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# Predictors of Sexual Satisfaction and Self-Esteem among Active Older Adults

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**Objectives:** The purpose of the study was to identify the biological, sociocultural, and psychological factors that are predictors of sexual satisfaction and self-esteem among a population of retired adults. **Methods:** Participants were retired adults over 55 (N=237), randomly selected from a listing of residents of the largest active retirement community in the United States. Participants completed and returned a self-report questionnaire sent to them via U.S. mail. Data were analyzed using a number of statistical tests including Person correlations, confirmatory factor analysis, and multiple regression. **Results:** Results from the multiple regression analysis, using the entire sample, indicated a set of predictor variable explained 56% of the variation in sexual satisfaction ($p<.001$). Individual predictor variables that were statistically significant were: number of health issues ($p=.04$) and sexual behavior ($p<.001$). When self-esteem was used as the dependent variable predictor variables explained 7.5% of the variance in self-esteem ($p=.001$); sexual satisfaction was the only statistically significant predictor ($p<.001$). **Discussion:** Our findings add to the existing body of literature on sexual satisfaction and self-esteem. Health professionals should work to develop interventions which provide education and programs to enhance sexual satisfaction and self-esteem among older adults.

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**Keywords:** aging, sexualsatisfaction, self-esteem, older adults

**Conflict of Interests**

The authors declare that there is no conflict of interest. This manuscript has not been previously published, nor is it before another journal for consideration.

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## 1. Introduction

Empirical research on sexual satisfaction and self-esteem among older adults has been limited in the literature. This may be due to cultural norms which focuson sexuality among youth (Broadway & Beard, 2015; Delamater, Hyde, & Fong, 2008; Santos-Iglesias, Byers, & Moglia, 2016) as well as the perceived association between aging and asexuality (Dixon, 2012; Fileborn, Thorpe, Hawkes, Minichiello, Pitts, & Dune, 2015).Much literature has discredited this popular assumption and has established that many older people desire sexual intimacy and other various forms of sexual expression throughout their lifespan

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[2] Assistant Professor,Department of Exercise Science and Health Promotion,Florida Atlantic University, 777 Glades Road, FH-11, RM 25B,Boca Raton, FL 33431, USA, Email: mhall61@fau.edu
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(Deacon, Minichiello, & Plummer, 2006; Gray & Garcia, 2012; Hurd & Korotchenko, 2011; Kleinplatz, Menard, Paradis, Campbell, & Dalgleish, 2013; McCarthy, Farr, & McDonald, 2013; Rheaume & Mitty, 2008). Attitudes toward sex and their influence on sexual behaviors can be related to an individual's generational cohort (Lodge & Umberson, 2012). Evidence exists supporting a positive cultural shift relative to aging and sexuality, particularly among the "Baby Boomer" generation (Delamater, 2012; Delamater& Koepsel, 2015). This study is an extension of the sexual satisfaction and quality of life research previously conducted by Penhollow, Young, and Denny (2009). The authors wanted to further explore political and religious demographics along with sexual behavior and self-esteem among a similar sample population. Thus, the purpose of the study was three-fold: (1) to report the impact of biological, psychological, and sociocultural factors on sexual satisfaction and self-esteem among a sample of older adults, (2) to identify the impact of biological, psychological, and sociocultural factors on sexual satisfaction and self-esteem by sex, and (3) to compare and contrast our current research findings to a study conducted 10 years prior employing similar methods of data collection with a similarsample population.

### 1.1 - Sexual Satisfaction in Older Adults

For the purpose of this study, sexual satisfaction was defined as a multidimensional experience involving individual thoughts, feelings, personal and socio-cultural attitudes and beliefs, combined with biological factors (Penhollow & Young, 2008; Young, Denny, Luquis, & Young, 1998; Young, Denny, Young, & Luquis, 2000). The sense of enjoyment with one's *sexual* life varies given that sexual satisfaction may be related to prior sexual experiences, current expectations, and future intentions. The literature reveals the strongest predictors of sexual satisfaction include overall relationship satisfaction (Beutel, Schumacher, Weidner, & Brahler, 2002; Lawrance, 1998; Penhollow et al., 2009; Sprecher, 2002), commitment, stability (Perrone & Worthington, 2001), marital quality (Young et al., 1998; Young et al., 2000), perceived levels of attractiveness (Koch, Mansfield, Thurau, & Carey, 2005), partner initiation,communication, knowledge/skill (Penhollow et al., 2010), sexual self-confidence and frequency of orgasm (Penhollow et al., 2009). A recent study found that among women who were sexually active, higher relationship satisfaction, better communication, and higher importance of sex were related to higher sexual satisfaction (Thomas, Hess,& Thurston, 2015). This study also revealed that age did not predict sexual satisfaction among their sample of 1,345 midlife and older women.

### 1.2 - Self-Esteem in Older Adults

Self-esteem has been defined as the difference between the actual and ideal self and dependent upon the ability of an individual to achieve important life goals (Chua & Guzman, 2014). Some research suggests older adults maintain their self-esteem throughout their lifespan (Pullman, Allik, & Realo, 2009); while other research on aging reveals a decline in self-esteem with increasing age(McMillin & Cairney, 2004).Lower levels of self-esteem can result in multiple problems including depression, anxiety, feelings of loneliness, withdrawal from social interactions, and an overall decrease in self-worth (Loredana& Corina, 2016; Shahbazzadeghan, Farmanbar, Ghanbari, & Roshan, 2010). Decreases in self-esteem with age may be due to physical and mental deterioration, changes in lifestyle and living arrangements, medication use, and/orlack of support from family and friends.

A recent study of community dwelling older adults employed a four-month treatment program consisting of wellness education, physical fitness, and livelihood training. Compared to the control group who received no treatment program, the experimental group revealed higher levels of life satisfaction, self-esteem, and lower depression levels (Chua & Guzman, 2014). Additionally, a study conducted by Leung and colleagues (2006) revealed later life learning programs served as a venue to achieve personal satisfaction and network building. Other studies have highlighted the health benefits of older adult development programs, including increased life satisfaction and self-esteem (Russell, 2008; Seals & Clanton, 2008). Self-esteem has been found to play an important role in the initiation of and participation in sexual activity (Burgoyne, 1982; Johnson, 1998; Weeks, 2010). Higher sexual satisfaction has been associated with better mental and physical health, relationship quality, and greater psychological well-being (Davidson, Bell, & LaChina, 2009; Thompson, Charo, Vahia, Depp, Allison, & Jeste, 2011). Sexual dysfunction is less likely to occur in women who are in good physical and emotional health (Addis et al., 2006). It is reported that positive sexual self-esteem, good sexual functioning, and a sexually skillful partner are the significant predictors of maintaining sexual desire with age (Kontula & Haavio-Mannila, 2009).

It is important to investigate both sexual satisfaction and self-esteem, as both are influenced by biopsychosocial factors. These factors can change with age and may play an important role in successful aging and overall quality of life.

## 2. Methods

### 2.1 – Participants

The population age 65 and older varies by state in the United States. California and Florida are currently the top two states in overall percentage of older adults. The size and growth rate of the older population places demands on the resources available by state and county. Thus, aging issues and policies that affect the well-being of this population is vital to investigate as the nation faces challenges to meet the demands of this cohort. The oldest county in the nation is Sumter County, Florida, where over 43% of the residents are age 65 and older. Lake, Marion, and Sumter County Florida encompassesThe Villages, the largest active 55 and older retirement community in the United States (Reynolds, Gunderson, & Bamford, 2015). The Villages is located 45 minutes north of Orlando and 30 minutes south of Ocala. It is one of the most renownedretirement communities in the Southeast with the current population exceeding 80,000. The Villages retirement community was selected as the sample for this study.

### 2.2 – Instrumentation

A questionnaire was developed to explore the values, attitudes, beliefs, and behaviors of a sample of older adults relative to religiosity, physical activity, sexual behavior, and self-esteem. The testing instrument used in this study was a self-report questionnaire. The questionnaire was similar in nature and containing most of the same constructs as the instrument utilized in our previous study. Following are selective measures included in the questionnaire.

**2.2.1 *-Demographics.*** A number of demographic variables were assessed including age, gender, sexual orientation, relationship status, living arrangements, education, ethnicity, annual household income, and political affiliation.

**2.2.2 *-Religiosity.***Religious views were measured using 6 items. Questions evaluating religiosity included importance of religion and importance of spirituality, as well as frequency of religious attendance.

**2.2.3 *-Sexuality.*** Sexual health was evaluated using three separate subscales -sexual desirability, sexual behavior, and sexual satisfaction.Sexual desirability comprised 6 items including frequency of sexual thoughts or fantasies and frequency of sexual desire. Ratings of oneself and perception of ratings from a partner relative to sexual performance and sexual desire also comprised the sexual desirability construct (Penhollow& Young, 2004). Sexual behavior was measured using 6 items, including mutual caressing, giving and receiving oral sex, and frequency of orgasm. An 11-item scale was included to measure sexual satisfaction. Questions measuring sexual satisfaction included"I am satisfied with my sexual partners," "I have good communication with my partner about sex," "I am pleased with my frequency of sexual activity," "I am pleased with my intensity of sexual activity," and "My partner makes it clear I provide him/her with sexual pleasure" (Penhollow, Marx, & Young, 2010; Young, Denny, & Luquis, 1998). Potential responses for each item ranged from strongly disagree (1) to strongly agree (4).

**2.2.4 *-Physical Activity.*** Physical activity was examined with 4 items. Questions measuring physical activity included exercise patterns as well as weekly duration of cardiovascular activities and strength training.

**2.2.5 *-Self-Esteem.***One of the most widely used self-esteem scales, the Rosenberg Self-Esteem Scale (RSES) was used toinvestigate levels of perceived self-esteem. The RSES is a 10-item Likert Scalewith potential responses ranging from strongly disagree (1) to strongly agree (4). This scale is a valid and reliable quantitative instrument to assess self-esteem by asking respondents to reflect on their individual self-worth and beliefs (Chua & Guzman, 2014).

### 2.3 – Procedures

A random sample of the largest active 55+ retirement community located in Central Florida was obtained through a mail-out data collection strategy. Resident names and addresses were randomly selected by the first letter of their last name (e.g.76-As, 76-Bs, 76-Cs, etc.) and acquired from anonline phonebook (Data Publishing, 2017).A cross-sectional research design was employed for the investigation. Based on the purpose of the study, only respondents who indicated current residential status at an active retirement community were included in the investigation.

All retirement community residents were eligible to participate. Return of the completed questionnaire was taken as consent to participate in the investigation. Institutional Review Board (IRB) approval was obtained prior to the collection of data.

Research packages for the mail-out included a cover letter that explained the purpose and importance of the study and requested the potential respondent's participation. To ensure random selection, the cover letter provided a request for the person in the household with the next upcoming birthday to complete and return the questionnaire. Participants who voluntarily completed the questionnaire returned it via a postage-paid, pre-addressed envelope. As a way to thank respondents and potentially increase participation, a free summary report of the research findings was offered upon request to all those who participated in the study. To enhance response rates, researchers placed an advertisement in the local community newspaper for four days upon the mail-out of the questionnaire in order to increase awareness of the study and encourage participation.

### 2.4 - Data Analysis

Data were analyzed using Statistical Package for Social Sciences (SPSS). Principal components factor analysis confirmed the construct validity of all subscales. Cronbach's alpha calculations determined the reliability coefficients for the internal consistency of all subscales. Data were analyzed using descriptive analyses, which produced frequency distributions of responses on every item. Pearson product-moment correlation coefficients were calculated to identify the existence of relationships between variables.Multiple regression analyses determined the extent to which sexual satisfaction and self-esteem are associated with selected biopsychosocial factors. All analyses were conducted first with data from all participants. Then data from male participants and data from female participants were analyzed separately. A level of significance was set at $p<.05$.

## 3. Results

### 3.1 - Frequency Counts

Complete data were obtained from$N = 237$residentsof the largest active retirement community in the United States. The potential sample was $N = 2,000$, which is an 11.85% response rate. Age of participants ranged from 49 to 97 years, with the majority of respondents being 65 to 75 years of age. Males comprised 52% ($N = 123$) of this number; females 48% ($N =114$). Whites were the largest racial/ethnic group 93.6% ($N = 220$), followed by Hispanics 2% ($N = 5$), Asian/Pacific Islander 1.3% ($N = 4$), other ethnicity 1.3% ($N = 4$), Blacks .9% ($N = 2$), and American Indian .9% ($N = 2$).Over a quarter of the respondents earned a Bachelor degree (28%), with 25% earning a Master degree, and 20% indicating they attained some college. The greatest percentage of the sample reported and annual household income of $75,000-$99,999 (30%), with 25% indicated an annual income of $50,000-$74,999 and 18% reporting an annual income of $100,000-$149,999. Almost all participants (99%) were legally registered to vote in the United States with 59% indicating they would vote Republican, 30% Democrat, 8% Independent, and 3% indicating they would not vote in the 2016 presidential election.

The majority of participants reported their sexual orientation as heterosexual (95%), with 4% homosexual, and 1% bisexual. Most participants reported their relationship status as married (68%), with 10% reporting being in a committed relationship and 6% indicating they were divorced. The majority of respondents lived with their spouse or partner (76%), 19% lived alone, and 5% reported living with a friend or roommate. Less than 10% of respondents reported ever being inquired about their sexual behaviors or ever had a sexual risk assessment performed by their healthcare provider. Only 2% of participants reported having a sexually transmitted infection (STI) in the last year. Regarding ever health status, 46% reported high blood pressure, 43% high cholesterol, 34% arthritis, 22% cancer, 20% heart condition, 16% enlarged prostate, 11% depression, 10% diabetes,3% stroke, and 2% reported ever having a nervous condition. Selected demographic characteristics are provided in Table 1.

**Table 1. Demographic Characteristics**

| Participants (N = 237) Number | | Percentage |
|---|---|---|
| Males | 123 | 51.7% |
| Females | 114 | 48.3% |
| **Ethnicity (N = 237)** | | |
| White | 220 | 93.6% |
| Hispanic | 5 | 2.0% |
| Black | 2 | .9% |
| Asian/Pacific Islander | 4 | 1.3% |
| American Indian | 2 | .9% |
| Other | 4 | 1.3% |
| **Relationship Status (N = 237)** | | |
| Single, not dating | 7 | 3.0% |
| Single, casually seeing someone | 11 | 4.6% |
| Committed relationship | 23 | 9.7% |
| Married | 161 | 67.9% |
| Divorced | 15 | 6.4% |
| Other | 20 | 8.4% |
| **Educational Attainment (N = 237)** | | |
| Less than high school | 2 | .8% |
| High school or GED | 23 | 9.7% |
| Some college | 47 | 19.8% |
| Associate degree | 21 | 8.9% |
| Bachelor degree | 67 | 28.3% |
| Master degree | 60 | 25.3% |
| Doctoral degree | 17 | 7.2% |
| **Annual Income (N = 223)** | | |
| Less than $24,999 | 13 | 5.8% |
| $25,000-$49,999 | 38 | 17.0% |
| $50,000-$74,999 | 55 | 24.7% |
| $75,000-$99,999 | 67 | 30.2% |
| $100,000-$149,999 | 40 | 17.9% |
| $150,000-$199,999 | 3 | 1.3% |
| $200,000-$249,999 | 4 | 1.8% |
| $250,000 or greater | 3 | 1.3% |

### 3.2 – Correlations

Pearson correlations indicated that the variables significantly correlated with self-esteem were: physical activity ($r=.322$, $p<.001$); sexual satisfaction ($r=.316$, $p<.001$); sexual desirability ($r=.311$, $p<.001$); and sexual behavior ($r=.229$, $p<.05$). Pearson correlations indicated that the variables most strongly correlated with sexual satisfaction were: sexual desirability ($r=.654$, $p<.001$), sexual behavior ($r=.757$, $p<.001$), self-esteem ($r=.316$, $p<.001$), and negatively correlated with number of health issues ($r= -.316$, $p<.001$). Results of the correlation analysis is provided in Table 2.

**Table 2. Correlations and Means of Study Variables All Participants**

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | M | SD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sexual Satisfaction | - | -.240** | .194** | .561** | .745** | .086 | .294** | -.016 | 29.69 | 10.52 |
| 2. Number of Health Issues | | - | -.254** | -.140* | -.204** | -.106 | -.112 | .055 | 2.15 | 1.68 |
| 3. Physical Activity | | | - | .257** | .288** | .263** | .185** | -.079 | 10.53 | 5.06 |
| 4. Sexual Desirability | | | | - | .700** | .058 | .205** | -.123 | 11.65 | 5.86 |
| 5. Sexual Behavior | | | | | - | .127 | .125 | -.058 | 15.44 | 9.80 |
| 6. Annual Income | | | | | | - | ..061 | .044 | 2.56 | 1.39 |
| 7. Self-Esteem | | | | | | | - | .049 | 32.95 | 5.43 |
| 8. Religiosity | | | | | | | | - | 11.96 | 5.06 |

*p<0.05, **p<0.001

**Females**

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | M | SD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sexual Satisfaction | - | -.319** | .092 | .654** | .757** | .172 | .316** | .011 | 29.23 | 11.53 |
| 2. Number of Health Issues | | - | -.246** | -.194* | -.328** | -.043 | -.103 | -.094 | 1.78 | 1.36 |
| 3. Physical Activity | | | - | .185** | .253** | .192* | .322** | -.054 | 10.30 | 5.24 |
| 4. Sexual Desirability | | | | - | .716** | .104 | .311** | -.111 | 9.88 | 5.70 |
| 5. Sexual Behavior | | | | | - | .201* | .229* | -.001 | 13.97 | 10.16 |
| 6. Annual Income | | | | | | - | .092 | -.023 | 2.60 | 1.40 |
| 7. Self-Esteem | | | | | | | - | .038 | 33.04 | 5.54 |
| 8. Religiosity | | | | | | | | - | 12.29 | 4.97 |

*p<0.05, **p<0.001

**Males**

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | M | SD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sexual Satisfaction | - | -.193* | .312** | .477** | .720** | .021 | .319** | -.033 | 30.35 | 9.51 |
| 2. Number of Health Issues | | - | -.302** | -.216* | -.167 | -.143 | -.135 | .174 | 2.46 | 1.87 |
| 3. Physical Activity | | | - | .341** | .330** | .334* | .050 | -.106 | 10.72 | 4.94 |
| 4. Sexual Desirability | | | | - | .670** | .034 | .168 | -.134 | 13.35 | 5.47 |
| 5. Sexual Behavior | | | | | - | .075 | .059 | -.090 | 16.91 | 9.25 |
| 6. Annual Income | | | | | | - | .029 | .097 | 2.52 | 1.39 |
| 7. Self-Esteem | | | | | | | - | .064 | 32.80 | 5.35 |
| 8. Religiosity | | | | | | | | - | 11.66 | 5.12 |

*p<0.05, **p<0.001

### 3.3 - Factor Analysis

In order to confirm each subscale measured a single construct, all items assigned to the subscale were subjected to separate principle component factor analysis. A cutoff for factor loadings was set at $\geq$ .30 and any item not meeting the cutoff value was discarded and the analysis was repeated. For the religiosity subscale, all items loaded at .626 or above. The subscale had good internal consistency with a Cronbach's alpha of .798. Factor loadings for the physical activity subscale ranged from .693 to .851. The physical activity subscale had a Cronbach's alpha of .794. Factor loadings for the sexual desirability subscale ranged from .679 to .855. The sexual desirability subscale had a Cronbach's alpha of .865. Factor loadings for the sexual behavior subscale ranged from .555 to .872.The sexualbehavior subscale had a Cronbach's alpha of .881. Factor loadings for the sexual satisfaction subscale ranged from .705 to .883. The sexual satisfaction subscale had a Cronbach's alpha of .950. Factor loadings for the self-esteem subscale ranged from .496 to .804. The self-esteem subscale had a Cronbach's alpha of .853. Factor analysis results are provided in Table 3.

**Table 3. Principal Components Factor Analysis**

| **Religiosity** | **Females** | **Males** |
|---|---|---|
| How Important is religion to you | .803 | .881 |
| How often do you attend religious services | .658 | .724 |
| How would you describe your religious views | .706 | .783 |
| How important is spirituality to you | .727 | .779 |
| My religious beliefs influence the decisions I make in life | .536 | .698 |
| How would you describe your spiritual views | .622 | .706 |
| Alpha | .743 | .834 |
| **Physical Activity** | | |
| What is your average time spent for each exercise session | .837 | .813 |
| What best describes your exercise patterns | .829 | .811 |
| In a typical week, how much time do you spend participating in cardiovascular exercise (such as biking, swimming, or fast pace walking) | .835 | .860 |
| In a typical week, how much time do you spend strength training (such as lifting weights to tone muscles) | .731 | .665 |
| Alpha | .807 | .783 |

| | | |
|---|---|---|
| **Sexual Desirability** | | |
| If your sexual partner(s) were to rate your sexual performance, your rating would be | .881 | .840 |
| How would you rate your sexual performance | .825 | .824 |
| If your sexual partner(s) were to rate your sexual desirability, your rating would be | .848 | .861 |
| How would you rate your sexual desirability | .825 | .854 |
| How frequently do you have sexual thoughts, fantasies, or erotic dreams | .785 | .618 |
| How frequently do you feel sexual desire (wanting to have sexual experiences or planning to engage in sexual activities) | .739 | .721 |
| Alpha | .898 | .858 |
| **Sexual Behavior** | | |
| How often do you engage in mutual caressing (holding hands, massage) with a partner | .536 | .624 |
| How often do you give oral sex | .855 | .811 |
| How often do you receive oral sex | .820 | .841 |
| How often do you engage in manual stimulation of genitals with a partner | .796 | .779 |
| When you engage in sexual activity with a partner how often does it result in an orgasm for your partner | .465 | .679 |
| When you engage in sexual activity with a partner how often does it result in an orgasm for you | .275 | .563 |
| Alpha | .724 | .814 |
| **Sexual Satisfaction** | | |
| I have good communication with my partner about sex | .913 | .818 |
| I am pleased with my frequency of sexual activity | .879 | .786 |
| I am satisfied with my variety of sexual positions and activities | .876 | .810 |
| After sex I feel relaxed, fulfilled | .883 | .800 |
| My partner makes me feel sexually desirable | .868 | .897 |
| I am satisfied with my sexual partner | .858 | .801 |
| I am pleased with my intensity of sexual activity | .813 | .823 |
| My partner makes it clear I provide him/her with sexual pleasure | .791 | .809 |
| I have satisfying orgasms | .785 | .834 |
| I feel that foreplay with my partner is very arousing | .791 | .769 |
| I am sexually attracted to my sexual partner | .749 | .716 |
| Alpha | .957 | .945 |
| **Self-Esteem** | | |
| I take a positive attitude toward myself | .851 | .781 |
| I feel that I'm a person of worth, at least on an equal plane with others | .776 | .634 |
| On the whole, I am satisfied with myself | .761 | .702 |
| At times, I think I am no good at all* | .775 | .486 |
| I wish I could have more self-respect for myself* | .697 | .705 |
| I am able to do things as well as most people | .693 | .615 |
| I certainly feel useless at times* | .666 | .591 |
| I feel I do not have much to be proud of* | .579 | .334 |
| All in all, I am inclined to feel that I am a failure* | .532 | .645 |
| I feel that I have a number of good qualities | .713 | .699 |
| Alpha | .882 | .806 |

*Indicates items were reversed scored prior to analysis

### 3.4 - Multiple Regression

Two multiple regression models were analyzed, model 1 using sexual satisfaction as the dependent variable, and model 2 using self-esteem as the outcome variable. For model 1, sexualbehavior, sexual desirability, number of health conditions, and physical activity were entered as the predictor variables. The multiple regression analysis was conducted first with all participants, then separate analyses were conducted by sex. For the entire sample, the set of predictor variables explained 56% of the variance in sexual satisfaction ($R^2$=.560) which was statistically significant [F(4, 192)=63.296, p<.001]. The individual predictor variables that were statistically significant were: number of health issues (p=.04) and sexualbehavior (p<.001). When only male participants were considered, the set of predictor variables explained 60.2% of the variance in sexual satisfaction, which was statistically significant [F(4, 79)=32.338, p<.001]. Sexual behavior was the only individual predictor variable that was statistically significant (p=.018). When only female participants were considered, the set of predictor variables explained 51.1% of the variance in sexual satisfaction and was statistically significant [F(4, 105)=29.451, p<.001]. Sexual behavior was the only statistically significant (p<.001) predictor of sexual satisfaction.

Model 2 multiple regression used a set of predictor variables consisting of annual income, religiosity, and sexual satisfaction on self-esteem. When all participants were included in the analysis, the set of predictor variables explained 7.5% of the variance in self-esteem, which was statistically significant [F(3, 185)=6.11, p=.001]. Sexual satisfaction was the only individual predictor variable that was statistically significant (p<.001). When only male participants were considered, the set of predictor variables explained 6.8% of the variance in self-esteem, which was statistically significant [F(3, 78)=2.962, p=.037]. Sexual satisfaction was the only individual predictor variable which was statistically significant (p=.006). When only female participants were considered, the set of predictor variables explained 8.1% of the variance in self-esteem, and was statistically significant [F(3, 102)=4.094, p=.009]. The only statistically significant predictor (p=.001) was sexual satisfaction. Results of the multiple regression analyses are provided in Table 4.

**Table 4. Results of Multiple Regression**

| Variable | B | SE B | β | t | p | F | R | $R^2$ | Adj. $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| **Both Sexes** Model 1[a] | | | | | | | | | |
| (Constant) | 19.15 | 1.70 | - | 11.27 | .000 | 63.30** | .754 | .569 | .560 |
| Sexual Behavior | .731 | .073 | .681 | 10.05 | .000 | | | | |
| Sexual Desirability | .148 | .120 | .083 | 1.24 | .216 | | | | |
| Number of Health Conditions | -.641 | .310 | -.103 | -2.07 | .040 | | | | |
| Physical Activity | -1.03 | .106 | -.049 | -.974 | .331 | | | | |
| Model 2[b] | | | | | | | | | |
| (Constant) | 27.48 | 1.57 | - | 17.51 | .000 | 6.11** | .300 | .090 | .075 |
| Annual Income | .131 | .275 | .034 | .477 | .634 | | | | |
| Religiosity | .056 | .075 | .052 | .742 | .459 | | | | |
| Sexual Satisfaction | .150 | .036 | .292 | 4.14 | .000 | | | | |
| **Males Only** Model 1[a] | | | | | | | | | |
| (Constant) | 19.82 | 2.70 | - | 7.35 | .000 | 32.34** | .788 | .621 | .602 |
| Sexual Behavior | .660 | .118 | .581 | 5.59 | .000 | | | | |
| Sexual Desirability | .484 | .201 | .239 | 2.41 | .018 | | | | |
| Number of Health Conditions | -.962 | .635 | -.113 | -1.51 | .134 | | | | |
| Physical Activity | -.279 | .160 | -.127 | -1.74 | .085 | | | | |
| Model 2[b] | | | | | | | | | |
| (Constant) | 27.81 | 2.35 | - | 11.82 | .000 | 2.96* | .320 | .102 | .068 |
| Annual Income | .156 | .431 | .039 | .362 | .719 | | | | |
| Religiosity | .040 | .120 | .036 | .334 | .739 | | | | |
| Sexual Satisfaction | .148 | .052 | .308 | 2.83 | .006 | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Females Only**<br>Model 1[a] | | | | | | | | | |
| (Constant) | 18.13 | 2.41 | - | 7.52 | .000 | 29.45** | .727 | .529 | .511 |
| Sexual Behavior | .732 | .094 | .712 | 7.81 | .000 | | | | |
| Sexual Desirability | -.066 | .160 | -.038 | -.414 | .679 | | | | |
| Number of Health Conditions | -.309 | .360 | -.061 | -.857 | .393 | | | | |
| Physical Activity | 1.38 | .143 | .072 | .967 | .336 | | | | |
| Model 2[b] | | | | | | | | | |
| (Constant) | 26.28 | 2.19 | - | 11.98 | .000 | 4.09* | .328 | .107 | .081 |
| Annual Income | .060 | .362 | .015 | .165 | .870 | | | | |
| Religiosity | .077 | .098 | .073 | .780 | .437 | | | | |
| Sexual Satisfaction | .181 | .053 | .321 | 3.43 | .001 | | | | |

a – dependent variable "Sexual Satisfaction"; b – dependent variable "Self-Esteem"
*p<.05, **p<.001

## 4. Discussion

The purpose of the present study was three-fold: (1) to report the impact of biological, psychological, and sociocultural factors on sexual satisfaction and self-esteem among a sample of older adults, (2)to identify the impact of biological, psychological, and sociocultural factors on sexual satisfaction and self-esteem by sex, and (3) to compare and contrast our current research findings to a study conducted 10 years prior employing similar methods of data collection with a similarsample.Results of this study revealed a set of predictor variables that explained the variance in sexual satisfaction and self-esteem without regard to sex and by sex.

The biopsychosocial factors which significantly predicted sexual satisfaction among both sexes were sexual behavior and number of chronic health conditions. Sexual satisfaction was the only variable to predict self-esteem for all participants. Engaging in recent sexual behaviors was a significant predictor of sexual satisfaction in this older adult sample, regardless of sex. This finding is consistent with other studies across various age groups (Heiman, Long, Smith, Fisher, Sand, & Rosen, 2011; Impett & Tolman, 2006; McNulty & Fischer, 2008; Young et al., 2000).

For men, both sexual behavior and sexual desirability were significant predictors of sexual satisfaction. For women, sexual behavior was the only significant predictor of sexual satisfaction. This finding is congruent with McNulty and Fischer's (2008) research indicating a sex difference when evaluating sexual behavior frequency as a predictor of sexual satisfaction. While both sexes had increased sexual satisfaction when sexual behavior frequency increased, an interaction effect difference indicated this association was stronger for men. Additionally the researchers had linked sexual satisfaction expectancies to changes in sexual satisfaction among women. This perceptual construct may suggest that sexual satisfaction in females may have a more cerebral contributor than sexual desirability itself. Research by Impett & Tolman (2006) found that sexual satisfaction among adolescent girls was driven by several constructs including sexual self-concept, approach sex motives (attraction, readiness, romance, love),and sexual activity frequency. The current study which includes a much older female sample may suggest a lifetime of experiences having a role in establishing a positive sexual self-concept and relationship components of "approach sex motives" such as romance and love, which have a positive influence on sexual health and sexual satisfaction. This is a key finding because contemporary social norms with regard to sexuality is an attractive appearance dominated view, and doesn't leave much consideration for individuals who experience changes to those social standards as they age. As such there are few sexuality norming messages aimed at the older adult population. The current study shows that satisfaction with sexual experiences is still possible as people grow older.

Sexual activity was once thought to primarily exist in younger populations, but current research suggests older adults have a high interest in and capacity for satisfying sexual behaviors (Lindau, Schumm, Laumann, Levinson, O'muircheartaigh, & Waite, 2007; Gott& Hinchliff, 2003). For men, sexual satisfaction was the only significant predictor variable to account for variation in self-esteem; the same finding was found for women.

These results suggest that self-esteem, which has shown to be an effective buffer against stressful events in older adults, is responsive to the degree of sexual satisfaction. Results of our previous investigation (Penhollow et al., 2009) on sexual satisfaction were similar to our present findings. Pearson correlations in both studies found that sexual satisfaction was most strongly correlated with self-esteem, sexual self-confidence, and sexual desire; and negatively correlated with number of health issues. Comparable results were also found in the multiple regression analyses on sexual satisfaction. Both the original study and the present follow-up investigation found sexual behavior (frequency of self/partner orgasm, caressing, and giving/receiving oral sex) significantly predicted sexual satisfaction. The original investigation found that mental health (sexual self-confidence/self-esteem) predicted sexual satisfaction. The present study found that physical health (number of chronic health conditions) was a significant predictor of sexual satisfaction. Self-esteem was employed as a dependent variable only in the present study. The findings support a need to provide effective interventions designed to encourage older adults to maximize their expression of sexuality.

### 4.1 – Limitations

Methodological limitations should be taken into consideration when interpreting these results. The study instrument consisted of a self-report questionnaire. Self-report measures are only as accurate as the memory and truthfulness of the respondents.Moreover, there is a possibility participants may have provided false or socially desirable responses. In addition, the current study utilized a cross-sectional research design, indicating that correlates of behavior were assessed rather than antecedents of behavior. Moreover, overall response rates were not as high as one might desire. The nature of the subject matter and/or the length of time necessary to complete the survey may possibly have negatively influenced potential respondents. The timing of the mail-out may have had bearing on response rates as well. It is often common for Northern or non-U.S. resident retirees to spend summer months North (or in their native country), and the other half of the year at their retirement residence. There is a likelihood that a number of residents may not have been occupying their retirement home at the time of the survey mail-out. This lower response rate may have had an impact on the responses that were gathered.

Findings from the study may have been influenced by specific characteristics of the sample. For example, the population assessed is an active retirement community which hosts health fairs, daily scheduled physical activities, and other social gatherings which may improve older adults' social networks, self-esteem, and overall quality of life. Moreover, over half ofthe respondents indicated they had a Bachelor or Master degree and nearly half reported an annual household income of at least $75,000. Individuals with higher educational attainment, higher income, and better access to healthcare may have a higher self-esteem and may be more comfortable with their sexuality. Therefore, this population may differ from the typical older adult in the United States and limits the generalizability of the study findings. Nevertheless, this research provides insight into better understanding aging and the variables which contribute to higher self-esteem and greater sexual satisfaction among active retired older adults.These variables are both influenced by biopsychosocial factors which can change with age and may influence successful aging and overall quality of life among our aging population.

### References

Addis, I., Van Den Eeden, S., Wassel-Fyr, C., Vittinghoff, E., & Brown, J., & David, T. (2006). Sexual activity and function in middle-aged and older women. *Obstetrics and Gynecology, 107*, 755-764.

Beutel, M., Schumacher, J., Weidner, W.,& Brahler, E. (2002). Sexual activity, sexual and partnership satisfaction in ageing men – results from a German representative community study. *Andrologia, 34*, 22-28.

Broadway, K.E.,& Beard, R.L. (2015). "Don't be trying to box folks in": Older women's sexuality. *Affilia, 30*, 504-518.

Burgoyne, D. (1982). How self-esteem affects sexual behavior. *Medical Aspects of Human Sexuality, 16*, 70D,F,G,H.

Chua, R.,& Guzman, A. (2014). Effects of third age learning programs on the life satisfaction, self-esteem, and depression level among a select group of community dwelling Filipino elderly. *Educational Gerontology, 40*, 77-90.

Data Publishing. (2017). *The Villages, FL Directory*. Available online: http://datapublishing.com/directory/villages-fl-directory

Davidson, L., Bell, J., & LaChina, M. (2009). The relationship between self-reported sexual satisfaction and general well-being in women. *The Journal of Sexual Medicine, 6*, 2690-2697.

Deacon, S., Minichiello, V., & Plummer, D. (2006). Sexuality and older people: Revisiting the assumptions. *Educational Gerontology, 5*, 497-513.

Delamater, J. (2012). Sexual expression in later life: A review and synthesis. *Journal of Sex Research, 49*, 125-141.

Delamater, J., Hyde, J., & Fong, M. (2008). Sexual satisfaction in the seventh decade of life. *Journal of Sex & Marital Therapy, 34*, 439-454.

Delamater, J.,& Koepsel, E. (2015). Relationships and sexual expression in later life: a biopsychosocial perspective. *Sexual and Relationship Therapy, 30*, 37-59.

Dixon, J. (2012). Communicating ageism: Exploring stereotypes of age and sexuality in the workplace. *Research on Aging, 34*, 654-669.

Fileborn, B., Thorpe, R., Hawkes, G., Minichiello, V., Pitts, M.,& Dune, T. (2015). Sex, desire and pleasure: considering the experiences of older Australian women. *Sexual and Relationship Therapy, 30*, 117-130.

Gray, P.,& Garcia, J. (2012). Ageing and human sexual behavior: Biocultural perspectives – a mini-review. *Gerontology, 58*, 446-452.

Gott, M., & Hinchliff, S. (2003). How important is sex in later life? The views of older people. *Social Science & Medicine*, *56*, 1617-1628.

Heiman, J. R., Long, J. S., Smith, S. N., Fisher, W. A., Sand, M. S., & Rosen, R. C. (2011). Sexual satisfaction and relationship happiness in midlife and older couples in five countries. *Archives of Sexual Behavior*, *40*, 741-753.

Hurd, L.,& Korotchenko, A. (2011). Aging and the body: A review. *Canadian Journal on Aging, 30*, 495-510.

Impett, E. A., & Tolman, D. L. (2006). Late adolescent girls' sexual experiences and sexual satisfaction. *Journal of Adolescent Research*, *21*, 628-646.

Johnson, B. (1998). A correlational framework for understanding sexuality in women age 50 and older. *Health Care for Women International, 19*, 553-564.

Kleinplatz, P., Menard, D., Paradis, N., Campbell, M., & Dalgleish, T. (2013). Beyond sexual stereotypes: Revealing group similarities and differences in optimal sexuality. *Canadian Journal of Behavioural Science, 45*, 250-258.

Koch, P., Mansfield, P., Thurau, P., & Carey, M. (2005). "Feeling frumpy": The relationships between body image and sexual response changes in midlife women. *Journal of Sex Research, 42*, 215-223.

Kontula, O., & Haavio-Mannila, E. (2009). The impact of aging on human sexual activity and sexual desire. *Journal of Sex Research, 46*, 46-56.

Lindau, S. T., Schumm, L. P., Laumann, E. O., Levinson, W., O'muircheartaigh, C. A., & Waite, L. J. (2007). A study of sexuality and health among older adults in the United States. *New England Journal of Medicine*, *357*, 762-774.

Leung, A., Chi, I., & Lui, Y. (2006). A cross-cultural study in older adults' learning experience. *Asian Journal of Gerontology & Geriatrics, 2*, 78-83.

Lodge, A.,& Umberson, D. (2012). All shook up: Sexuality of mid- to later life married couples. *Journal of Marriage and Family, 74*, 428-443.

Loredana, I.,& Corina, D. (2016). Ageing and body image: relation between self-esteem and body self-esteem of older adults. *Interstudia, 19*, 148-160.

McCarthy, B., Farr, E., & McDonald, D. (2013). Couple sexuality after 60. *Journal of Family Psychotherapy, 24*, 38-47.

McMillin, J.,& Cairney, J. (2004). Self-esteem and the intersection of age, class, and gender. *Journal of Aging Studies, 18*, 75-90.

McNulty, J. K., & Fisher, T. D. (2008). Gender differences in response to sexual expectancies and changes in sexual frequency: A short-term longitudinal study of sexual satisfaction in newly married couples. *Archives of Sexual Behavior*, *37*, 229-240.

Penhollow, T., Young, M., & Denny, G. (2009). Predictors of quality of life, sexual intercourse, and sexual satisfaction among active older adults. *American Journal of Health Education, 40*, 14-22.

Penhollow, T., Marx, A., & Young, M. (2010). Impact of recreational sex on sexual satisfaction and leisure satisfaction. *Electronic Journal of Human Sexuality, 13.* Available online: http://www.ejhs.org/volume13/recreationalsex.htm

Penhollow, T., & Young, M. (2008). Predictors of sexual satisfaction: The role of body
image and fitness. *Electronic Journal of Human Sexuality, 11.* Available online: http://www.ejhs.org/volume11/Penhollow.htm

Penhollow, T.,& Young, M. (2004). Sexual desirability and sexual performance: Does exercise and fitness really matter? *Electronic Journal of Human Sexuality*, *7*. Available online: http://www.ejhs.org/volume7/fitness.html

Perrone, K. M., & Worthington, E. L. (2001). Factors influencing ratings of marital quality by individuals within dual-career marriages: A conceptual model. *Journal of Counseling Psychology, 48*, 3-9.

Pullman, H., Allik, J., & Realo, A. (2009). Global self-esteem across the lifespan: A comparison between representative and self-selected Internet samples. *Experimental Aging Research, 35*, 20-44.

Reynolds, J., Gunderson, J., & Bamford, M. (2015). *Florida's aging population: Critical issues for Florida's future*. Available online:
http://pepperinstitute.fsu.edu/sites/g/files/imported/storage/original/application/22487bf23ab907d4c17b39227dccf000.pdf

Rheaume, C., & Mitty, E. (2008). Sexuality and intimacy in older adults. *Geriatric Nursing, 29*, 342.349.

Russell, H. (2008). Later life: A time to learn. *Educational Gerontology, 34*, 206-224.

Santos-Iglesias, P., Byers, E., & Moglia, R. (2016). Sexual well-being of older men and women. *The Canadian Journal of Human Sexuality, 25*, 86-98.

Seals, C.,& Clanton, K. (2008). Lifelong learning: Becoming computer savvy at a later age. *Educational Gerontology, 34*, 1055-1069.

Shahbazzadeghan, B., Farmanbar, R., Ghanbari, A., & Roshan, Z. (2010). The study of the effects of the regular exercise program on the self-esteem of the eldery in the Old People Home of Rasht. *European Journal of Social Sciences, 13*, 271-278.

Thomas, H., Hess, R., & Thurston, R. (2015). Correlates of sexual activity and satisfaction in midlife and older women. *Annals of Family Medicine, 13*, 336-342.

Thompson, W., Charo, L., Vahia, I., Depp, C., Allison, M., &Jeste, D. (2011).
Association between higher levels of sexual function, activity, and satisfaction and self-rated successful aging in older postmenopausal women. *The American Geriatrics Society, 59*, 1503-1508.

Weeks, D. (2010). Sex for the mature adult: Health, self-esteem and countering ageist stereotypes. *Sexual & Relationship Therapy, 3*, 231-240.

Young, M., Denny, G., Luquis, R., & Young, T. (1998). Correlates of sexual satisfaction in marriage. *The Canadian Journal of Human Sexuality, 72*, 115-127.

Young, M., Denny, G., Young, T., & Luquis, R. (2000). Sexual satisfaction among married women. *American Journal of Health Studies, 16*, 73-84.