

Special Issue: Sexuality and Aging: Research Article

# Do Sexual Expectations Matter for Older Men and Women? Anticipated Sexual Futures and Late-Life Sexuality Over Two Decades

Markus H. Schafer, PhD\* and Laura Upenieks, PhD

Department of Sociology, Baylor University, Waco, Texas, USA.

\*Address correspondence to: Markus H. Schafer, PhD, Department of Sociology, University of Toronto, 725 Spadina Avenue, Toronto, ON M5A-4L1, Canada. E-mail: [markus.schafer@utoronto.ca](mailto:markus.schafer@utoronto.ca)

Received: January 18, 2022; Editorial Decision Date: May 3, 2022

**Decision Editor:** Nicholas G. Castle, PhD, FGSA

## Abstract

**Background and Objectives:** Expectations across a variety of life domains appear to shape the aging process, giving weight to the role of self-fulfilling prophecies in later life. Sexuality is one area where the power of expectations is not well-understood. We investigated whether 10-year sexual expectations were associated with sexual satisfaction and sexual frequency a decade on among older heterosexual coupled adults. We further examined whether sexual expectations could offset the sex-constraining impact of functional limitation onset.

**Research Design and Methods:** We used 3 waves of the Midlife Development in the United States study (1995, 2005, 2014), a nationally representative panel survey. Analyses consider adults aged 45+ in 1995 who had a spouse or romantic partner at 2 consecutive waves. Associations between sexual expectations and eventual sexual satisfaction and frequency were estimated with multivariable generalized estimating equations. Moderation analyses examined whether between-wave onset of functional limitations had less influence on sexuality outcomes when combined with a high initial level of sexual expectations.

**Results:** Sexually optimistic participants reported more sexual satisfaction and higher sexual frequency a decade later. Though the onset of functional limitations tended to suppress sexual frequency for women, the probability of having weekly sex was significantly higher among such women if they had high rather than low sexual expectations.

**Discussion and Implications:** Results suggest that, similar to other life domains, expectations shape the sexual experience of older adults. Clinicians and care providers may consider ways to help foster realistic optimism about sexuality among older men and women.

**Keywords:** Disability, Functional limitations, Self-fulfilling prophecy, Sexual frequency, Sexual satisfaction

Older adults who remain sexually active and satisfied with their sexual lives report more fulfillment in their intimate relationships, fewer depressive symptoms, and better physical health than those who lack these forms of sexual expression (Brody, 2010; DeLamater, 2012; Laumann et al., 2005). Though the causal directions of such associations are complicated, mounting evidence suggests that increasing the fre-

quency and quality of sexual expression can improve and sustain well-being as adults age (Gianotten et al., 2021). All the same, older adults—including those with available sexual partners—face numerous challenges to regular and rewarding sexual expression, including internalized ageism (Heywood et al., 2019), hormonal changes (Bortz et al., 1999), and medication side effects (Muzacz & Akinsulure-Smith, 2013).

Health problems and functional limitations, however, stand out as a particular constraint to sexual expression (Dorner et al., 2018; Karraker & DeLamater, 2013; Lindau & Gavrilova, 2010; Stroope et al., 2015).

Drawing on the idea that domain-specific expectations matter for key age-related outcomes, this study examines the prospective role of optimistic sexual expectations for sexual activity and satisfaction in the second half of heterosexual coupled adults' lives. We also ask whether and to what extent expectations counteract sexual hurdles posed by functional health limitations.

## The Power of Expectations in Later Life

There is a growing recognition that expectations have a profound impact on the process of aging. A constellation of theories and frameworks—including stereotype embodiment theory (Levy, 2009), cumulative inequality theory (Schafer et al., 2011), and the temporally extended self-model (Peetz & Wilson, 2008)—have been applied by gerontologists to emphasize how beliefs about the future become self-fulfilling prophecies by shaping motivation, perceived opportunities and constraints, and goal-directed behavior over the life course.

One approach to expectations examines general future orientations. The concept of future time perspective, for instance, taps into whether the future is seen as expansive and full of opportunity versus marked by constraint; older adults perceiving an expansive future tend to engage in frequent physical activity (Stahl & Patrick, 2012) and proactive retirement planning (Hershey & Mowen, 2000). A similar take on future orientations is to examine people's attitudes toward the aging process, namely whether they see growing older as benign or as instead accompanied by a bundle of negative experiences (e.g., loneliness, forgetfulness, disability). People with positive aging views presumably eschew the negative stereotypes and tend to behave in ways that disprove them; empirical support for this view comes from studies showing that holding upbeat expectations predicts making new friends in later life (Menkin et al., 2017), enjoying better functional health over 18 years (Levy et al., 2002), and showing less memory decline over nearly four decades (Levy et al., 2012).

An alternative approach to future orientations is domain-specific, targeting specific expectations people hold toward significant realms of their life. Studies using this tactic also affirm the power of expectation. Middle-aged people who before the 2008 recession expressed positive expectations about their future financial situation ended up less affected by the stress of recession-era strains (e.g., job loss, debt) than their less sanguine counterparts (Wilkinson et al., 2020). Another prospective study showed that for older adults currently viewing their health as poor, expecting the best possible health a decade on is associated with only a 0.12 probability of death, compared to 0.2 for those with middling expectations and 0.46 for those who expect the

worst (Ferraro & Wilkinson, 2015). Having positive expectations about one's contributions to others' welfare is likewise predictive of positive future outcomes, including a high sense of self-worth and strong sense of belonging to one's community (Grossman & Gruenewald, 2020).

Curiously, sexuality tends to be neglected throughout the literature on future orientations—in fact, gerontologists have to our knowledge yet to consider the consequences of sexual expectations in the lives of older adults. Some evidence attests to how general expectations about aging shape sexual outcomes. For instance, middle-aged Americans most pessimistic about how overall life quality changes with age show the greatest drop in sexual satisfaction over the course of a decade (Estill et al., 2018). Still, no evidence yet indicates whether beliefs about one's sexual future act as a self-fulfilling prophecy, or whether sexual expectations can counteract age-related challenges to sexual flourishing.

## Current Study

The current study addresses these gaps, first prospectively examining whether sexual expectations are related to future sexual frequency and satisfaction, two commonly studied dimensions of sexual expression in old age (e.g., Gillespie 2017; Stroope et al., 2015; Syme et al., 2013). Second, we examine whether sexual expectations buffer the sex-diminishing role of functional health limitations.

Consistent with theories that advance accounts of a self-fulfilling prophecy, we argue that sexual expectations influence future sexuality through a variety of mechanisms. These include the basic identification of sexual expression as a valued life goal; coordination with significant others (i.e., romantic partner) to realize the goal; and, importantly, motivation and the formation of strategies for pursuing the goal—optimizing and adapting—over against pervasive ageism (e.g., beliefs that late-life sexuality is shameful) and amidst personal setbacks (Wurm et al., 2013).

The onset of functional limitations is one such setback, representing an important health transition that reshapes romantic relationships and marks declining autonomy (Polenick et al., 2020; Schieman & Turner, 1998). Such an experience raises difficulties for sexual expression because it is accompanied by pain (Ji et al., 2021), loss of strength and agility (Schaap et al., 2013), and other physical problems that force bodily and emotional adjustment. By asking whether expectations counteract these challenges, our analysis extends beyond merely observing whether expectations matter, on average, for older adults. Indeed, our second research objective moves toward the issue of whether expectations serve as a coping resource amidst difficulty.

Late-life sexuality is distinct for men and women. Men, for instance, report more frequent and more satisfying sex than women (DeLamater & Karraker, 2009; Lindau et al., 2007; Syme et al., 2013); they also hold more optimistic expectations about their future sexual lives (Fischer

et al., 2018; Kolodziejczak et al., 2019). On the other hand, men's sexuality appears to be more affected by poor health (Karraker & DeLamater, 2013; Lindau et al., 2007), though women are more likely to be beset by functional limitations than men (Lin, 2020). For these reasons, we will examine all associations separately by sex. In addition, most sexual expression in later life is in the context of a stable partnership (Karraker et al., 2011), so we confine our analysis to older men and women married or in a marriage-like relationship.

We advance two hypotheses to examine the role of sexual expectations.

*Hypothesis 1:* Sexual expectations are positively associated with sexual frequency and sexual satisfaction in the future among coupled older adults.

*Hypothesis 2:* Though the onset of functional limitation(s) decreases sexual expression (frequency, satisfaction), higher sexual expectations prior to limitation minimize these decreases.

## Data and Methods

We employ data from the National Survey of Midlife Development in the United States (MIDUS). MIDUS is a national probability sample of noninstitutionalized, English-speaking adults recruited through nationwide random digit dialing. The first wave (MIDUS 1) was conducted in 1995–1996, consisting of 7,108 respondents aged 25–74. Follow-up waves were conducted both in 2004–2006 (MIDUS 2) and 2013–2014 (MIDUS 3), with reasonably high retention rates (e.g., 77% of living participants responded to the MIDUS 3 telephone survey). We restricted the analysis to the 3,487 respondents from the nationally representative portion of the MIDUS sample to ensure data representativeness. At the time when MIDUS 1 was collected, about half the sample was male, and the average age was 46 years, with an age range spanning from 25 to 74. From this sample, 2,257 of the respondents (74%) participated in MIDUS 2, and 1,414 (47%) participated in MIDUS 3.

We imposed several restrictions to arrive at our final analytic sample. First, inclusion in our sample required a MIDUS respondent to be in a heterosexual partnership, because there were very few same-sex partnerships at the baseline survey. Second, we only included observations from respondents who were partnered (those who reported being married or “currently living with someone in a steady, marriage-like relationship”) at both T1 and T2, that is, from MIDUS 1 to MIDUS 2 and/or MIDUS 2 to MIDUS 3. Because our focus was on how future sexual expectations might affect sexual frequency and satisfaction during the second half of life, we also only included participants who were 45 years of age or older at MIDUS 1 (see Author Note 1). Therefore, for analyses related to the full partnered sample, we are left with  $N = 461$  women and

$N = 632$  men ( $N = 613$  MIDUS 1 → MIDUS 2 cases, and  $N = 480$  MIDUS 2 → MIDUS 3 cases).

Select analyses pertaining to the interaction between future sexual expectations and disability onset (Hypothesis 2) were restricted to MIDUS respondents who did not report any difficulty with these nine activities at T1 of the study. Between MIDUS 1 and 2, 11% of the partner sample went from zero functional limitations to at least one or more (51% were men and 49% were women). Between MIDUS 2 and 3, another 14% of the sample went from no functional limitations to one or more (55% were men, 45% were women). For our moderation analyses, then, we are left with a slightly smaller sample size of  $N = 403$  women and  $N = 567$  men given this imposed restriction (534 MIDUS 1 → MIDUS 2 cases, 436 MIDUS 2 → MIDUS 3 cases).

## Dependent Variables

Sexual frequency and sexual satisfaction are our outcome variables. An identical measure of *sexual frequency* was asked of respondents at each wave: “Over the past 6 months, on average, how often have you had sex with someone?” Respondents were coded where 1 = “Never or not at all,” 2 = “Less often than once a month,” 3 = “Once a month,” 4 = “Two or three times a month,” 5 = “Once a week,” and 6 = “Two more times a week.” The latter two categories were collapsed because very few MIDUS respondents in our analytic sample reported having sex two or more times a week.

*Sexual satisfaction* was measured by the following question at each MIDUS wave: “Using a scale of 0 to 10, where 0 means ‘the worse possible situation’ and 10 means ‘the best possible situation’, how would you rate the sexual aspect of your life these days?” In all analyses, sexual satisfaction was treated as a continuous variable.

## Focal Independent Variables

At each wave of the MIDUS study, *future sexual expectations* were measured by the following question: “Looking ahead 10 years into the future, what do you expect the sexual aspect of your life to be like at that time?” Responses were coded continuously from 0 = “Worst” to 10 = “Best.”

## Functional limitations

At each wave, respondents were asked to respond to the following prompt from the Short Form Health Survey (see Ware & Sherbourne, 1992) gauging limitations in performing key activities of daily life: “how much does your health limit you in doing each of the following?” The tasks were: (a) lifting or carrying groceries; (b) bathing or dressing yourself; (c) climbing several flights of stairs; (d) bending, kneeling, stooping; (e) walking more than a mile; (f) walking several blocks; (g) walking one block; (h) vigorous activity (e.g., running, lifting heavy objects); and (i)

moderate activity (e.g., bowling, vacuuming). Responses were recoded into the distinction of 0 = “Not at all limited” versus 1 = “A little,” “Some,” or “A lot” limited for each activity. We were particularly interested in this study in *functional limitation onset*, which we defined as moving from a 0 score on difficulties at one time point to having one or more difficulties at follow-up. Supplementary analyses, recounted in the *Results* section, use alternative operationalizations and coding schemes to ensure robustness.

### Covariates

All analyses feature adjustment for several covariates that could confound the relationship between future sexual expectations, functional limitation onset, and sexual frequency/satisfaction. First, we adjust for a *count of physical conditions* the respondent reported at T1 (e.g., lung problems, heart problems, cancer, etc.) that ranged from 0 to 3, as physical health problems are known to undermine sexual frequency and satisfaction (DeLamater et al., 2008; Gillespie, 2017). We also include a measure of *baseline depressive symptoms*, measured at each Wave of MIDUS with the Kessler-6 scale (Kessler et al., 2010). Sample items included how often in the last 30 days one felt “hopeless,” or that “everything was an effort” and responses ranged from 1 = “none of the time” to 5 = “all of the time” ( $\alpha = 0.85$  at MIDUS 1 and  $\alpha = 0.86$  at MIDUS 2). Because sexual activity occurs within a romantic partnership in our analyses, we also include an adjustment for *partner support*. Respondents were asked, “On average, about how many hours per month do you receive informal emotional support (such as getting comfort, having someone listen to you, or getting advice) from your spouse or partner?” Responses were coded from 0 hr = “No support” and were top coded at 100 hr per month.

We also adjust for several demographic characteristics. First, we include a measure of race, which contrasts White respondents with all other races (non-White). Models also include a measure of the highest level of educational attainment the respondent has attained at T1 (either MIDUS 1 or MIDUS 2), with less than high school (reference group), high school or equivalent, some college education, or a university degree or higher. We also adjust for age (years) and household income at baseline, which was coded into five quintiles, where higher quintiles indicate higher household income.

### Plan of Analysis

After providing a descriptive overview of the three MIDUS waves, we use generalized estimating equations (GEEs) with robust standard errors to account for multiple observations per respondent. GEE is a form of population-averaged model that accounts for correlated errors with panel data. We use an unstructured covariance matrix, but

alternative specifications yield identical results. For both sexual frequency and sexual satisfaction, we use lagged dependent variable specifications to account for sexual activity and satisfaction prior to functional limitation onset (at the wave prior to the outcome, T1). Analyses of sexual frequency are conducted using the ordered logit link (as the proportional odds assumption was not violated), whereas analyses of sexual satisfaction use the normal distribution link function. We also examined variance inflation factor (VIF) scores and found no evidence of problematic multicollinearity: all VIF values are below 2.0, a common threshold offered by Allison (1999). All models incorporate multiple imputation ( $m = 10$ ).

Sample attrition is a possible concern given that respondents had to be over the age of 45 to be included in our sample and the imperfect retention rates of MIDUS respondents between Waves 1 and 3. To address issues of attrition, we applied inverse-probability-of-attrition weights to counterbalance the underrepresentation of cases with certain traits by assigning the highest consequences to respondents who are least likely to remain in the sample (Weuve et al., 2012). We first estimated the predicted probability that a respondent entering the sample at MIDUS 1 was successfully reinterviewed at MIDUS 2 using a logistic regression model, and similarly, whether a respondent at MIDUS 2 was followed up at MIDUS Wave 3. Predictors were drawn from the extensive range of demographic and health data available at the first two waves of MIDUS, including partnership status, age, gender, education, ethnicity, education, housing type, depressive symptoms, health conditions, and self-rated physical health. We calculated an inverse of the predicted probability derived from the two respective logistic regression models for MIDUS 1 → MIDUS 2 cases, and MIDUS 2 → MIDUS 3 cases. We multiplied this inverse score by the sampling weight provided in the MIDUS data, which was then subsequently applied to all GEE models.

Finally, given the gender-specificity of late-life sexuality, we conducted analyses on separate samples of men and women. Given the discrepancies in sample size between strata, with roughly 200 more males than females, we only draw conclusions on whether the hypothesized associations are present (e.g., statistically significant) for men and/or women and make no attempt to compare coefficients across gender.

## Results

### Descriptive Patterns

Table 1 presents descriptive statistics by wave for the full analytic sample, differentiated by sex. As expected, men report higher sexual satisfaction and more frequent sex than women, a pattern that is consistent across the three waves. Men also have the highest sexual expectations at the second wave—though not at Wave 1 of MIDUS, suggesting that women see their sexual expectations fall at a faster rate

**Table 1. Descriptive Statistics, MIDUS Study, Full Partnered Sample (N = 403 Females, N = 567 Males)**

MIDUS wave →	Possible range	Wave 1		Wave 2		Wave 3	
		Female	Male	Female	Male	Female	Male
		Mean (SD) or %					
<b>Dependent variables</b>							
<b>Sexual frequency</b>							
Never or not at all		12.86	10.28	10.09	9.82	9.81	10.09
Less than once a month		12.54	12.50	20.64	16.73	23.45	18.08
Once a month		11.90	10.56	11.01	16.00	10.87	20.32
Two or three times a month		20.90	22.78	22.94	24.00	25.41	24.33
Once a week or more		41.80	43.89	35.32	33.45	30.46	27.18
Sexual satisfaction	0, 10	5.74 (2.98)	6.03 (2.78)	4.93 (3.01)	5.06 (2.90)	4.21 (2.85)	4.02 (2.99)
<b>Focal independent variables</b>							
Future sexual expectations	0, 10	4.63 (3.10)	4.51 (2.99)	4.14 (2.97)	4.36 (2.96)	—	—
Functional limitation onset	0, 1	—	—	18.87	16.30	20.81	21.10
Average level of functional limitation	1, 4	1.15 (0.47)	1.07 (0.31)	1.35 (0.65)	1.28 (0.63)	1.64 (0.50)	1.47 (0.61)
<b>Covariates</b>							
Count of physical health conditions	0, 3	0.60 (0.74)	0.54 (0.74)	0.73 (0.83)	0.69 (0.68)	—	—
Depressive symptoms	1, 5	1.50 (0.54)	1.35 (0.42)	1.55 (0.56)	1.39 (0.40)	—	—
Partner support	0, 100	31.12 (27.11)	23.60 (28.11)	33.09 (26.54)	25.04 (25.43)	—	—
Age	45, 92	56.92 (8.04)	56.46 (8.19)	67.86 (7.96)	68.10 (8.35)	—	—
Non-White	0, 1	6.26	4.03	5.94	3.98	—	—
Education							
Less than high school		8.83	7.34	—	—	—	—
High school degree		34.70	27.45	—	—	—	—
Some college/vocational		29.34	22.01	—	—	—	—
College degree/more		27.13	43.21	—	—	—	—
Household income							
First quintile		11.40	6.32	13.43	5.32	—	—
Second quintile		17.26	16.48	20.34	14.65	—	—
Third quintile		24.43	22.53	21.35	22.34	—	—
Fourth quintile		24.43	21.98	26.54	23.39	—	—
Fifth quintile		22.48	32.69	18.34	34.30	—	—

Notes: MIDUS = Midlife Development in the United States; SD = standard deviation.

as they age relative to men. Other factors associated with higher sexual expression and higher sexual expectations include physical health conditions, depressive symptoms, and partner support. Finally, we note that approximately 40% (women) and 37% (men) of the sample of without functional limitations at T1 experienced this transition by T2.

### Multivariable Longitudinal Analyses

Moving to the GEEs, we present results for both outcomes stratified by sex in [Table 2](#). Covariates are suppressed for sake of space, but the full set of estimates is available in [Supplementary Material](#). Overall, the table conveys that sexual expectations go on to strongly predict future expression for partnered men and women alike. Net of current sexual satisfaction, health, and other covariates, each 1-unit increase in the 11-point expectations scale translates into an approximately 1.5-unit boost to sexual satisfaction almost a decade later ( $p < .001$  for men and women). The coefficient is slightly larger for men, though not significantly from that of women. In terms of standardized associations, a 1 standard deviation (SD) increase in expectations corresponds to an approximately 0.8 SD enhancement in future satisfaction for women.

Associations are similarly pronounced for sexual frequency. The ordered logit models for men and women show that each unit increase in expectations—net of current sexual frequency and other T1 covariates—is linked to greater odds of a higher sexual frequency score at T2 (odds ratio [OR] = 1.38 for men, OR = 1.54 for women,  $p < .001$  for both genders). Putting these results on a probability scale, this means that for women who currently have sex once a week, moving from a 5 to an 8 on sexual expectations (approximately 1 SD) would boost the probability of maintaining sex at least once a week from 0.34 to 0.59, and lowers the probability of not having sex in the future from 0.04 to 0.01. Taking a man who was sexually active only monthly at T1, dropping from 6 to 3 on the expectations scale would lower his future chances of having sex at least several times a month from 0.30 to 0.17 and increase the likelihood that he would be sexually inactive from 0.05 to 0.16.

Sexual expectations can be compared to other variables in the GEE analysis associated with the [Table 2](#) outcomes, and such contrasts suggest a distinctive and robust role for expectations. Women, for instance, who saw sexual frequency trail off when struggling with depressive symptoms at baseline, showed over 2.5 times as strong a drop-off in weekly sex across an SD change drop in sexual expectations compared to comparable SD rise in their depression score. For men, whose sexual frequency dipped with age, a 1-unit boost in the sexual expectations scale was on par with being 4.3 years younger when predicting weekly sex 10 years later.

Finally, we consider whether sexual expectations offset the challenges associated with functional limitations in [Table 3](#). This portion of the analysis focuses on partnered

adults who reported no limitations at T1 and were thereby at risk of onset by T2. This reduces the sample sizes from 431 and 632 to 403 and 567. Surprisingly, the onset of limitations had no prospective association with future sexual satisfaction, and so we omit models for that outcome for sake of space (available upon request). Functional limitation(s) experienced between waves were, however, linked to a drop in sexual frequency as expected for both subsamples. Meanwhile, the interaction between limitation onset and sexual expectations supports Hypothesis 2 for women, though not for men.

We graph the interaction effect with predicted probabilities in [Figure 1](#). The figure shows that the gap in probability of frequent sex (at least weekly) between nonlimited women with low ( $-1$  SD) and high ( $+1$  SD) sexual expectations was 27 percentage points, whereas this gap widens to 57 percentage points for those who experienced onset of at least one limitation. Importantly, however, the predicted probabilities show not only that high sexual expectations limit the disruptiveness of any functional limitations; we also observe that the combination of limitation onset and positive expectations was actually associated with a higher probability of regular sex even relative to those *without* any limitation onset who hold low or moderate sexual expectations.

We conducted several sensitivity analyses to ensure that findings are robust to alternative coding decisions and additional model specifications. First, we revisited the operationalization of functional limitation onset to differentiate levels of limitation severity. Second, we distinguished activities of daily living (e.g., dressing, bathing, walking a block) and instrumental activities of daily living (climbing stairs, moderate activity) items in the list of functional limitations and assessed the role of each set. Finally, we considered whether partnership change between waves (e.g., becoming divorced or widowed and then repartnering within the decade) explained any associations reported in [Tables 2](#) and [3](#). Overall, results remained consistent under each of these approaches.

### Discussion

Findings suggest that expectations matter for late-life sexuality, adding to the catalog of life domains where optimistic future orientations appear to create self-fulfilling prophecies for older people ([Ferraro & Wilkinson, 2015](#); [Grossman & Gruenewald, 2020](#); [Menkin et al., 2017](#)). Specifically, partnered men and women in the second half of life experienced more frequent and satisfying sex when they had anticipated higher sexual satisfaction a decade earlier. Moreover, the power of expectations met or exceeded other factors that turn the dial of late-life sexuality.

Another key contribution of the current study was to show that, at least among older women, positive expectations can offset the disruptive role of functional limitations, specifically in the case of sexual frequency. Generally,

**Table 2.** Coefficients Predicting Sexual Frequency and Sexual Satisfaction at T2, Full Partnered Sample

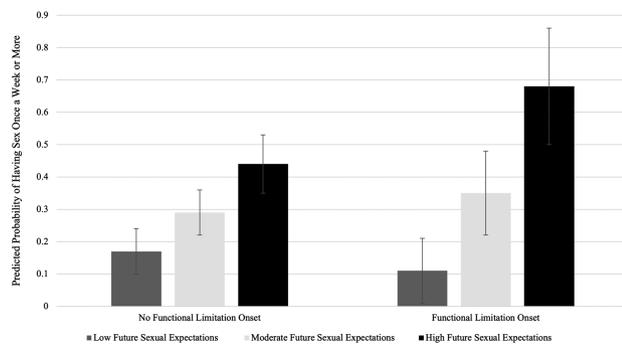
Variable	Female (N = 403)		Male (N = 567)	
	Sexual frequency (ordered logit)		Sexual satisfaction (linear regression)	
	Model 1	Model 2	Model 3	Model 4
Sexual frequency, T1	2.04*** (1.64–2.55)	0.06 (0.04)	1.73*** (1.44–2.07)	0.15** (0.03)
Focal independent variables				
Future sexual expectations, T1	1.38*** (1.23–1.54)	0.80*** (0.04)	1.54*** (1.38–1.72)	0.79*** (0.03)
Selected covariates				
Count of physical health conditions, T1	0.83 (0.56–1.23)	0.04 (0.13)	1.08 (0.76–1.54)	-0.10 (0.12)
Depressive symptoms, T1	0.82* (0.51–0.94)	-0.22 (0.18)	0.87* (0.75–0.97)	0.07 (0.20)
Partner support, T1	1.00 (1.00–1.01)	0.01 (0.01)	1.00* (0.97–0.99)	0.01 (0.01)
Age	1.01 (0.97–1.04)	0.01 (0.01)	0.95** (0.91–0.98)	0.01 (0.01)

Notes: Odds ratios and 95% confidence intervals shown for ordered logit models; regression coefficients and robust standard errors shown for OLS models. Models estimated with generalized estimating equations. All models adjust for race, education, and household income (coefficients not shown). \*\*\* $p < .001$ . \*\* $p < .01$ . \* $p < .05$ .

**Table 3.** Coefficients From Ordered Logistic Regression Models Predicting Sexual Frequency at T2, Partnered Sample With No T1 functional limitations, Odds Ratios, and 95% Confidence Intervals Shown

Variable	Female (N = 403)		Male (N = 567)	
	Model 1		Model 3	
	Model 1	Model 2	Model 3	Model 4
Sexual frequency, T1	1.98*** (1.56–2.49)	1.98*** (1.57–2.49)	1.77*** (1.47–2.14)	1.76*** (1.46–2.13)
Focal independent variables				
Future sexual expectations, T1	1.41*** (1.25–1.59)	1.33*** (1.17–1.52)	1.53*** (1.37–1.70)	1.54*** (1.37–1.73)
Functional limitation onset, T1 → T2	0.78* (0.65–0.96)	0.33 (0.06–1.79)	0.59* (0.33–0.93)	0.82 (0.22–1.09)
Future sexual expectations × Functional limitation onset		1.31* (1.04–1.75)		0.92 (0.70–1.21)
Selected covariates				
Count of physical health conditions, T1	0.95 (0.62–1.45)	0.85 (0.56–1.28)	1.07 (0.75–1.54)	1.07 (0.74–1.54)
Depressive symptoms, T1	0.84* (0.67–0.96)	0.82* (0.65–0.94)	0.73** (0.60–0.85)	0.69** (0.58–0.84)
Partner support, T1	1.00 (1.00–1.01)	1.01 (1.00–1.01)	1.00* (0.97–0.99)	0.99* (0.97–0.99)
Age	1.01 (0.97–1.06)	1.02 (0.98–1.06)	0.96* (0.92–0.99)	0.95* (0.92–0.99)

Notes: Models estimated with generalized estimating equations. All models adjust for race, education, and household income (coefficients not shown). \*\*\* $p < .001$ . \*\* $p < .01$ . \* $p < .05$ .



**Figure 1.** Functional limitation onset and sexual frequency across future sexual expectations. Estimates are derived from Model 2 of Table 3. All other covariates are held at their respective means. 95% Confidence intervals are shown. *Low Future Sexual Expectations* correspond to 1 standard deviation (*SD*) below the mean of sexual expectations (a score of 2), *Moderate Future Sexual Expectations* corresponds to the mean sexual expectations score (5) and *High Future Sexual Expectations* corresponds to 1 *SD* above the mean score on sexual expectations (8).

for men and for women, the onset of limitations between waves tended to reduce sex, but this pattern did not hold for women with positive expectations prior to limitation onset. In fact, these women remained more likely to have frequent sex not only relative to their health-limited peers with low expectations, but also compared to women across much of the expectations range *who had no such health setbacks*. This is arguably an instance of “sexual resilience,” a process in which individuals and/or couples “withstand, adapt, and find solutions to events and experiences that challenge their sexual relationship” (Beck & Robinson, 2015, p. 64). In another sense, though, our findings point to something beyond the mere adaptation to hardship (resilience)—positive expectations appear to promote antifragility, *positive growth* under conditions of adversity (Kiefer et al., 2018; Taleb, 2012). The role of expectations for fostering such sexual antifragility could be an important topic for future research.

Interestingly, the moderating role of expectations amidst disability was found only among women, even as men and women both generally benefited from holding high sexual expectations. It may be that because men place more emphasis than women on the physical aspects of sex (Peplau, 2003), expectations are less effective as a buffer. Men’s difficulty with physical aspects of sexual performance likely undermines sexual self-esteem, which in turn seems to predict lower frequency of sex (Kontula & Haavio-Mannila, 2009). Women appear to maintain greater sexual self-esteem and perceived attractiveness relative to men following physical limitations (McCabe & Taleporos, 2003), and higher expectations may help facilitate this process of adjustment in later life. That said, results did not indicate a statistically significant difference between men and women in these functional limitation findings, so we caution against over-interpretation here.

Also of note, the onset of functional limitations had no discernible impact on sexual satisfaction. Though

some previous cross-sectional research reaches a similar conclusion (DeLamaeter et al., 2008; McFarland et al., 2011), suggesting that older adults adjust their sexual scripts and priorities in light of their limitations, other findings conclude that recent onset of a disabling condition erodes satisfaction (Kedde & Berlo, 2006; Mamali et al., 2020). It may be that the 10-year gap between waves obscures the recency effect and reduced precision in our estimates, and so we acknowledge this limitation of the current analysis.

Several other limitations of the current study should be kept in mind. As an observational study, we are unable to ascertain causal relationships and multiple unmeasured variables could confound associations between sexual expectations and the sexual outcomes we studied. The sample we studied also had very few nonheterosexual couples, limiting our potential to observe diversity across relational forms.

Besides addressing these limitations, we see several other fronts where future research may build on the present findings. First, our analysis focused on people’s orientations toward their sexual future, but late-life sexuality is formed by a wider sweep of time. Learning more about how past sexual experience shapes the present and the future—indeed, elaborating a “temporally extended *sexual self*” (see Peetz & Wilson, 2008)—could fill out our understanding of how older adults construct, modify, become constrained by, and perhaps even transcend a distinct perceived life trajectory. Scholars could further map the continuity of past and present behavior by uncovering the early life-course origins of mid-to-late-life sexual expectations. Another topic for future research is whether there are potential pitfalls to soaring sexual expectations; what happens if circumstances intervene and a partner is lost or becomes incapacitated? If illness or dysfunction thwarts best-laid plans? There are mixed findings as to whether unrealistic and/or unmet expectations pose a downside for people’s well-being (Grossman & Gruenewald, 2020; Reynolds & Baird, 2010; Sendroiu et al., 2021), but how this unfolds in the domain of late-life sexuality has yet to be considered.

In closing, the current study offers some potential application for clinicians and care providers who serve older adults. Optimism about sexuality among older men and women appears to pay dividends, but it is unlikely that the topic of sexual expectations regularly finds its way into clinical settings, given that well less than half of older people, for instance, discuss sexual difficulties with their physician (Lindau et al., 2007). Indeed, health professionals commonly suppose that late-life sexuality falls outside their realm of expertise (Haesler et al., 2016; Levkovich et al., 2018), many citing a lack of training on the topic (Hughes & Wittmann, 2015; Gott, 2005). For their part, many older adults fear the disapproval of providers when broaching sexual topics (Gott & Hinchliff, 2003). Future-oriented discussion about a range of late-life topics is clearly important in the clinician–patient relationship (see Parry et al.,

2014), and the current findings show that sexual expectations are among the issues that should not be overlooked. Recognizing the possibility that unmet expectations can backfire, we recommend a strategy that balances optimism with realistic acknowledgment of the challenges present in older age.

## Supplementary Material

Supplementary data are available at *The Gerontologist* online.

## Author Note

1. Results are substantively similar if we use 50 or 55 years of age as the cutoff to denote sample inclusion.

## Funding

None declared.

## Conflict of Interest

None declared.

## References

- Allison, P. (1999). *Multiple regression: A primer*. Pine Forge.
- Beck, A. M., & Robinson, J. W. (2015). Sexual resilience in couples. In: K. Skerrett & K. Fergus (Eds.), *Couple resilience* (pp. 63–82). Springer.
- Bortz, W. M., Wallace, D. H., & Wiley, D. (1999). Sexual function in 1,202 aging males: Differentiating aspects. *The Journals of Gerontology, Series A: Biomedical Sciences and Medical Sciences*, 54(5), M237–M241. doi:10.1093/gerona/54.5.M237
- Brody, S. (2010). The relative health benefits of different sexual activities. *The Journal of Sexual Medicine*, 7(4), 1336–1361. doi:10.1111/j.1743-6109.2009.01677.x
- DeLamater, J. (2012). Sexual expression in later life: A review and synthesis. *Journal of Sex Research*, 49(2–3), 125–141. doi:10.1080/00224499.2011.603168
- DeLamater, J., Hyde, J. S., & Fong, M. C. (2008). Sexual satisfaction in the seventh decade of life. *Journal of Sex & Marital Therapy*, 34(5), 439–454. doi:10.1080/00926230802156251
- DeLamater, J., & Karraker, A. (2009). Sexual functioning in older adults. *Current Psychiatry Reports*, 11(1), 6–11. doi:10.1007/s11920-009-0002-4
- Dorner, T. E., Berner, C., Haider, S., Grabovac, I., Lamprecht, T., Fenzl, K. H., & Erlacher, L. (2018). Sexual health in patients with rheumatoid arthritis and the association between physical fitness and sexual function: A cross-sectional study. *Rheumatology International*, 38(6), 1103–1114. doi:10.1007/s00296-018-4023-3
- Estill, A., Mock, S. E., Schryer, E., & Eibach, R. P. (2018). The effects of subjective age and aging attitudes on mid-to late-life sexuality. *The Journal of Sex Research*, 55(2), 146–151. doi:10.1080/00224499.2017.1293603
- Ferraro, K. F., & Wilkinson, L. R. (2015). Alternative measures of self-rated health for predicting mortality among older people: Is past or future orientation more important? *The Gerontologist*, 55(5), 836–844. doi:10.1093/geront/gnt098
- Fischer, K. E., & Riddle, N. C. (2018). Sex differences in aging: Genomic instability. *The Journals of Gerontology, Series A: Biomedical Sciences and Medical Sciences*, 73(2), 166–174. doi:10.1093/gerona/glx105
- Gianotten, W. L., Alley, J. C., & Diamond, L. M. (2021). The health benefits of sexual expression. *International Journal of Sexual Health*, 33(4), 478–493. doi:10.1080/19317611.2021.1966564
- Gillespie, B. J. (2017). Correlates of sex frequency and sexual satisfaction among partnered older adults. *Journal of Sex & Marital Therapy*, 43(5), 403–423. doi:10.1080/0092623X.2016.1176608
- Gott, M. (2005). *Sexuality, sexual health and ageing*. Open University Press.
- Gott, M., & Hinchliff, S. (2003). Barriers to seeking treatment for sexual problems in primary care: A qualitative study with older people. *Family Practice*, 20(6), 690–695. doi:10.1093/fampra/cm612
- Grossman, M. R., & Gruenewald, T. L. (2020). Failure to meet generative self-expectations is linked to poorer cognitive-affective well-being. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 75(4), 792–801. doi:10.1093/geronb/gby069
- Haesler, E., Bauer, M., & Fetherstonhaugh, D. (2016). Sexuality, sexual health and older people: A systematic review of research on the knowledge and attitudes of health professionals. *Nurse Education Today*, 40, 57–71. doi:10.1016/j.nedt.2016.02.012
- Hershey, D. A., & Mowen, J. C. (2000). Psychological determinants of financial preparedness for retirement. *The Gerontologist*, 40(6), 687–697. doi:10.1093/geront/40.6.687
- Heywood, W., Minichiello, V., Lyons, A., Fileborn, B., Hussain, R., Hinchliff, S., & Dow, B. (2019). The impact of experiences of ageism on sexual activity and interest in later life. *Ageing & Society*, 39(4), 795–814. doi:10.1017/S0144686X17001222
- Hughes, A. K., & Wittmann, D. (2015). Aging sexuality: Knowledge and perceptions of preparation among US primary care providers. *Journal of Sex & Marital Therapy*, 41(3), 304–313. doi:10.1080/0092623X.2014.889056
- Ji, L., Qiao, X., Jin, Y., Si, H., Liu, X., & Wang, C. (2021). Functional disability mediates the relationship between pain and depression among community-dwelling older adults: Age and sex as moderators. *Geriatric Nursing*, 42(1), 137–144. doi:10.1016/j.gerinurse.2020.12.010
- Karraker, A., & DeLamater, J. (2013). Past-year sexual inactivity among older married persons and their partners. *Journal of Marriage and Family*, 75(1), 142–163. doi:10.1111/j.1741-3737.2012.01034.x
- Karraker, A., DeLamater, J., & Schwartz, C. R. (2011). Sexual frequency decline from midlife to later life. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 66(4), 502–512. doi:10.1093/geronb/gbr058
- Kedde, H., & Van Berlo, W. (2006). Sexual satisfaction and sexual self images of people with physical disabilities in the Netherlands. *Sexuality and Disability*, 24(1), 53–68. doi:10.1007/s11195-005-9003-3
- Kessler, R. C., McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., & Williams, D. R. (2010). Childhood adversities and adult psychopathology in the WHO

- World Mental Health Surveys. *The British Journal of Psychiatry*, 197(5), 378–385. doi:10.1192/bjp.bp.110.080499
- Kiefer, A. W., Silva, P. L., Harrison, H. S., & Araújo, D. (2018). Antifragility in sport: Leveraging adversity to enhance performance. *Sport Exercise and Performance Psychology*, 7(4), 342–350. doi:10.1037/spy0000130
- Kolodziejczak, K., Rosada, A., Drewelies, J., Düzel, S., Eibich, P., Tegeler, C., & Gerstorf, D. (2019). Sexual activity, sexual thoughts, and intimacy among older adults: Links with physical health and psychosocial resources for successful aging. *Psychology and Aging*, 34(3), 389–404. doi:10.1037/pag0000347
- Kontula, O., & Haavio-Mannila, E. (2009). The impact of aging on human sexual activity and sexual desire. *Journal of Sex Research*, 46(1), 46–56. doi:10.1080/00224490802624414
- Laumann, E. O., Nicolosi, A., Glasser, D. B., Paik, A., Gingell, C., Moreira, E., & Wang, T. (2005). Sexual problems among women and men aged 40–80 y: Prevalence and correlates identified in the Global Study of Sexual Attitudes and Behaviors. *International Journal of Impotence Research*, 17(1), 39–57. doi:10.1038/sj.ijir.3901250
- Lin, J. (2020). Inter-individual variability in trajectories of functional limitations by race/gender. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 75(5), 1082–1092. doi:10.1093/geronb/gby156
- Levkovich, I., Gewirtz-Meydan, A., Karkabi, K., & Ayalon, L. (2018). Views of family physicians on heterosexual sexual function in older adults. *BMC Family Practice*, 19(1), 86. doi:10.1186/s12875-018-0770-1
- Levy, B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, 18(6), 332–336. doi:10.1111/j.1467-8721.2009.01662.x
- Levy, B. R., Slade, M. D., & Kasl, S. V. (2002). Longitudinal benefit of positive self-perceptions of aging on functional health. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57(5), 409–417.
- Levy, B. R., Zonderman, A. B., Slade, M. D., & Ferrucci, L. (2012). Memory shaped by age stereotypes over time. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 67(4), 432–436. doi:10.1093/geronb/gbr120
- Lindau, S. T., & Gavrilova, N. (2010). Sex, health, and years of sexually active life gained due to good health: Evidence from two US population-based cross-sectional surveys of ageing. *BMJ*, 340, c810–c810. doi:10.1136/bmj.c810
- 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(8), 762–774. doi:10.1056/NEJMoa067423
- Mamali, F. C., Chapman, M., Lehane, C. M., & Dammeyer, J. (2020). A national survey on intimate relationships, sexual activity, and sexual satisfaction among adults with physical and mental disabilities. *Sexuality and Disability*, 38(3), 469–489. doi:10.1007/s11195-020-09645-0
- McCabe, M. P., & Taleporos, G. (2003). Sexual esteem, sexual satisfaction, and sexual behavior among people with physical disability. *Archives of Sexual Behavior*, 32(4), 359–369. doi:10.1023/A:1024047100251
- McFarland, M. J., Uecker, J. E., & Regnerus, M. D. (2011). The role of religion in shaping sexual frequency and satisfaction: Evidence from married and unmarried older adults. *Journal of Sex Research*, 48(2–3), 297–308. doi:10.1080/00224491003739993
- Menkin, J. A., Robles, T. F., Gruenewald, T. L., Tanner, E. K., & Seeman, T. E. (2017). Positive expectations regarding aging linked to more new friends in later life. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 72(5), 771–781. doi:10.1093/geronb/gbv118
- Muzacz, A. K., & Akinsulure-Smith, A. M. (2013). Older adults and sexuality: Implications for counseling ethnic and sexual minority clients. *Journal of Mental Health Counseling*, 35(1), 1–14. doi:10.17744/mehc.35.1.534385v3r0876235
- Parry, R., Land, V., & Seymour, J. (2014). How to communicate with patients about future illness progression and end of life: A systematic review. *BMJ Supportive & Palliative Care*, 4(4), 331–341. doi:10.1136/bmjspcare-2014-000649
- Peplau, L. A. (2003). Human sexuality: How do men and women differ? *Current Directions in Psychological Science*, 12(2), 37–40.
- Peetz, J., & Wilson, A. E. (2008). The temporally extended self: The relation of past and future selves to current identity, motivation, and goal pursuit. *Social and Personality Psychology Compass*, 2(6), 2090–2106. doi:10.1111/j.1751-9004.2008.00150.x
- Polenick, C. A., Leggett, A. N., Webster, N. J., Han, B. H., Zarit, S. H., & Piette, J. D. (2020). Multiple chronic conditions in spousal caregivers of older adults with functional disability: Associations with caregiving difficulties and gains. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 75(1), 160–172. doi:10.1093/geronb/gbx118
- Reynolds, J. R., & Baird, C. L. (2010). Is there a downside to shooting for the stars? Unrealized educational expectations and symptoms of depression. *American Sociological Review*, 75(1), 151–172. doi:10.1177/0003122409357064
- Schaap, L. A., Koster, A., & Visser, M. (2013). Adiposity, muscle mass, and muscle strength in relation to functional decline in older persons. *Epidemiologic Reviews*, 35(1), 51–65. doi:10.1093/epirev/mxs006
- Schafer, M. H., Ferraro, K. F., & Mustillo, S. A. (2011). Children of misfortune: Early adversity and cumulative inequality in perceived life trajectories. *American Journal of Sociology*, 116(4), 1053–1091. doi:10.1086/655760
- Schieman, S., & Turner, H. A. (1998). Age, disability, and the sense of mastery. *Journal of Health and Social Behavior*, 39(3), 169–186. doi:10.2307/2676310
- Sendroiu, I., Upenieks, L., & Schafer, M. H. (2021). The divergent mental health effects of dashed expectations and unfulfilled aspirations: Evidence from American lawyers' careers. *Social Psychology Quarterly*, 84(4), 376–397.
- Stahl, S. T., & Patrick, J. H. (2012). Adults' future time perspective predicts engagement in physical activity. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 67(4), 413–416. doi:10.1093/geronb/gbr118
- Stroope, S., McFarland, M. J., & Uecker, J. E. (2015). Marital characteristics and the sexual relationships of US older adults: An analysis of national social life, health, and aging project data. *Archives of Sexual Behavior*, 44(1), 233–247. doi:10.1007/s10508-014-0379-y
- Syme, M. L., Klonooff, E. A., Macera, C. A., & Brodine, S. K. (2013). Predicting sexual decline and dissatisfaction among older adults: The role of partnered and individual physical and mental health

- factors. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 68(3), 323–332. doi:[10.1093/geronb/gbs087](https://doi.org/10.1093/geronb/gbs087)
- Taleb, N. N. (2012). *Antifragile: Things that gain from disorder* (Vol. 3). Random House Incorporated.
- Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care*, 30(6), 473–483. doi:[10.1097/00005650-199206000-00002](https://doi.org/10.1097/00005650-199206000-00002)
- Weuve, J., Tchetgen, E. J. T., Glymour, M. M., Beck, T. L., Aggarwal, N. T., Wilson, R. S., & de Leon, C. F. M. (2012). Accounting for bias due to selective attrition: The example of smoking and cognitive decline. *Epidemiology*, 23(1), 119–128. doi:[10.1097/EDE.0b013e318230e861](https://doi.org/10.1097/EDE.0b013e318230e861)
- Wilkinson, L. R., Schafer, M. H., & Wilkinson, R. (2020). How painful is a recession? An assessment of two future-oriented buffering mechanisms. *Social Science & Medicine*, 255, 112455. doi:[10.1016/j.socscimed.2019.112455](https://doi.org/10.1016/j.socscimed.2019.112455)
- Wurm, S., Warner, L. M., Ziegelmann, J. P., Wolff, J. K., & Schüz, B. (2013). How do negative self-perceptions of aging become a self-fulfilling prophecy? *Psychology and Aging*, 28(4), 1088–1097. doi:[10.1037/a0032845](https://doi.org/10.1037/a0032845)