et al. (2009) noted that microlevels of ageism consist of ageism at the individual or personal level. The mesolevel refers to ageism at the level of social network interactions (Iversen et al., 2009). Finally, the macrolevel consists of institutional ageism (Iversen et al., 2009). Swift et al.'s (2021, 2022) findings suggest a tripartite view of ageism, which consists of a cognitive component (e.g., stereotyping), an affective component (e.g., prejudice), and a behavioral component (e.g., discrimination).

The concept of "attitudes" is often used to refer to multiple forms of ageism (e.g., stereotype and prejudice) (Ayalon et al., 2019). Perceptions are a view of a person or concept that can be positive or negative (Chasteen et al., 2015). Stereotypes are "mistaken or exaggerated beliefs," and attitudes are associated with negative feelings about the outgroup (Palmore, 1999, p. 19). In this review, the terms attitudes, beliefs, perceptions, or stereotypes may be used interchangeably to describe age-related stigma.

External Forms of Ageism

External ageism is how people collectively view older aged individuals (Widrick & Raskin, 2010). External ageism consists of messages about old age in the media, everyday language, stereotypes, and cultural, familial, and societal views/attitudes (Chen et al., 2022; Levy, 2009; Widrick & Raskin, 2010). The media often mispresents or underrepresents older adults through negative or positive messages (Chen et al., 2022). A few examples of external ageism are stereotypes in the media and oppressive attitudes held against older adults (Chen et al., 2022). Examples of this in the media are wrinkle cream commercials, TV shows with older adults getting plastic surgery, shows glamorizing youth, and depicting old age as a death

sentence (Chen et al., 2022). Ayalon's (2013) assertion that the societal level of beliefs about old age is a form of external ageism is supported this statement. The media and the English language often portray a negative view of age through phrases and shows such as "Cougar Town" and "Sexy Seniors" (Walz, 2002). In conclusion, external ageism can be explicit, somewhat conscious, or direct in the attempt to stereotype older adults through various avenues.

Explicit. Explicit bias is the conscious and direct preference for a particular group (Ayalon et al., 2019; Levy & Banaji, 2002). Explicit bias can be seen in views of health care decisions during the COVID-19 pandemic (Abramson, 2020). Abramson (2020) asserted that COVID-19 has increased the prevalence of ageist beliefs. The COVID-19 pandemic was a global crisis that provided insight into the explicit ageism in our world (Abramson, 2020). In fact, Carpenter et al. (2022) defined ageism during the pandemic as the "new ageism." During the pandemic, there was an increase in explicit ageism within health care policies (e.g., rationing treatment; Cesari & Proietti, 2020) and social media (e.g., #boomerremover; Ayalon, 2020; Jimenez-Sotomayor et al., 2020). Similarly, Ayalon et al. (2019) noted concerns with a rise in internal and external ageism due to COVID-19, including stereotype embodiment and economic and social strain (Morrow-Hollow et al., 2020). Furthermore, explicit ageism can be conceptualized as either hostile or benevolent (Fraser et al., 2020).

Hostile and Benevolent Ageism. Hostile ageism is when older adults are dismissed as useless, expendable burdens (Fraser et al., 2020). Fraser et al. (2020) corroborated that benevolent ageism is a stereotype that views older adults as fragile and vulnerable and that, while condescending, these views may be prevalent in multiple generations (Ayalon et al., 2019). Furthermore, women are at an increased risk from the compounding effects of both sexism and ageism (Cary et al., 2017).

Media. Contributions of the media to explicit ageism can portray negative, positive, and neutral messages regarding old age (Chen et al., 2022). The research suggests the media represents the outward ageist beliefs of our society (Chen et al., 2022). Ageism in media and visual arts reflects discriminatory and stereotypical practices of underrepresentation, misrepresentation, and marginalization of old age, aging, or older people in traditional media (such as print press and advertising, films, and television programs), social media (such as Internet-based information sharing sites, digital games, social networking sites, and microblogs), and visual arts (such as sculptures, portraits, paintings) (Chen et al., 2022; Ivan et al., 2020; Ivan & Cutler, 2021; Loos & Ivan, 2018). Specifically, in advertisements older adults were only depicted in commercials related to medical problems, wrinkle reversing creams, and erectile dysfunction (Carrigan & Szmigin, 1999). Researchers have found the role of mass media's emphasis on the "young and beautiful" is damaging to older adults (Berger, 2017; Hummert, 2015; Marshall, 2012), particularly in depictions of sexual expression among older adults. The research indicates that the media is damaging sexual expression by not showing older adult couples and older adults discussing or engaging in intimate behaviors (Holladay, 2002). Holladay (2002) contended that the media sends positive and negative messages about aging through commercials, television shows, movies, and news reports. Several researchers have found that older adults are either misrepresented or not represented in the media (Bramlett-Soloman & Wilson, 1989; Fisher, 1977). Moreover, Palmore (1999) researched "animated gerontophobia," the extensive fear of older individuals expressed in animated media. Furthermore, Perry (1999) highlighted that ageist and sexist stereotypes begin at a young age.

The Role of Stereotypes in Explicit Ageism. A stereotype is a belief about an individual or group that is inaccurate and can be harmful (Helmes & Pachana, 2016; Levy, 2009). Some of

these beliefs about older adults include “older adults are repulsive” and “older adults cannot have sex” (Estill et al., 2017; Fischer et al., 2018; Hillman, 2012; Hinchliff & Gott, 2016; Huffstetler, 2006; Syme & Cohn, 2016; 2021). Stereotype expression can vary between cultures (Levy, 2009). Hahn and Kinney (2020) studied the themes of aging stereotypes—deterioration, age-related impairments, mental health, loneliness and loss, and experiencing ageism— and found that after completing the course on aging, students learned about simple age-related changes and had conflicting stereotypical ideas of what it would be like to be age 75.

The Role of Culture in the Formation and Maintenance of External Ageism. Martin and North’s (2022) study asserted that age is a form of diversity and should be considered with cultural identities. Ageism is experienced in many ways through cultural identities and societal norms (Ackerman & Chopik, 2021). Admittedly, different cultures view older adults differently. Ackerman and Chopik (2021), for example, examined age bias present in individualistic and collectivistic cultures. The study results found that collectivistic cultures held less implicit and explicit age bias toward older adults (Ackerman & Chopik, 2021). Moreover, collectivistic cultures tended to value family and older generations compared to individualistic cultures (Ackerman & Chopik, 2021; Fiske, 2017). Fiske et al.’s (2017) study highlights the need to understand commonalities and differences across cultures as well as origins of beliefs within cultures in order to combat ageism.

***Culture and Family*.** A person’s culture and family offer a foundation for views of self and the world (Levy, 2003). Internalization of stereotypes or stigmas can begin in childhood, whereby stereotypes are adopted through family or cultural influences (Levy, 2003). In short, an individual’s family and cultural views can impact their views of aging.

Prevalence of External Ageism. Palmore (2001) published a survey of 20 items to assess ageism among older adults. Palmore's results suggest ageism is prevalent in multiple ways, such as increased vulnerability to being victims of a crime and being denied a promotion or employment. Palmore's (2001) study also showed that ageism is less likely to be challenged than racism and sexism (Palmore, 2001). The World Health Organization (WHO, 2015) acknowledged ageism as a public health issue and identified it as the most prevalent form of prejudice. In agreement, Martin and North (2022) noted that age discrimination is very prevalent, especially in the workplace. Furthermore, ageism reinforces the social inequalities of older adults (Ayalon & Tesch-Römer, 2017). Therefore, older adults are often oppressed without widespread understanding of these effects (Levy & Banaji, 2002; Palmore et al., 2016). Palmore et al. (2016) found that research focuses on the consequence of activating either positive or negative age stereotypes in older adults without their awareness. Palmore et al. (2016) used a survey approach to assess unconscious ageism using an implicit association test (IAT). This measure assumes that individuals will make associations more quickly for congruent judgments with unconscious associations and more slowly for incongruent judgments with unconscious associations (Palmore et al., 2016). In addition, IAT research has yielded several findings that unconscious age bias is stronger than racial and gender biases (Palmore et al., 2016). In agreement, Dobrowolska et al. (2019) found in their study that age discrimination is the most tolerated form of prejudice, especially in medical facilities.

Costs Associated with External Ageism. Ageism affects the cost and pervasiveness of several medical problems (Levy et al., 2020). In order to analyze the health care costs of ageism, Levy et al. (2020) combined effect sizes from ageism and health-condition research with the comprehensive health care spending data from the Institute for Health Metrics and Evaluation

(2018) and chose eight health outcomes. Levy et al. (2020) found that the yearly cost of ageism was $63 billion and 15.4% was spent on eight medical conditions. The eight health conditions consisted of cardiovascular disease, chronic respiratory disease, musculoskeletal disorders, injuries, diabetes mellitus, treatment of smoking, mental disorders, and non-communicable diseases (Levy et al., 2020). Levy et al.'s (2020) findings suggest ageism resulted in 17.04 million occurrences of these medical conditions. The authors estimated that this number of additional cases have their origin in older adults who have internalized beliefs about older adults that lead them to behave in ways that ultimately damage their own health. Levy et al. (2020) calculated the cost of these medical conditions for participants 60 years of age or older who endorsed items on age stereotypes and had at least one of eight medical conditions in the survey. In total, per individual, it costs $8,100.40 to manage one to eight of the medical conditions described. Further, Levy and colleagues (2020) only assessed direct costs of medical conditions through insurance claims, not loss of labor or other related costs, indicating costs could be even higher if they were not conservative.

Ayalon (2013) found that 35% of participants 18 and older reported experiencing ageism. Further, racism and sexism are associated with stereotype categorization, the initial process of placing an individual in a category based on a stereotype orientation (Nelson, 2009). Nelson (2009) suggested that stereotype categorization occurs among older adults; however, it is often overlooked. One consideration for ageism is that views of older adults vary among cultural groups (Palmore, 1999). Palmore (1999) verified that ageism can be culturally based and conditioned, and that some individuals can be unaware of engaging in ageist behaviors. Ageism exists within a given culture or family, and individuals are conditioned to believe these societal norms (Palmore, 1999).

Family and Positive Perceptions. Family has a tremendous impact on the individual, especially on their values and perceptions. Perceptions of aging on the part of family members can be neutral, negative, or positive (Ayalon, 2020; Seidler & Wolff, 2017). Often perceptions are largely negative (Levy et al., 2002; Levy & Myers, 2004). Positive perceptions are the beliefs regarding older adults that are encouraging (Ayalon, 2020; Levy et al., 2002; Levy & Myers, 2004). Specifically, older adults are thought of as wise and hardworking (Ayalon, 2020). Ingrand et al. (2018) studied psychological distress and positive perception of aging (PPOA) and found that PPOA and psychological distress exhibited the most substantial influence on quality of life (QOL). Psychological factors are predictors of QOL and have to be taken into account to maximize the resources for successful aging.

Even though the prevalence of negative perceptions of older adults is high, positive perceptions are affected by an individual's experiences with family (Gordon, 2020; Hilt & Lipschultz, 2005). Moreover, every family has its values, beliefs, and assumptions about individuals and groups (Gordon, 2020; Hilt & Lipschultz, 2005). Further, family of origin perceptions of aging can be internalized across the lifespan. Another example of positive perceptions of older adults can include kindness, wisdom, dependability, freedom, and political power (Hilt & Lipschultz, 2005). Because not every older person has freedom or political power, one should evaluate these assumptions with caution as everyone does not match the stereotype (Hilt & Lipschultz, 2005). Interestingly, few individuals consider the need to prevent negative perceptions of aging (Hilt & Lipschultz, 2005). Donizzetti's (2019) study posited that knowledge of prejudice toward older adults is essential to refuting negative perceptions. Further, this highlights the need for knowledge as a preventative measure in the fight against ageism. In short,

positive perceptions research suggests that positive perceptions on the part of family members can counter the influence of negative perceptions on aging beliefs.

The Role of Implicit Language and Phrases in External Ageism. The English language has multiple words and phrases that deprecate older adults through implicit bias (Palmore, 1999; Walz, 2002). Implicit bias is an unconscious preference for the dominant group; in this case, the dominant group is younger adults (Palmore, 1999). Palmore's (1999) study confirmed that ageism is reinforced by using certain words. In the English language, these include "old-fashioned, crone, old maid, over the hill" (Palmore, 1999). Another term in English usage in sex and ageism research is "sexy seniors" (Sandberg, 2015; Walz, 2002).

The term "sexy seniors" has received increased attention from researchers in the last decade (Sandberg, 2015; Walz, 2002). Hinchliff and Gott (2016) discovered that the idea of "sexy oldie" contributes to negative older adult stereotypes (Gott, 2004). Hinchliff and Gott's (2017) findings are consistent with the movement for older adults to "age well"; however, this movement can contribute to the idea that "dysfunction" is expected (Hinchliff & Gott, 2017). Rather than the term "sexy senior" contributing to positive views of aging, the term promotes ideas of "cougar" and "dirty old man" (Saporta, 1991; Walz, 2002). Thus, addressing the use of derogatory words is essential in eliminating ageism due to the internalization of these harmful terms. The next section will describe the effects of this type of internalization of age stereotypes.

Internal Forms of Ageism

Based on this body of work, scholars have concluded that internalized stereotypes are ageist beliefs about oneself (Levy, 2009). Levy (2009) suggested that individuals internalize stereotypes based on what they see portrayed in the media. Furthermore, stereotypes are generally negative or cause an adverse reaction (Levy, 2009). Similarly, contributing to internal

beliefs about aging are myths about aging, such as “You cannot teach an old dog new tricks” and “to be old is to be sick” (Hilt & Lipschultz, 2005). Siedl’s (2017) study termed internalization as “self-imposed ageism” affecting older adults’ intimacy and sexual engagement. One example Seidl (2017) provided from her study was “I’m too old for sexual intimacy.”

Another implication of ageism is fear of old age or death. Older adults generally do not fear death (Hilt & Lipschultz, 2005; Mejia et al., 2018). Nonetheless, when older adults internalize negative stereotypes, they can have anxiety about the end of life (Hilt & Lipschultz, 2005). In fact, older adults may avoid discussions about death or refuse to complete an advanced directive because it evokes their fear of dying (Hilt & Lipschultz, 2005).

Positive Attitudes and Internal Ageism. In contrast to stereotypes, research on later life can be treated as a positive topic because there are positive attitudes toward aging (Levy et al., 2002). Positive attitudes constitute a set of accepted beliefs about older individuals, including socially appealing qualities like wisdom and kindness (Levy et al., 2002). As previously stated, positive attitudes can also be internalized by older adults (Levy et al., 2002). Notably, Levy et al. (2002) found that positive attitudes about aging were associated with older adults’ longevity when compared to older adults with negative attitudes about aging.

Self-Perceptions of Aging. In a review of existing studies on self-perceptions of aging (SPA), Hausknecht et al. (2020) identified seven themes about aging: aging well, subjective aging, attitudes toward aging, future self-views, aging body, self-stigma/aging stereotypes, and construction of aging identities. Self-stigma and self-stereotyping are the acts of internalizing societal stereotypes (Hausknecht et al., 2020). Hausknecht et al. (2020) added that stereotyping and being stigmatized by others could lead to self-stereotyping and self-stigma among older adults. Moreover, understanding of stereotyping and stigma enables the individual to gain

awareness of the stereotype/prejudice and avoid internalizing the stereotypical beliefs (Sheehan et al., 2017). For instance, the presence of an existing stereotype can cause an individual to embody the stereotype causing distress and changes in behavior. Further, Levy (2003) found that self-stereotyping occurs in two stages: 1) joining the "old age group" and 2) the more negative the stereotype is, the more resistance to the stereotype there is, which can result in denial (Levy, 2003; Levy & Banaji, 2002).

Additionally, Wurm et al.'s (2013) research on self-stigma and self-stereotyping confirmed that self-perceiving an attitude toward aging can become a self-fulfilling prophecy, whereby it causes increased amounts of illness and decreased life satisfaction among the older adults endorsing the stereotype. In a self-fulfilling prophecy, an individual's expectation about themselves eventually confirms the expectations (Chrisler et al., 2016). For example, if an individual believes they are incompetent, then they will embody this by displaying incompetence.

The research suggests that the internalization of ageist beliefs can be explained by stereotype embodiment (Levy, 2009), age discrimination (Nelson, 2016), and stereotype threat (Lamont et al., 2015). These related perspectives suggest that negative stereotypes exist within the older adult community even though positive stereotypes exist alongside them (Ayalon et al., 2019). As an example, an older adult can hold the positive stereotype that "older adults are wise" while believing the negative stereotype that older adults have poor memories. In a similar vein, Hehman and Bugental (2013) researched "age-relevant stereotypes" among older and younger adults, determining differences in the self-stigma of aging. Moreover, Hehman and Bugental (2013) found that self-stigma causes anxiety that serves to confirm existing old-age stereotypes that lead to individuals exemplifying the stereotype (Hehman & Bugental, 2013). For instance,

an older adult may be worried about going against a perceived old age stereotype (Hehman & Bugental, 2013). Specifically, an older adult would not feel comfortable dating a younger partner for fear of being viewed as asexual (Hehman & Bugental, 2013). Within that context, Levy (2003) found that stereotype threat occurs when a person identifies with a domain affected by anxiety, confirming the negative stereotype.

Seidler and Wolff's (2017) study provided initial evidence that SPA can influence trajectories of cognitive decline. The results emphasize the detrimental and beneficial effects of stereotypes on individuals and add further support for the theory of stereotype embodiment (Seidler & Wolff, 2017). Tully-Wilson et al. (2021) found that SPA that are more positive were associated with healthier long-term outcomes, including self-rated health, greater longevity, activities of daily living, obesity, depression, and cognitive functioning. Furthermore, Tully-Wilson et al.'s (2021) findings noted a reduction in dementia and general cognitive decline. The research indicates that older adults' endorsement of aging stereotypes in psychological, behavioral, and physiological domains provided support for Levy's stereotype embodiment theory (Seidler & Wolff, 2017; Tully-Wilson et al., 2021). The results have significant implications including a suggestion for providers to screen for SPA in at least middle-aged adults (Seidler & Wolff, 2017).

Self-Perception of Aging, Successful Aging, and Subjective Aging. Perceived age discrimination is associated with fears around aging (Chasteen et al., 2015) and worsening self-perceptions of aging (Giasson et al., 2017; Han & Richardson, 2015). Subjective age has also been associated with age stereotypes and perceived age discrimination. For example, older adults reported feeling older after taking a series of cognitive tests, and those who endorsed negative age stereotypes reported an increase in subjective age throughout the testing session (Geraci et

al., 2018). Negative age stereotypes and perceived age discrimination predicted older subjective age and lower self-esteem indirectly through negative self-perceptions of aging.

Positive, Subjective, and Successful Aging. Positive aging and successful aging have been researched to determine their impacts on older adults (Stulhofer et al., 2018; Thompson et al., 2011; Woloski-Wruble et al., 2010). Positive and successful aging impacts older adults' overall well-being and health outcomes (Daskalopoulou et al., 2017). Successful aging is conceptualized as the absence of disease and high levels of physical, social, and cognitive functioning (Amin, 2017; Karraker et al., 2011; Rowe & Kahn, 1997, 2015; Syme, 2014), and it continues to garner attention with reference to the ever-increasing older adult population. Although the extent to which aging can be characterized as successful varies among older adults, successful aging is generally defined by physical, psychological, cognitive, and functional health (Daskalopoulou et al., 2017; Kusumastuti, 2016). Kunuroglu and Vural Yuzbasi (2021) found that self-compassion, psychological resilience, and positive attitudes toward aging predicted successful aging. Related to successful aging is an age-relative term known as subjective aging in ageism research. Subjective aging is how individuals view themselves in terms of how old they feel they are, rather than their chronological age (Chasteen & Cary, 2015; Diehl et al., 2015; Miche et al., 2014; Westerhof & Wurm, 2022).

Negative Self-Perceptions. Negative self-perceptions or rather "stigma" hinder older adults by harming their overall life satisfaction and successful aging (Amin, 2017; Conner et al., 2017; Hillman, 2012; Levy, 2003; Levy & Myers, 2004; Fullen, 2018; Syme & Cohn, 2016). As one example, if older adults view themselves negatively, they will likely believe faulty perceptions about age, such as fragility (Amin, 2017). Age-related stigma impedes successful aging in later years, causing adverse health outcomes such as declining cardiovascular health and

obesity (Kusumastuti et al., 2016; Thompson et al., 2011). However, Stulhofer et al. (2018) found that continued sexual interest and activity contributed to successful aging among older adults in Europe, suggesting that positive sexual attitudes impacted sexual behaviors.

Gender and Ageism

Both men and women experience ageism (Chrisler et al., 2016; Waite et al., 2009). In particular, the research suggests that older men are referred to as "dirty" when they engage in sexual acts that are perfectly natural for them (Hilt & Lipschultz, 2005). Kalavar (2001) found that male college students displayed more ageist attitudes than females. Knuutila et al.'s (2021) research highlighted that women are more likely to have age bias impact them than their older male counterparts. Women face other stigmatic beliefs based on appearance, being referred to as "ugly" or "old hag" (Hilt & Lipschultz, 2005). Moreover, women experience ageism, sexism, and racism at higher rates than their male counterparts (Chrisler et al., 2016; Hilt & Lipschultz, 2005; Milivojević et al., 2021). For example, women are often disrespected during medical treatments (Chrisler et al., 2016) where their needs or questions during treatments are considered irrelevant and unimportant. In a similar vein, women are expected to dye their hair if they see gray hair, especially below a certain age, so they do not seem "old" (Gerike, 1990). Regardless of the differences between men and women, older adults, in general, have positive perceptions/attitudes of aging.

Sexual Behaviors

For this study, the umbrella term "sexual behaviors" includes the following: partnered and solo sexual (e.g., vaginal, oral, and anal sex) and intimate behaviors (e.g., fondling, cuddling, caressing, petting, touching, and kissing; Benbow & Beeston, 2012). Scholars have found conflicting findings about older adults' changing sexual behaviors. Studies suggest that older

adults engage in sexual activity and are interested in multiple sexual behaviors (DeLamater & Karraker, 2009; Syme & Cohn, 2016). The frequency and variety of sexual behaviors in which older adults engage decline with age (DeLamater & Karraker, 2009; Syme & Cohn, 2016). Beckman et al. (2008) completed a 30-year longitudinal study with 70-year-olds to determine sexual activity and functioning rates. Beckman et al. (2008) found that participants engaged in increased sexual activity and reported higher levels of sexual satisfaction. In contrast, as Benbow and Beeston (2012) pointed out, Beckman et al.'s study did not examine sexual activity beyond just intercourse and heterosexual couples.

Ginsburg et al. (2005) found that older adults living in a community residential facility wanted relationships that included kissing and touching, but masturbation and intercourse were not essential. Instead of sexual intercourse, however, many older adults often engage in intimate behaviors like fondling, kissing, cuddling, external stimulation, and other non-genital activities (Benbow & Beeston, 2012; DeLamater & Karraker, 2009; Sandberg, 2015). For instance, 90% of older adults are engaging in intimate activities such as hugging or handholding (Waite et al., 2009). Furthermore, the most common physical greeting among older adult men and women is hugging or kissing (Waite et al., 2009). In agreement with Benbow and Beeston (2012), Oppenheimer (2002) found that sexual interactions change across the lifespan. Oppenheimer's (2002) findings indicate that older adults' sexual interest, arousal, and activity is largely due to stigma and physiological changes.

Age-Related Stigma and Sexual Behaviors

Age-related stigma and sexual behaviors are closely related. In fact, older adults that internalize age-related stigma engage in fewer sexual behaviors (Syme & Cohn, 2021). Age-related stigma affects older adults by internalizing beliefs (Widrick & Raskin, 2010), impacting

the age with which an individual identifies (Estill et al., 2017) and the behaviors in which they choose to engage (Ševčíková & Sedláková, 2020; Syme & Cohn, 2021). Furthermore, older adults have more health-related concerns, which have been found to impact sexual activity (DeLamater, 2012; Jackson et al., 2020). In addition, sexual activity decreases with age due to a lack of partners; having a sexual partner is a significant predictor of sexual activity (Waite et al., 2009). Moreover, sex is a use it or lose it model (DeLamater et al., 2012; DeLamater & Karraker, 2009). Specifically, individuals in their forties are more likely to have sex in their seventies if they are having sex in their forties (DeLamater et al., 2012; DeLamater & Karraker, 2009). In short, the research highlights the negative relationship between age-related stigma and sexual behaviors.

Gender Differences in Sexual Behavior

Generally, both men and women engage in similar sexual behaviors; however, differences exist among older age groups (Waite et al., 2009), with Waite et al. (2009) finding that older adult women have less access to partners and experience a wider age gap in partners. In fact, women are even less likely to engage in intimate behaviors such as hand holding compared to men (Waite et al., 2009). As an example, women also experience a lack of sexual interest because of the absence of a sexual partner whereas men do not experience a lack of interest without a partner (Waite et al., 2009). Herbenick et al. (2010) found that women engaged in various solo and partnered sexual behaviors. Specifically, older women engaged in oral, anal, and vaginal sex and were consistently involved in masturbation across their lifespan (Bouman et al., 2006; Herbenick et al., 2010). Furthermore, women who did not engage in more sexual behaviors had issues with decreased libido, vaginal dryness, or lack of a partner (Herbenick et al., 2010). Men that engaged in less sexual behaviors tended to be those who were affected by

cardiovascular disease, other health problems, and a lack of a partner (Herbenick et al., 2010). Sexual behavior was less frequent or inconsistent in older age groups and varied according to partner status and health status (Herbenick et al., 2010). In conclusion, sexual behavior among older adults is connected with views of aging and age-related stigma.

Views of Aging

As previously noted, views of aging can affect sexual behaviors and attitudes. DeLamater and Sill (2005) found that if an older adult in a relationship viewed penetrative sex as the only acceptable form of sexual activity, their sexual lives would be non-existent. Additionally, the more negative views held by the older adult, the less likely they were to engage in sexual behaviors or activities (Tetley et al., 2018). Specifically, negative views affect how an individual perceives themselves, and that person may embody these views by fulfilling viewpoints such as not having sex because they believe they are repulsive. In another study, Ševčíková and Sedláková (2020) found that older adults that perceived themselves as younger engaged in more frequent sexual behavior, unlike older adults that perceived themselves as older. Moreover, Ševčíková and Sedláková (2020) discovered that having sex helped reduce beliefs of unattractiveness and limits to one's capacity.

In another study, Sinković and Towler (2019) completed a systematic review identifying two theme categories: psychological and relational aspects of sexuality and health among older adults. The researchers found that negative stereotypes are persistent, affecting older adult sexuality, a critical component of quality of life (Sinković & Towler, 2019). In agreement, Gott and Hinchliff's (2003) survey concluded that older adults rated their sexual activity as either "very" or "extremely" important. In addition, Estill et al.'s (2017) study found that subjective age and views toward aging predict a person's experience of sex. For instance, older adults who

felt older reported less frequent sexual activity and interest than those that felt positively about themselves (Estill et al., 2017).

Health Outcomes

Decades of research supports the notion that older adults should engage in sexual activity because it is associated with positive health outcomes (Jackson et al., 2020). Sexual activities are beneficial for sexual and physical health, especially among older adults (Bach et al., 2013). Health benefits of sexual activity include improved cardiovascular health and overall mental and physical health (Bach et al., 2013; Jackson et al., 2020; Lindau et al., 2007). Field at al.'s (2013) findings suggest that higher rates of COPD and difficulty with mobility decreased sexual activity. Further, review of the literature highlights the fact that due to declines in health-seeking behaviors, older adults are underutilizing medical services, especially those related to sexual health issues (Chrisler et al., 2016). In agreement, Chang et al. (2019) found that ageism led to diminished health outcomes among older adults. Another influence on health outcomes among older adults is age-related stigma due to a lack of engagement in sexual behaviors (Levy, 2009). Levy's (2009) findings suggest stereotype embodiment extended across ages, affecting life expectancy when older adults endorse negative stereotypes. Furthermore, the research emphasizes the importance of engagement in sexual behaviors among older adults for improved physical health and improved quality of life. Summarizing the research to date, health can be affected by lack of sexual behaviors, and sexual behavior should be considered as part of overall quality of life.

Sexual Attitudes

Sexual attitudes can be traced to a number of factors, including education on sex, familial and cultural values, views of sexuality, and previous sexual experiences (American

Psychological Association [APA], 2020). In agreement, Silva et al.'s (2021) findings suggest sexual attitudes are influenced by education on sex, experiences, values, and sexual desire. For the current study, *sexual attitudes* was defined as beliefs about sexual behavior based on experiences, knowledge, and cultural/societal beliefs. Daugherty and Burger's (1984) research laid the groundwork for examining how sexual attitudes impact sexual behaviors by assessing various types of attitudes regarding sexual knowledge and experience.

A growing body of research has found that positive sexual attitudes increased engagement in sexual behaviors, whereas negative sexual attitudes predicted a decline in sexual behaviors (Dosch et al., 2016; Fischer et al., 2018). Positive sexual attitudes can be conceptualized as an openness or willingness to engage in a variety of sexual behaviors (Fallis et al., 2013). Fischer found that older adults in four European countries who endorsed positive sexual attitudes reported higher rates of sexual activity (Fischer et al., 2018). Fischer et al. (2018) and Træen et al. (2019a) found that sexual attitudes were significant predictors of sexual behaviors in older adult cohorts. Expanding on Fischer et al. (2018), Vasconcelos et al. (2021) reported that improving attitudes toward sex could improve engagement in sexual activities, finding that older adults who have positive views toward sexual acts report more sexual activities. In addition to attitudes, knowledge was also found to influence sexual attitudes and behaviors (Wang et al., 2008). Findings also suggest that sexual attitudes toward older adults are becoming more permissive. In a study conducted by Syme and Cohn (2016), using three groups categorized according to age, older adults had more negative views of aging sexuality than younger adults. In addition, sexual attitudes have been known to become more liberal or open over time among most Baby Boomers (1946-1964; Hartman-Stein & Potkanowicz, 2003), which is a large portion of the participants in the current study (Syme & Cohn, 2016, 2021). In

summary, older adults draw on sexual attitudes through knowledge and experiences across the lifespan.

Positive Sexual Attitudes and Differing Definitions

The research indicates there are a variety of definitions of positive sexual attitudes (Dosch et al., 2016; Sierra et al., 2021). Sierra et al. (2021) found that positive (e.g., open/flexible) attitudes toward sexual fantasies are more salient than a "general" attitude toward sexuality in explaining sexual function. For instance, if individuals noted flexibility or openness to various sexual fantasies, they exhibited a "positive" sexual attitude (Sierra et al., 2021). Sierra and colleagues (2021) referred to positive attitudes as openness to beliefs toward sexual fantasies. Sierra et al.'s (2021) definition of sexual attitudes differed from those of previous researchers, stating that "sexual attitudes are beliefs that cause people to respond positively or negatively to sexual stimuli" (p. 1). Sierra et al. (2021) also noted that sexual attitudes could be displayed toward sexuality in general (erotophilia) or toward certain sexual behaviors (sexual fantasies or masturbation); both definitions impact sexual expression, satisfaction, and sexual function. *Erotophilia* is a personality trait that assesses a person's positive or negative response to sexual cues (Durant et al., 2002). In summary, positive sexual attitudes improve sexual function, and sexual attitudes encompass various aspects such as erotophilia and sexual conduct.

Purifoy et al. (1992) found that in older adults, age was associated with less sexual drive, activity, interest, and more negative sexual attitudes. Furthermore, sexual daydreaming, drive, and sexual activity improved with positive sexual attitude across older adult cohorts (Purifoy et al., 1992). Dosch et al.'s (2016) findings indicate positive sexual attitudes impacted sexual desire and engagement in sexual behaviors. Moreover, sexual attitudes can be implicit (automatic) and explicit (controlled) (Dosch et al., 2016; Strack & Deutsch, 2004). As an example, a person can

have a desire for sexual experiences, but decide not to act on this desire due to a conflict with time; one process is automatic and the other is controlled (Dosch et al., 2016). In short, positive sexual attitudes can serve as a buffer against the effects of age-related stigma.

Culture Differences Towards Sexual Behavior

Several studies have discovered that sexual behaviors and sexual attitudes are influenced by an individual's race and ethnicity (Cuddy et al., 2005; Lewis et al., 2006). Age-relative sexual attitudes concern the appropriateness of sexual expression and relationships in the older adult population (Graf & Patrick, 2014). Zeiss and Kasl-Godley (2001) found that the cultural value of sexual expression across the lifespan contributes to sustained sexual activity and satisfaction among older adults. Further, Guan (2004) and Wang et al. (2008) have found that sexual expression, attitudes, and behaviors are culturally based. In agreement, Cuddy et al. (2005) found that aging stereotypes were prevalent among older adults across collectivistic and individualistic cultures. In other cross-cultural investigations, participants in China (Tien-Hyatt, 1986-1987), Japan (Koyano, 1989), Taiwan (Tien-Hyatt, 1986-1987), and Thailand (Sharps et al., 1998) reported substantially more negative attitudes toward older adults than their American counterparts. Further, China, Taiwan, Japan, and Thailand cultures are largely collectivistic (Cuddy et al., 2005). Cuddy et al. (2005) suggested that modernism and influence from western culture impacted the change in perception in the participants from collectivistic cultures. Moreover, the research posits variations and similarities across cultures regarding attitudes toward sex (Cuddy et al., 2005).

Older Adults and Gender Differences

In order to understand sexual attitudes, it is crucial to understand the impact of age on sexual attitudes across the lifespan. Waite et al. (2009) found that men had more positive

attitudes toward sexual expression than women. Secondly, older women were more negative in their attitudes about sex than younger men and women adults (Waite et al., 2009). In contrast, other research suggests that older adults have positive attitudes toward sexual expression; however, masturbation was noted as less acceptable (Spector & Femeth, 2008; Syme & Cohn, 2016; Wasow & Loeb, 1979). Weeks (2002) found that "irrational prohibitive feelings" about aging sexuality can adversely affect sexual relationships. Irrational prohibitive feelings are inaccurate beliefs associated with cultural ageism (Weeks, 2002). Specifically, irrational feelings affect sexual engagement between partners, causing emotional turmoil in the relationship (Weeks, 2002). In a similar vein, Kaas's (1981) study analyzed the intersection between ageism and sexual dysfunction. Kaas's (1981) term "Geriatric Sexuality Breakdown Syndrome" indicated that societal ageism becomes a sexual problem among older adults (Syme & Cohn, 2016). As an example, older adults are exposed to diminished sexual activity in commercials and therefore become nonsexual themselves (Kaas, 1981). Societal ageism consists of the ideologies woven into everyday society about age (Hendricks et al., 2005). Hendricks et al. (2005) went on to explain that societal ageism is seen in societal perceptions of aging and public policy such as social security. Specifically, social security can be obtained at age 62, yet the amount is typically far below an individual's "working income" and can be difficult to survive on, especially when an older adult is no longer able to work for their previous employer. In conclusion, sexual attitudes can influence the impact of age-related stigma on older adults.

The Relationship Between Age-Related Stigma and Sexual Behaviors

Age-related stigma can be internalized by older adults, causing a decrease in sexual behaviors (Estill et al., 2017). Estill et al.'s (2017) findings suggest that older adults that feel older engage in fewer sexual activities. Specifically, the less positive the views that older adults

held about aging, the less older participants valued and engaged in sexual behaviors (Estill et al., 2017). Fischer et al. (2018) found that older adults that were more open to sexual changes due to aging experienced higher levels of sexual intercourse activity in Danish and Belgian participants. Older adults are sexual beings like younger age groups; in fact, sex is not only for youth (Waite et al., 2009). Age-related stereotypes, such as older adults being asexual, can be damaging (Marshall, 2012; Simpson et al., 2017; Syme & Cohn, 2021; Waite et al., 2009). Furthermore, internalization of such harmful stereotypes by older adults is detrimental to their sexual attitudes and sexual behaviors (Levy, 2009; Syme & Cohn, 2021). In summary, age-related stigma is harmful and influences sexual behavior among older adults, which, in turn, affects quality of life and health outcomes.

Sexual Attitudes as a Moderator

Sexual attitudes can be neutral, positive, or negative by drawing on experiences and knowledge (Graf & Patrick, 2014; Tobin, 2011). Sexual attitudes can impact age-related stigma's influence on older adults by increasing or decreasing the extent of internalization of stereotypes (Graf & Patrick, 2014). Fischer et al. (2018) found a significant relationship between positive sexual attitudes toward aging and sexual activities. Noting the presence of this effect, the primary research question in this study is whether positive sexual attitudes have a buffering effect on the negative relationship between age-related stigma and sexual behaviors among older adults. For instance, if an older adult endorses a negative sexual attitude, it is hypothesized they will experience higher levels of age-related stigma, which in turn would be associated with less sexual activity. In conclusion, sexual attitudes and age-related stigma should be further examined to determine the moderating effect on sexual behavior in older adults.

Sexual Attitudes and Sexual Behaviors

Sexual attitudes inherently affect sexual behaviors in people (Fischer et al., 2018). Hynie and Lydon (1996) found that sexual attitudes predicted sexual behaviors. Building on Gerrard's (1987) study showing that women with negative sexual attitudes participated in fewer sexual behaviors, Hynie and Lydon (1996) found that positive sexual attitudes were associated with higher levels of sexual activity. Patrick and Graf (2014) and Fischer et al. (2018) highlighted that sexual attitudes do, in fact, predict sexual behaviors. For instance, when individuals experience positive sexual attitudes, they experience more sexual behaviors (Fischer et al., 2018; Stulhofer et al., 2018). Likewise, when individuals have negative sexual attitudes, they will have a decrease in sexual behaviors (Fischer et al., 2018; Stulhofer et al., 2018). In summary, sexual attitudes, whether positive or negative, influence the rate and kinds of sexual behavior older adults are engaging in.

Age as a Moderator

Age group is a category assigned to individuals based on phase of life and unique age characteristics (Daignault et al., 2021). The research suggests that old age can be conceptualized as 55 years old and older (Bytheway, 2005; Hummert et al., 1997). Age influences the strengths of the relationships among sexual attitudes on age-related stigma and sexual behaviors among older adults (Le Gall et al., 2002). The research indicates that the older an individual is, the more likely they will experience a decrease in sexual behavior and an increase in age-related stigma (DeLamater & Karraker, 2009). Furthermore, this study seeks to examine age as a moderator impacting the association of sexual attitudes with the relationship between age-related stigma and sexual behaviors.

Covariates of Education, Socioeconomic Status, and Relationship Status

Individuals with higher educational attainment have reported an increase in various sexual behaviors and, therefore, should be controlled for in the current study (Syme & Cohn, 2021). An individual's socioeconomic status can influence the current study variables, age, age-related stigma, sexual attitudes, and sexual behaviors (Syme & Cohn, 2021). Engagement in sexual behaviors can depend on relationship status among older adults and was controlled for in the present study (Graf & Patrick, 2014; Syme & Cohn, 2021).

Gaps in the Literature

Research to date has not examined the extent to which sexual attitudes influence the strength of the relationship between age-related stigma and sexual behaviors among older adults (Graf & Patrick, 2014; Syme & Cohn, 2021). Older adults practice several sexual behaviors directly influenced by stigmatic beliefs about age (Syme & Cohn, 2021), but it is possible that the strength of the negative relationship between age-related stigma and sexual behavior will be reduced among older adults with more positive sexual attitudes. Furthermore, this moderating effect of sexual attitudes may itself be moderated by whether a person is on the younger side of persons classified as older or the older end of this scale; specifically, the moderation effect may be less prominent for persons on the older side of old. The current study addressed these gaps in the sexuality and aging literature.

The Present Study

This review reveals gaps in the literature related to the influence of sexual attitudes on the relationship between age-related stigma and sexual behaviors. The current study explores the influence of sexual attitudes on the experiences of age-related stigma and sexual behaviors. The anticipated outcome of this study is to further knowledge regarding older adults' experiences of

sexual attitudes and to understand further how sexual attitudes influence the relationship between age-related stigma and sexual behaviors. Furthermore, if sexual attitudes emerge as a moderator, this research can benefit medical and mental health providers regarding the impact of sexual attitudes on older adult sexual behaviors.

Previous research has not examined the influence of sexual attitudes on the relationship between age-related stigma and sexual behaviors. This research can contribute to the existing literature by informing practitioners and interdisciplinary providers about older adults' unique needs, which impact psychotherapy. Furthermore, the study can explore the experiences of age-related stigma among older adults. If the moderation hypothesis is supported, this research could advance the literature by uncovering the important relationships among age-related stigma, sexual attitudes, and sexual behaviors.

Hypotheses and Model

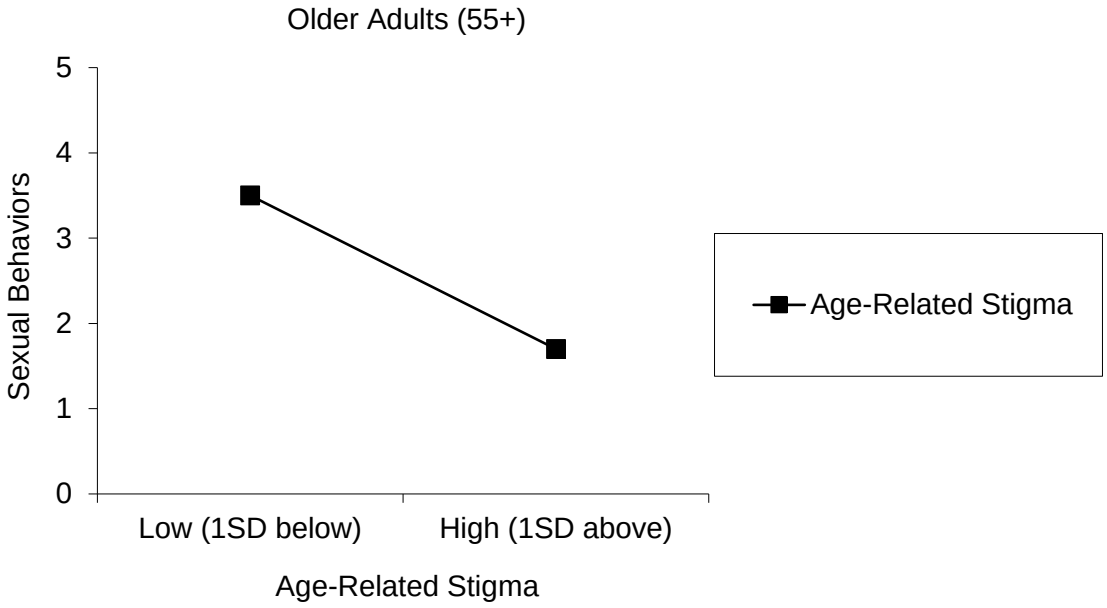
Based on the findings from the literature, the following hypotheses are proposed for the current study:

Hypothesis 1: Age-Related Stigma and Sexual Behaviors

There will be a negative relationship between age-related stigma and sexual behaviors among older adults. Older adults with higher amounts of age-related stigma will endorse fewer sexual behaviors when statistically controlling for education, relationship status, and socioeconomic status. Figure 1 displays the predicted pattern of the effect.

Figure 1

Hypothesis 1



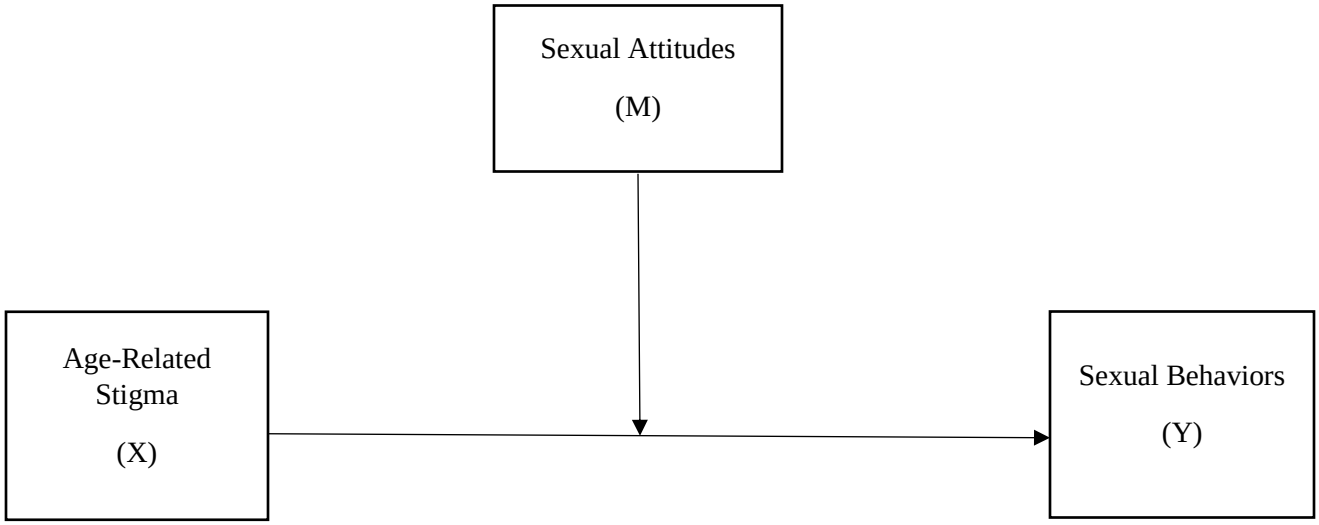
Note. The predicted pattern of results for Hypothesis 1: There will be a negative relationship between age-related stigma and sexual behaviors among older adults. Older adults with higher amounts of age-related stigma will endorse fewer sexual behaviors.

Hypothesis 2: Sexual Attitudes as a Moderator Variable

Sexual attitudes will moderate the strength of the relationship between age-related stigma and sexual behaviors among older adults. Older adults with negative sexual attitudes will display a stronger relationship between age-related stigma and sexual behaviors than will older adults with positive sexual attitudes. Figures 2 display the statistical model for the predicted moderation effect. Figure 3 displays the predicted pattern for this moderation effect.

Figure 2

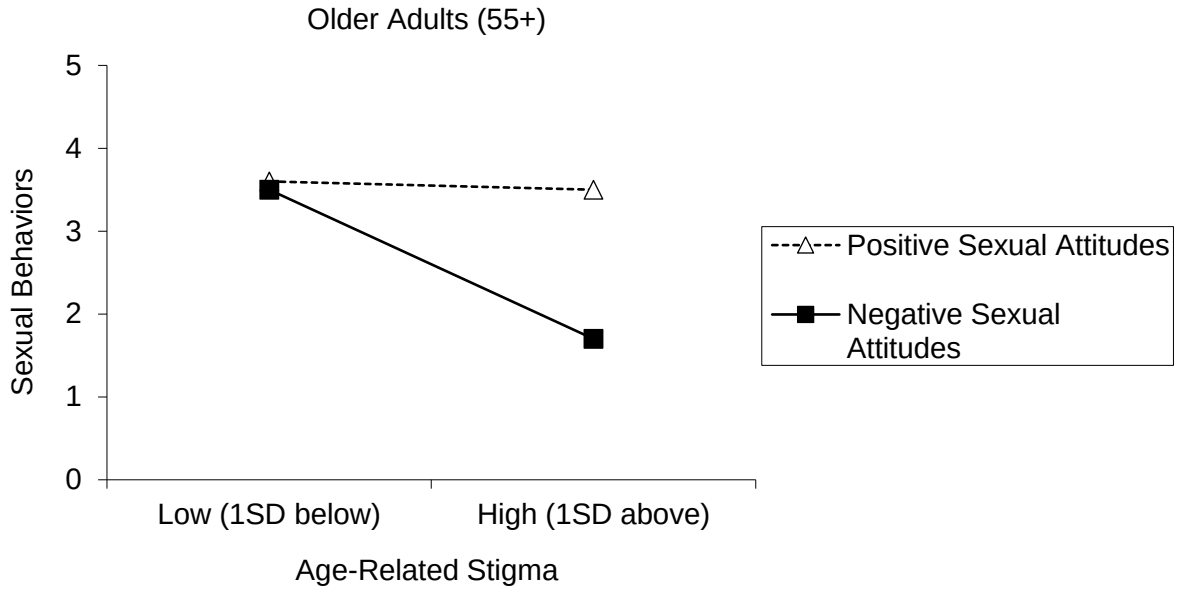
Moderation Model



Note. The conceptual model showing the moderation hypothesis.

Figure 3

Moderation Hypothesis



Note. The predicted pattern of results for Hypothesis 2: Sexual attitudes will moderate the strength relationship between age-related stigma and sexual behaviors among older adults. A negative relationship between age-related stigma and sexual behaviors for older adults with negative sexual attitudes. No relationship between age-related stigma and sexual behaviors will be observed for older adults with positive sexual attitudes.

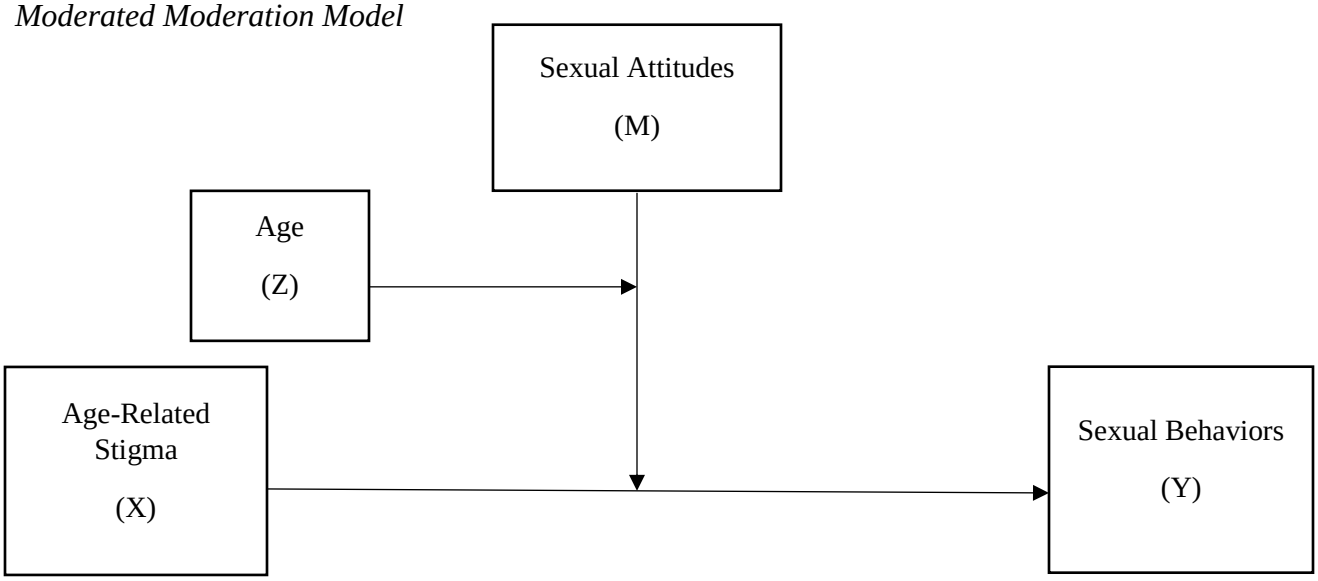
Hypothesis 3: Age as an Additional Moderator Variable

Age will moderate the strength of the moderation effect outlined in Hypothesis 2. Specifically, it is predicted that the moderation effect of sexual attitudes on the relationship between age-related stigma and sexual behaviors will be stronger in participants 65 years of age and older than in participants between the ages of 55 and 64. Figure 4 displays the conceptual

model for this predicted moderated moderation effect. Figure 5 displays the predicted pattern of results for the moderated moderation effect.

Figure 4

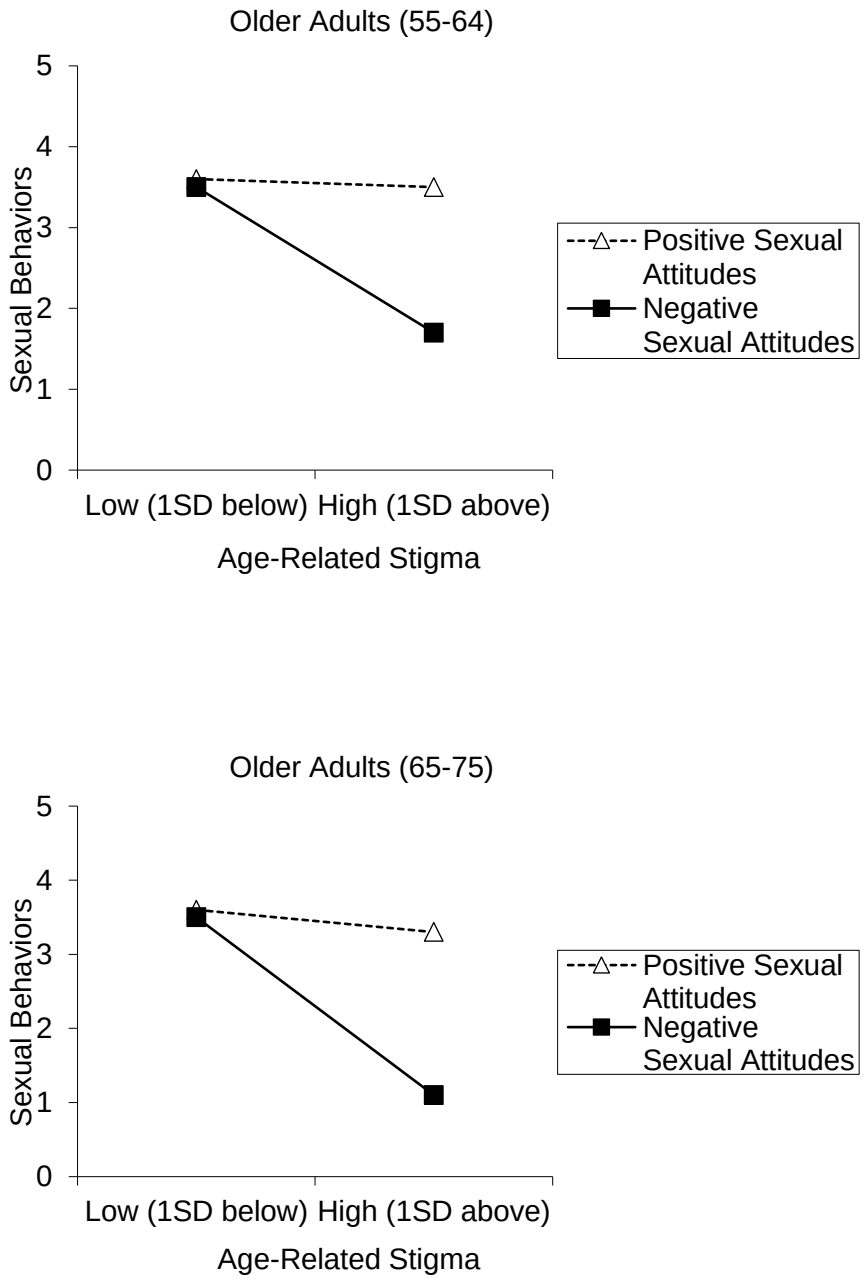
Moderated Moderation Model



Note. The conceptual model showing the moderated moderation hypothesis.

Figure 5

Moderated Moderation Hypothesis



Note. The predicted pattern of results model for the moderated moderation hypothesis: Age will moderate the ability of sexual attitudes to moderate the strength of the relationship between age-related stigma and sexual behaviors among older adults.

CHAPTER THREE

METHOD

This chapter will review the research methodology used to examine whether sexual attitudes moderate the relationship between age-related stigma and sexual behaviors in an older adult sample. First, information is provided regarding the recruitment of participants and the sample. Then, the measures and the procedures are reviewed. Finally, statistical analyses are discussed.

Participants

Inclusion and Exclusion Criteria

The current study uses a sub-sample of a larger sample of participants collected as part of a larger study on older adult sexuality (Syme & Cohn, 2021). The full sample included 1,018 participants and the sub-sample used in the current study was 485 participants. Participants were excluded from the sample if they did not complete all items on questionnaires, endorse living in the United States, or they failed to respond accurately to the validity items.

Characteristics

Data used for this study were collected as part of a larger study of beliefs about aging and sexual behaviors (Syme & Cohn, 2021). For the current study, the sample consisted of older adults aged 55-75. Of note, 429 participants were aged 55-64 and 56 were aged 65-75. The research indicates that older age groups can begin with 55-year-olds (Bytheway, 2005; Gendron et al., 2016; Hummert et al., 1995a; Hummert et al., 1995b; Hummert et al., 1997; Hummert et al., 1999; Kite et al., 2005; Kogan & Shelton, 1960; 1962; Mold et al., 2004; Schroyen et al., 2018; Tsuchiya et al., 2003). In fact, Overall (2006) found that adults at age 50 could be considered “older adults.” For this study, adults aged 55 and older were examined. Data on

sexual attitudes, age-related stigma, and sexual behaviors were available from 422 participants, respectively. Regarding gender of participants, 62.1% of participants were female, 37.9% were male. Most participants identified as White (83.4%), 11.8% identified as Black or African American, 1.4% identified as Asian, 0% identified as Native American or Pacific Islander, 0% identified as American Indian or Alaska Native, and 1.2% identified their race as "other." Additionally, 19.9% of the sample identified themselves as Spanish, Latino, or Hispanic origin, and 80.1% did not identify as Spanish, Hispanic, or Latino. The majority of participants identified as heterosexual (79.9%), whereas 17.8% identified as bisexual, 1.7% identified as gay, 0.2% identified as lesbian, 0% identified as queer, 0.2% identified as other sexual identity, and 0.2% did not choose to disclose.

Of the participants, 8.5% identified as single, 74.9% identified as married, 10.4% identified as divorced, 0.7% identified as separated, 1.9% identified as widowed, 3.1% identified as living with a significant other (not married), and 0.5% had a significant other (not living together). The participants' annual household income before taxes was between 0-1,500,000 (M = 79,194.67, median = 55,000.00, SD = 144,411.22).

When asked about education, 0.2% of participants reported having at least some high school education, 6.9% had a high school degree or equivalent, 7.6% had an associate degree (2-year), 2.1% had a vocational school degree (2-year), 9.7% had at least some college, 48.6% had a bachelor's degree, 22.3% had a master's degree, 2.1% had a doctoral degree, 0.2% had a Juris doctor, and 0.2% had a Doctor of Medicine degree. Regarding religion, 8.5% of participants identified as agnostic, 6.2% as atheist, 0.9% as Buddhist, 50.2% as Christian catholic, 18.7% as Christian protestant, 5.5% as Christian (other denomination), 0.5% as Hindu, 2.4% as Jewish, 1.4% as Muslim, and 5.7% endorsed the option of "I believe in a higher power, but I do not

identify with any religion." Lastly, 98.1% of participants identified English as their primary language, and 1.9% did not identify English as their primary language.

Sampling Procedures

Data were collected over 10 days in April 2020 via Amazon Mechanical Turk (MTurk). MTurk is a crowd-sourcing marketplace that makes it more efficient for individuals to conduct research (Amazon, 2018; Hanrahan et al., 2018; Kan & Drummey, 2018; Kees et al., 2017; Keith et al., 2017; Kim & Hodgins, 2020; Mellis & Bickel, 2020; Moss et al., 2020; Sodré & Brasileiro, 2017; Thomas & Clifford, 2017). The research suggests that using MTurk to gather participants allows for a limited for only a limited snapshot of the population based on education, computer access, and accessibility (Aruguete et al., 2019; Ford, 2017; Gleibs & Albayrak, 2021; Lovett et al., 2018). Data collected included variables related to age-related stigma, sexual attitudes, sexual behaviors, and demographics. Participation in the study was voluntary, and participants could decline participation even if the survey had been started. Participants received $3 for their participation in the study.

Human Participants. This study was determined to be exempt from IRB review by Radford University's IRB for Human Subjects Research.

Measures

Materials

The original study used additional measures, including subjective age questions (i.e., felt younger, felt older, felt actual age), Aging Perceptions Questionnaire (Barker et al., 2007); Awareness of Age-Related Change (Brothers, 2016; Kaspar et al., 2019); Attitudes to Ageing Questionnaire (Laidlaw et al., 2007); Age Cognitive Physical Losses, Age Cognitive Development Scale (Wurm et al., 2010; based on items developed by Dittmann-Kohli, 1995;

Dittmann-Kohli et al., 1995); Aging Experiences of Physical Decline, Aging Experiences of Continuous Growth, and Aging Experiences of Social Loss (Steverink et al., 2001); Health Attitudes and Behaviors: Physical, Sexual, and Psychological Health Survey (Syme & Cohn, 2021); Sexual Satisfaction Scale (Laumann et al., 2006); and the Knowledge and Age-Related Expectations Scale (Fallo-Mitchell & Ryff, 1982; Peterson, 1996).

The present study used scales assessing sexual attitudes, sexual behaviors, and age-related stigma.

Demographic Items. Participants were asked to complete items assessing the following: age, gender identity, sexual orientation, race and ethnicity, relationship status, education, religious affiliation, household income, and age. See Appendix A, Demographic Items.

Sexual Behaviors. The Sexual Behaviors Scale was adapted from a six-item measure used in the National Social Life, Health, and Aging Project (NSHAP), which assesses sexual behaviors among older adults (Waite et al., 2009). The NSHAP contains information on sexual activity, sexual attitudes, sexual relationships, and sexual behavior in single and partnered adults (Iveniuk & Waite, 2018). The measure includes six items measuring sexual behaviors in the last six months on a 6-point item response scale (1 = *None* to 6 = *Once a day or more*). Sample items include “Vaginal intercourse with a partner,” “Foreplay behaviors (examples: hugging, kissing, fondling),” and “Sexual talk with a partner (examples: sexting, sexual flirting).” Scores can range from 6 to 36, with high scores reflecting increased sexual behaviors and low scores indicating decreased sexual behaviors. The six items were added together to create an index score.

Reliability and Validity of a Modified Measure. The Sexual Behaviors Scale (SBS) has internal consistency, convergent validity, discriminatory validity, sensitivity, and specificity on

the SBS are not well documented in the research, and our study offered information on reliability (Waite et al., 2009).

Rationale and Utility. This measure of sexual behavior has been previously used in several studies using NSHAP (Galinsky et al., 2014; Karraker et al., 2011). The NSHAP is a longitudinal population-based study of health and social factors assessing older adults sexual, physical, and social health and wellness (The Nonpartisan and Objective Research Organization at the University of Chicago [NORC], 2022).

Sexual Attitudes. The Sexual Attitudes Scale (SAS) used in this study was developed by Graf and Johnson (2019), who expressed concern with the prevailing measure of sexual attitudes developed by White in 1982. The SAS is a 51-question instrument developed to measure sexual attitudes and beliefs (Graf & Johnson, 2019). Some items were drafted from the White (1982) scale on sexual attitudes. The scale includes 51 items measuring sexual attitudes on a 6-point Likert scale (1 = *absolutely inappropriate* to 6 = *absolutely appropriate*). Sample items include "Feel unashamed by their sexual thoughts, desires, or behaviors?" and "Seek sexual advice from the internet?" Scores can range from 51 to 306, with high scores reflecting increased positive sexual attitudes and low scores indicating negative sexual attitudes. The 51 items were added together to create an index score. See Appendix A, for Sexual Attitudes Scale items.

Reliability and Validity of a Modified Measure. The SAS has high internal consistency (α = .80) (Graf & Johnson, 2019). The convergent validity, discriminatory validity, sensitivity, and specificity of the SAS are not well documented in the research, and our study offered information on reliability. The SAS is unique from other measures in that it examines complex sexual attitudes for a sexually diverse aging population.

Rationale and Utility. The SAS was developed from the Aging Sexuality Knowledge and Attitudes Scale (ASKAS; White, 1982), a 26-item measure assessing age-related sexual attitudes. The reliability for the ASKAS was α = .91 (White, 1982). The ASKAS was utilized in several other studies (Ewen & Brown, 2012; Glass et al., 1986; Goldstein-Lohman & Aitken, 1995; Hillman & Stricker, 1996; Wang et al., 2008). The ASKAS has been used in previous studies but is criticized for its lack of multidimensionality and ambiguity (Syme & Cohn, 2021; White, 1982). Therefore, some items were used from the ASKAS and other items were created to assess multidimensional levels of sexual attitudes.

Age-Related Stigma. Items from the German Ageing Survey (DEAS) are helpful to conceptualize the influence of age-related stigma on sexual attitudes and sexual behaviors. The DEAS is an ongoing survey of community-dwelling people living in Germany (Weiss, 2018). The survey began in 1996 and continues to date. The survey uses sequential cohort data, cross-sectional surveys, and panel data for people aged 40 to 85 years of age. Over 14,700 participants have been interviewed for the DEAS (Wurm et at., 2013). Items from the DEAS were selected to measure age-related stigma. The German Ageing Survey is an 11-item instrument developed to measure age-related stigma on a 4-point Likert-type scale (1 = *strongly agree* to 4 = *strongly disagree*). Sample items consist of "Ageing means to me that I can still put my ideas into practice" and "As you get older, you are less useful." Scores can range from 11 to 44, with higher scores reflecting increased age-related stigma and lower scores indicating less age-related stigma. The items from the DEAS have been used by other researchers as a means of assessing age-related stigma (Baumbach et al., 2021; Buczak et al., 2019; Siedlecki et al., 2020). Item responses were summed to create an overall index score of age-related stigma, where higher scores indicated more age-related stigma. This measure of age-related stigma has been

previously used in several studies examining older adults and subjective well-being (Baumbach et al., 2021; Buczak et al., 2019; Siedlecki et al., 2020).

Reliability and Validity. The DEAS's internal consistency and convergent validity is not well documented in the research, and our study provided information on reliability.

Utility. The German Ageing Survey has examined family, social relationships, income, health, support, work, well-being, and volunteering (Klaus et al., 2017). Hajek and König (2020) used it to examine subjective age, life satisfaction, and affect. This measure of age-related stigma has been previously used in several studies examining older adults and subjective well-being (Buczak et al., 2019; Baumbach et al., 2021; Siedlecki et al., 2020).

Procedure

The present study is a secondary analysis of data collected from a study examining stereotypes about aging, sexual attitudes, and sexual behaviors (Syme & Cohn, 2021). The original study received IRB approval. Participants were recruited through the MTurk crowd-sourcing platform. Participants were able to sign up for the survey if they fit the age range. The participants were divided into three age groups: 18 to 35 years of age, 36 to 54 years, and 55 years and older. Participants were then able to review the informed consent document containing information about the risks and benefits of participating through Qualtrics. The survey was administered using the online software platform Qualtrics (www.qualtrics.com). The survey was estimated to take 15-20 minutes. MTurk requires researchers to recruit participants based on age, requiring a separate survey for older adults (55+). To avoid bias in item administration, the participants were randomized to one of two sections and asked items regarding age-related stigma before or after completing items on the perception of aging. For Group 1, the order of questionnaires was as follows: Demographics, Beliefs about Personal Expression Part I, Health

Attitudes and Behaviors, Beliefs about Personal Expression Part II, Beliefs about Age and Aging, and At What Age Questions. Group 2 completed the questionnaires in reverse order as Group 1. Validity checks were used in the form of two attention checks throughout the portion of questions. Invalid participant scores were not included in the data analysis.

Power Analysis

A power analysis is a crucial aspect of a quantitative study and effectively determines the necessary sample size, with most studies aiming for a small to medium effect size (Correll et al., 2020; Dong et al., 2021; Liu & Wang, 2019; Zhang et al., 2019). A power analysis was conducted to determine how many participants were needed to produce a small moderation effect. G*Power software was used with a priori power analysis with an alpha level of .05, effect size of $f^2 = .02$, and power of .80, indicating a total required sample size of 395 participants to detect a small effect. Furthermore, the detection of a medium effect size ($f^2 = .15$) would require 55 participants, and detection of a large effect size ($f^2 = .35$), would require 25 participants.

Preliminary Analysis

IBM's Statistical Package for Social Sciences (SPSS) (version 28) was used to clean the data and conduct the analyses. Participants with missing data were excluded from further analyses. Descriptive statistics were collected on demographic information about the participants. Correlations among study variables were obtained and are presented in Table 2.

Statistical Analyses

Hypothesis 1 was tested by obtaining the correlation coefficient between age-related stigma and sexual behaviors.

Hypothesis 2 was examined through a moderation analysis using Hayes' PROCESS macro for SPSS. The analysis assessed the degree to which sexual attitudes moderated the

strength of the relationship between age-related stigma and sexual behaviors. Follow-up analyses obtained simple slopes with age-related stigma predicting sexual behavior scores at the 16th, 50th, and 84th percentiles of scores for sexual attitudes.

Hypothesis 3 was tested using the moderated moderation model in Hayes' PROCESS macro for SPSS. Age group was used as a second-level moderator variable to determine if the degree of moderation assigned to sexual attitudes in the test of Hypothesis 2 changed significantly as the age of participants increased.

CHAPTER FOUR

RESULTS

This chapter provides the results from statistical analyses used to examine the study's hypotheses and research questions. Hypothesis 1 predicted there would be a negative relationship between age-related stigma and sexual behaviors among older adults. Hypothesis 2 was that sexual attitudes would moderate the strength of the relationship between age-related stigma and sexual behaviors among older adults. Finally, Hypothesis 3 was that a moderated moderation effect would be observed, in which the degree to which sexual attitudes moderates the strength of the relationship between age-related stigma and sexual behavior is greater as the age of participants increase.

In this chapter, I first present descriptive statistics of the variables (e.g., sexual attitudes, age, sexual behaviors, and age-related stigma) and information regarding the psychometric properties of these variables using data from this study. Then, the chapter examines correlations among the study variables of age-related stigma, sexual behaviors, and sexual attitudes. Next, the results from the multiple regression analyses are provided, examining whether age-related stigma significantly predicted sexual behaviors among older adults. Lastly, results for the tests of moderation and moderated moderation are presented.

Preliminary Analyses

Secondary analyses were conducted on data collected from 422 participants aged 55-79 years old (M = 58.95, SD = 4.61; White 83.4%, Black 11.8%, Hispanic/Latino/Latina 19.9%, Asian 1.4%, Other 1.2%) (Syme & Cohn, 2021). Means, standard deviations, and the range for study variables are reported in Table 1. Independent samples t-tests were used to determine if there were statistically significant differences for the three study variables (sexual attitudes, age-

related stigma, and sexual behaviors) based on gender. There were differences between male and female participants for each measure (sexual attitudes, $t(418) = -2.25$, $p = .03$, Cohen's $d = -.226$; age-related stigma, $t(418) = -1.529$, $p = .13$, Cohen's $d = -.153$; sexual behaviors, $t(418) = 4.357$, $p < .001$, Cohen's $d = .437$; age, $t(418) = .123$, $p = .902$, Cohen's $d = .012$.

Table 1

Descriptive Statistics of Variables

Descriptive Statistics			
Variables	Mean	Standard Deviation	Range
Age	59.00	4.67	55-79
Sexual Attitudes	236.05	42.64	51-306
Age-Related Stigma	25.18	4.44	11-44
Sexual Behaviors	18.71	7.20	6-36

Note. This table displays descriptive statistics of the variables.

Measures

Sexual Attitudes

Sexual Attitudes Scale (SAS)

The Sexual Attitudes Scale (SAS) is a 51-question measure **(***M* **=** 242.64, *SD* = 214.325) developed to measure sexual attitudes and beliefs (Graf & Johnson, 2019). This study determined the SAS has high internal consistency (α = .80) and reliability.

Age-Related Stigma (ARS)

The German Ageing Survey (DEAS) is an 11-item instrument developed to measure age-related stigma (*M* = 44.30, *SD* = 126.73). The DEAS had good internal consistency (α =.97) and scale reliability. This measure of age-related stigma has been previously used in several studies

examining older adults and subjective well-being, which provided information on the validity of the measure (Baumbach et al., 2021; Buczak et al., 2019; Siedlecki et al., 2020).

Sexual Behaviors

The Sexual Behaviors Scale was adapted from a six-item measure used in the National Social Life, Health, and Aging Project (NSHAP), which assesses sexual behaviors among older adults (Waite et al., 2009). The Sexual Behaviors Scale is a six-item instrument (M = 30.27, SD = 71.36) used to measure sexual behaviors (NORC, 2022). The present study found that the Sexual Behaviors Scale had good internal consistency (α = .96) and scale reliability. This measure of sexual behaviors has been previously used in several studies using the NSHAP project (Galinsky et al., 2014; Karraker et al., 2011). The NSHAP is a longitudinal, population-based study of health and social factors assessing older adults' sexual, physical, and social health and wellness displaying good construct validity (NORC, 2022).

Correlations Among Primary Study Variables

Correlations among scores from the sexual behaviors (SBS), age-related stigma (ARS), sexual attitudes (SAS) scales, and age are presented in Table 2. The correlations among the studies variables were weak to moderate in size. Age-related stigma had a negative correlation [r (418) = -.266, p < .001] with sexual behaviors and a positive correlation with age [r (418) = .147, p = .002]. Sexual attitudes were negatively correlated [r (418) = -.099, p = .043] with age and age-related stigma [r (418) = -.196, p < .001]. Sexual behaviors scores were negatively correlated to age-related stigma [r (418) = -.266, p < .001] and age [r (418) = -.338, p < .001] but positively correlated to sexual attitudes [r (418) = .281, p < .001].

Table 2

Correlations

		SBS	ARS	SAS	Age
Pearson Correlation	SBS	1.000	-.266	.281	-.338
	ARS	-.266	1.000	-.196	.147
	SAS	.281	-.196	1.000	-.099
	Age	-.338	.147	-.099	1.000
Sig. (2-tailed)	SBS	.	<.001	<.001	<.001
	ARS	<.001	.	<.001	.002
	SAS	<.001	<.001	.	.043
	Age	<.001	.002	.043	.

Note. *Correlation significant at the 0.05 level (2-tailed) and **Correlation significant at the 0.01 level (2-tailed).

Regression Analyses

Test of Hypothesis 1: The Ability of Age-Related Stigma to Predict Sexual Behaviors

A regression analysis examined whether experiences of stigma significantly predicted sexual behaviors among older adults. Age-related stigma accounted for a significant amount of variability in scores for the frequency of sexual behavior, $F(1, 418) = 19.98$, $p < .001$, $\beta = -.266$, $r^2 = .071$, with lower levels of age-related stigma associated with greater frequency of sexual behaviors among older adults. Age-related stigma accounted for 7.1% of the variability in scores of frequencies of sexual behaviors.

Test of Hypothesis 2: The Moderating Effect of Sexual Attitudes on the Relationship Between Age-Related Stigma and Sexual Behaviors

The PROCESS macro for SPSS (Version 4.1, Hayes, 2018) was used to test the ability of sexual attitudes to moderate the strength of the relationship between age-related stigma and sexual behaviors. As reflected in Table 2, the results indicated that sexual attitudes moderated the relationship between age-related stigma and sexual behaviors among older adults, $F(1, 418) = 6.97$, $p = .015$, $\beta = -.120$, r^2 change = .040. The strength of the relationship between age-related stigma and sexual behaviors was significantly stronger in individuals with more positive sexual attitudes. Figure 6 displays the simple slopes of age-related stigma predicting scores for sexual behaviors at the 16^{th}, 50^{th}, and 84^{th} percentiles of scores for sexual attitudes.

The main effect of sexual attitudes was significant, $F(1, 418) = 27.35$, $p < .001$, $\beta = +.244$, r^2 change = .038, with more positive sexual attitudes associated with greater frequency of engaging in sexual behavior. The main effect of age-related stigma was significant, $F(1, 418) = 32.061$, $p < .001$, $\beta = -.171$, r^2 change = .029, with higher self-reported scores for age-related stigma associated with lower frequency of sexual behavior.

Table 3

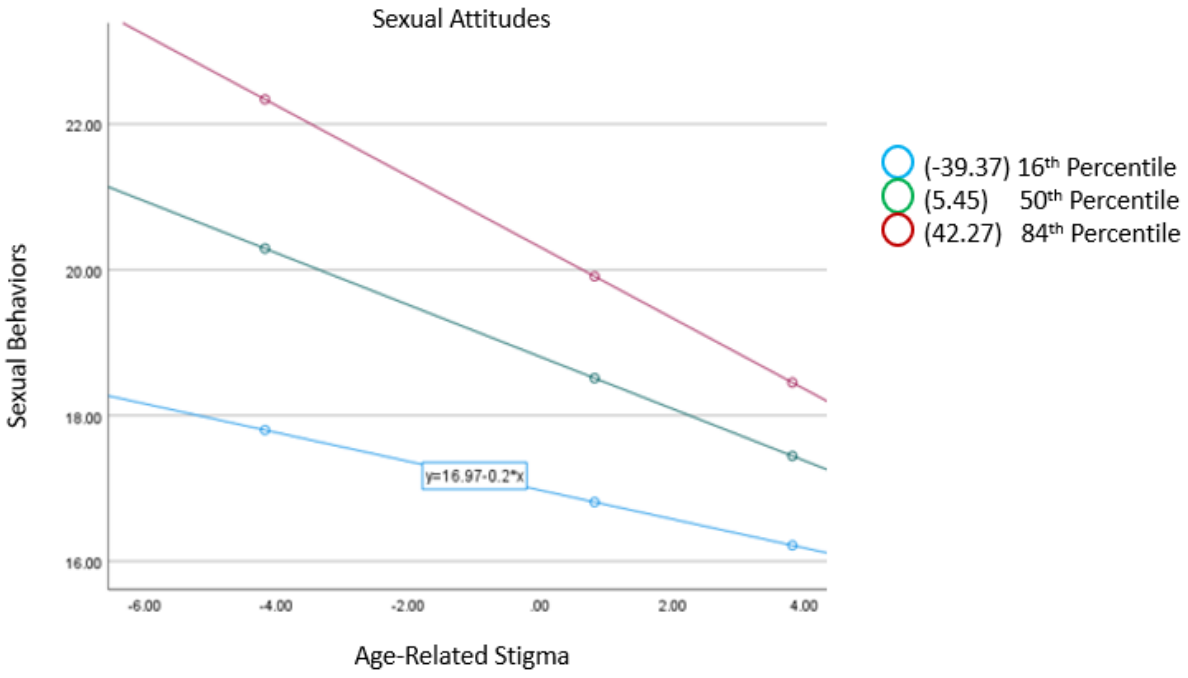
Test of Sexual Attitudes as a Moderator in the Relationship Between Age-Related Stigma and Sexual Behaviors

Variable	B	SE B	β	*p*
SEXUAL ATTITUDES (SAS)	.041	.008	.244	<.001**
AGE-RELATED STIGMA (ARS)	-.277	.076	-.171	<.001**
ARSXSAS	-.003	.001	-.114	.015*

Note. *Represents a $p < .05$ and **indicates a $p < .01$.

Figure 6

The Relationship Between Age-Related Stigma and Sexual Behaviors at the 16th, 50th, and 84th Percentiles of Sexual Attitudes



Note. Represents the moderating effect of sexual attitudes on the strength of the relationship between age-related stigma and sexual behaviors among older adults. Separate regression lines are plotted for age-related stigma predicting sexual behaviors when participants score at the 16th, 50th, and 84th percentiles for sexual attitudes.

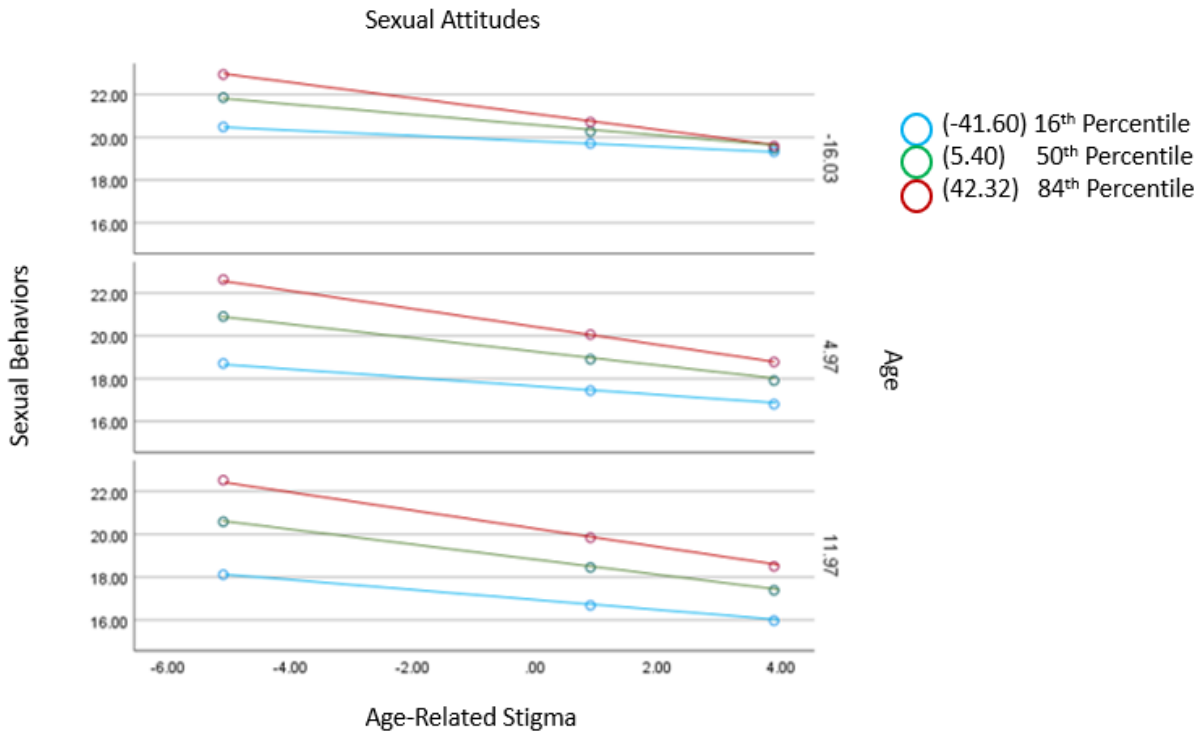
Test of Hypothesis 3: The Degree to Which the Moderating Effect of Sexual Attitudes on the Relationship Between Age-Related Stigma and Sexual Behaviors Varies as a Function of Age

The results revealed that the extent to which sexual attitudes moderates the relationship between age-related stigma and sexual behaviors does not vary as a function of age, $F(1, 414) = .974$, $p = .324$, $\beta = .053$, r^2 change = .002. See Table 3 and Figure 7. Figure 7 displays the

relationship between age-related stigma and sexual behaviors for the nine combinations of participants at the 16th, 50th, and 84th percentiles for age-related stigma and the 16th, 50th, and 84th percentiles for age. The interactive pattern between age-related stigma and sexual attitudes is described in the results for Hypothesis 2. The interaction between sexual attitudes and age was significant, $F(1, 414) = .324$, $p = .043$, $\beta = -.094$, r^2 change = .010, whereby the strength of the relationship between sexual attitudes and sexual behaviors was stronger among participants at the older end of the age range for this study. The interaction between age and age-related stigma was not significant, $F(1, 414) = .324$, $p = .427$, $\beta = -.041$, r^2 change = .022. The main effect of age was significant, $F(1, 414) = .324$, $p < .001$, $\beta = -.292$, r^2 change = .114, in which the older the participants, the less frequently they engaged in sexual behaviors. Within the context of this model, the main effect of sexual attitudes was significant, indicating that more positive sexual attitudes are associated with a greater frequency of sexual activity, $F(1, 414) = .324$, $p < .001$, $\beta = +.244$, r^2 change = .038. The main effect of age-related stigma was also significant, $F(1, 414) = .324$, $p < .001$, $\beta = -.171$, r^2 change = .029, indicating that lower levels of age-related stigma were associated with greater frequency of engaging in sexual behavior.

Figure 7

Test of Age and Sexual Attitudes as Moderators of the Relationship Between Age-Related Stigma and Sexual Behaviors



Note. This figure represents the moderating effects of age and sexual attitudes. The three graphs from top to bottom are for participants at the 16th, 50th, and 84th percentiles for ages 55-79. Within each graph, the blue (bottom), green (middle), and red (top) lines correspond to participants at the 16th, 50th, and 84th percentiles for sexual attitudes.

Exploratory Analysis

An exploratory analysis was conducted examining the degree to which sexual attitudes mediate the strength of the relationship between age-related stigma and sexual behaviors. The PROCESS macro for SPSS, version 4.2 (Hayes, 2022) was used for the analysis. Scores for the independent variable (age-related stigma) accounted for a significant amount of variability in

scores for the dependent variable (sexual behaviors), β = -.2663, $t(420) = -5.66$, $p < .001$. Scores for the age-related stigma accounted for a significant amount of variability in scores for the mediator variable (sexual attitudes), β = -.1957, $t(420) = -4.09$, $p < .001$. When entered in a multiple regression equation with age-related stigma as a second predictor variable, sexual attitudes accounted for a significant amount of variability in scores for sexual behaviors, β = .2376, $t(419) = 5.10$, $p < .001$. When the mediator variable (sexual attitudes) was entered as a predictor in the same multiple regression equation, the independent variable (age-related stigma) accounted for a significant amount of variability in the dependent variable (sexual behaviors), β = -.2198, $t(419) = -4.72$, $p < .001$. Because the direct effect of age-related stigma is significantly greater than zero, no evidence in support of a full mediation effect was observed. The indirect effect of age-related stigma on sexual behaviors, working through the mediator variable of sexual attitudes was significant, however (β = -.0465, LLCI = -.0793, ULCI = -.0155), indicating that sexual attitudes partially mediates the relationship between age-related stigma and sexual behaviors.

CHAPTER FIVE

DISCUSSION

This chapter provides a summary of findings and a discussion of the implications of the results for the study of sexual behavior in older adults. In addition, this chapter includes the limitations of the study and recommended future research directions. Lastly, clinical implications are discussed, and an overall conclusion is provided.

Summary of Findings

The Relationship Between Age-Related Stigma and Sexual Behaviors

As previously noted, this study tested three hypotheses. First, it was hypothesized that there would be a negative relationship between age-related stigma and sexual behaviors among older adults, and a significant negative relationship between age-related stigma and sexual behaviors was observed. This effect is consistent with previous research. Although a qualitative study, Ševčíková and Sedláková (2020) found common themes of ageist beliefs and perceptions of age influencing sexual behaviors among older adults. Prior studies have reported both positive and negative relationships between age-related stigma and sexual behaviors (Graf & Patrick, 2014). For instance, negative age stereotypes influenced older adults' willingness to engage in sexual behaviors (Graf & Patrick, 2014). Graf and Patrick (2014) also found that age-relative sexual attitudes contributed significantly to sexual well-being, and that women tended to hold more positive age-relative attitudes about sex. Similarly, Estill et al.'s (2018) results indicated that views of age and age stereotypes may influence the experience of sex in later life. Specifically, older adults that view themselves as older engaged in less sex and experienced lower quality of sexual experiences (Estill et al., 2018).

In addition, Widrick and Raskin (2010) found that age-related stigmatic beliefs held by older adults' influence views of self and subsequent behaviors of older adults. In their study, individuals consistently rated beliefs about age negatively (Widrick & Raskin, 2010). Further, Syme and Cohn (2021) indicated that understanding the relationship between sexual attitudes, age-related stigma, and sexual behaviors is essential in aiding older adults struggling with sexual issues medically and in their partnered relationship as an important aspect of overall well-being.

Sexual Attitudes as a Moderator of the Relationship Between Age-Related Stigma and Sexual Behaviors

The second hypothesis was that sexual attitudes would moderate the strength of the relationship between age-related stigma and sexual behaviors among older adults. The results indicated that negative sexual attitudes were accompanied by the presence of a stronger negative relationship between age-related stigma and sexual behaviors. Previous research has found similar results. Graf and Patrick (2014) found the strength of the relationship between age-related stigma and sexual behaviors to be greater when older adults endorsed negative sexual attitudes. In a similar vein, Fischer et al. (2018) found that sexual activity and positive sexual attitudes were highly predictive of partnered sexual activity. Explicitly, if older adults had a partner and held positive sexual attitudes, they tended to participate in more frequent sexual behaviors (Fischer et al., 2021). Lastly, Syme and Cohn (2021) found that internalized age-stereotypes can be personified and taken on by the individual (Levy, 2009), which results in decreased engagement in sexual behaviors. In agreement with Fischer et al.'s (2021) study, Syme and Cohn (2021) also found similarities among their results across genders. The findings add to the existing literature by confirming that sexual attitudes do influence the relationship between age-

related stigma and sexual behaviors and by clarifying the broad multi-dimensional ability of sexual attitudes to affect older adults.

Age as a Moderator of the Moderating Effect of Sexual Attitudes on the Relationship Between Age-Related Stigma and Sexual Behaviors

The third hypothesis was that the moderation effect of sexual attitudes on the relationship between age-related stigma and sexual behaviors would be stronger as the age of participants increased. The results did not support this hypothesized role for age in this moderated-moderation model. The degree to which the moderating effect of sexual attitudes on the strength of the relationship between age-related stigma and sexual behaviors changed as a function of age was not statistically significant. This suggests that being on the older end of the age range does not further amplify the negative effects of age-related stigma on the frequency of sexual behavior beyond the influence exerted by the presence of negative sexual attitudes.

Stereotype Embodiment Theory. The literature indicates several possible explanations for this set of findings. First, it is possible that stereotype embodiment theory (Levy, 2009) can explain the effects of sexual attitudes and age-related stigma on the frequency of sexual behaviors engaged in by older adults. Specifically, higher levels of perceived age-related stigma were associated with lower levels of engagement in both sexual and intimate behaviors among older adults. Stereotype embodiment theory is designed to explain how an individual's health and functioning become assimilated to the aging cultural stereotypes over time (Levy, 2009). Simply put, as an individual ages, if they maintain age stereotypes, they are more likely to develop or experience developmental declines that are consistent with these age stereotypes (Fawsitt & Setti, 2017; Levy, 2009; Seidler & Wolff, 2017). For example, if an individual believes that older adults have impaired cognitive ability or decreased sexual activity or

functioning, then those individuals are more likely to experience a decline in cognitive ability and sexual activity compared to individuals who do not maintain those beliefs (Fawsitt & Setti, 2017; Levy, 2009; Seidler & Wolff, 2017; Syme et al., 2019; Tully-Wilson et al., 2021). Syme and Cohn (2021) reported similar findings. Stereotype embodiment theory (Levy, 2009) can account for some of the effects across age groups in the study's results. However, future research should determine 1) if individual perspectives or group perspectives have a more profound influence on age-related stigma and 2) what stigmatic beliefs are the most salient for older adults (Levy, 2009).

***Covariates*.** Prior research suggested that individuals with higher educational attainment, higher socioeconomic status, and relationship status among older adults can impact the study's variables (Graf & Patrick, 2014; Syme & Cohn, 2021). However, the results were not significantly different when the covariates were controlled for. Therefore, these variables should be controlled on a case-by-case basis due to the variation in findings.

***Demographics*.** One interesting finding was the participants 50.2% identified as Catholic Christians should be considered when interpreting the results. Religious views have been shown to influence attitudes about sex (Le Gall et al., 2002). Moreover, it is important to note the disparity in religious/spiritual identities as a factor that limits the variation in the sample.

Exploratory Analysis

An exploratory analysis found that sexual attitudes partially mediates the relationship between age-related stigma and sexual behaviors. Because sexual attitudes are statistically significant in the roles of both moderator and mediator variable, further research is needed to best specify the role of sexual attitudes within causal models leading from age-related stigma as a root cause and sexual behaviors as the outcome variable.

Strengths of the Study

This study was a secondary analysis of preexisting data used in another study (Syme & Cohn, 2021). Bosma and Granger (2022) noted that research in general is subject to inaccurate interpretation and lack of reporting of study results due to bias, and decisions include a bias toward favorable results. Therefore, many psychologists do not fulfill their ethical responsibility of sharing their research data, which does not promote transparency (Bosma & Granger, 2022). The culture of transparency would also promote growth through secondary analyses that enhance existing data (Bosma & Granger, 2022). Bosnjak et al. (2022) also pointed out the need to report results even if they are not significant. Therefore, this study is publishing the results even if they are inconsistent with *a priori* hypotheses. Another notable strength of the study was the use of valid and reliable measures to prevent internal validity concerns. Further, participants were randomly assigned to two groups receiving questionnaire measures in different orders to control for practice effects of fatigue and boredom, another threat to the internal validity of the study.

Limitations

One limitation of this study involved the use of an online self-report questionnaire. Individuals tend to be biased when reporting their own experiences (Chan, 2010). For example, older adults could have underreported their sexual attitudes and behaviors (Tourangeau & Yan, 2007). This difference could have influenced the data obtained by not fully capturing the true directions and strengths of relationships among the explored variables. However, participants were notified that the study would be anonymous. Also, because the data in this study were collected through a survey method, and the data collected were correlational, cause and effect relationships between variables cannot be determined. The data in this study can only describe associations between variables and explore which variables may significantly predict others.

However, more research is needed in this area. This study aimed to examine older adults, in particular, to provide insight into ways to prevent or intervene with the relationship between age-related stigma and sexual behaviors among older adults.

A significant limitation of the study is the use of a cross-sectional design. Whereas cross-sectional designs are cost-effective, they lack generalizability compared to longitudinal studies (Sedgwick, 2014). Cross-sectional studies are susceptible to sampling bias, a potential weakness of the study (Sedgwick, 2014). Furthermore, because the data were collected via MTurk, the results cannot be generalized because of the lack of a representative sample. The research suggests that using MTurk to enroll participants allows for a limited snapshot of the population based on education, computer access, and accessibility (Aruguete et al., 2019; Ford, 2017; Gleibs & Albayrak, 2021; Lovett et al., 2018). In particular, MTurk participants tend to have more education, more accessibility to technology, and more comfort with technology (Aruguete et al., 2019; Ford, 2017). Another limitation is that the data collection period overlapped with an unprecedented worldwide pandemic, which significantly changed many lives and negatively affected individuals' mental health.

Future Directions

Future research should explore various methods for collecting information regarding sexual attitudes and sexual behaviors among older adults. Future studies should extend the correlational findings using experimental designs manipulating the amount and type of information older adults receive regarding sexuality in later life and assessing group differences in future sexual activity. As mentioned previously, a forced-choice measure may provide more specific results among the participants. However, currently, there is a lack of forced-choice measures that assess multiple domains of sexual behavior in an older adult population. Part of

this future research will likely include creating such measures. Research should also continue to explore the relationship between age-related stigma and sexual behaviors during older age. Qualitative research could be beneficial in determining extraneous or other confounding variables influencing this population and the relationships among sexual attitudes, age-related stigma, and sexual behaviors. Ševčíková and Sedláková (2020) completed a qualitative study examining these factors and suggested further research to defuse the ambiguity of the complex relationships among ageist beliefs, sexual attitudes, and sexual behaviors. For instance, the layers existing amongst ageist beliefs, sexual attitudes, and sexual behaviors are plagued with nuances of culture, positive and negative attitudes, differences in demographics, physical abilities, and partner status (Ševčíková & Sedláková, 2020). In particular, one variable to consider is the health status of participants. For example, if a participant is struggling with a health condition, it can influence their sexual behaviors, and age-related stigma has been shown to influence a variety of health outcomes in addition to just sexual behaviors (Levy, 2009). DeLamater and Karraker's (2009) research on sexual behaviors found that if an older adult's partner has a medical condition, it can influence sexual activity. Further, DeLamater and Karraker's (2009) suggested that partner status can also be beneficial to conceptualize the interaction between age-related stigma, sexual attitudes, and sexual behaviors. The potential of health outcomes and status to interact with age-related stigma and sexual attitudes is important to explore. Future research should also explore how age and sexual attitudes may moderate the relationship between age-related stigma and sexual behaviors. The interplay among sexual attitudes, age, and sexual behaviors should be deconstructed and explored further in future studies. Specifically, the relationships between holding conversative and liberal sexual attitudes and variables assessing sexual behaviors, intimate behaviors, and frequency across the lifespan can be identified. Along

with this research, future studies should examine specific interventions that may be implemented to help prevent age-related stigma and negative sexual attitudes in older adults. Finally, more research on sexual attitudes among older adults is necessary; specifically, exploring the differences between sexual mores, religious beliefs, sexual attitudes, and/or preferences could be valuable in determining the overall effects of sexual attitudes on older adults, sexual behaviors, and the relationship between age-related stigma and sexual behaviors.

Clinical Implications

These findings can aid mental health professionals to better understand the unique experiences of older adults with regard to sexual behavior. In clinical settings, they could also be beneficial for exploring the connections between sexual attitudes and sexual behaviors with clients dealing with sexual concerns. In addition, clinicians may need to assess specific mental health concerns associated with age-related stigmas, such as symptoms of depression and anxiety. Age-related stigma has been shown to influence health outcomes (Levy, 2009) and is an important variable to consider when working with older adults, and clinicians can benefit from working within an integrated health care team. The clinical implications include the need for educational programs that promote more positive attitudes regarding sexuality and greater levels of sexual behavior in older adults. For prevention efforts, knowing and understanding the connections among age-related stigma, sexual attitudes, and sexual behaviors provides information that should be included in everyday discussions aimed at the prevention of age-related sexual stigma. In particular, counseling psychologists, as part of their social justice advocacy, can provide education, present research, and lead discussion on the importance of positivity surrounding older adult sexuality and the necessity to decrease age-related stigma. Further, it may be helpful to include outreach in a community living environment that explains

how experiences of age-related stigma may be associated with an increased risk of decreased sexual behaviors. Outreach may also address positive coping skills and other behaviors of individuals who have experienced age-related stigma. In addition, as a prevention effort, counseling psychologists can also educate young and middle-aged adults on how harmful age-related stigma can be to help them find ways to promote positive sexual attitudes and sex positivity among older adults.

Conclusion

Findings from the current study indicate that there does appear to be a complex set of relationships among sexual attitudes, age-related stigma, and sexual behaviors. This is important to consider when working with older adults who report that they have experienced age-related stigma. Future research should focus on 1) deconstructing and explaining the relationship between experiences of age-related stigma, mental health concerns, and sexual behaviors and 2) exploring possible prevention strategies to reduce the consequences of age-related stigma.

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Appendix A: Measures

Demographic Items

1. What is your gender identity?
o Man (1)
o Woman (2)
o Transgender (3)
o Additional gender identity, please specify: (4)
_____
o Prefer not to disclose (5)

2. Do you consider yourself Spanish/Hispanic/Latino?
o Yes (1)
o No (2)

3. How would you describe your race? Mark all that apply.
o American Indian or Alaska Native (1)
o Asian (2)
o Black or African American (3)
o Native American or Pacific Islander (4)
o White (5)
o Other (6) _____

4. Sexual identity?
o Bisexual (1)
o Gay (2)
o Straight (Heterosexual) (3)
o Lesbian (4)
o Queer (5)
o Additional sexual identity, please specify (6)
_____
o Prefer not to disclose (7)

5. Current marital/relationship status?
o Single (1)
o Married (2)
o Divorced (3)
o Separated (4)
o Widowed (5)
o Living with a significant other (not married) (6)
o Significant other (not living together) (7)

6. Highest level of education?
o Some high school (1)
o High school degree or equivalent (2)
o Associate degree (2-year degree) (3)

o Vocational school degree (2-year) (4)
o Some college (5)
o Bachelor's degree (6)
o Master's degree (MA, MSN) (7)
o Doctoral degree (PhD, EdD, DNP) (8)
o Juris Doctor (JD) (9)
o Doctor of Medicine (MD) (10)

7. What is your annual household income before taxes (approximately)?

_____

8. Religious affiliation?
o Agnostic (1)
o Atheist (2)
o Buddhist (3)
o Christian Catholic (4)
o Christian Protestant (5)
o Christian (other denomination) (6)
o Hindu (7)
o Jewish (8)
o Muslim (9)
o I believe in a higher power but do not identify with any religion. (10)

9. What is your birthdate?

_____

Sexual Attitudes Scale Items

Sexual Attitude Scale (SAS) Items[3]

Please indicate how appropriate or inappropriate it is for SOMEONE YOUR OWN AGE to engage in the following. Because people may have different definitions of what it means to be sexually intimate, please use this definition for the following questions: any form of sexual expression with a mutually involved partner. This can include many different activities and may change with age, relationships, or time. Absolutely Inappropriate (1) Inappropriate (2) Slightly Inappropriate (3) Slightly Appropriate (4) Appropriate (5) Absolutely Appropriate (6)

1. Feel confused about their sexuality?
2. Feel unashamed by their sexual thoughts, desires, or behaviors?
3. Seek sexual advice if experiencing physical symptoms of sexual dysfunction?
4. Feel confident about their sexuality?
5. Seek sexual advice if experiencing mental symptoms of sexual dysfunction?
6. Seek sexual advice from medical professionals, such as their primary care physician?
7. Feel ashamed by their sexual thoughts, desires or behaviors?
8. Seek sexual advice generally?
9. Seek sexual advice from media sources (e.g., reading books, watching informative shows)?
10. Seek sexual advice from family members?
11. Seek sexual advice from the internet?
12. Seek sexual advice from friends?
13. Need sexual satisfaction in a sexually intimate relationship?
14. Communicate about safe sex practices with sexual partners?
15. Pursue a sexually intimate relationship through online venues, such as dating websites?
16. Be sexually satisfied without being sexually active?
17. Engage in public displays of intimacy (such as sexual touching or fondling, deep kisses, etc.)?
18. Communicate sexual needs and desires to sexual partners?
19. Be sexually intimate with a partner who does not have the same level of sexual desire?
20. Engage in public displays of affection (such as hugging, cuddling, pecks on the cheek or lips)?
21. Ask a partner to be tested for sexually transmitted infections prior to engaging in sexual activity?
22. Engage in a one -night stand, a single sexual encounter without an expectation of further relations?
23. Be sexually intimate with a partner of the other sex?
24. Have a sexually intimate relationship with someone other than their spouse?
25. Be sexually intimate with a partner of the same sex?
26. Have more than one sexually intimate partner at any given time?
27. Have a sexually intimate relationship with someone other than their spouse if their spouse can no longer physically have sexual relations?
28. Be sexually intimate with a partner of either sex without being married?

[3] Permission to include the items was obtained from the copyright holder.

29. Have a sexually intimate relationship with someone other than their spouse if their spouse can no longer mentally consent to sexual relations?
30. Have sexual thoughts and fantasies that are inconsistent with their religious beliefs?
31. Perform sexual acts and behaviors that are inconsistent with their upbringing?
32. Obtain sexual consent before engaging in sexual contact when in an ongoing sexually intimate relationship?
33. Perform sexual acts and behaviors that are inconsistent with their religious beliefs?
34. Give sexual consent before engaging in sexual contact with a spouse?
35. Have sexual thoughts and fantasies that are inconsistent with their moral beliefs?
36. Give sexual consent before engaging in sexual contact when in an ongoing sexually intimate relationship?
37. Perform sexual acts and behaviors that are inconsistent with their moral beliefs?
38. Obtain sexual consent before engaging in sexual contact when initiating a sexually intimate relationship with a new partner?
39. Have sexual thoughts and fantasies that are inconsistent with their upbringing?
40. Obtain sexual consent before engaging in sexual contact with a spouse?
41. Give sexual consent before engaging in sexual contact when initiating a sexually intimate relationship with a new partner?
42. Joke about one’s own sexuality?
43. Read erotic literature?
44. Engage in masturbation?
45. Have sexual fantasies?
46. Joke about others’ sexualities?
47. View pornographic material?
48. Use sexual toys (e.g., vibrators, dildos, etc.) to enhance sexual pleasure?
49. Have sexual thoughts?
50. Use sexual aids (e.g., lubrication) to enhance sexual pleasure?
51. Act out sexual fantasies with a partner?

Appendix B: Informed Consent

Radford University Cover Letter for Internet Research

You are invited to participate in a research survey, entitled "Health and Wellness Across the Life Course: A Cross-Sectional Study." The study is being conducted by Tracy J. Cohn, PhD, LCP, Department of Psychology of Radford University, P.O. Box 6946 Radford, VA 24142, tcohn@radford.edu. The purpose of this study is to examine how people think, behave, and feel about health and wellness across their lives, including how people think about sexual behavior and sexual orientation. Your participation in the survey will contribute to a better understanding of how individuals think about aging and beliefs and behaviors toward older adults, including sexuality and sexual behaviors. We estimate that it will take about 30 minutes of your time to complete the questionnaire. You are free to contact the investigator at the above email to discuss the survey. This study has no more risk than you may find in daily life. Some of the questions we will ask you as part of this study may make you feel uncomfortable. You may refuse to answer any of the questions, take a break, or stop your participation in this study at any time. The research team will work to protect your data to the extent permitted by technology. It is possible, although unlikely, that an unauthorized individual could gain access to your responses because you are responding online. This risk is similar to your everyday use of the internet. Identification numbers associated with email addresses will be kept during the data collection phase for tracking purposes only. IP addresses will be recorded but deleted once data collection is complete. A limited number of research team members will have access to the data during data collection. Identifying information will be stripped from the final dataset. Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time without penalty. If you wish to withdraw from the study

or have any questions, contact the investigator listed above. You will be compensated for your time ($3). In order to receive compensation, you must generate a 4-digit code and enter that code at the beginning of the survey and then at the end of the survey. You must enter this 4-digit code, even if you choose not to participate or decide to withdraw. If you choose not to participate or decide to withdraw, there will be no impact on your compensation. If you have any questions please call Tracy J. Cohn, PhD, 540-230- 5958. You may also request a hard copy of the survey from the contact information above. This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dean Ben Caldwell, Institutional Official and Dean of the College of Graduate Studies and Research, 540-831-5724. If you agree to participate, please press the button that reads “Agree” at the bottom right of the screen. Otherwise use the X at the upper right corner to close this window and disconnect. Thank you.