Sexual activity in older adults with visual impairment: findings from the English Longitudinal Study of Ageing

Abstract

Background: Sexual activity is a central component of intimate relationships and has been shown to have numerous benefits for health and wellbeing. Studies have shown that people with disabilities often report less satisfaction with their sex lives, but none have examined the levels of sexual activity in older adults with visual problems.

Aim: We investigated associations between self-rated eyesight and sexual activity in a population-based sample of older adults.

Methods: Analyses were conducted using data from 2,587 men and 3,238 women participating in the English Longitudinal Study of Ageing. Participants provided information on self-rated eyesight in three domains: overall, at distance, and up close (categorised as: excellent/very good/good/fair-poor), sexual activity (any vs. none in the last year), and frequency of sexual intercourse in the last month (not at all, once, 2-3 times, once a week or more) among those who were sexually active. Associations between self-rated eyesight and sexual activity were examined using adjusted logistic regression.

Results: Relative to excellent self-rated eyesight, fair–poor eyesight was consistently associated with significantly lower odds of being sexually active in men (overall eyesight OR 0.41, 95% CI 0.26-0.64, $p<0.001$) but not in women (overall eyesight OR=0.99, 95% CI 0.70-1.41, $p=0.959$). However, among women who were sexually active, there was some evidence that fair–poor eyesight was associated with lower frequency of sexual intercourse in the last month (e.g. fair–poor eyesight at distance OR=0.45, 95% CI 0.31-0.66, $p<0.001$). No association between self-rated eyesight and frequency of sexual intercourse was observed for men.

Clinical Implications: Identifying ways to help older patients with impaired vision achieve a more active sex life could help to improve the health and wellbeing of this population group.

Conclusion: Visual impairment is associated with lower prevalence of any sexual activity in older men, and lower frequency of sexual intercourse in older women.

Key words: sexual activity; sexual intercourse; visual impairment; older adults; diabetic retinopathy; England.

Introduction

Sexual activity – defined as sexual intercourse, masturbation, petting or fondling – is a central component of intimate relationships and has been shown to be associated with benefits for health and wellbeing [1]. For example, in a US-based study of 1,046 men and 1,158 women (aged 57-85), with a five-year follow-up, frequent and high-quality sex was found to protect against cardiovascular events in later life [2]. Regular sexual activity has also been shown to be associated with reduced risk of fatal coronary events, as well as prostate and breast cancer [3-5]. Moreover, engaging in sexual activity has been shown to be beneficial for mental health. In a study of 133 older adults (mean age 74 years), both the frequency and self-rated importance of sexual behaviors were moderately positively correlated ($r = 0.52$ and 0.47, respectively, both $p<0.001$) with quality of life [6]. In another, larger study (n=2,810), the frequency of sexual intercourse was positively associated with sexual satisfaction, health, and wellbeing [7].

Studies have indicated that people with physical disabilities may be less likely to have active and satisfying sex lives. For instance, in a sample of 1,196 participants (with a mean age around 36 years), people with severe physical impairments experienced significantly lower levels of sexual esteem and sexual satisfaction and significantly higher levels of sexual depression than those who had milder impairments or who did not report having a physical impairment [8]. The same study also found that people with more severe physical disabilities engaged in mutual sexual activity significantly less frequently [8]. One particular disability that has yet to be studied in older adults and may present itself as a key barrier to sexual activity is reduced vision. This is of particular concern as approximately two million people in the UK are living with sight loss (defined here as partial sight or blindness in the better seeing eye), and the prevalence of sight loss is on the rise [9], owing to an ageing UK population [10]. Importantly, along with a decline in vision, ageing is also known to be

associated with reduced sexual activity [11]. Studies have shown that levels of free-living physical activity are lower in those with reduced eyesight compared to those with “normal” vision [12]. While sexual activity has been classed as a form of physical activity, it is not captured by physical activity measurement tools. It is likely that levels of sexual activity are low among people with visual impairment. However, to date no studies have investigated the relationship between vision loss and sexual activity.

The present study therefore aimed to compare levels of sexual activity in relation to self-rated eyesight in a large, representative sample of older English adults. Specifically, we aimed to explore whether: (a) the prevalence of any sexual activity, and (b) the frequency of sexual intercourse differed between individuals who rated their eyesight as excellent, very good, good, or fair-poor. We hypothesized that those who rated their sight as fair-poor would be less likely to be sexually active and would engage in less frequent sexual intercourse than those who rated their eyesight as good or bettter.

Methods

Study population

The English Longitudinal Study of Ageing (ELSA) is a population-representative longitudinal panel study of men and women aged ≥50 years living in England [13]. Participants take part in biennial assessments, in which they complete a computer-assisted personal interview and self-completion questionnaires. For the purpose of the present analyses, we used data from Wave 6 (collected 2012/13), as this is the only wave to date that has included assessment of sexual activity. Of the 10,601 individuals who were interviewed in wave 6 of ELSA, 7,079 (67% of those eligible) completed the paper-based questionnaire that included measures of sexual attitudes and behavior. We restricted our sample to those who had complete data on sexual activity, self-rated eyesight, and all

covariates (*n*=5,825). All participants gave full informed consent to participate in the study and ethics approval was obtained from the London Multi-Centre Research Ethics Committee.

Measures

Exposure: self-rated eyesight

To assess self-rated eyesight, participants were asked "*Is your eyesight (using glasses or corrective lenses; if you use them) excellent/very good/good/fair/or poor?*" Based on response options, participants were then categorized into one of four groups (excellent/very good/good/fair–poor). Participants were also asked "*How good is your eyesight for seeing things at a distance, like recognising a friend across the street?"* and "*How good is your eyesight for seeing things up close, like reading ordinary newspaper print?*" Response options were categorized as above (excellent/very good/good/fair–poor).

Outcome: sexual activity

Sexual activity was assessed via two items from the Sexual Relationships and Activities Questionnaire (SRA-Q). All men and women were asked "*Have you had any sexual activity (sexual intercourse, masturbation, petting or fondling) in the past year?*" (yes/no). Those who reported being sexually active in the past year were asked "*How many times have you had or attempted sexual intercourse (vaginal, anal or oral sex) in the past month?*", with the following response options: not at all, once in the past month, 2-3 times in the past month, once a week, 2-3 times a week, once a day, more than once a day. Due to low numbers of participants endorsing the latter three response options, we combined those reporting having or attempting sexual intercourse once a week or more for analyses. The SRA-Q was administered as a self-completion questionnaire and returned in a sealed envelope. Participants were advised that all responses would be kept anonymous.

Covariates

All covariates were selected *a priori*. Age, sex, ethnicity (white vs. non-white), and partner status (married/cohabiting, separated/divorced, widowed, or single/never married) were self-reported. Socioeconomic status was indexed using household non-pension wealth quintile (calculated across all ELSA Wave 6 participants), a measure shown to be particularly sensitive in this age group [14].

Trained interviewers asked participants about their smoking status (smoker vs. non-smoker), alcohol intake (categorized as: never/rarely [never – once or twice a year], regularly [once every couple of months – twice a week], or frequently [3 days a week – almost every day] [15]), physical activity (categorized as: inactive [no moderate/vigorous activity on a weekly basis], moderate activity at least once a week, and vigorous activity at least once a week [16]), depressive symptoms (using the eight-item Centre for Epidemiological Studies Depression Scale [17]), history of cardiovascular disease (CVD; angina, heart attack, stroke, hypertension), history of diabetes, and history of eye disease (glaucoma, diabetic eye disease, macular degeneration, cataract).

Statistical analysis

Analyses were performed using IBM SPSS Statistics 25. Data were weighted to correct for sampling probabilities and for differential non-response and to calibrate back to the 2011 National Census population distributions for age and sex. The weights accounted for the differential probability of being included in wave 6 of ELSA and for non-response to the SRA-Q. Details can be found at http://doc.ukdataservice.ac.uk/doc/5050/mrdoc/pdf/5050_elsa_w6_technical_report_v1.pdf.

Associations between visual impairment and (i) covariates, and (ii) sexual activity were assessed using one-way analyses of variance (ANOVAs) for continuous variables and chi-square tests for categorical variables. Multivariable logistic regression models were used to analyze independent associations between self-rated eyesight (as a four-level variable as described above and a binary

variable comparing fair-poor with all other ratings) and sexual activity, adjusting for age, partner status, ethnicity, wealth, smoking status, alcohol intake, physical activity, depressive symptoms, and history of CVD, diabetes, and eye disease. We used binary logistic regression to analyze data on any sexual activity in the past year in the whole sample and ordinal logistic regression to analyze the frequency of sexual activity in the past month among those who were sexually active. All analyses were performed separately for men and women, with a *p*-value <0.05 indicating statistical significance.

Results

Complete data were available for 2,587 men and 3,238 women. Sample characteristics are summarized in Table 1. A total of 17.3%, 35.0%, 38.1%, and 9.6% of men and 13.6%, 34.9%, 39.4%, and 12.0% of women rated their eyesight as excellent, very good, good, and fair–poor, respectively. Those with fair–poor self-rated eyesight were older (p<0.001), less wealthy (p<0.001), and less likely to be married (p<0.001) or white (p=0.011 men, p<0.001 women). They also had the highest prevalence of smoking (p<0.001), physical inactivity (p<0.001), history of CVD (p<0.001), history of diabetes (p<0.001), and history of eye disease (p<0.001), and the highest mean number of depressive symptoms (p<0.001), but reported less frequent alcohol intake (p<0.001).

Compared with other self-rated eyesight groups, the prevalence of any sexual activity in the last year was highest in the group who rated their eyesight as excellent (87.1% of men, 63.6% of women) and lowest in the group who rated their eyesight as fair or poor (56.7% of men, 38.0% of women; p<0.001). Among those who were sexually active, the proportion of men who reported no sexual intercourse in the last month was lowest in the group who rated their eyesight as excellent (31.8%) and highest in the group who rated their eyesight as fair or poor (48.1%; p=0.002). The proportion of women who reported sexual intercourse once a week or more was highest in the group who rated

their eyesight as excellent (29.3%) and lowest in the group who rated their eyesight as fair or poor (15.9%; *p*=0.001) (Table 1).

In adjusted logistic regression models, when self-rated eyesight was analyzed as a four-level variable men with fair–poor eyesight were significantly less likely to be sexually active than those who reported excellent eyesight (OR 0.41, 95% CI 0.26-0.64, *p*<0.001; Table 2). Similar findings were found for the variables 'recognition of friends across street' and 'reading ordinary newspaper' (Table 2). There was no association between self-reported eyesight and the prevalence of sexual activity in women (fair–poor vs. excellent OR=0.99, 95% CI 0.70-1.41, *p*=0.959; Table 2). However, among women who were sexually active, fair–poor eyesight for recognition of friends across the street (OR=0.45, 95% CI 0.31-0.66, *p*<0.001) and reading ordinary newspaper print (OR=0.61, 95% CI 0.43-0.88, *p*=0.007) was associated with lower frequency of sexual intercourse in the last month (Table 3). The association with frequency of intercourse in women did not reach significance based on the overall measure of self-rated eyesight (OR=0.76, 95% CI 0.53-1.09, *p*=0.140), and no significant association between self-reported eyesight and frequency of sexual intercourse was observed for men (Table 3). Results were largely unchanged when self-rated eyesight was analyzed as a binary variable, the only notable difference being that the association in men between fair-poor eyesight for recognition of friends across the street and sexual activity was no longer statistically significant (Table 2).

Discussion

In this large, representative sample of older English adults, we found that men with fair–poor eyesight were significantly less likely to be sexually active than those who reported excellent eyesight. Similar findings were found for the variables 'recognition of friends across street' and 'reading ordinary newspaper'. Interestingly, there was no association between self-reported

eyesight and the prevalence of sexual activity in women. However, among women who were sexually active, fair–poor eyesight for recognition of friends across the street and reading ordinary newspaper print was associated with lower frequency of sexual intercourse in the last month. Taken together, these results confirm the hypothesis that poor self-rated eyesight is associated with lower levels of sexual activity. These findings support previous work showing that people with a physical disability tend to have poorer sexuality-related outcomes [8].

Low levels of sexual activity in those with reduced eyesight is of concern as this population may be at an increased risk of non-communicable diseases, such as higher risk of CVD [18] and tend to report poorer quality of life [19]. Studies have suggested that engaging in frequent sexual activity may be protective against CVD [3] and is associated with better quality of life [6]. The low levels of sexual activity in older adults who are visually impaired may reflect inhibitions and functional barriers based on visible restrictions. It may also reflect lower sexual confidence or sex appeal on the part of individuals with visual impairments or greater dyadic difficulties in initiating sexual activity. More broadly, older individuals may also internalize cultural scripts that desexualize people with physical disabilities (i.e., that physical disability excludes one from sexuality and engenders discomfort with the notion of differently-abled sexuality) [20], which in turn results in lower sexual esteem and avoidant approaches to sexual activity. The fact that we only observed an association between self-reported eyesight and prevalence of sexual activity in men, with no significant association in women, should be noted. One plausible explanation may be that in men conditions that are known to be associated with erectile dysfunction are also related to reduced eyesight, for example, CVD and overweight/obesity.These factors may be driving the observed association in men. Interestingly, among women who were sexually active, those who reported poor eyesight for recognition of friends across the street and reading ordinary newspaper print engaged in sexual intercourse less frequently, suggesting that reduced eyesight is associated with reduced sexuality in older women.

A clear strength of the present study is the large, representative sample of older English adults. However, data from the present study must be interpreted in light of its limitations. Participants who were included in the analytic sample were slightly older, less likely to have fair-poor eyesight, and less likely to be sexually active than those who were excluded on the basis of missing data. Measures of eyesight and sexual activity were self-reported and thus may have introduced bias. The present analyses were cross-sectional in design and so the causal direction of the observed associations should be inferred with caution. Nonetheless, it seems more plausible that visual impairment causes reduced sexual activity than low sexual activity causes visual impairment.

Conclusions

This study is the first to show that prevalence and frequency of sexual activity in older adults with self-rated fair-poor vision is low compared to those reporting better vision. These findings are important because healthcare professionals are often reluctant to discuss sexual issues with older patients [21-23], which is further compounded by the reticence of older adults to raise sexual concerns themselves [24]. However, noting the limitations of the cross-sectional study design, the present findings suggest that loss of vision may have an adverse impact on sexual activity in older adults. This in turn could affect the maintenance of intimate relationships in later life. Introducing sensitive discussions about sexual activity as part of routine enquiry for older adults with visual impairment could facilitate better management of concerns and promote better quality of life [25]. While it may be difficult to treat vision loss if it associated with significant ocular pathology, rehabilitation could target factors that reduce sexual activity in order to promote better quality of life and wellbeing.

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Tables

Table 1 Characteristics of the male and female samples in relation to self-rated eyesight

	Men					Women				
	Excellent (*n*=448)[1]	**Very good (*n*=905)**	**Good (*n*=985)**	**Fair-poor (*n*=249)**	***p***	**Excellent (*n*=441)**	**Very good (*n*=1131)**	**Good (*n*=1276)**	**Fair-poor (*n*=390)**	***p***
Age (mean [SD] years)	63.57 (8.88)	64.18 (9.31)	65.17 (9.53)	67.56 (11.00)	<0.001	62.73 (8.80)	64.75 (9.53)	66.13 (9.62)	68.54 (10.55)	<0.001
Partner status										
Married/cohabiting	77.7	73.7	75.7	59.7	<0.001	68.9	62.3	60.3	52.0	<0.001
Separated/divorced	11.1	9.8	11.6	17.1	-	15.1	15.6	14.8	19.0	-
Widowed	5.1	5.9	5.6	11.9	-	10.9	17.6	18.4	21.4	-
Single/never married	6.0	10.6	7.2	11.3	-	5.2	4.5	6.6	7.6	-
Ethnicity										
White	94.2	95.8	92.4	92.5	0.011	96.5	97.3	96.0	92.1	<0.001
Non-white	5.8	4.2	7.6	7.5	-	3.5	2.7	4.0	7.9	-
Wealth quintile										
1 (poorest)	10.9	16.7	15.3	37.5	<0.001	9.1	16.8	20.8	35.5	<0.001
2	11.6	18.2	22.7	19.1	-	15.8	20.4	21.1	24.9	-
3	22.3	19.4	20.6	14.0	-	24.4	22.2	19.3	19.0	-
4	26.6	23.7	20.5	14.0	-	26.4	20.2	20.2	11.3	-
5 (richest)	28.6	21.9	20.8	15.4	-	24.2	20.4	18.6	9.4	-
Current smoker	10.9	12.2	15.8	22.2	<0.001	13.3	11.5	13.2	18.2	0.010
Alcohol intake[1]										
Never/rarely	10.7	13.7	17.3	25.9	<0.001	24.9	24.8	31.9	41.1	<0.001
Regularly	42.9	41.4	41.8	43.7	-	42.2	46.1	43.4	40.4	-
Frequently	46.4	44.9	40.9	30.4	-	32.8	29.1	24.7	18.5	-
Physical activity										
Inactive	11.4	15.0	21.5	41.6	<0.001	14.8	21.5	24.7	47.4	<0.001
Moderate at least once a week	39.6	44.8	44.8	39.9	-	43.2	50.4	50.4	41.0	-
Vigorous at least once a week	49.0	40.2	33.7	18.4	-	42.0	28.1	24.9	11.6	-

Depressive symptoms (0-8) (mean [SD] years)	0.67 (1.32)	0.89 (1.58)	1.13 (1.79)	2.21 (2.37)	<0.001	1.13 (1.71)	1.36 (1.90)	1.60 (1.97)	2.25 (2.28)	<0.001
History of CVD	38.8	41.4	46.6	54.9	<0.001	28.5	35.6	43.4	58.1	<0.001
History of diabetes	6.2	11.8	13.2	16.3	<0.001	6.2	7.4	9.6	20.4	<0.001
History of eye disease	15.4	17.7	24.8	49.1	<0.001	19.8	22.8	32.6	57.4	<0.001
Sexually active[3]	87.1	81.5	77.4	56.7	<0.001	63.6	60.0	53.5	38.0	<0.001
Frequency of sexual intercourse[4]										
Not at all	31.8	31.1	37.8	48.1	0.002	30.9	30.4	29.4	35.1	0.001
Once in the past month	17.9	17.6	14.4	13.6	-	10.0	18.8	20.3	28.5	-
2-3 times in the past month	23.3	25.8	22.7	15.4	-	29.7	26.1	26.2	20.5	-
Once a week or more	26.9	25.5	25.2	22.8	-	29.3	24.8	24.1	15.9	-

[1] Unweighted sample sizes.

Values are percentages unless otherwise stated.

All figures are weighted for sampling probabilities and differential non-response.

SD = standard deviation, CVD = cardiovascular disease.

[2]Never/rarely = never – once or twice a year; regularly = once every 2 months – twice a week; frequently = 3 days a week – almost every day.

[3] Any sexual activity in the last year.

[4] In the last month, among participants who reported being sexually active.

Table 2 Associations between self-rated eyesight and any sexual activity in the last year in older men and women

	Men			Women		
Rating	**Self-rated eyesight**	**Recognition of friends across street**	**Reading ordinary newspaper**	**Self-rated eyesight**	**Recognition of friends across street**	**Reading ordinary newspaper**
Four-level variable						
Excellent	1.00 [Ref]	1.00	1.00	1.00	1.00	1.00
Very good	0.77 [0.53-1.12]	0.76 [0.55-1.04]	0.58 [0.40-0.83]**	1.22 [0.92-1.62]	0.94 [0.74-1.19]	0.82 [0.63-1.07]
Good	0.71 [0.50-1.02]	0.57 [0.42-0.79]**	0.50 [0.35-0.71]***	1.16 [0.88-1.53]	0.95 [0.74-1.22]	0.93 [0.71-1.21]
Fair–poor	0.41 [0.26-0.64]***	0.54 [0.33-0.89]*	0.30 [0.19-0.47]***	0.99 [0.70-1.41]	0.80 [0.56-1.14]	0.93 [0.65-1.32]
Binary variable						
Good/very good/excellent	1.00 [Ref]	1.00	1.00	1.00	1.00	1.00
Fair–poor	0.53 [0.39-0.74]***	0.77 [0.50-1.19]	0.52 [0.37-0.73]***	0.86 [0.66-1.12]	0.83 [0.61-1.14]	1.04 [0.77-1.39]

* $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Values are odds ratios with 95% confidence intervals.

All figures are adjusted for age, partner status, ethnicity, wealth, smoking status, alcohol intake, physical activity, depressive symptoms, and history of CVD, diabetes and eye disease, and weighted for sampling probabilities and differential non-response.

Table 3 Associations between self-rated eyesight and frequency of sexual intercourse in the last month in sexually active older men and women

	Men			Women		
Rating	**Self-rated eyesight**	**Recognition of friends across street**	**Reading ordinary newspaper**	**Self-rated eyesight**	**Recognition of friends across street**	**Reading ordinary newspaper**
Four-level variable						
Excellent	1.00 [Ref]	1.00	1.00	1.00	1.00	1.00
Very good	1.12 [0.90-1.38]	1.04 [0.86-1.25]	1.11 [0.91-1.36]	0.87 [0.68-1.12]	0.90 [0.73-1.12]	0.96 [0.76-1.20]
Good	0.98 [0.80-1.21]	0.88 [0.72-1.08]	1.05 [0.85-1.29]	0.94 [0.73-1.21]	0.94 [0.75-1.18]	0.88 [0.70-1.11]
Fair–poor	0.79 [0.56-1.11]	0.68 [0.44-1.05]	0.86 [0.60-1.23]	0.76 [0.53-1.09]	0.45 [0.31-0.66]***	0.61 [0.43-0.88]**
Binary variable						
Good/very good/excellent	1.00 [Ref]	1.00	1.00	1.00	1.00	1.00
Fair-poor	0.76 [0.56-1.03]	0.70 [0.46-1.05]	0.81 [0.59-1.12]	0.83 [0.62-1.12]	0.48 [0.34-0.68]***	0.66 [0.48-0.90]**

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

Values are odds ratios with 95% confidence intervals.

All figures are adjusted for age, partner status, ethnicity, wealth, smoking status, alcohol intake, physical activity, depressive symptoms, and history of CVD, diabetes and eye disease, and weighted for sampling probabilities and differential non-response.