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Sexual satisfaction of older adults: testing the Interpersonal Exchange Model of Sexual Satisfaction in the ageing population

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Abstract

Having a satisfying sex life is important to older adults. Thus, this study aimed to provide information about the sexual satisfaction of older adults in a relationship, using the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS) as a theoretical framework. Participants were 187 sexually active individuals (98 men and 89 women) in a romantic relationship (age 65–75 years). They were recruited using Amazon's Mechanical-Turk, and completed the Interpersonal Exchange Model of Sexual Satisfaction Questionnaire and two open-ended questions asking what they enjoyed most and least about their sexual relationship. On average, participants were highly sexually satisfied. In keeping with the IEMSS, greater sexual satisfaction was predicted by a more favourable balance of sexual rewards to costs, greater equality of sexual costs and higher satisfaction with the non-sexual aspects of the relationship. Four themes emerged regarding what participants liked most and least about their sexual relationship: emotional aspects of the relationship, physical aspects of the relationship, dyadic aspects of the relationship and age-related aspects of being sexual. None of the four themes were specific to men or women, although some gender/sex differences were found. The results paint a positive picture of the sexual relationships of older adults and support the utility of the IEMSS as a framework to understand sexual satisfaction in older adults.

Keywords: sexual satisfaction; older adults; Interpersonal Exchange Model of Sexual Satisfaction; ageing; gender; health

Introduction

Sexuality is an integral part of the quality of life of most older adults (American Association of Retired Persons, 2010; Karraker and DeLamater, 2013; Hensel and Fortenberry, 2014). In keeping with the World Health Organization (2008), older adults are defined as those who are 65 years or older. Most research on the sexuality of older adults has focused on sexual frequency and sexual function, neglecting the positive affective dimensions of sexual wellbeing such as sexual satisfaction

(DeLamater, 2012; DeLamater and Koepsel, 2015). Yet, most older adults consider it important to have a *satisfying* sex life, not just a sex life (Santos-Iglesias *et al.*, 2016). Furthermore, sexual satisfaction and wellbeing have been shown to be closely associated with relationship satisfaction and longevity, psychological wellbeing, sexual function and quality of life in both younger (Ventegodt, 1998; Byers, 2005; Byers and Rehman, 2014; Sánchez-Fuentes *et al.*, 2014) and older (Gott and Hinchliff, 2003; Bouman *et al.*, 2006; Levin, 2007; Malatesta, 2007; Chao *et al.*, 2011; Heiman *et al.*, 2011; Tsang *et al.*, 2012) adults. Given the potential benefits of a satisfying sex life for older adults, it is important to understand the mechanisms that lead to greater sexual satisfaction. Therefore, the goal of this study was to provide information about the sexual satisfaction of older adults in a romantic relationship using the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS) as a theoretical framework (Lawrance and Byers, 1992, 1995).

Interpersonal Exchange Model of Sexual Satisfaction (IEMSS)

The IEMSS was proposed as a theoretical model to explain the mechanisms leading to higher sexual satisfaction (Lawrance and Byers, 1995). Based on social exchange theories (Thibaut and Kelley, 1959), Lawrance and Byers (1995) defined sexual satisfaction as an individual's affective response arising from the subjective evaluation of the positive and negative dimensions of their sexual relationship. These positive and negative dimensions are operationalised as the sexual rewards and costs, respectively, that partners exchange in their sexual relationships. Sexual rewards are exchanges that are positive and pleasurable to the individual, whereas sexual costs are exchanges that cause physical or mental effort or pain, embarrassment, anxiety or other negative affect (Thibaut and Kelley, 1959). Any sexual exchange (e.g. level of affection during sexual activity, use of sex toys, engaging in oral sex) can be experienced as a reward, a cost, neither a reward nor a cost, or both a reward and a cost, depending on the nature of the interaction and the individual's appraisal of it (Lawrance and Byers, 1992, 1995). For example, oral sex would be a reward if an individual engages in this activity with the desired frequency and enjoys it. However, it would be a cost if an individual would like to engage in oral sex more or less frequently or does not enjoy it.

According to the IEMSS (Lawrance and Byers, 1995), sexual satisfaction is influenced by four components: (a) the balance of sexual rewards and costs in the relationship; (b) the way that sexual rewards and costs compare to the expected levels of sexual rewards and costs, termed comparison level of sexual rewards and costs or relative sexual rewards and costs; (c) the perceived equality of sexual rewards and sexual costs between partners; and (d) the quality of the non-sexual aspects of the relationship. Specifically, individuals in a romantic relationship are expected to be more sexually satisfied if: (a) they experience a more favourable balance of overall level of sexual rewards to level of sexual costs in the relationship (*i.e.* they experience high sexual rewards and low sexual costs); (b) this balance compares favourably to their expected level of sexual rewards and sexual costs (*i.e.* they experience high sexual rewards and low sexual costs compared to their expectations); (c) they perceive greater equality between their own and their partner's sexual rewards and costs; and (d) they appraise the non-sexual aspects of the

relationship more positively. The IEMSS has received strong empirical support and it is the most well-researched model for understanding the mechanisms of sexual satisfaction (Byers and Rehman, 2014; Péloquin *et al.*, 2019). Researchers have shown that the four components of the model are associated with the sexual satisfaction of individuals in mixed-sex married and co-habiting relationships in Canada, Spain and China (Lawrance and Byers, 1995; Renaud *et al.*, 1997; Sánchez-Fuentes and Santos-Iglesias, 2016); individuals in mixed-sex dating relationships in Canada and the United States of America (USA) (Byers *et al.*, 1998; Peck *et al.*, 2005); women in same-sex relationships (Byers and Cohen, 2017); and individuals with autism spectrum disorder (Byers and Nichols, 2014). In these studies, the components accounted for between 58 and 79 per cent of the variance in sexual satisfaction.

Utility of the IEMSS to predict sexual satisfaction in older adults

Researchers have not investigated the utility of the IEMSS for explaining the sexual satisfaction of older men and women. It is possible that the model is not appropriate or works differently for older adults than for younger adults because of differences in sexual attitudes when they were growing up than are evident today (Waite *et al.*, 2009), as well as the increased health and relationship challenges experienced as people age (Lindau and Gavrilova, 2010; Karraker and DeLamater, 2013). That is, it may be that one or more of the components in the IEMSS are not associated with, or account for little variance in, the sexual satisfaction of older men and women, necessitating the development of a revised model specific to older adults. Therefore, the first goal of the study was to examine the utility of the IEMSS for understanding the sexual satisfaction of older men and women.

Testing the robustness of the IEMSS

The IEMSS proposes that individual characteristics affect the components of the model but do not affect the relationships between these components and sexual satisfaction – that is, the robustness of the model to individual differences (Lawrance and Byers, 1995). For example, Byers and Cohen (2017) compared women in same-sex relationships on the IEMSS components based on relationship stage (*i.e.* daters and co-habitors). They found that daters reported higher levels of sexual rewards, sexual costs and relative sexual rewards than co-habitors. However, the relationship between the IEMSS components and sexual satisfaction was robust (not moderated) to relationship stage. Overall, Byers and colleagues have found that the IEMSS is robust to the influences of gender/sex,¹ child status, relationship characteristics and extent of self-disclosure (Lawrance and Byers, 1995; Byers *et al.*, 1998; Byers and Nichols, 2014; Byers and Cohen, 2017) (for an exception, see Peck *et al.*, 2005). Because there is considerable evidence that both gender/sex and physical health are associated with sexual wellbeing and satisfaction in older adults (American Association of Retired Persons, 2010; Schwartz *et al.*, 2014; Santos-Iglesias *et al.*, 2016), the second goal of this study was to examine whether these variables moderated the relationships between the IEMSS components and sexual satisfaction.

Differences in the IEMSS components based on sex/gender and sexual health

Information about group differences in the IEMSS components can inform education and interventions to enhance sexual satisfaction by identifying the components that are most adversely affected for members of a specific group (Byers, 1999). Therefore, the third goal of this study was to determine whether there were group differences in the IEMSS components based on gender/sex and health status.

Gender/sex differences in the sexual satisfaction of older adults

Scripts are cognitive schemas that dictate how to behave in a given situation. Sexual scripts delineate how individuals are supposed to behave sexually. According to the Sexual Script Theory (Simon and Gagnon, 1984, 1987; McCormick, 1987, 2010; Gagnon, 1990), all sexual behaviour is socially determined and scripted. That is, boys and girls internalise different messages about appropriate gender roles and the expected sexual behaviour and attitudes for their gender/sex. This, in turn, influences the sexual expectations, behaviour, affect and experience of men and women. One sexual script in particular, the traditional sexual script, prescribes a list of gendered sexual expectations that are more restrictive with respect to female than male sexuality (McCormick, 2010). This script inhibits women's communication about sexual preferences, discounts the importance of their sexual pleasure, and restricts their access to sexual pleasure and satisfaction (Tiefer *et al.*, 2002). There is considerable research that documents gender/sex differences in sexual satisfaction of older adults consistent with the traditional sexual script. For example, several studies have found that older men report higher levels of sexual satisfaction than older women (Laumann *et al.*, 2006; McFarland *et al.*, 2011; Kim and Jeon, 2013; Syme *et al.*, 2013). Conversely, researchers have also found less adherence to traditional sexual scripts as relationships become more committed (Seal *et al.*, 2008). Less adherence to traditional sexual roles has been indirectly associated (via lower sexual passivity) with greater sexual satisfaction (Kieffer and Sanchez, 2007). This explains why some studies have not found gender/sex differences in sexual satisfaction in older adults in long-term committed relationships (Santos-Iglesias *et al.*, 2016). Furthermore, because older adults tend to be more sexually conservative than younger adults (Wasow and Loeb, 1979; Spector and Femeth, 1996; Waite *et al.*, 2009), based on the traditional sexual script, it may be that older men would report more favourable sexual exchanges than would older women. Although research with younger samples has not found gender/sex differences in the IEMSS components (Lawrance and Byers, 1995; Byers *et al.*, 1998; La France, 2010), researchers have not yet examined gender/sex differences in sexual exchanges of older adults.

Health status

Researchers have shown that older adults with poorer health status report poorer sexual wellbeing (DeLamater, 2012; Santos-Iglesias *et al.*, 2016). This may, in part, be due to physical changes associated with ageing that affect the sexual response (Lindau *et al.*, 2007; Smith *et al.*, 2007; DeLamater and Karraker, 2009; DeLamater, 2012; Mitchell *et al.*, 2013). These changes may lead to pain, fatigue, reduced frequency or cessation of sexual activity (Bancroft, 2007; DeLamater and Karraker, 2009), all of which may be perceived as sexual costs (*see* Lawrance and

Byers, 1995; Sánchez-Fuentes and Santos-Iglesias, 2016). However, researchers have not examined differences in sexual exchanges generally of older adults in good compared to poor health.

Most rewarding/costly aspects of the sexual relationship

Lawrance and Byers (1995) proposed that an individual's sexual satisfaction is a result of their overall appraisal of all of the exchanges experienced as sexual rewards and sexual costs, rather than their appraisal of any specific sexual exchanges. Nonetheless, these authors found that individuals (aged 20–66 years) differed in whether they find specific sexual exchanges to be rewarding and/or costly. That is, in this sample between 92.5 and 20.8 per cent of the men and 97.7 and 15.5 per cent of the women endorsed each of the exchanges as sexual rewards; between 56.6 and 5.7 per cent of the men and 65.1 and 2.3 per cent of the women endorsed each of the exchanges as sexual costs (for similar results, see Sánchez-Fuentes and Santos-Iglesias, 2016). The sexual rewards reported most commonly were related to emotional and relationship exchanges as well as physical and behavioural exchanges. The only exchanges that were identified as sexual costs by more than 50 per cent of participants were having sex when they or their partner were not in the mood. Although these results are useful for identifying the relative prevalence of specific sexual rewards and costs, they do not provide information about the relative importance of each exchange or type of exchanges to individuals. Indeed, little is known about what aspects of the sexual relationship older adults find particularly rewarding and/or costly. Therefore, the fourth and final goal of this study was to determine, using an open-ended format, the aspect of their sexual relationship that older adults find the most rewarding as well as the aspect that they find most costly.

The current study

The overall goal of this study was to enhance understanding of the sexual satisfaction of older adults in a romantic relationship. The first goal was to examine the utility of the IEMSS for understanding the sexual satisfaction of older men and women. In keeping with the IEMSS and based on previous research with younger adults (Lawrance and Byers, 1995; Renaud *et al.*, 1997; Byers *et al.*, 1998; Byers and MacNeil, 2006), we predicted that higher sexual satisfaction would be associated with a more favourable balance of sexual rewards and sexual costs, a more favourable balance of relative sexual rewards and costs, greater equality of sexual rewards and costs, and higher relationship satisfaction (Hypothesis 1). The second goal was to examine whether gender/sex and health status moderated the relationships between the IEMSS components and sexual satisfaction. Based on research that has found that individual and relationship characteristics do not moderate the associations between the model components and sexual satisfaction (Lawrance and Byers, 1995; Byers *et al.*, 1998; Byers and Nichols, 2014), we did not expect to find that gender/sex or health status moderated these relationships (Hypothesis 2). The third goal was to determine whether there were group differences in the IEMSS components based on gender/sex and health status. Given the mixed results

regarding gender/sex differences in sexual satisfaction and that gender/sex differences in the IEMSS components have not been examined yet in older adults, we explored whether there were gender/sex differences in the IEMSS components (Research Question 1). Regarding health status we predicted that individuals with better health status would report more favourable sexual exchanges than individuals with poor health status (Hypothesis 3). Finally, in keeping with the fourth goal, we identified aspects of the sexual relationship that participants liked most and least (Research Question 2). We also examined whether there were gender/sex differences in the frequency of the themes that emerged (Research Question 3). The current study used data that were part of a larger research project. Other aspects of the larger study have previously been published (Santos-Iglesias *et al.*, 2016). Although this previous publication included sexual satisfaction, the research questions and goals of the current study are distinct from those in the previous publication.

Method

Participants

Participants were 187 individuals (98 men and 89 women, none identified as transgender) who were in a romantic relationship and had engaged in sexual activities in the previous three months. They ranged in age from 65 to 75 years (mean = 67.21, standard deviation (SD) = 1.98). The majority of participants identified as Caucasian/White/European (84.3%) and heterosexual/straight (89.3%). In terms of education, 11.4 per cent reported having a high school education or less, 33.0 per cent college, trade or technical school, 32.4 per cent an undergraduate degree and 23.2 per cent a graduate degree. In terms of relationship type, most (86.6%) were married or co-habiting and 13.4 per cent were dating and not living with their partner. The average length of the relationship was 28.32 years (SD = 15.69). Participants' average overall rating of their physical health was 'good' (mean = 3.81, SD = 0.78). The men and the women in the sample did not differ on age ($t(185) = -0.69, p = 0.49$), ethnicity ($\chi^2(1) = 1.10, p = 0.29$), sexual orientation ($\chi^2(1) = 2.72, p = 0.10$), education ($\chi^2(4) = 8.04, p = 0.09$) or physical health ($t(185) = -0.25, p = 0.80$).

Measures

Background questionnaire

Participants provided a range of demographic information including their age, gender, ethnicity, education, sexual identity (heterosexual/straight, lesbian or gay, bisexual, pansexual or multisexual, questioning, unlabelled, queer, asexual, other) and relationship type (married, living together but not married, dating/seeing each other exclusively, dating/see each other but not exclusively, other). Participants rated their current levels of physical health on a scale from very poor (1) to very good (5). Responses were dichotomised to good (very good, good) *versus* poor (fair to very poor) physical health. Participants also indicated the frequency with which they had engaged in sexual activities in the previous three months.

Interpersonal Exchange Model of Sexual Satisfaction Questionnaire (IEMSSQ)

The IEMSSQ is the only available measure to assess the IEMSS. It is comprised of three self-report measures that assess the components of the IEMSS: the Global Measure of Sexual Satisfaction (GMSEX), the Global Measure of Relationship Satisfaction (GMREL) and the Exchanges Questionnaire. It also includes a checklist of sexual rewards and costs: the Rewards/Costs Checklist (RCC). The IEMSSQ was developed following definitions of sexual satisfaction and the IEMSS (Lawrance *et al.*, 2020). The GMSEX, GMREL and the Exchanges Questionnaire were developed to assess the IEMSS components and to avoid overlap between the measures of sexual exchanges and satisfaction. The 58-item RCC was developed based on open-ended questions about the sexual rewards and costs experienced by university students in mixed-sex relationships (Lawrance and Byers, 1992) and was later revised to include additional sexual rewards and costs identified by lesbians and gay men (Cohen *et al.*, 2008).

In the present study, participants completed the three measures from the IEMSSQ needed to assess the IEMSS components and sexual satisfaction (Lawrance *et al.*, 2020): the Exchanges Questionnaire, the GMREL and the GMSEX. They did not complete the fourth measure on the IEMSSQ, the RCC, because this checklist was not developed and validated to assess the sexual rewards and costs of older men and women. Instead, they were asked two open-ended questions about the things that they liked most and least from their sexual relationships (*see below*). The Exchanges Questionnaire, the GMREL and GMSEX are described below.

The Exchanges Questionnaire consists of six items that are used to assess three of the IEMSS components. Item 1 assesses the overall level of sexual rewards (REW) on a nine-point scale ranging from 'not at all rewarding' (1) to 'extremely rewarding' (9). Item 2 assesses level of sexual rewards in comparison to the expected level of rewards (CL_{REW}) on a nine-point scale ranging from 'much less rewarding in comparison' (1) to 'much more rewarding in comparison' (9). Item 3 assesses the level of rewards in comparison to the level of rewards their partner receives on a nine-point scale ranging from 'my rewards are much higher' (1) to 'my partner's rewards are much higher' (9). Parallel items are used to assess sexual costs (items 4–6). The IEMSS components were computed based on these items. The first component of the IEMSS, the overall balance of rewards and costs (REW-CST), was calculated by subtracting Item 4 from Item 1. The second component, the comparison level of sexual rewards and costs ($CL_{REW}-CL_{CST}$), was calculated by subtracting Item 5 from Item 2. In both cases, possible scores range from -8 to 8, so that higher scores represent a more favourable balance of sexual rewards to sexual costs. Finally, for calculating the third component of the IEMSS, the perceived equality of sexual rewards and sexual costs (EQ_{REW} and EQ_{CST} , respectively), items 3 and 6 were recoded such that the middle point of the response scale (5), which represents perfect equality, was assigned a score of 4 and the endpoints were assigned a score of 0. Similarly, scores of 2 and 8 were recoded to a score of 1, scores of 3 and 7 were recoded to a score of 2, and scores of 4 and 6 were recoded to a score of 3. Thus, higher scores represent greater equality of rewards and costs between partners. In previous studies that included Canadian and Spanish samples, the components of the Exchanges Questionnaire have shown

good test–retest reliabilities between 3 and 18 months (Sánchez-Fuentes *et al.*, 2015; Lawrance *et al.*, 2020). These authors also have provided evidence to support the validity of the Exchanges Questionnaire to assess the IEMSS components.

The GMREL was used to assess satisfaction with the overall relationship (the fourth component of the IEMSS). Participants rated their overall relationship with their partner on five seven-point bipolar scales: good–bad, pleasant–unpleasant, positive–negative, satisfying–unsatisfying, valuable–worthless. Total scores range from 5 to 35, with higher scores indicating greater relationship satisfaction. In previous studies, this measure has been shown to have high internal consistency and test–retest reliability at three and 18 months (Sánchez-Fuentes *et al.*, 2015; Lawrance *et al.*, 2020) (in the current study, $\omega = 0.93$ in men and $\omega = 0.96$ in women). Significant correlations with other measures of relationship adjustment and various indicators of positive relationship function (*e.g.* communication) provided evidence of its validity to assess relationship satisfaction.

The GMSEX was used to assess sexual satisfaction. Respondents provided their ratings on the same scales as for the GMREL. This measure has been shown to have high internal consistency and test–retest reliability at three and 18 months (Lawrance *et al.*, 2020) (in the current study, $\omega = 0.95$ in men and $\omega = 0.97$ in women). Scores are significantly correlated with other measures of sexual satisfaction as well as with multiple indicators of sexual function (*e.g.* sexual desire), providing evidence of the validity of the scale to assess sexual satisfaction.

Open-ended questions

Participants completed two questions designed to assess the most important sexual reward and cost they experienced in their sexual relationship with their partner. In these two questions participants indicated what they enjoy most ('What do you enjoy most about your sexual relationship with your partner?') and least ('What do you enjoy least about your sexual relationship with your partner?') about their sexual relationship with their partner. The two open-ended questions were used instead of the RCC, because the RCC was not developed to assess the sexual rewards and costs of older men and women. As such, the RCC is likely to include aspects of the sexual relationships that are not relevant to older men and women (*e.g.* pregnancy, child conception) and it does not capture aspects that might be important for them (*e.g.* age-related aspects of the sexual relationship).

Responses to the open-ended questions were analysed using content coding analysis, which requires development of a coding scheme using an emergent process through which content clusters are identified (Neuendorf, 2002). Content codes were created from manifest content only. That is, they were based on what participants actually wrote rather than on what could be inferred from their responses. We developed codes related to what participants liked most and what they liked least separately (Research Question 2). The content coding proceeded as follows. First, the first author created an exhaustive list of codes based on individual responses; this resulted in 32 codes for what participants liked most and 43 codes for what participants liked least. Second, the two authors examined the codes and grouped them into a smaller number of clusters, resulting in nine clusters for what participants liked most and 11 clusters for what participants liked least. Labels and conceptual descriptions summarising the meaning of each cluster were created. Third,

two independent coders read and coded the individual responses as representing one or more of the nine and 11 clusters for what participants liked most and least, respectively. The coders could not reach agreement and the intercoder agreement was low. Fourth, the two authors examined the codes again and identified a smaller number of higher-order content clusters. Each content cluster, as well as examples of responses from each cluster, were discussed by the authors to develop labels and conceptual descriptions that adequately summarised their meaning. Because, for the most part, the content clusters for responses to what participants liked most and least appeared to represent positive and negative aspects of a common dimension, we collapsed the clusters into four themes that represented both what participants liked most and what they liked least about their sexual relationship. Fifth, two different independent coders then read and coded the written responses as representing one or more of the four themes; coding was done separately for what participants indicated they liked most and least. Disagreements between coders were settled by ratings by a third coder and discussions about the meaning of responses. Most disagreements were cases where one coder identified more codes than the other coder for the same written response. Intercoder agreement for the initial coding of both questions was acceptable: 84 and 77 per cent for enjoy the most and least codes, respectively (see Table 1). In order to address Research Question 3, we calculated the frequency of each theme in the entire sample, as well as for men and women separately.

Procedure

Individuals age 65 and older were recruited to participate in a study about sexual satisfaction in older people through Amazon's crowdsourcing platform Mechanical Turk®. All participants first read an informed consent form that included the purpose of the study, inclusion criteria, risks and benefits of participating, steps to ensure confidentiality, as well as contact information for the researchers. After giving consent to participate in the study, participants completed a brief screening questionnaire to ensure that they met the inclusion criteria (*i.e.* 65 years old or older and living in Canada or the USA). Participants were not paid for completing this screening. Only those participants who met the inclusion criteria could access the survey. Although we recruited both individuals currently in and not in a relationship, because the IEMSS is specific to sexual satisfaction within relationships, only those who were currently in a relationship are included in the current study. After participants completed the survey, they were paid US \$1 for their time. The study was approved by the University of New Brunswick Research Ethics Board.

Results

Participants reported high levels of sexual (mean = 28.37, SD = 6.73) and relationship satisfaction (mean = 30.64, SD = 4.97). Their balance of sexual rewards and costs (mean = 2.93, SD = 3.35) and comparison level of sexual rewards and costs (mean = 1.80, SD = 2.88) were both positive, indicating that their sexual rewards were higher than their sexual costs. Both the equality of sexual rewards (mean = 2.78, SD = 1.27) and the equality of sexual costs (mean = 3.08, SD = 1.11) were

Table 1. Descriptions of themes emerging from participants' responses to what they enjoy the most and least from their sexual relationship

Theme	Enjoyed most	Enjoyed least
Emotional aspects of the experience	Positive feelings from, towards and regarding partner; intimacy, closeness, love, respect	Negative feelings from, towards and regarding partner; negative feelings about self; absence of expected positive aspects (e.g. absence of intimacy)
Physical aspects of the experience	Sexual activities (ranging from cuddling, kissing to oral sex, intercourse), aspects of the sexual script (e.g. roleplaying, exploration, kink), reference to body parts, reference to physical sensations or sexual response (e.g. orgasm)	Sexual activities (ranging from cuddling, kissing to oral sex, intercourse), aspects of the sexual script (e.g. roleplaying, exploration, kink), reference to body parts, reference to unpleasant physical sensations or sexual response (e.g. sweat, smell, mess), sexual problems/dysfunction (e.g. premature ejaculation, erectile dysfunction, decreased desire, orgasm difficulties, pain, low or decreased frequency)
Dyadic aspects of the experience	Pleasuring partner, partner pleasuring them, knowing how to please each other, knowing likes and dislikes, partner's response (e.g. passion, desire), attraction to partner, partner's attraction to them, extent of knowledge of partner or regarding partner	Not knowing how to pleasure partner, partner not pleasuring them, not knowing how to please each other, partner's lack of positive or negative response (e.g. lack of passion, desire, interest), lack of attraction to partner, partner's lack of attraction to them, desire discrepancy, pressure from partner
Age-related responses	Longevity of the experience, continuation of feelings or behaviour to current age, feeling young again	Bodily decline, lower mobility, changes in sexual response cycle due to age

high, indicating that they viewed their own and their partner's sexual rewards and costs to be similar. Table 2 shows the bivariate correlations among the IEMSS components. For the most part, they were significantly positively correlated with each other. However, relationship satisfaction was not significantly correlated with EQ_{REW} or EQ_{CST}; CL_{REW}-CL_{CST} was not significantly correlated with EQ_{REW}.

Utility of the IEMSS to predict sexual satisfaction in older adults

We used a multiple regression analysis to address our first goal, the utility of the IEMSS for predicting sexual satisfaction in older men and women. Sexual satisfaction served as the criterion variable and the components of the IEMSS (i.e. REW-CST, CL_{REW}-CL_{CST}, EQ_{REW} and EQ_{CST}, and relationship satisfaction) were simultaneously entered as predictors. The results are shown in Table 3. The IEMSS components were significantly associated with sexual satisfaction, $F(5, 181) = 75.19$, $p < 0.001$, $R^2 = 0.67$, adjusted $R^2 = 0.66$. As predicted

Table 2. Correlations among the Interpersonal Exchange Model of Sexual Satisfaction components

	GMREL	REW-CST	CL _{REW} -CL _{CST}	EQ _{REW}	EQ _{CST}
GMREL					
REW-CST	0.54***				
CL _{REW} -CL _{CST}	0.38***	0.69***			
EQ _{REW}	0.04	0.18*	0.09		
EQ _{CST}	0.07	0.41***	0.39***	0.39***	

Notes: N = 187. GMREL: Global Measure of Relationship Satisfaction. REW-CST: overall balance of sexual rewards and costs. CL_{REW}-CL_{CST}: comparison level of sexual rewards and costs. EQ_{REW}: perceived equality of sexual rewards. EQ_{CST}: perceived equality of sexual costs.

Significance levels: * $p < 0.05$, *** $p < 0.001$.

Table 3. Results of the multiple linear regression predicting sexual satisfaction

Predictors	<i>r</i>	β	<i>sr</i>
GMREL	0.73***	0.47	0.38***
REW-CST	0.68***	0.43	0.27***
CL _{REW} -CL _{CST}	0.51***	0.10	0.07
EQ _{REW}	0.02	-0.02	-0.02
EQ _{CST}	0.07	-0.17	-0.13***

Notes: N = 187. GMREL: Global Measure of Relationship Satisfaction. REW-CST: overall balance of sexual rewards and costs. CL_{REW}-CL_{CST}: comparison level of sexual rewards and costs. EQ_{REW}: perceived equality of sexual rewards. EQ_{CST}: perceived equality of sexual costs.

Significance level: *** $p < 0.001$.

(Hypothesis 1), at the bivariate level greater sexual satisfaction was significantly associated with greater relationship satisfaction, a positive balance of sexual rewards and costs, and a favourable balance of sexual rewards and costs compared to expectations. However, contrary to predictions, the equality of sexual rewards and costs were not associated with sexual satisfaction. Higher relationship satisfaction, a more favourable balance of sexual rewards and costs, and lower equality of sexual costs were uniquely associated with greater sexual satisfaction.

Robustness of the IEMSS to predict sexual satisfaction in older adults

In order to test our second goal, whether gender/sex and health status moderated the effect of the IEMSS components on sexual satisfaction, we conducted two separate hierarchical multiple regression analyses. To test whether there was moderation by gender/sex, the IEMSS components were entered in the first step. Gender/sex was entered in the second step and the interaction terms between gender/sex and the IEMSS components using partialled products based on centred variables were entered simultaneously in the third step. A parallel analysis was used to test moderation effects of health status. The results indicated that neither gender/sex nor the interaction terms produced a significant change in the multiple *R* at

step 2, $F_{\text{change}} = 3.46$, $p = 0.06$ and $F_{\text{change}} = 1.34$, $p = 0.25$, respectively. Similarly, neither health status nor the interaction terms added significantly to the model at step 3, $F_{\text{change}} = 0.40$, $p = 0.52$ and $F_{\text{change}} = 0.77$, $p = 0.57$, respectively. These results show that the model worked equally well for men and women, as well as for individuals with good and poor health status.

Gender/sex and health status differences in the IEMSS components

We conducted two separate multivariate analyses of variance (MANOVA) to examine the third goal – that is, gender/sex and health status differences in the IEMSS components (*i.e.* GMREL, REW-CST, $CL_{\text{REW}}-CL_{\text{CST}}$, EQ_{REW} , EQ_{CST}). In the MANOVA testing gender/sex difference, the multivariate effect was not statistically significant, $F(5, 181) = 1.91$, $p = 0.09$, $\eta_p^2 = 0.05$. In the MANOVA testing health status differences, the multivariate effect was significant, $F(5, 179) = 7.04$, $p < 0.001$, $\eta_p^2 = 0.16$. Follow-up univariate analyses of variance comparing individuals in poor and in good health on each of the IEMSS components showed that, compared to those with poor health, participants in good health reported significantly higher relationship satisfaction, a more favourable balance of sexual rewards to costs, and a more favourable comparison level of sexual rewards and costs (*see* Table 4).

Most rewarding/costly aspects of the sexual relationship

To address our fourth goal, determining the aspects of the relationship that older adults liked most and least about their sexual relationships, we used the content coding analysis and examined the frequencies of the themes that emerged. In total, 184 (98.40%) and 181 (96.80%) participants, respectively, provided responses to the questions about what they liked most and least about their sexual relationship. Of these, three participants indicated ‘everything’ and two participants indicated ‘nothing’ regarding what they liked most, suggesting that they could not identify a specific aspect that they liked most. Thirty-nine participants indicated ‘nothing’ as what they liked least, suggesting that they could not find anything that they liked least. The remaining responses fell into four themes: emotional aspects of the relationship, physical aspects of the relationship, dyadic aspects of the relationship and age-related aspects of being sexual (Research Question 1; *see* Table 1). Each of these themes is described in more detail below.

What older adults like most and least about their sexual relationship

Emotional aspects of the relationship. The theme emotional aspects of the relationship refers to feelings from, towards and regarding the partner and self, as well as positive (or lack thereof) aspects of the relationship. Participants most often identified the emotional aspects of the relationship as the aspect of the sexual relationship they enjoyed the most. Conversely, few participants identified the emotional aspects as what they liked least about it. They indicated that being sexual with their partner was a source of positive feelings both from and towards the partner, including feelings of *love*, *intimacy* and *closeness*. For example, one man responded ‘That we still love it after all these years. It’s not as regular, but it remains fantastic because of the love we have for each other.’ One woman indicated ‘I enjoy how

Table 4. Differences in the Interpersonal Exchange Model of Sexual Satisfaction components according to health

	Poor health		Good health		<i>F</i>	η_p^2
	Mean	SD	Mean	SD		
GMREL	27.88	5.24	31.93	4.24	31.04***	0.14
REW-CST	1.71	3.23	3.48	3.27	12.10***	0.06
CL _{REW} -CL _{CST}	0.90	2.45	2.19	2.97	9.08***	0.05
EQ _{REW}	2.92	1.10	2.69	1.33	1.39	<0.01
EQ _{CST}	3.08	1.07	3.07	1.14	0.01	<0.01

Notes: N = 58 poor health, 127 good health. SD: standard deviation. GMREL: Global Measure of Relationship Satisfaction. REW-CST: overall balance of sexual rewards and costs. CL_{REW}-CL_{CST}: comparison level of sexual rewards and costs. EQ_{REW}: perceived equality of sexual rewards. EQ_{CST}: perceived equality of sexual costs. Significance level: *** $p < 0.001$.

close it makes us feel.’ In contrast, a few participants identified the emotional aspects of the relationship as what they liked least about the sexual relationship. For some, *sex felt like a chore*. For example, one woman indicated that she felt ‘like we have to do it to keep the spice up in our relationship’.

The participants who identified the emotional aspects as what they liked least about the sexual results typically described sex as resulting in negative feelings about their partner. For example, one man stated ‘She can be very bossy and turn me off at times.’ Another indicated that ‘She can be a very negative person.’

Physical aspects of the relationship. The theme physical refers to sexual activities, aspects of the sexual script, and references to body parts, physical sensations or sexual response. A substantial number of participants identified the physical aspects as the part of their sexual relationship they liked most. However, many more participants identified the physical aspect of the sexual relationship as the aspect of their sexual relationship that they enjoyed least; indeed this was the aspect most frequently identified as what they liked least. In terms of physical aspects that they liked the most, participants mentioned enjoyment of one or more specific sexual activities (ranging from kissing and cuddling to oral sex and intercourse), specific body parts (*e.g.* penis, breasts, genitals), physical sensations including orgasm, sights and the sounds their partner makes. Other participants mentioned aspects of their interaction with their partner. For example, one man commented, ‘She will initiate sex and talk about sex and is not inhibited in any way’, whereas a woman commented, ‘He lets me take control mostly.’ Others, such as this woman, emphasised freedom from inhibition ‘It’s freeing and fun. We get to live out our wildest fantasies with each other.’

Participants who identified physical aspects as the part they liked least about the sexual relationship most often identified aspects of the sexual script (*e.g.* timing, duration, frequency, variety), especially frequency and duration of sexual activity. One man indicated that ‘It doesn’t happen all that often’ and one woman reported that it ‘Lasts too long.’ Other participants pointed to one or more specific sexual activity (*e.g.* oral sex, anal sex) or aspect of their or their partner’s sexual response (*e.g.*

orgasm, desire). Some participants mentioned that physical conditions affecting their sex life such as being *tired*, *having health issues* and *not having much energy*.

Dyadic aspects of the relationship. The theme dyadic refers to pleasuring the partner, the partner pleasuring them, knowing each other's sexual likes and dislikes, desire discrepancy, as well as attraction (or lack thereof) to partner. A substantial minority of participants identified dyadic aspects of the experience as what they liked most about the sexual relationship; fewer identified dyadic aspects as what they liked least about it. In terms of the former, some participants pointed to their knowledge of their partner as what they liked most. For example, one man said 'We know what each other likes.' Participants who pointed to dyadic aspects as what they liked least tended to identify differences in their own and their partner's sexual preferences. For example, one woman commented, 'He doesn't take his time.' A man stated: 'She doesn't like oral sex.'

Age-related changes. The theme age-related changes refers to the longevity of the sexual relationship and continuation of feelings and sexual behaviour to current age, as well as bodily changes due to age. Only a few participants specifically pointed to their age-related responses or changes as the aspect that they liked most or least about their sexual relationship. In terms of the former, participants tended to point to the longevity of their sexual relationship *at our age* or *after all these years*, such as the man who stated: 'It is that we are still engaging in this kind of activity even at our age.' In contrast, some individuals identified changes in their sexual response associated with ageing as the part they liked the least. For example, one man stated: 'The fact that I am too old to perform.' One woman commented: 'We cannot physically do what we used to.'

Gender/sex differences in the most rewarding/costly aspects of the sexual relationship

We examined whether men and women differed on the aspects of their sexual relationship that they enjoyed most and least (Research Question 3) using a separate chi-square test for each of the four themes (see Table 5). In terms of what they liked most, significantly more women than men described the emotional aspects of the sexual relationship as what they enjoyed most about it, $\chi^2(1) = 6.15$, $p = 0.01$, Cramer's $V = 0.18$. The men and women did not differ in their likelihood of identifying physical, dyadic and age-related aspects as what they enjoyed most. In terms of gender differences in what participants liked least, significantly more women than men described the physical aspects as what they enjoyed least, $\chi^2(1) = 8.41$, $p = 0.004$, Cramer's $V = 0.22$, and more men than women described the age-related aspects as what they enjoyed least, $\chi^2(1) = 5.61$, $p = 0.02$, Cramer's $V = 0.18$. The men and women did not differ in their likelihood of reporting physical and dyadic aspects as what they enjoyed the least about it.

Discussion

The results add to our understanding of the sexual wellbeing of older adults in a romantic relationship by going beyond sexual function and frequency to an examination of the positive aspects of sexual health and wellbeing. The results suggest that the IEMSS is a useful framework to understand sexual satisfaction in older men and women, with the IEMSS components accounting for 67 per cent of the

Table 5. Most rewarding and costly sexual exchanges for men and women

	Enjoy most			Enjoy least		
	Full sample	Men	Women	Full sample	Men	Women
	<i>Frequencies (%)</i>					
Emotional	87 (47.3)	37 (38.5) ^a	50 (56.8) ^a	10 (5.5)	5 (5.2)	5 (5.9)
Physical	40 (21.7)	20 (20.8)	20 (22.7)	90 (49.7)	38 (39.6) ^b	52 (61.2) ^b
Dyadic	42 (22.8)	26 (27.1)	16 (18.2)	27 (14.9)	18 (18.8)	9 (10.6)
Age-related	12 (6.5)	9 (9.4)	3 (3.4)	16 (8.8)	13 (13.5) ^c	3 (3.5) ^c

Notes: N = 187. Frequencies with the same subscript letter are significantly different.

variance in sexual satisfaction. The results also shed light on participants' lived experiences of their sexual relationship, identifying the aspects that older adults see as enhancing and detracting from their sexual wellbeing. Overall, the results paint a positive picture of the romantic and sexual relationships of older adults. These results stand in contrast to stigma associated with sexuality and ageing (Kenny, 2013) that has resulted in negative attitudes and stereotypes about the sex lives of older adults (Thompson *et al.*, 2014). It is important to note that older adults comprise a wide range of individuals with different levels of functional independence (World Health Organization, 2008). Because our participants were all between the ages of 65 and 75 (*i.e.* 'early elder(s)'), they cannot be generalised to men and women in later stages of life (*i.e.* 'late elder(s)') (Orimo *et al.*, 2006; World Health Organization, 2008).

The IEMSS as a framework for understanding the sexual wellbeing of older adults

Two main findings support the utility of the IEMSS for understanding the sexual satisfaction of older adults. First, as predicted based on both theory and previous research (Lawrance and Byers, 1995; Renaud *et al.*, 1997; Byers *et al.*, 1998; Byers and MacNeil, 2006; Sánchez-Fuentes and Santos-Iglesias, 2016), higher sexual satisfaction was associated with a more favourable balance of sexual rewards to sexual costs, a more favourable balance of relative sexual rewards to sexual costs and higher satisfaction with the non-sexual aspects of the relationship on a bivariate level. Furthermore, greater sexual satisfaction was uniquely predicted by a more favourable balance of sexual rewards to sexual costs, greater equality of sexual costs and higher satisfaction with the non-sexual aspects of the relationships.

Secondly, as predicted, the model is robust to the effect of gender/sex and health status. That is, the same model can be used to predict the sexual satisfaction of older men and women, and those who report good and poor health status. In keeping with previous research with younger adults (Lawrance and Byers, 1995; Byers *et al.*, 1998; La France, 2010), we found no gender/sex differences in the IEMSS components. This may be because our participants were in committed long-term relationships (*i.e.* the average length of the relationship was 28 years and the majority were married). Researchers have also found less adherence to traditional sexual

scripts as relationships become more committed (Seal *et al.*, 2008) and less adherence to traditional sexual roles is associated with greater sexual satisfaction (Kieffer and Sanchez, 2007). It may be that there also are not gender/sex differences in the IEMSS components because the present cohort of older adults are from the baby-boom generation who were exposed to the so-called sexual revolution and the feminist movement (Rowntree, 2014). As such, compared to previous generations of older adults, they received more information about sexuality, were more flexible about different forms of sexual relationships (*e.g.* premarital or extramarital sex) and commonly reject the idea of the asexual older individual. Therefore, they would be less likely to adhere to the traditional sexual script. Alternatively, it may be that the traditional sexual script does not affect all forms of sexual expressions equally and that some of these gender/sex differences may change over time. In their meta-analytic review, Oliver and Hyde (1993) found that gender/sex differences were mostly found on sexual attitudes (*i.e.* extramarital sex, casual sex) and behaviours (frequency of masturbation), but not on sexual satisfaction. Furthermore, they found that some of these differences (*e.g.* attitudes towards extramarital sex) decreased with increasing age. Gender/sex differences in older adults may result from the dynamic interaction among age, generational effects and relationship characteristics. More research accounting for the interplay between these different factors is therefore warranted.

However, we found that health status was associated with the IEMSS components. Specifically, participants with poor health status reported poorer relationship satisfaction, a less favourable balance of sexual rewards and costs, and a less favourable comparison level of sexual rewards and costs than older adults with good health status. This extends previous research that has found older adults with better physical health to report significantly better sexual wellbeing (DeLamater, 2012; Syme *et al.*, 2013; Santos-Iglesias *et al.*, 2016), by demonstrating a negative association between health and aspects of the sexual relationship that impact sexual satisfaction. This suggests that to enhance the sexual wellbeing of individuals experiencing poor sexual health, it is important to enhance the non-sexual aspects of their relationship, as well as to help them develop a revised mutually pleasurable sexual script (*i.e.* high rewards and low costs) and revise their expectations about their sexual relationships (Byers, 1999; Metz and McCarthy, 2007). This is in keeping with findings by Ménard *et al.* (2015) that the ability to make changes to the sexual script, learn from and adapt to illness-related changes was one of the key aspects leading to optimal sexual experiences (*i.e.* extraordinary sex) in older adults. However, given the cross-sectional nature of the study, it is impossible to determine whether changes in self-rated health bring about changes in the IEMSS components. The relationship between health, sexual satisfaction and the IEMSS needs to be explored from a lifecourse perspective.

Despite the utility of the IEMSS, some differences emerged in comparison to studies conducted with younger samples. First, the comparative level of sexual rewards and costs did not uniquely predict sexual satisfaction. It appears that comparisons between actual rewards and costs and expectations are not as important for older adults in long-term relationships, as long as they experience a positive balance of sexual rewards to costs. This is in keeping with findings by Byers and colleagues that the comparison level of sexual rewards and costs appears to be a

stronger predictor of sexual satisfaction in dating samples, who had been in a relationship for an average of 13 months (Byers *et al.*, 1998), than in co-habiting samples, who had been in a relationship for an average of 12 years (Lawrance and Byers, 1995). In keeping with models of coping and resilience in older adulthood (*see* Brandtstädter and Greve, 1994), it may be that older adults have developed a sexual script that matches well with their expectations (*i.e.* assimilative coping strategies). Alternately, they may have altered their expectations to match their sexual script (*i.e.* accommodative coping strategies) (Syme *et al.*, 2019).

Second, contrary to our predictions, the equality of sexual rewards and costs was not associated with sexual satisfaction at the bivariate level (Lawrance and Byers, 1995; Renaud *et al.*, 1997; Byers *et al.*, 1998; Byers and MacNeil, 2006; Sánchez-Fuentes and Santos-Iglesias, 2016). However, the equality of sexual costs did receive a statistically significant negative regression weight. This could be interpreted in light of our finding that older adults with poor health status reported a less-favourable balance of sexual rewards and costs than those with good health status. This suggests that the sexual satisfaction of older adults who experience higher sexual costs as a result of physical and health changes associated with ageing (Lindau *et al.*, 2007; DeLamater and Karraker, 2009; DeLamater, 2012; Mitchell *et al.*, 2013) may be greater if their partner does not experience equally high sexual costs. That is, it may be better for sexual satisfaction if at least one member of the couple experiences low sexual costs. In keeping with this view, Gewirtz-Meydan and Ayalon (2019) found that as they age, men's and women's motives for sex become more 'partner focused'. That is, their own pleasure was determined by their partner's experience of pleasure and satisfaction, which could explain why sexual satisfaction is higher when partners experience lower sexual costs. Dyadic research is needed to determine the impact of sexual costs associated with health on both members of the couple.

Older adults' experience of their sexual relationship

The results also contribute to the literature by identifying what older adults like most and least about their sexual relationship – that is, the most important sexual reward and sexual cost.

Of interest, the same aspects that were experienced as sexual rewards for some individuals were experienced as sexual costs by others, and as both a sexual reward and a sexual cost by others. This is in keeping with the IEMSS and findings assessing individuals' appraisals of a range of sexual exchanges (Lawrance and Byers, 1995; Sánchez-Fuentes and Santos-Iglesias, 2016) that emphasise that the valence of a sexual exchange is subjective and not objective. Thus, it is important that researchers and clinicians do not impose their assumptions about whether a sexual exchange is a reward or a cost when assessing aspects of the sexual relationship.

Both men and women most commonly identified an emotional aspect associated with their sexual relationship as what they liked most. Their sexual relationship was considered a source of positive emotions and feelings such as love, closeness, intimacy, connection and happiness. These results are consistent with results from Lawrance and Byers (1995) and Sánchez-Fuentes and Santos-Iglesias (2016), who found that in younger samples most sexual rewards were related to emotional and relational sexual exchanges. Similarly, Gewirtz-Meydan and Ayalon (2019) reported that older men

and women engage in sexual activity in order to obtain emotional intimacy, closeness, warmth, love and support; and Syme *et al.* (2019) found feelings of satisfaction, happiness and love to be indicators of sexual wellbeing for older men and women. Although less common, some participants identified dyadic aspects of the relationship, such as knowing each other's likes and dislikes, as most rewarding. Knowing each other's sexual likes and dislikes has been indicated as an important contributor to sexual satisfaction and positive sexual experiences (MacNeil and Byers, 2005, 2009; Ménard *et al.*, 2015). This may reflect the instrumental pathway to sexual satisfaction (Cupach and Metts, 1991), which proposes that such knowledge leads to a mutually pleasurable sexual script and greater sexual satisfaction. It may also reflect the expressive pathway to sexual satisfaction (Cupach and Metts, 1991) and social penetration theory (Altman and Taylor, 1973) which propose that knowledge enhances feelings of closeness and intimacy, leading to greater sexual satisfaction.

Participants were most likely to identify the physical aspects of the relationship as what they enjoyed least. Most of these aspects were related to the sexual script, such as the frequency, duration and variety of sexual activity. Previous research has found a decrease in sexual frequency among older men and women (Karraker *et al.*, 2011). The current study extends these findings by showing that at least some older men and women find these changes costly. Researchers tend to attribute these negative changes in the sexual script to physical and health challenges as people age (DeLamater, 2012; DeLamater and Koepsel, 2015). However, we found that only a few men and significantly fewer women referred to age-related changes as what they liked least about their sexual relationship. This is consistent with DeLamater and Moorman (2007), who found that medical illnesses and their associated treatments have a small influence on sexual behaviours. For some other participants, the physical changes they enjoyed least referred to activities that they likely never enjoyed, or long-standing discrepancies between their own and their partner's interests or desire. Research has consistently found that desire discrepancies between partners is associated with lower relationship and sexual satisfaction (Mark, 2015).

There were no gender/sex differences in any of the four themes that emerged on aspects of the sexual relationship that our participants liked most or least specific to men or women, suggesting significant similarity between the sexual experiences of older men and older women. However, in keeping with the traditional sexual script (Simon and Gagnon, 1984, 1987; McCormick, 1987, 2010; Gagnon, 1990), women were significantly more likely than men to find the emotional aspects of the relationship as what they liked most and the physical aspects as what they liked least about the sexual relationship. Similarly, Syme *et al.* (2019) found that women were more likely than men to define their sexual wellbeing based on psychological/emotional aspects of their relationship.

Limitations and future research

The current paper sheds some light on the sexual satisfaction of older adults; however, this study is not exempt of limitations. First the socio-demographic characteristics of the sample may limit the generalisability of the results. That is, most participants were Caucasian, heterosexual, highly educated and healthy. Although, the sample was 65 years or older, none of them were older than 75. Future studies should recruit samples

from more diverse populations and much older participants. Second, we collected data from individuals not dyads. Research is needed to investigate dyadic influences on sexual satisfaction. Third, there is also a risk of self-selection bias because participants voluntarily agreed to participate in a study related to sexuality (Dawson *et al.*, 2019). Thus, it may be that the sexual satisfaction of older men and women is lower than found here. Finally, the cross-sectional nature of the study does not allow conclusions about changes in sexual satisfaction over the lifecourse to be drawn. Longitudinal studies should explore how sexual satisfaction changes over time.

Conclusions and implications

The results of the current study support the use of the IEMSS as a framework for enhancing our understanding of sexual wellbeing in older adulthood, including similarities and differences between younger and older adults. The IEMSS also provides a conceptual model that could guide therapeutic-based interventions to increase sexual satisfaction in older men and women (Byers, 1999). They also point to specific aspects of the sexual relationship (aspects participants liked least) that might be targets to help older adults enhance their sexual satisfaction and wellbeing. This is important because sexual wellbeing has been linked to physical and psychological wellbeing and relationship longevity (Christopher and Sprecher, 2000; Laumann *et al.*, 2006; Davison *et al.*, 2009; Solway *et al.*, 2018).

The results also challenge negative stereotypes about sexuality and ageing in general and with respect to the sexuality of older women specifically (Ussher *et al.*, 2015) by showing that, for the most part, older men and women in relationships are sexually satisfied and enjoy multiple dimensions of their sexual relationships. These negative myths and stereotypes can negatively affect older adults sexuality because they result in internalised sexual ageism and negative attitudes (Kaas, 1981), poorer sexual wellbeing (Graf and Patrick, 2014; Heywood *et al.*, 2019), decrease help-seeking for sexual problems (Hinchliff and Gott, 2011), and result in policies and practices within the health-care system that desexualise older adults (Taylor and Gosney, 2011; Syme and Cohn, 2016). Thus, it is important that health-care providers, clinicians, sex educators and administrators be informed about the positive picture of sexuality and ageing found in this study. They, in turn, can ensure that they communicate a positive view of sexuality and ageing in their work, and develop policies and practices that accurately reflect the realities, experiences and needs of older men and women.

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Note

1 In keeping with the recommendation of Hyde *et al.* (2019), based on Yoder (2003), we have adopted the term gender/sex rather than either sex or gender in this article.

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