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Sexual Well-Being in Old Age: Effectiveness of an Intervention Program to Promote Sexual Well-Being in Older Community-Dwelling Adults

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Abstract: Objectives: While many people strive for a fulfilling sexual life as they age, the inevitable changes that come with aging can present significant challenges concerning their sexual well-being (SWB). This study aims to present a comparative analysis of the scores in the variables of sexual satisfaction, adjustment to aging (AtA), and satisfaction with life (SwL) before and after the implementation of an intervention program to promote SWB among older adults. Methods: A convenience sample of 117 older community-dwelling adults ($M = 72.31$; $SD = 5.752$) were included in this study, and an ex post facto longitudinal design was applied. A six-week intervention program aimed at improving older adults' understanding and exchanging their experiences of SWB was performed. The following measures were utilized: (1) a sociodemographic, health and lifestyle questionnaire; (2) Adjustment to Aging Scale (AtAS); (3) Satisfaction with Life Scale (SwLS); (4) New Sexual Satisfaction Scale (NSSS-S); and (5) Mini-Mental Status Exam (MMSE). The specified assessment time points in this study were as follows: baseline and after intervention. A follow-up assessment was conducted 6 months and 12 months after the baseline measurement. Results: The results indicated an increase in the scores in sexual satisfaction, AtA, and SwL from before to after the intervention among the intervention group. Conclusions: The development of intervention programs in older communities is necessary to contribute to the enhancing older adults' SWB and to explore the best practices for implementing tailored interventions within community settings.

Keywords: adjustment to aging; satisfaction with life; sexual well-being; sexual satisfaction; intervention; older adults



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1. Introduction

The rate of population aging is accelerating worldwide, with particularly notable increases in developed countries, like Portugal. The rapid growth in the older population has an effect on how older people experience healthy aging, on policies to be established, and needs to be addressed by public health professionals and society as a whole (World Health Organization (WHO) 2022). Portugal boasts one of Europe's oldest populations, a result of rising life expectancies and declining fertility rates. In 2021, individuals aged 65 and above accounted for 29.1% of the population, marking a notable increase from 24.6% a decade earlier (Eurostat 2023).

To date, most studies on older adults' sexuality have been primarily focused on the effects of aging, sexual dysfunctions, the medical model of older adults' sexuality, and age-related physiological changes that might affect older adults' sexual response cycles (Gledhill and Schweitzer 2014). Although little is known about how older persons deal with sexual well-being (SWB), sexual challenges are common but are less typically shared with others (von Humboldt and Leal 2014, 2017). Despite the common misconception

that older adults are not sexually active or interested in sex, research indicates otherwise. Studies have shown that while the frequency of sexual activity may decrease with age, a significant proportion of older adults remain sexually active (Steckenrider 2023). For instance, in a study conducted in England, 86% of men and 60% of women aged 60–69 reported being sexually active (Lee et al. 2016), and 10% of individuals older than 90 years reported the same in a Swedish study (Stentagg et al. 2021). Moreover, findings from a U.S. study revealed that more than half of sexually active individuals aged 75–85 years reported engaging in sex two or three times per month, and almost a quarter reported doing so one or more times per week (Lindau et al. 2007). Even though older adults continue to enjoy and participate in sexual activities, research has been more focused on the medical aspects of their sexual functioning. More recently, research on SWB has progressively moved away from a merely medical or dysfunctional perspective toward a more comprehensive biopsychosocial and interpersonal approach (Byers and Rehman 2014; DeLamater and Koepsel 2015).

An emotional and cognitive evaluation of an individual's sexual life has been considered an indicator of SWB (Santos-Iglesias et al. 2016; Štulhofer et al. 2019). However, it has been challenging to establish a clear and suitable operationalization of SWB, since it has been employed as an umbrella term that unites various mostly positive elements of sexuality, such as sexual satisfaction, desire, intimacy function, expression, pleasure, and interest, among others (Graf and Patrick 2014; Schaller et al. 2020; Štulhofer et al. 2019). Rosen and Bachmann's (2008) definition of SWB is one of the most often used and encompasses a mixture of four factors: sexual function, sexual activity, sexual satisfaction, and sexual interest (Rosen and Bachmann 2008; Štulhofer et al. 2020). However, it is important to acknowledge that this discrepancy in definitions may influence the interpretation of findings, as differing conceptualizations can lead to variations in how researchers measure and assess SWB. Additionally, an approach to SWB among older adults is further constrained by its primary focus on sexual activity and sexual function (Štulhofer et al. 2020; Syme et al. 2019).

Numerous mental and physical health advantages have been linked to SWB. Better cardiovascular health, better cognitive performance, lower levels of stress, higher levels of self-esteem, and lower mortality are all associated with higher levels of SWB (Bouman et al. 2006; Brody 2010; Kleinstäuber 2017; Santos-Iglesias et al. 2016). Furthermore, SWB is also correlated with fewer sexual problems, greater sexual desire, and higher levels of relationship satisfaction (Hinchliff et al. 2018; Santos-Iglesias et al. 2016; von Humboldt et al. 2020). Other authors attest that SWB may influence positively relationship quality, enhance body image and self-esteem, improve mental health, and is linked to relaxation, less pain sensitivity, higher vitality, and fewer gynecological and skin conditions (DeLamater 2012; Syme 2014; Træen et al. 2017).

Indeed, when older adults experience sexual activity, their psychological and physical health may improve, which may help to lessen a variety of physical and mental health issues (von Humboldt et al. 2013a, 2013b). The general consensus is that older adults who engage in sexual activity gain from a significant amount of pleasure and positive reinforcement, which may improve psychological and physical well-being, and perhaps quiesce a number of physical and mental health issues (Trudel et al. 2010; von Humboldt et al. 2013a). Additionally, and when penetrative intercourse is no longer available, maintaining physical intimacy appears to be important for older adults' SWB (Gott and Hinchliff 2003; von Humboldt et al. 2020).

To better understand the interconnectedness of sexual satisfaction, adjustment to aging (AtA), and satisfaction with life (SwL), it is essential to clarify how each of these measures contributes to overall well-being. Indeed, the relationship between AtA, sexual satisfaction, and SwL is relevant for understanding older adults' SWB. AtA influences how individuals perceive and adapt to the changes that come with aging (von Humboldt and Leal 2015a; von Humboldt et al. 2014a, 2014b), while sexual satisfaction and SwL are key indicators of well-being (Miguel et al. 2024). Research indicates that sexual satisfaction remains a vital aspect of life and well-being as people age. Sexual satisfaction directly affects SWB as a

whole, as it influences intimate relationships and contributes to overall well-being and life satisfaction. Moreover, sexual satisfaction is significant for older adults, underscoring its importance in overall health and aging well (Wang et al. 2015). According to Miguel et al. (2024) while sexual satisfaction generally decreases with age, it is positively correlated with AtA. This suggests that individuals' perceptions of aging and their attitudes toward it can significantly influence their SWB. Sexual satisfaction plays a crucial role for SWB, since it is considered a key domain of SWB. This further highlights the necessity of addressing sexual satisfaction within the broader context of well-being in aging individuals. Enhancing sexual satisfaction can positively influence both SWB and healthy aging (Brody 2010). Additionally, there is a strong association between continued sexual activity and higher SwL among older adults (Smith et al. 2019). Effective AtA influences sexual satisfaction and SwL and contributes to promoting SWB and overall well-being in old age (Miguel et al. 2024).

Existing studies on SWB have been a valuable source of information for interventions that support health, functional ability, well-being, and quality of life in old age (Bell et al. 2017; Syme et al. 2019; von Humboldt et al. 2018). Understanding the cultural context and specific community factors is vital, as these may shape the resources and support systems available to enhance SWB. Additionally, studies support specific public health intervention programs (e.g., sexually transmitted infections programs) as well (Fileborn et al. 2018; Golub et al. 2013). In recent decades, intervention programs have emerged as a valuable and effective form of supplementing health approaches and have become progressively more frequent (Beinart et al. 2012; Bevan Jones et al. 2018; Birmaher and Brent 2007; Brent and Maalouf 2015; Colom 2011; Smith et al. 2010). These interventions aim to provide older adults with accurate information on mental health and well-being (Sarkhel et al. 2020). While early interventions were primarily developed for clinical settings, there is growing evidence of their potential in community settings (Sarkhel et al. 2020). Research on interventions specifically targeting sexual satisfaction as a proxy for SWB has demonstrated promising outcomes. For example, a brief online psychoeducational intervention of just 3.5 min, focused on sexual mindfulness and cognitive distraction reduction strategies, showed significant improvements in sexual satisfaction and sexual desire among nonclinical participants (Dawson et al. 2022; Stephenson 2017). By educating individuals on the benefits of sexual focus and introducing strategies for more meaningful sexual experiences, this intervention directly influenced sexual satisfaction while also improving SWB, communication, and intimacy between partners (Mallory 2022).

Understanding older adults' SWB is crucial for planning public health resources and services, aimed at improving their overall well-being. Research indicates that older individuals are not asexual, and engaging in regular, pleasurable sexual activity is linked to increased well-being (Smith et al. 2019). Additionally, the relationship between physical and mental health and SwL becomes increasingly important with age, highlighting the need for interventions that address these aspects (Halaweh et al. 2018; von Humboldt and Leal 2015b).

Although few interventions focusing on sexual health in older adults were identified, none specifically target sexual satisfaction, AtA and SwL. Hence, this study aimed to (1) analyze the effect of an intervention program to promote SWB on sexual satisfaction, AtA, and SwL, by comparing data collected at the beginning of the program with post-intervention data; (2) assess the degree of satisfaction that the program activities held for participants.

2. Methods

2.1. Study Design and Procedure

This study has an ex post facto design for examining how a six-week intervention program affected older adults' sexual satisfaction, AtA, and SwL (see Table 1). The control group ($N = 57$) did not participate in the six-week intervention program, while the experimental group ($N = 60$) engaged in the intervention program. Both groups exhibited similar

sociodemographic characteristics (age group, sex, marital status, household income, and education; see Table 2).

The 6-week intervention program took place in September and October of 2022. In each weekly one-hour program session, participants earmarked and discussed different activities to enhance their SWB. There were also two phases of dependent variable measurement. In the first phase (pretest phase), participants rated their sexual satisfaction, AtA, and SwL. In the second phase (intervention and post-test intervention), intervention program sessions in the form of face-to-face and non-face-to-face activities were planned. After the program was fully developed, AtA and SwL were reassessed at 6 and 12 months after the program ended.

Table 1. Intervention program: session activities.

Session	Type	Components
1	Informative	• Presentation of the intervention, the health professional and the participants; • Information on the general aspects of SWB in old age (e.g., key factors influencing SWB such as emotional well-being, satisfaction with life, mental health, sexual health, and interpersonal relationships); • Multimedia learning on SWB.
2	Informative/Supportive	• Key information about the dimensions of SWB and the indicators of sexual unwellness in old age; • Sharing experiences and communication exercises; • Acceptance of negative reactions, unrealistic expectations, and understanding ambivalence.
3	Informative/Supportive	• Exchange of experiences with others related to SWB and mutual support; • Emotional manageability; • Community resources for safe sex and patient rights and obligations, for those with sexual dysfunction and/or STDs.
4	Informative/Supportive	• Key information about potential approaches for enhancing SWB in old age; • Emotional support; • Exercises for managing stressful situations, sharing of body image' perceptions, and practices like breathing, body awareness, and assessing SWB in daily life; • Acceptance of negative reactions, unrealistic expectations, and understanding ambivalence.
5	Supportive	• Communication, problem-solving and self-help, in terms of SWB and indicators of sexual unwellness; • Network support and information about professional, financial and institutional resources; • Problem-solving techniques; • Balancing gains and losses; • Challenging core beliefs.
6	Supportive	• Network support; • Expressive writing; • Setting new goals into personal narratives and planning future steps; • Self-report measure and wrapping-up.

Table 2. Sociodemographic characteristics of the participants.

Characteristics	Control Group	Intervention Group	Total
Age, average $\pm$ SD		$M = 72.31 \pm 5.752$	
Total (overall)	57 (48.7%)	60 (51.3%)	117 (100%)
Sex			
Male	21 (36.8%)	23 (38.3%)	44 (37.6%)
Female	36 (63.2%)	37 (61.7%)	73 (62.4%)
Educational level			
<High school	10 (17.5%)	10 (17.1%)	20 (16.8%)
High school	39 (68.4%)	41 (68.3%)	80 (68.3%)
>High school	8 (14.0%)	9 (15.0%)	17 (14.9%)
Marital status			
Single	12 (21.1%)	14 (23.3%)	26 (22.2%)
Married/de facto union	34 (59.6%)	36 (60.0%)	70 (59.8%)
Divorced/separated	7 (12.3%)	7 (11.7%)	14 (12.0%)
Widow	4 (7.0%)	3 (5.0%)	7 (6.0%)
Household			
Living with someone	41 (71.9%)	43 (71.7%)	84 (71.8%)
Living alone	16 (28.1%)	17 (28.3%)	33 (28.2%)
Family Annual Income (EUR)			
$\leq 25,000$	32 (56.1%)	34 (56.7%)	66 (56.4%)
$> 25,000$	25 (43.9%)	26 (43.3%)	51 (43.6%)
Perceived health			
Good	36 (63.2%)	38 (63.3%)	74 (63.2%)
Poor	21 (36.8%)	22 (36.7%)	43 (36.8%)
Engagement in leisure activities			
Yes	30 (52.6%)	31 (51.7%)	61 (52.1%)
No	27 (47.4%)	29 (48.3%)	56 (47.9%)
Spirituality			
Yes	46 (80.7%)	48 (80.0%)	94 (80.3%)
No	11 (19.3%)	12 (20.0%)	23 (19.7%)

2.2. Weekly Intervention Framework

The first program session introduced participants to the health professional and to the intervention itself. Foundational knowledge was offered through watching videos and listening to audio files that covered general aspects of SWB in older age. Participants also completed a self-report measure on basic beliefs about SWB. The aim of this first session was to enhance the understanding of SWB and to set the stage for further development, particularly by highlighting the key factors that influence SWB in older adults, such as emotional well-being, satisfaction with life, mental health and sexual health, and interpersonal relationships (Smith et al. 2019; Miguel et al. 2024).

During the second session, key information was provided on the dimensions of SWB and indicators of sexual unwellness in old age. This session covered aspects such as sexual intimacy and expression, eroticism, attractiveness and sexual desire, sexual openness, sexual health, physical and mental health, and emotional well-being. Activities adapted from Giménez-Dasi et al.'s (2016) intervention program were utilized, providing a comprehensive approach tailored to the unique needs of older adults, with an emphasis on enhancing sexual communication and intimacy. This focus aligned well with our study objectives, making it a suitable choice for our program. Additionally, the session was centered on sharing experiences related to SWB and enhancing communication skills through various activities. It also addressed the acceptance of negative reactions and the understanding of ambivalence between positive and negative feelings. Discussion points and activities were adapted from Baró's (2015) manual, which emphasizes effective communication and positive criticism handling, ensuring that participants develop essential skills for promoting their SWB. Additionally, insights from Harris's (2017) book were incorporated to help participants with skills such as urge surfing, addressing unrealistic

expectations, managing unhelpful thoughts, coping with unpleasant emotions, and aligning actions with personal values. These practical strategies empower participants to navigate through emotional challenges and to reinforce their personal values, which are crucial for enhancing SWB.

The third session emphasized the exchange of experiences related to SWB and mutual support. Techniques for emotional manageability were explored, and discussions included various forms of therapeutic support. Informative support was provided on community resources for safe sex, including institutions, financial, and professional assistance. The rights and obligations of patients with sexual dysfunction and/or STDs were also covered. Activities included sharing personal experiences and discussing emotional manageability techniques and community resources and patient rights.

In the fourth session, the focus was on providing key information about approaches for enhancing SWB in old age and discussing emotional support. Activities included exercises for managing stressful situations, sharing of body image perceptions, which included practices like breathing, body awareness, and assessing SWB in daily life. The session also covered psychological acceptance of negative reactions and the ambivalence of feelings related to SWB.

The fifth session was centered on communication, problem solving, and self-help related to SWB and indicators of sexual unwellness. The importance of network support was highlighted, and information was shared about professional, financial, and institutional resources available to participants. Activities included balancing gains and losses, challenging core beliefs, and applying problem-solving skills.

Finally, the sixth session emphasized the importance of support encouraging expressiveness and sharing about SWB. Participants were introduced to the expressive writing technique, including its definition, objectives, and instructions. Written materials were collected and reviewed confidentially. The session also included discussing the integration of new goals into personal narratives and planning future steps. Each participant completed the questionnaires from the second evaluation moment, as well as a questionnaire to evaluate the intervention program. Finally, the session included activities for wrapping up the intervention (see Table 1).

In order to ease any reservations about taking part in this study, the goals of the present research were explained to the participants. Every participant was made aware that their participation was fully voluntary and that they might withdraw at any time. Assurances of anonymity, confidentiality, and privacy were offered throughout this study.

A convenience sample was recruited by contacting life-long learning centers, local senior communities, and unofficial social networks. All participants provided informed consent. Consenting participants completed and returned written questionnaires to the study team in person. All procedures were approved by (anonymized for peer-review) and were in accordance with the ethical standards of the Portuguese Psychologists' Code of Ethics and the ethical guidelines of the Declaration of Helsinki for research with human participants.

3. Participants

A total of 117 older Portuguese adults were in the studied sample. All such community-dwelling participants were 65 years-old and older ($M = 72.31$; $SD = 5.752$). Participants were recruited in Portugal, considering that Portugal has a high number of older adults and that intervention programs within this population are scarce. Nearly two-thirds (62.4%) were women. While 68.3% of participants had completed high school, only 16.8% finished elementary school; 14.9% had a bachelor's or post-bachelor's degree, and 14.1% had a master's degree. Additionally, 59.8% were married, 22.2% were single, and the remaining participants were divorced (12%) or widowed (6%). We also tracked any changes in partnership status throughout the study duration and found no alterations among participants. Furthermore, regarding partnered individuals, no participants were married to or partnered with other participants in this study (see Table 2).

The 57 older adults (63% of whom were women) in the control group were comparable to the intervention group in terms of age, sex, education level, marital status, and household income.

In order to ensure adequate recruitment of participants for this study in Portugal, inclusion criteria were broad. These criteria were (a) being at least 65 years of age; (b) clearly understanding their voluntary involvement; and (c) not having any cognitive impairment, mental conditions, or alcohol or other substance misuse, assessed through both the Mini-Mental State Examination (MMSE) and the questionnaire.

Inclusive and diversity sampling afforded similar understandings of older people's lived experiences and a more focused evaluation of program intervention efficacy. Each stage of the recruitment process was meticulous and ethically oriented. Data from participants who did not complete the questionnaires before or after the intervention program were excluded to respect their wishes.

4. Materials

A number of survey tools were used to evaluate the effects of the intervention program.

4.1. Sociodemographic, Health, and Lifestyle Questionnaire

Demographic, socioeconomic, health, and lifestyle information was gathered. Participants were asked about their age, sex, education level, marital status, household, income, perceived health, engagement in leisure activities, and spirituality. Perceived health was dichotomized into 'good' or 'poor' to facilitate a clearer distinction in the analysis of health outcomes.

4.2. New Sexual Satisfaction Scale (NSSS-S)

The New Sexual Satisfaction Scale (NSSS-S) assesses several dimensions of sexual satisfaction and is composed of twelve questions in two subscales: the Ego-Centered subscale (e.g., "My body's sexual functioning") and the Partner/Sexual Activity-Centered subscale (e.g., "My partner's sexual creativity") (Brouillard et al. 2019).

For each of the questions, respondents are asked to rate how satisfied they were with their sex life in the six months prior using a 5-point Likert type scale: 1 indicates that they were not at all satisfied, 2 that you are somewhat satisfied, 3 that they were moderately satisfied, 4 that they were very satisfied, and 5 that they were extremely satisfied. Higher scores indicate greater levels of sexual fulfillment, which are calculated by averaging the related characteristics (Brouillard et al. 2019). This scale demonstrated validity, exhibiting robust psychometric properties with a Cronbach's alpha of 0.94 as for internal consistency in the Portuguese version, and 0.92 and 0.89 for the Ego-Centered subscale and Partner/Sexual Activity-Centered subscale, respectively (Pechorro et al. 2015).

4.3. Adjustment to Aging Scale (AtAS)

The Adjustment to Aging Scale (AtAS), a 22-item measure, is used to evaluate variables related to older people's AtA. A sense of purpose and ambitious, zest and spirituality, body and health, aging in place and stability, and social support are the five components of the scale. On a Likert-type scale, from 1 (strongly disagree) to 5 (strongly agree), participants were asked to indicate how strongly they agreed or disagreed with each statement. Higher scores indicated greater degrees of aging adjustment. Through exploratory and confirmatory factor analyses, the scale was validated, and it showed strong psychometric qualities, such as validity and reliability, with the total scale achieving a Cronbach's alpha of 0.891. The internal consistency for its individual dimensions was as follows: sense of purpose and ambitions (Cronbach's alpha 0.874, e.g., "Being active and working at something that I like"), zest and spirituality (0.927, e.g., "Feeling relaxed about the future"), body and health (0.904m e.g., "Sports and outdoor activities"), aging in place and stability (0.862, e.g., "Having comfort and economic stability"), and social support (0.932, e.g., "Having a

good partner in life”) (von Humboldt et al. 2014b). It may also be used in cross-national samples to analyze AtA across different cultures (von Humboldt et al. 2014a, 2014b).

4.4. Satisfaction with Life Scale (SwLS)

To determine how satisfied respondents were with their life in general, the Satisfaction with Life Scale (SwLS) was used. The SwLS is shown to be a valid and reliable indicator of SwL that is suitable for use with a broad variety of age groups and applications. Given that it evaluates an individual’s conscious assessment of their life, using the individual’s own criteria, the SwLS is recommended as a supplement to scales that focus on emotional health. It is a 5-item scale intended to assess global cognitive assessments of one’s level of SwL measured on a 7-point scale, where 1 represents strong disagreement and 7 represents strong agreement (e.g., “I am satisfied with my life.”). In this context, a higher number on this scale corresponds to a higher level of SwL (Diener et al. 1985). The SwLS demonstrated both validity and reliability, with a strong internal consistency assessed with Cronbach’s alpha ($r = 0.78$) (Pavot and Diener 2008).

4.5. Mini-Mental Status Exam (MMSE)

The Mini-Mental Status Exam (MMSE) is a concise and commonly employed cognitive assessment tool created to evaluate diverse cognitive abilities in individuals, encompassing memory, attention, language, and orientation. It differentiates individuals with cognitive impairments from those without and was utilized in this study to ensure that only participants with sufficient cognitive function were included. This screening was essential for maintaining this study’s focus on individuals capable of providing informed consent and clear responses. Comprising 30 questions, it can be administered in a brief 5–10 min timeframe, making it a convenient choice for repeated and regular use (Folstein et al. 1975). The MMSE demonstrated high reliability with retest correlations of $r = 0.89$ after 24 h and $r = 0.99$ after 28 days when assessed by single examiners (Folstein et al. 1975).

4.6. Data Analysis

Survey data were analyzed descriptively and comparatively using SPSS (Statistical Package for the Social Sciences, version 26). Descriptive statistics included percentages, means, and standard deviations.

Levene’s test revealed equality of variance between the two study groups regarding their sexual satisfaction, AtA, and SwL from preintervention to postintervention. Additionally, there was no evidence of homoscedasticity, non-normality, or correlated residual scores. A dependent Student’s *t*-test for paired samples was then used to compare sexual satisfaction, AtA, and SwL between pre- and postintervention assessments. A *p*-value of $p < 0.05$ was the criterion for deeming any such findings statistically significant findings.

5. Results

Intervention Effect

Table 3 illustrates the effect of the intervention program by comparing scores on the NSSS-S, the AtAS, and SwL scales before the program and at 6 months and 12 months after the program ended. Increases were observed in the intervention participants’ sexual satisfaction, AtA, and SwL. Although sexual satisfaction and SwL slightly decreased and AtA increased, these positive outcomes were consistently observed 6 months and 12 months after the intervention. The control group showed little to no change in their sexual satisfaction, AtA, and SwL over the same time periods, thus highlighting the effectiveness of the intervention.

Table 3. Comparison of pre–post means of the variables in the control and intervention groups of older participants.

Variables	Preintervention				Postintervention				Post 6 Months				Post 12 Months				Student’s <i>t</i> -Test (Pre- and Postintervention)					
	Control Group		Intervention Group		Control Group		Intervention Group		Control Group		Intervention Group		Control Group		Intervention Group		Control Group			Intervention Group		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>t</i>	<i>df</i>	<i>p</i>
New Sexual Satisfaction Scale (NSSS-S)	1.30	1.109	1.51	1.145	1.50	1.149	4.14	1.224	1.33	1.020	3.92	1.166	1.19	1.199	3.86	1.010	0.06	45	0.420	1.67	65	<0.001
Adjustment to Aging (AtAS)	1.47	1.211	1.71	1.452	1.52	1.309	4.89	1.404	1.53	1.250	5.18	1.398	1.48	1.236	5.15	1.323	1.63	45	0.523	2.26	65	<0.001
Satisfaction with Life (SwLS)	2.41	1.021	2.34	1.222	2.39	1.234	4.08	1.430	2.45	1.039	3.96	1.109	2.05	1.601	3.91	1.307	2.98	45	0.126	2.33	65	<0.001

Control group (*N* = 57); intervention group (*N* = 60); *M*: mean; *SD*: standard deviation; *t*: Student’s *t*-statistic for dependent samples; *df*: degrees of freedom; *p*: significance level.

The intervention program on SWB activities were rated highly by the participants. They were highly satisfied with these activities ($M = 6.61$; $SD = 0.21$). Program activity satisfaction was measured on a Likert-type scale where 1 = “not at all satisfactory” and 7 = “very satisfactory”), highlighting its usefulness and helpfulness for these participants.

6. Discussion

6.1. Overview of the Intervention's Effects

Research has shown that sexuality-focused interventions can effectively enhance older adults' well-being. However, studies specifically linking sexual satisfaction, AtA, and SwL in the context of such interventions remain scarce. This study addressed this gap by exploring these outcomes following an intervention aimed at fostering positive SWB among community-dwelling older adults.

Our analysis compared pre- and postintervention data to examine the program's impact on sexual satisfaction, AtA, and SwL. The results indicated statistically significant improvements across all three outcomes in the intervention group compared to the control group, supporting the intervention's effectiveness in enhancing SWB among older adults.

In contrast to the control group, the intervention-group participants showed statistically significant increases in all variables, with marked improvements in sexual satisfaction and AtA immediately after the intervention compared to preintervention levels. Although scores in the intervention group slightly decreased at 6 and 12 months after the intervention, they remained statistically significantly higher than preintervention levels and compared to the control group at the same time points. These results suggest that the intervention had a significant and long-lasting effect on sexual satisfaction and AtA. Similar patterns were observed for SwL scores, with postintervention improvements diminishing somewhat over time, but scores remained higher than baseline scores.

The findings of this study align with the findings of [Vasconcelos et al. \(2022\)](#), which emphasize that experiencing a fulfilling sexual life is a critical component of well-being. This connection is particularly relevant because our program integrated various strategies aimed at enhancing sexual satisfaction, which, in turn, can improve overall SWB. The improvements observed in sexual satisfaction among the participants in the intervention group were also associated with significant gains in AtA and SwL. This suggests that enhancing sexual satisfaction can not only improve SWB but also positively influence how older people perceive their own aging and overall SwL. Programs targeting the well-being of older adults should, therefore, incorporate elements that promote a fulfilling sexual life, as this can lead to broader benefits in other areas of life satisfaction and adjustment, further supporting the all-inclusive SWB of the aging population ([Miguel et al. 2024](#); [von Humboldt et al. 2020](#); [Wang et al. 2015](#)).

The control group showed minimal changes in all variables. Sexual satisfaction showed a negligible increase immediately after the intervention period, which then slightly decreased over time and to below preintervention satisfaction levels at 12 months. AtA remained unchanged throughout this study, with only marginal fluctuations. SwL also exhibited little change, with a slight statistically significant decline by the end of this study, indicating that a lack of participation in the program may have had a detrimental effect on overall SwL.

These patterns of findings among the control group alone may also be linked to common barriers in help-seeking behavior regarding SWB. Older adults often perceive sexual problems as a normal consequence of aging, which reduces their distress but also discourages them from seeking support ([Hinchliff and Gott 2008](#); [Sinković and Towler 2019](#)). Both men and women might avoid discussing sexual issues with healthcare providers due to embarrassment, lack of available information, or the perception that these issues are not relevant to their health ([Abramsohn et al. 2013](#); [Gott and Hinchliff 2003](#)). This reluctance to seek help or discuss sexual matters can have long-term implications, potentially leading to persistent sexual dissatisfaction, poor AtA, and decreased SwL life. The findings from the control group seem to reflect these difficulties, highlighting the importance of addressing

these barriers through targeted interventions that encourage open communication and provide the necessary support to improve SWB and overall life satisfaction among older adults (Abramsohn et al. 2013).

Another important factor to consider is the presence of a partner as a relevant factor influencing sexual satisfaction and overall SWB among older adults. In our sample, 40.2% were unpartnered, which may have affected their experiences and perceptions of SWB throughout this study. The opportunity for sexual engagement is often linked to relationship status, and unpartnered individuals may face unique challenges and barriers to achieving sexual satisfaction.

The fact that this intervention program was rated highly by participants reflects its perceived usefulness and effectiveness. Participants particularly valued the opportunity to share their experiences in a supportive environment, which contributed significantly to their overall positive feedback. This enhanced their openness when discussing sensitive topics like SWB and helped them to challenge and reduce the stereotypes associated with aging and sexuality. This finding aligns with those in the previous literature, which suggests that sharing difficult experiences and complex themes with others can lead to self-growth, emotional wellness, social support, and mental health (Miguel et al. 2024; von Humboldt and Leal 2017), which in turn is important for their well-being (Ryff 2014).

Furthermore, it is important to recognize the unique cultural context of Portugal, which could have played a significant role in shaping the effectiveness and accessibility of the intervention program. As a developed country, Portugal has a distinct social structure with a prevalence of an older population, community resources, and healthcare systems that influence how older individuals engage with interventions designed to enhance SWB (Hinchliff et al. 2018; Santos-Iglesias et al. 2016). For instance, the program utilized resources that resonate with the cultural values and norms prevalent in Portuguese society, such as the emphasis on community support. Conversely, program interventions focused on SWB are still lacking in the Portuguese context (Hinchliff et al. 2018; Santos-Iglesias et al. 2016; von Humboldt et al. 2020).

The findings of this study as a whole show that the SWB program implemented was effective in significantly enhancing sexual satisfaction, AtA, and SwL among the 60 participants in the intervention group compared to the control group. That these outcomes are unique to the intervention group underscores the efficacy of the intervention. Intervention programs have been widely recognized as effective in providing older adults and caregivers accurate information on psychological challenges, in supplementing health approaches, in approaching mental health conditions, and in supporting methods so that people may stay well (Bevan Jones et al. 2018; Sarkhel et al. 2020; Tursi et al. 2013).

6.2. Key Program Outcomes

The observed effects of the program intervention draw much-needed attention to the potential of community-based interventions when addressing SWB and highlight a critical and less-explored dimension of overall well-being among older populations (Bevan Jones et al. 2018; Sarkhel et al. 2020; von Humboldt et al. 2020). By incorporating aspects such as goal setting, emotional support, and effective communication, this intervention program aimed to equip participants with tools to navigate challenges related to their intimacy and sexual health. The slight declines in scores that we observed at the 6- and 12-month follow-ups suggest that program effects might wane over time without continued support. Indeed, this study's unique longitudinal design permitted such evidence in support of ongoing or booster sessions to sustain these benefits. Gewirtz-Meydan and Ayalon (2019) emphasized that health, rather than age, is the crucial factor influencing SWB among older adults. Addressing health-related factors and challenging the misconception that older adults are inherently asexual when living in the community are critical (for example, see Fileborn et al. 2015). By continuing to provide tailored support to older people, we could benefit older populations with what they stand for through community-based interventions and with respect to sexual satisfaction, AtA, overall SwL, and SWB.

The intervention program's focus on effective communication, social support, and goal setting was essential to enhancing the participants' experiences. Effective communication was emphasized as a key skill to foster openness and reduce barriers to discussing sensitive topics, ultimately promoting a more fulfilling intimate life. These findings align with the previous literature (Wolfe et al. 2023).

The sessions in our intervention were meticulously structured to address the SWB challenges faced by older adults. These sessions provided a safe space for participants to openly discuss their sexual life, share personal experiences, and receive information and support. They included practical exercises for addressing difficulties concerning their intimacy, exploring body image and body awareness, and accessing sexual health resources. This approach combined informative content with emotional support, helping participants to address SWB effectively. This collaborative atmosphere not only likely promoted sexual satisfaction, AtA, and SwL but also facilitated positive transformations in participants' SWB, as suggested by Wolfe et al. (2023) and Gewirtz-Meydan and Ayalon (2019).

The focus on effective communication was addressed in sessions 2 and 5 through sharing experiences, communication exercises, and problem-solving techniques. By equipping participants with these skills, the program aimed to empower them to articulate their concerns and manage negative reactions. Previous research has highlighted the importance of communication in maintaining healthy relationships and well-being, particularly among older adults (Mallory et al. 2019). By fostering informative resources, support and communication skills, this program likely contributed to the increased sexual satisfaction, AtA, and SwL, which, in turn, led to higher SWB levels among the participants.

Both emotional support and network support were emphasized across sessions 3 and 4 and sessions 5 and 6, respectively. Emotional support was facilitated through exercises for managing stressful situations and discussions on acceptance of negative reactions. These sessions also included discussions on acceptance of negative reactions, unrealistic expectations, and understanding ambivalence. Network support was addressed by providing information on professional, financial, and institutional resources and by encouraging the development of support networks. Additionally, sessions on network support included activities focused on challenging core beliefs and fostering connections to enhance participants' overall support systems. By promoting emotional and social support, our intervention likely contributed to the observed improvements in sexual satisfaction, AtA, and SwL. Social support is widely recognized for its positive effects on both physical and mental health outcomes (Sharifian et al. 2022). For example, perceived stress significantly influences the relationship between support and well-being, where greater support reduces stress and enhances well-being (Acoba 2024). Social support may also encourage increased physical activity among older adults, further promoting health and well-being over time (Kang et al. 2018).

Moreover, goal setting was a significant aspect of the program, as it involved expressive writing and integrating new goals into personal narratives. This approach aimed to boost participants' motivation and self-efficacy, enhancing their overall sense of accomplishment. By setting realistic and achievable goals in various domains, such as physical activity, cognitive activity, and social engagement, older adults could focus on positive outcomes, thereby fostering a healthier and more satisfying approach to intimate relationships and enhancing their overall well-being (Acoba 2024; Nelis et al. 2018).

This intervention demonstrated positive effects on sexual satisfaction, AtA, and SwL among older adults. These findings underscore the importance of addressing sexual health, promoting effective communication, and providing social support in interventions aimed at improving well-being in later life. The slight decline in benefits over time highlights the need for continued support to sustain these improvements. These findings align with those in the existing literature, which emphasizes the need for targeted interventions to improve well-being in older adults, particularly in areas often disregarded, such as SWB and AtA (Heyne et al. 2023; Miguel et al. 2024). The control group's lack of significant improvement further reinforces the idea that without tailored interventions, older adults

may not experience enhancements in these variables. This suggests a potential gap in standard care for this population, which community-based interventions could effectively address (Bevan Jones et al. 2018; Sarkhel et al. 2020; Tursi et al. 2013).

6.3. Limitations and Implications

This study has a number of limitations. The findings may not be generalizable beyond this older sample. The perspectives and experiences shared by older individuals in this study do not necessarily reflect those of older people from different cultural, socioeconomic, and demographic backgrounds. Moreover, the participants in this study showed a lack of ethnic diversity and limited variation in education, income, sex, and sexual orientation. Additionally, there was a higher proportion of female participants in this study. In future intervention studies like this one, recruiting participants from diverse backgrounds would enhance the applicability of findings and help intervention researchers better understand the effects of SWB programs across different older populations.

Another limitation is the ex post facto design being employed. Participants were not randomly assigned. Self-reported measures were also employed. Additionally, and because interventions can be susceptible to researcher bias, the results may have unintentionally been impacted by their personal views and perhaps even social desirability. Last, research on intervention interventions for sexual health in later age remains rare despite the expanding body of literature on intervention programs. It is therefore difficult to relate the overall efficacy of this intervention to any others, particularly in cases wherein program activities are codesigned with older people.

Notwithstanding these limitations, this study makes a relevant contribution to the literature. Traditional views of healthy aging typically emphasize maintaining function across various life domains, including SWB. This study highlights the critical importance of targeting SWB and in improving it in the broader framework of aging, demonstrating its significant impact on the well-being and overall satisfaction of older adults. Given the unique and hard-to-access sample, this study's year-long measurement period provided robust, consistent results, underscoring the intervention's effectiveness. Moreover, participants rated the intervention highly, reflecting satisfaction with the activities designed to enhance SWB, communication skills, information, and support.

6.4. Conclusions and Future Directions

In conclusion, SWB is of importance in terms of one's well-being and health, especially as one ages. This study demonstrates the effectiveness of this unique intervention program specifically designed to improve SWB among older community-dwelling adults. The intervention led to significant improvements in sexual knowledge, attitudes, and behaviors toward increased SWB. Additionally, participants showed statistically significant increases in SWB, AtA, and SwL following the intervention, although these improvements slightly decreased after 6 and 12 months.

These findings underscore the potential of community-based intervention programs to positively influence the SWB, sexual health, and general well-being of older adults. They also have important implications for policy and healthcare practices aimed at improving SWB and overall aging well. However, further research is needed to explore the long-term effects of such interventions and to gain a deeper understanding of the complex factors influencing SWB in older age. Indeed, SWB plays a crucial role and involves the enhancement in overall sexual satisfaction, AtA, and SwL among older adults. This underscores the importance of integrating SWB into broader support frameworks to promote all-inclusive well-being and, ultimately, aging well. Moreover, future research should explore how cultural factors can be integrated into similar programs in diverse settings to ensure their effectiveness and adaptability. Investigating how community-specific elements contribute to the success of SWB interventions may provide valuable insights for practitioners looking to implement these programs in different cultural contexts.

The intervention's focus on these areas not only improved SWB but also addressed crucial gaps in current support structures, benefiting both older individuals and their partners. By effectively linking SWB with communication and psychological support, the intervention program offered valuable insights into enhancing overall well-being. This study emphasizes the need for continued support through such programs, as they play a vital role in managing the complex challenges of aging. Future research should include diverse participant backgrounds and consider integrating various support components to validate and further refine these findings. Moreover, future studies should investigate which specific components of the program were the most effective and beneficial, providing insights into how each element contributed to the overall positive outcomes.

Future research could also further investigate the impact of intervention programs on older adults' mental health and internalized symptoms, such as anxiety related to aging challenges, as well as on their SwL and overall well-being. Additionally, examining the effects of these interventions on the social dynamics and interactions within their community or social groups could provide valuable insights. Future studies might also integrate advanced analytical methods, including artificial intelligence and neural network models, to better understand the relationships between SWB, AtA, and SwL.

Future research should aim to generate more knowledge around how to tailor intervention programs. This would help researchers adapt seemingly effective interventions in their own studies and provide older adults and health professionals with clear insights into the nature and potential benefits of any such interventions. Further research into individualized information and program design is needed to accommodate diverse ages, genders, educational levels, and capabilities. Future studies could also examine how these intervention programs are or can be integrated into social and healthcare services and why and how often older individuals use them. Additionally, leveraging the authenticity of intervention findings can foster greater openness about SWB, reduce stigma, and underscore the real importance of addressing this topic with genuineness and seriousness. This innovative study offers valuable results and practical recommendations for achieving these aims.

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