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Examining associations between sexual behaviours and quality of life in older adults

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Abstract

Background: while sexual behaviours are potentially important for quality of life in older adults, they are under-researched. The current study examined associations between frequency and importance of sexual behaviours and quality of life in older adults.

Method: one hundred and thirty-three participants (mean 74 years, SD = 7.1) provided information about the frequency with which they participated in six sexual behaviours and the perceived importance of these: touching/holding hands, embracing/hugging, kissing, mutual stroking, masturbating and intercourse. Participants also completed the WHO Quality of Life scale, providing an overall quality of life score, in addition to the domains of physical health, psychological health, social relationships and environment. Participants provided information on their marital status, living arrangements and self-reported health.

Results: both the frequency and importance of sexual behaviours were moderately positively correlated with quality of life ($r = 0.52$ and 0.47, respectively, both $P < 0.001$). In separate regression analyses, the frequency of sexual behaviours was a significant predictor of quality of life in the social relationships domain ($\beta = 0.225$, $P < 0.05$), and the importance of sexual behaviours was associated with the psychological domain ($\beta = 0.151$, $P < 0.05$), independent of the presence of a spouse/partner and self-reported health.

Conclusions: with ageing trends, a broader understanding of the factors that influence quality of life in older adults is increasingly important. The current findings suggest that aspects of sexual behaviour and quality of life were positively associated. Researchers are encouraged to consider aspects of sex and sexuality when exploring determinants of well-being in later life.

Keywords: *sexual behaviour, quality of life, older adults, older people*

Introduction

Increasing life expectancy has focussed attention on identifying factors that predict better health and well-being in later life [1–3]. While sex, sexuality and sexual behaviours are potentially important, they are currently under-researched. As many older adults continue to be sexually active and sexual experiences have been associated with preserved psychological and physical well-being [4], the current study examined the association between sexual behaviours and quality of life in older adults.

Ensuring older adults experience a good quality of life is the goal of much ageing research. While important determinants of quality of life have been reported—health status [5], having energy, being happy, maintained sensory functions and being free from pain [6]—studies rarely consider sex and sexuality. However, the National Survey of Sexual Attitudes and Lifestyles [7] reported that 42% of women and 60% of men aged 65–74 remained sexually active. Furthermore, researchers have identified potential benefits for older adults engaging in sexual behaviours. Edwards and Booth [8] reported that older adults who sexually expressed themselves through intercourse on a regular basis had better physical and psychological well-being, and reduced physical and mental health problems. Studies have further suggested that older adults who engage in sexual intercourse were likely to have a higher quality of intimate relationships, lower rates of depressive symptoms, slimmer waists and higher self-esteem [9, 10]. Indeed, Gott and Hinchcliff [11] suggested that age need not be a barrier regarding the importance of sex in later life or on the frequency of sexual experiences. Almost two-thirds of those aged 50–92

years considered sex to be a vital part of an emotional relationship, though they reported expressions of love and sexual relationships in more diverse and varied ways than younger cohorts [11]. A review by DeLamater [12] suggested that older adults experienced the same benefits through sexual expression including behaviours from holding hands to masturbation.

A focus on sexual intercourse alone may not adequately address the way in which older adults benefit from sexual behaviours. In a sample of 179 American adults 60 years and over, about two-thirds reported having had physical and sexual experiences in the past year, including touching/holding hands, embracing/hugging and kissing daily to once a month, though mutual stroking, masturbation and intercourse were less likely to have been experienced [13]. Regardless of the lower frequency of intercourse, older adults were equally satisfied engaging in other sexual behaviours [13].

In addition, Janus and Janus [14] reported that a majority of older adults showed an interest in maintaining their sexual activity and expressed their want and need for more opportunities to participate in sexual behaviours. More recently, Ekundayo and co-workers [15], in a sample of 375 Nigerian adults aged 40 years and older, reported that between 50–60% of participants engaged in touching/holds, embracing/hugging, kissing and intercourse. Although engagement in sexual behaviours was most prevalent among middle-aged adults, these surveys highlight how many older adults remain sexually active in a full range of sexual behaviours [13, 15]. However, they did not examine associations between engaging in sexual behaviours and important outcomes.

Chao *et al.* [16] therefore examined sexual desire, life satisfaction and quality of life in 283 middle-aged and older Korean adults. While sexual desire and sexual satisfaction declined with increasing age, there was an association between sexual desire and sexual satisfaction, while sexual satisfaction was also positively associated with quality of life.

Current work

While there is growing evidence that sexual behaviours might be both relatively frequent and important for older adults, few studies have examined associations between sexual behaviours and well-being. The current study, therefore, examined sexual activity and well-being in a sample of older, British adults. Based on the work of Ginsberg *et al.* [13], in addition to the frequency of participation in a range of sexual behaviours, participants were also asked to rate the importance of these, to identify whether the importance and/or frequency of sexual behaviours were associated with quality of life.

Methods

Participants

Participants were residents of West Lothian, Scotland, and were eligible to participate in the study if they were 65 years of age and over. All participants were living independently at home, with or without a partner. One hundred and thirty-eight individuals were recruited, though five were excluded due to incomplete questionnaire responses. The analytic sample of 133 participants consisted of 71 males (53%).

Procedure

Participants were recruited using a convenience sample design from a range of public facilities such as bowling clubs, local small businesses and older people's groups. Participants gave written informed consent, and the study was conducted with approval from the Heriot-Watt School of Life Sciences Ethics Committee.

Questionnaire

Participants provided basic demographic information including age and gender, and reported their marital status (single, married, divorced, widowed or separated), living situation (living with spouse/partner, children, friend or alone) and health status (on a 5-point scale from very poor to very good).

Sexual behaviours

A Sexual Behaviour Frequency Scale [13] was used to measure the frequency of sexual behaviours engaged in the last 6 months. Participants reported how often they engaged in six sexual behaviours (touching/holding hands, embracing/hugging, kissing, mutual stroking, masturbating and intercourse) using a 5-point scale from 'not at all' (0) to 'daily' (4). The six items were summed to give an overall sexual behaviour frequency score (Cronbach's alpha = 0.84).

Participants were asked to rate the same sexual behaviours in terms of perceived importance, using a 5-point scale from 'not at all important' (0) to 'very important' (4), summed to give an overall sexual behaviour importance score (Cronbach's alpha = 0.83). For both sexual behaviour frequency and importance, the overall scores could take values from 0 to 24, with ranges in the current sample of 0–20 and 3–18, respectively.

Quality of life

Quality of life was assessed using the World Health Organization Quality of Life-BREF (WHOQOL-BREF) [17]. This consists of 26 items (e.g. 'To what extent do you feel your life to be meaningful?') and provides scores for four quality of life domains: physical health, psychological health, social relationships and environment. The domain scores were standardised to a scale of 4–20 according to the guidelines. An overall quality of life score was computed using 26 items [18], which could range from 26 to 130 (scores ranged from 63 to 112 in the current sample).

Statistical analysis

Data were analysed using SPSS Statistics version 21.0. Independent samples *t*-tests were used to determine whether quality of life, sexual behaviour frequency and importance

Table 1. Sample descriptives

	Full (n = 138)	Analytic		
		Total (n = 133)	Male (n = 71)	Female (n = 62)
Gender				
Male	73 (53%)	71 (53%)		
Female	65 (47%)	62 (47%)		
Age (years)	74 (7.1)	74 (7.1)	74 (7.1)	74 (7.2)
Marital status				
Single	11 (8%)	10 (8%)	5 (7%)	5 (8%)
Married	67 (49%)	64 (48%)	32 (45%)	32 (52%)
Widowed	45 (33%)	44 (33%)	26 (37%)	18 (29%)
Separated	5 (4%)	5 (4%)	3 (4%)	2 (3%)
Divorced	10 (7%)	10 (8%)	5 (7%)	5 (8%)
Living situation				
With spouse/partner	69 (50%)	66 (50%)	34 (48%)	32 (52%)
With children	25 (18%)	24 (18%)	13 (18%)	11 (18%)
With a friend	16 (12%)	16 (12%)	11 (16%)	5 (8%)
Only myself	28 (20%)	27 (20%)	13 (18%)	14 (23%)
Self-rated health status				
Very poor	12 (9%)	11 (8%)	7 (10%)	4 (7%)
Poor	22 (16%)	22 (17%)	11 (16%)	11 (18%)
Neither good nor poor	30 (22%)	30 (23%)	15 (21%)	15 (24%)
Good	47 (34%)	44 (33%)	25 (35%)	19 (31%)
Very good	27 (20%)	26 (20%)	13 (18%)	13 (21%)
Sexual behaviour frequency		9.59 (5.02)	10.23 (5.26)	8.85 (4.67)
Sexual behaviour importance		9.62 (4.07)	9.94 (4.38)	9.26 (3.69)
WHOQOL—quality of life		93.89 (12.10)	93.04 (13.28)	94.87 (10.63)
WHOQOL domains				
Physical health		12.24 (1.90)	12.28 (2.03)	12.20 (1.75)
Psychological		14.14 (1.70)	14.05 (1.86)	14.24 (1.50)
Social relationships		15.71 (2.35)	15.38 (2.54)	16.09 (2.06)
Environment		16.09 (2.30)	15.84 (2.60)	16.39 (1.90)

Sample size reduced from 138 to 133 due to 5 questionnaires being incomplete. Values show mean (standard deviation) for age, sexual behaviour frequency, sexual behaviour importance, overall WHOQOL quality of life and the WHOQOL domains. Other values show number and percentage (%).

differed by gender, marital status or living situation. In regression analyses, quality of life (overall or domain scores) was the dependent variable, while independent variables included the demographics and the frequency or importance of sexual behaviours scores. Standardised beta values are reported throughout.

Results

The mean age of the analytic sample was 74 years (SD = 7.1, range 65–92). Full descriptives are reported in Table 1. Most participants reported being married (48%) and living with a spouse/partner (50%). Marital status and living situation were therefore considered as dichotomous variables in subsequent analyses: participants who were single, widowed, divorced or separated were recoded as 'not married' versus those currently married; participants who lived with a spouse/partner, children or friend were recoded as 'living with someone' versus living alone. Supplementary data, Appendix S1, available in *Age and Ageing* online display the frequency and importance data for each sexual behaviour separately, highlighting participants engaged most frequently in touching/holding hands (75%), embracing/hugging (89%) and kissing (87%).

While men scored higher than women for both frequency (10.2 (5.3) versus 8.9 (4.7)) and importance (9.9 (4.4) versus 9.3 (3.7)) of sexual behaviours (Table 2), these differences were not significant (t (131) = 0.968 (P = 0.335) and 1.589 (P = 0.117), respectively). Women reported higher overall quality of life (94.9 versus 93.1); however, this difference was not significant (t (131) = −0.861 (P = 0.391)).

Significant differences by marital status were found in overall quality of life (t (131) = −4.445, P < 0.001), sexual behaviour frequency (t (131) = −8.187, P < 0.001) and importance (t (131) = −5.459, P < 0.001). Overall, married participants reported higher quality of life, and frequency and importance of sexual behaviours (Table 2). Similarly, participants living with someone reported higher sexual behaviour frequency and importance (t (131) = 5.493 (P < 0.001) and 2.417 (P < 0.05), respectively); though it is important to note that unmarried individuals and those living alone were reporting sexual activity (Table 2). Given the non-independence of marital status and living arrangement (those living alone were all unmarried) and the potential for collinearity issues, the variables were combined to create a new variable: spouse/partner present (49.6%) versus not.

Frequency and importance of sexual behaviours were moderately positively correlated with quality of life (r = 0.52 and 0.47, respectively, P < 0.001). In addition, frequency and

Table 2. Summary of differences on quality of life and sexual behaviours

	Quality of life		Sexual behaviour frequency		Sexual behaviour importance	
	M (SD)	*t* (df), *P*	*M* (SD)	*t* (df), *P*	*M* (SD)	*t* (df), *P*
Gender		−0.861 (131), 0.391		1.579 (131), 0.117		0.968 (131), 0.335
Male	93.06 (13.3)		10.23 (5.3)		9.94 (4.4)	
Female	94.87 (10.3)		8.85 (4.7)		9.26 (3.7)	
Marital status		**−4.445 (131), <0.001**		**−8.187 (131), <0.001**		**−5.459 (131), <0.001**
Married	98.44 (9.5)		12.61 (3.6)		11.44 (3.3)	
Not married	89.70 (12.8)		6.78 (4.5)		7.94 (4.0)	
Living situation		−0.011 (131), 0.991		**5.493 (131), <0.001**		**2.417 (131), <0.05**
Living with someone	93.90 (12.7)		10.68 (4.3)		10.03 (3.9)	
Living alone	93.93 (9.5)		5.30 (5.3)		7.96 (4.4)	

Values shown are mean (standard deviation), *t* (df), *P* value. Significant values shown in bold. Marital status and living situation were recoded as dichotomous variables. Marital status was recoded as participants 'married' versus 'not married' (single, widowed, divorced and separated). Similarly, living situation was recoded as participants living 'alone' versus those 'living with someone' (spouse/partner, friends or children).

Table 3. Linear regression analyses of frequency and importance of sexual behaviours predicting quality of life

	Quality of life *β* (*P* value)	Physical health *B* (*P* value)	Psychological *β* (*P* value)	Social relationships *β* (*P* value)	Environment *β* (*P* value)
Age	−0.006 (0.918)	0.059 (0.371)	0.037 (0.647)	0.056 (0.572)	−0.074 (0.363)
Gender	0.057 (0.217)	−0.038 (0.461)	0.052 (0.407)	**0.169 (0.029)**	0.098 (0.121)
Health status	**0.806 (<0.001)**	**0.842 (<0.001)**	**0.691 (<0.001)**	**0.303 (0.003)**	**0.642 (<0.001)**
Spouse/partner	0.091 (0.105)	0.028 (0.649)	0.013 (0.866)	0.152 (0.106)	0.085 (0.269)
Sexual behaviour frequency	0.025 (0.696)	0.018 (0.798)	0.088 (0.309)	**0.225 (0.035)**	−0.026 (0.766)
Adjusted R^2	0.733	0.670	0.504	0.262	0.500
F (df)	73.319 (5,127)	54.598 (5,127)	27.830 (5, 127)	10.356 (5, 127)	27.348 (5, 127)
Age	−0.008 (0.891)	0.060 (0.351)	0.024 (0.763)	0.012 (0.900)	−0.067 (0.401)
Gender	0.063 (0.162)	−0.030 (0.551)	0.054 (0.378)	**0.151 (0.049)**	0.107 (0.086)
Health status	**0.774 (<0.001)**	**0.806 (<0.001)**	**0.651 (<0.001)**	**0.285 (0.007)**	**0.618 (<0.001)**
Spouse/partner	0.075 (0.144)	0.006 (0.918)	0.007 (0.918)	**0.201 (0.020)**	0.060 (0.394)
Sexual behaviour importance	0.094 (0.091)	0.104 (0.095)	**0.151 (0.047)**	0.167 (0.077)	0.047 (0.541)
Adjusted R^2	0.738	0.677	0.515	0.254	0.501
F (df)	75.454 (5,127)	65.343 (5,127)	29.070 (5,127)	9.981 (5,127)	27.467 (5,127)

Significant values are highlighted in bold. See Table 2.

importance were themselves correlated at 0.80. The regression analyses consider these variables separately; however, issues with interpretation are discussed.

Regression analysis

With quality of life as the dependent variable, and age, gender, health status, presence of spouse/partner and frequency of sexual behaviours as independent variables, a significant model emerged ($F(5,127) = 73.319$, $P < 0.001$), accounting for 73.3% of the variance. Health status ($\beta = 0.806$, $P < 0.001$) was the only significant contributor (Table 3).

Separate models were run for each quality of life domain, with the variance accounted for ranging from 26% for social relationships to 67% for physical health (Table 3). Health status was a consistent predictor across all quality of life domains (β ranging from 0. 303 to 0.842). Gender was a significant predictor for the social relationships domain ($\beta = 0.169$, $P < 0.05$), with females scoring higher. Sexual behaviour frequency was only significantly associated with quality of life in the social relationships domain ($\beta = 0.225$, $P < 0.05$).

The regression analyses were repeated with the importance of sexual behaviour replacing frequency (Table 3); importance was only a significant predictor for the psychological domain ($\beta = 0.151$, $P < 0.05$).

Discussion

The present study examined whether frequency or importance of sexual behaviours was associated with quality of life in older adults. Consistent with previous findings [13], the sample reported frequent engagement in the sexual behaviours, touching/holding hands, hugging and kissing, in addition to high levels of mutual stroking, masturbating and intercourse. Health status was found to be a consistent predictor across all quality of life domains. Due to being highly related, frequency and importance were considered in separate analyses and were associated with quality of life in the social relationship and psychological domain, respectively.

In the few studies that have considered sexual behaviours and well-being in older adults, associations have been reported between more frequent participation and higher well-being [8–10]. The associations were suggested as resulting from good physical and mental health, a positive attitude towards sex in later life, access to a healthy partner and satisfaction with one's sex life. In the current study, frequency of sexual behaviour and quality of life were associated, though in the regression analyses this was in the social relationships domain only. These results support the findings of Brody [9], suggesting those who frequently engaged in intercourse were more likely to have a higher quality of intimate relationships. The possibility of confounding by reverse causation might be particularly problematic within that association, so replication is required.

The current study asked participants about their physical health but not about their sexual health including whether they experienced any problems in sexual functioning (erectile dysfunction, low arousal and not reaching orgasm). It is possible that participants who scored low on frequency but high on importance were experiencing barriers that prevented them from engaging in sexual behaviours. In future studies, asking participants about their sexual health, including the use of any drugs such as sildenafil or tadalafil as a means to overcome any difficulties in sexual functioning, would be advantageous.

Furthermore, the current study assessed both frequency and importance of sexual activity as it may not be how often older adults engage in various sexual behaviours, but rather the importance they place on this behaviour. However, the variables were very strongly associated and could not be analysed concurrently. It would be advisable in future studies to devise alternative assessments of the importance that older adults place on their sexual activity. Given the dearth of studies assessing both frequency and importance, the current results are in need of replication, before more detailed explanations for the associations can be proposed and explored.

While the analyses focussed on the overall sexual behaviours scores, it may be that specific behaviours are more or less important for older adults. Some exploratory analyses were conducted with the individual behaviours, and consistent with those of Edward and Booth [8], intercourse (frequency and importance) was significantly associated with higher levels of well-being. Future analyses might consider alternative ways of combining the behaviours, for example characterising 'light' (touching/holding hands, kissing, embracing/hugging) versus 'hard' forms (mutual stroking, masturbating and intercourse). The current sample size precluded detailed analyses, though suggested that the importance of hard forms of sexual behaviours to be significantly associated with all domains of quality of life. These suggestions are to provide an impetus for further work (interim analyses are available on request). Larger studies would allow hierarchies within the sexual behaviours to be investigated also, via techniques such as Mokken scaling.

The current study did not specifically ask participants whether they had a current sexual partner or not, but the marital status and living arrangements data were combined to give an indicator of their having a spouse/partner versus not. Sexual behaviours were to be reported from the preceding 6 months, though more detailed sexual histories would be advantageous. It is interesting to note, however, that the unmarried individuals were still reporting sexual activity.

The current study considered a range of sexual behaviours as potential predictors of quality of life, whereas the majority of research has primarily looked at intercourse alone [8, 9]. In addition, an aim of the study was to consider both frequency and importance of sexual behaviours, and the results suggest the inclusion of aspects beyond frequency is worthy of further scrutiny. However, as the study was cross-sectional in design (as are most other studies in this area), there was no opportunity to study the direction of association between variables. The convenience sampling method may also have affected the kinds of older adults volunteering, being mostly active and socially engaged. In addition, the relatively small sample size would not be representative of the general population of older adults. That said, the sample was comparable in size to those in the literature and extended those earlier findings and this under-researched topic to a British sample.

Conclusion

Consistent with previous research [5], health status was found to have the greatest impact on overall quality of life and all domains. Frequency of sexual behaviour had a significant association with quality of life in the social relationship domain, while importance was significantly associated with the psychological domain, suggesting that sexual activity needs to be more fully considered as a determinant of quality of life in older adults.

Key points

- Sexual behaviours may influence quality of life in older adults.
- Sexual behaviours are under-researched in older adults.
- The frequency and importance of sexual behaviours may influence quality of life.

Conflicts of interest

None declared.

Supplementary data

Supplementary data mentioned in the text are available to subscribers in *Age and Ageing* online.

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Do levels of perceived stress increase with increasing age after age 65? A population-based study

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Abstract

Background: psychological and health-related stressors often occur in advanced ages, but little is known about perceived stress in adults aged 65 and over. This study aimed to test the hypothesis that levels of perceived stress increase with increasing age and to detect factors that may account for the association.