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Sexual function positively correlated with older adults' sexuality and quality of life

Função sexual positivamente correlacionada com a sexualidade e qualidade de vida do idoso

La función sexual correlacionado positivamente con la sexualidad y la calidad de vida de los ancianos

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ABSTRACT

Objectives: to analyze sexual function and its correlation with sexuality and quality of life in male older adults. **Methods:** a cross-sectional study, developed with 231 male older adults. Participants completed four instruments to obtain biosociodemographic data, sexual function, sexuality and quality of life. Analyzes were performed using the Mann-Whitney test and Spearman Correlation. **Results:** sexual function was positively correlated with sexuality in a moderate magnitude and with quality of life in a low magnitude. Male older adults without sexual dysfunction experienced their sexuality better and had a better quality of life. Finally, partner overall satisfaction was the facet of sexual function that had the highest positive correlation with sexuality, while self-confidence had the highest positive correlation with quality of life. **Conclusions:** we suggest that sexual function should be addressed more frequently in Primary Health Care services, as we found statistically significant correlations with sexuality and quality of life components.
Descriptors: Public Health; Health of the Elderly; Men's Health; Sexual Health; Geriatric Nursing.

RESUMO

Objetivos: analisar a função sexual e sua correlação com a sexualidade e com a qualidade de vida de homens idosos. **Métodos:** estudo transversal, desenvolvido com 231 homens idosos. Os participantes preencheram quatro instrumentos para obtenção dos dados biosociodemográficos, função sexual, sexualidade e qualidade de vida. Realizaram-se as análises com o Teste de Mann-Whitney e Correlação de Spearman. **Resultados:** a função sexual esteve positivamente correlacionada com a sexualidade em moderada magnitude e com a qualidade de vida em fraca magnitude. Os homens idosos sem disfunções sexuais melhor vivenciaram sua sexualidade e possuíram melhor qualidade de vida. Por fim, a satisfação geral do(a) parceiro(a) foi a faceta da função sexual que obteve maior correlação positiva com a sexualidade, enquanto que a autoconfiança apresentou maior correlação positiva com a qualidade de vida. **Conclusões:** sugerimos que a função sexual seja trabalhada com maior frequência nos serviços da Atenção Primária à Saúde, visto que encontramos correlações estatisticamente significantes com os componentes da sexualidade e da qualidade de vida.
Descritores: Saúde Pública; Saúde do Idoso; Saúde do Homem; Saúde Sexual; Enfermagem Geriátrica.

RESUMEN

Objetivos: analizar la función sexual y su correlación con la sexualidad y la calidad de vida en ancianos. **Métodos:** estudio transversal, desarrollado con 231 ancianos. Los participantes completaron cuatro instrumentos para obtener datos biosociodemográficos, función sexual, sexualidad y calidad de vida. Los análisis se realizaron utilizando la prueba de Mann-Whitney y la correlación de Spearman. **Resultados:** la función sexual se correlacionó positivamente con la sexualidad en una magnitud moderada y con la calidad de vida en una magnitud baja. Los ancianos sin disfunción sexual experimentaron mejor su sexualidad y tuvieron una mejor calidad de vida. Finalmente, la satisfacción general de la pareja fue la faceta de la función sexual que tuvo la correlación positiva más alta con la sexualidad, mientras que la confianza en uno mismo tuvo la correlación positiva más alta con la calidad de vida. **Conclusiones:** sugerimos que la función sexual debe ser abordada con mayor frecuencia en los servicios de Atención Primaria de Salud, ya que encontramos correlaciones estadísticamente significativas con los componentes de la sexualidad y la calidad de vida.
Descriptores: Salud Pública; Salud del Anciano; Salud del Hombre; Salud Sexual; Enfermería Geriátrica.

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INTRODUCTION

Aging is established in a complex, individual way and does not reflect in a phase of life marked by antisocial or asexual behavior. Although senescence promotes some physiological loss, it is possible to experience a full and successful old age[1], which includes a healthy experience of sexuality and sexual activity, i.e., experiences in a mutual way between both involved free from prejudices, impositions or feelings of obligation as a spouse to satisfy partners' desires.

In Brazil, an older adult is considered to be any individual aged 60 years or older[2]. It is estimated that, in the country, demographic developments jumped from 2.6 million in 1950 to 29.9 million older adults in 2020, reaching 72.4 million in 2100[3]. As aging is a global phenomenon, its growth is also observed in other countries, and, worldwide, 1 in 6 people will be 60 years old or older in 2030[4].

When it comes to sexuality in old age, myths and taboos emerge that end up discouraging older adults from experiencing it. Similarly, it occurs in relation to sexual activity in this age group, because, for the imaginary of society, being sexually active after aging consists of an abnormal, shameful and immoral practice[5]. However, it is noteworthy that sexuality in this period of life should be understood as a piece that forms the individuals' totality and, therefore, its acceptance is required as a biopsychosociocultural factor, as it occurs in other age groups[5].

It is necessary to make clear in this study some concepts that will be used. First, sexuality, a broad subject, used to describe a construct inherent in life whose development is continuous, beginning before birth and ending only after death. It is the way in which each individual expresses himself through looks, caresses, smell, love, affection, touch, intimacy, companionship, complicity, among other expressions, including sexual activity[5-6]. It is observed, then, that sexual activity is one of the sexuality components and, therefore, should not be treated as synonyms. Therefore, sexual activity in this study will be defined as the use of genitals to obtain pleasure and/or reproduction. Sexual function refers to the genitals' somatic capacity to perform the response stages of the sexual cycle in its biophysiological dimension[7].

Sexual activity is considered adequate when it harmoniously comprises several phrases, such as the desire to perform it, arousal, orgasm and resolution, the latter being marked by relaxation. When changes occur at any stage, a sexual dysfunction has been installed, which can cause negative repercussions on the perception of health and on the affective relationships of those who experience it, since sexuality and sex are fundamental components of human beings. Among sexual dysfunctions, erectile dysfunction is more frequently observed in about 30 to 52% of men aged at least 40 years[8], whose prevalence can reach up to 84.2% in male older adults[9].

It should be remembered that the stoning of sexuality is influenced by emotional, sociocultural, biological and physiological factors[5]. In addition to this, the experience of sexuality among older adults is considered a basic human need[10], significant for health[10], well-being[11] and quality of life (QoL) maintenance[12–14]. QoL is a subjective and multidimensional constituent, currently considered an important health marker[15-16]. It is the subjective conception that the individual has regarding the balance between the various aspects and contexts that shape their daily lives, such as family ties, employment bond, leisure, sexual activity, among others[17].

In more detail, the World Health Organization (WHO) defines QoL as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"[18]. In this sense, considering the need to invest in new health promotion strategies that incorporate quality to the additional years of life of older adults, it is worth starting to look more closely at aspects that are part of the individuals' totality, such as sexuality and sexual aspects.

Thus, the hypothesis of this study is that older adults with some type of sexual dysfunction have worse experience of sexuality and worse QoL. This study was motivated by the state of the art of revealing that older adults do not understand the difference between sexual intercourse and sexuality, treating them as synonyms and/or reducing sexuality to genital aspects[19-20]. As a consequence, it is inferred that they do not experience their sexuality satisfactorily, by reducing it only to sexual activity. Due to physiological changes typical of aging that culminate in sexual dysfunction, added to the social prejudice on the subject, there is, therefore, a facilitating environment for older adults to cancel their experiences in sexuality and, consequently, not enjoy its biopsychosocial benefits.

Also, the knowledge gap of this study is crossed by the predominance of investigations focusing on sexual aspects and the impact of the aging process on their experiences, thus contributing to few reflections on sexuality in its comprehensive definition[21]. The current studies that are closest to our theme did not investigate sexuality along with sexual function, and such variables were explored in isolation[22-29]. Moreover, researches do not clarify the concept of sexuality that theoretically supported the discussion, in addition to those that have the term "sexuality" in the title, in fact, are limited to the genital component, not to sexuality itself[22-23,29].

In this context, the main differential of this study concerns the fact that it is the first research developed with older adults in a social network on sexual function and sexuality, covering participants with a specific sociodemographic profile that does not represent the majority of Brazilian older adults investigated. This can serve as preliminary data for the direction of future public policies, given that, due to the current expansion of undergraduate and graduate courses in Brazil, there may be a greater number of older adults with high education in the not-too-distant future. Another differential concerns the incorporation of the sexuality variable, including its sexual, affective and social aspects, ratifying its broad construct.

OBJECTIVES

To analyze sexual function and its correlation with male older adults' sexuality and QoL.

METHODS

Ethical aspects

This study complied with all ethical precepts established by Resolution 466/2012 of the Brazilian National Health Council (*Conselho Nacional de Saúde*). Approval was obtained from the Research Ethics Committee of the *Universidade de São Paulo* at

Escola de Enfermagem de Ribeirão Preto in 2020. All participants agreed with the Informed Consent Form (ICF) available online, in which they clicked on the option "I read and accept to participate in the study". A second copy of the ICF was sent in the form of hidden sending to all e-mails informed.

Study design, period, and location

The study was developed with a cross-sectional, descriptive, web survey design, between August and October 2020, based on the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) guide. The study scenario was Facebook, represented by users from the five Brazilian regions (North, Northeast, Midwest, Southeast and South).

Sample; inclusion and exclusion criteria

The sample size was defined, a priori, considering an infinite population, 88% prevalence of sexual dysfunction[9], 5% sampling error and 95% confidence interval ($z\alpha/2 = 1.96$), obtaining the minimum value of 163 male older adults. However, due to the possibility of losses due to insufficient answers to the questionnaires, it was decided to add more than 40% to the calculation, which corresponded to a final sample size of 231 participants who fully met all the inclusion criteria and who were selected according to the non-probabilistic consecutive sampling technique.

Older adults aged 60 or over, male, living in a community in any Brazilian region, with internet access and an active Facebook account, with a fixed partnership for relationships, whether through marriage or civil union, obeying, therefore, a requirement of the instrument that assesses sexuality were included[30]. Older adults living in long-stay institutions and similar institutions, those who were hospitalized at the time of collection and those without interaction in the social network mentioned were excluded. The exclusion criteria were verified through three dichotomous questions (yes/no), available in the biosociodemographic survey header, asking if individuals were adequate in such situations. To proceed with the study, participants had to deny all questions without knowing that it was a selection strategy.

Due to skills required to handle equipment that provides access to the internet and, consequently, to Facebook, the application of instruments to assess the cognitive state was waived.

Study protocol

Data collection took place between August and October 2020, exclusively online, through internet access and an active Facebook account. The authors created a Facebook engagement page with the objective of disseminating scientific information on health, sexuality and QoL, in addition to developing online research related to these themes. On this page, an invitation was made through the online publication of a hyperlink that provided direct access to the survey questionnaire, organized in Google Forms, with four surveys: biosociodemographic; sexual function; sexuality; and QoL.

The authors resorted to the post boosting strategy, an option provided by Facebook, which, through payment, expands the dissemination of the research to all people with previously established characteristics in a specific field, throughout the national territory. With this strategy, it is possible to increase the number of engagements in the post and, consequently, the probability of the invitation being shared among users. Thus, it was possible to reach the desired sample size.

The first survey consisted of the ICF and the biosociodemographic questions. The entire content of the ICF was made available in full so that participants could read it completely, and, if they agreed to participate in the study, they could proceed to the biosociodemographic questions. These questions were prepared by the authors themselves and contained information that made it possible to trace the participants' profile, such as sexual orientation, age, religion, ethnicity, marital status, education, geographic location, among others.

The second survey referred to sexual function, elaborated by the Male Sexual Quotient (MSQ)[31], built and validated for the Brazilian population according to men's sexual specificities. This quotient presents 10 questions with five possible Likert-type answers: 0 (never); 1 (rarely); 2 (sometimes); 3 (approximately 50% of the time); 4 (most of the time); and 5 (always). The final score reflects in the sexual performance pattern that can be classified as having sexual dysfunction (<60 points) and without sexual dysfunction (≥60 points). This score is obtained by summing the numbers corresponding to each question and then multiplying by two[31].

The third survey referred to sexuality, elaborated with the Affective and Sexual Experiences Scale for Elderly (ASESE), built and validated for the old Brazilian population[30]. ASESE consists of 38 items that are distributed in three dimensions: sexual act; affective relationships; and physical and social adversity. It is structured with five possibilities of Likert-type responses: 1 (never); 2 (rarely); 3 (sometimes); 4 (often); and 5 (always). There is no cut-off point for this scale and it is considered that the lower/higher the score, respectively, the worse/better the experiences of sexuality in sexual activity and in affective relationships[30]. The physical and social adversities dimension contains negative questions and, therefore, its interpretation is opposite to the other two dimensions, and the highest/lowest score indicates, respectively, worse/better coping with adversities.

Finally, the fourth survey referred to QoL, organized with a validated and standardized instrument called World Health Organization Quality of Life – Old (WHOQOL-Old)[32]. It is a specific instrument to measure older adults' QoL, composed of 24 items that are distributed in six facets: sensory skills; autonomy; past, present and future activities; social participation; death and dying; and intimacy. It presents five possibilities of Likert-type responses (1 to 5 points), its total score varies between 24 and 100 points and the lowest/highest score indicates, respectively, the worst/best QoL[32].

Analysis of results, and statistics

After completion of collection, data[33] were transported to IBM® SPSS Statistics, version 25, in which all analyses statistics were performed. The descriptive analysis of the data was represented by the absolute and relative frequencies for qualitative variables, and median (M_d) and interquartile range (IQR) for quantitative variables.

The Kolmogorov-Smirnov test was applied to verify data distribution, thus verifying its abnormality ($p<0.05$). Therefore, non-parametric statistics, represented by the Mann-Whitney U test, were used to compare two independent groups. Spearman's correlation (ρ) was used to analyze the relationships between the independent variable (sexual function) and the dependent variables (sexuality and QoL). Correlation coefficients were interpreted as follows: weak magnitude ($\rho < 0.4$); moderate magnitude ($\rho \geq 0.4$ to < 0.5); and strong magnitude ($\rho \geq 0.5$)[34]. A 95% confidence interval ($p \leq 0.05$) was considered for all statistical analyses.

RESULTS

Table 1 shows participants' biosociodemographic data, especially the higher prevalence of individuals with high education, self-declared white and who have never received guidance on sexuality by health professionals. Moreover, Table 1 also shows the prevalence of sexual dysfunction according to categories, obtaining a predominance among older adults aged between 60 and 64 years, with only elementary school, married, Catholic and with more than 20 years of living with their partner. The other information can be seen in the table.

It is observed that, in Table 2, the highest medians were observed in individual overall satisfaction the sexual function instrument (MSQ), in the sexual activity in the sexuality instrument (ASESE) and in the sensory abilities and intimacy of QoL (WHOQOL -Old).

Table 3 shows that older adults without sexual dysfunction better experience their sexuality in all dimensions assessed, evidenced by the highest medians in sexual activity (**M_d**=77.00 [IQR= 71.00-81.75]) and in affective relationships (M_d=76.00 [IQR= 68.00-82.00]), and lower average in the physical and social adversity dimension (M_d=7.00 [IQR= 5.00-8.00]).

Regarding QoL, it is observed that older adults without sexual dysfunction showed the best statistically significant scores in five of the six assessed facets, with the exception only of the death and dying facet. Finally, it should be noted that the prevalence of sexual dysfunction was 39.4% (n=91), and, in overall, older adults without sexual dysfunctions better experience their sexuality and have better QoL when compared to older adults who have sexual dysfunctions.

Table 1 - Biosociodemographic characteristics, Ribeirão Preto, São Paulo, Brazil, 2020

Variables			Sexual dysfunction			
			With dysfunction		Without dysfunction	
	n	%	n	%	n	%
Age group						
60-64 years	101	43.7	37	40.7	64	45.7
65-69 years	68	29.4	22	24.2	46	32.9
70-74 years	49	21.2	25	27.5	24	17.2
75-79 years	6	2.6	3	3.2	3	2.1
≥80 years	7	3.1	4	4.4	3	2.1
Education						
Elementary school	76	33.0	40	44.0	36	25.7
High school	95	41.1	28	30.8	67	47.9
Higher education	59	25.5	22	24.2	37	26.4
Without education degree	1	0.4	1	1.0	0	0
Marital status						
Married	165	71.4	71	78.0	94	67.1
Stable union	40	17.3	10	11.0	30	21.4
Fixed partner	26	11.3	10	11.0	16	11.5
Time living with partner						
≤5 years	20	8.7	7	7.7	13	9.3
Between 6 and 10 years	23	10.0	5	5.5	18	12.9
Between 11 and 15 years	11	4.8	2	2.2	9	6.4
Between 16 and 20 years	9	3.9	3	3.3	6	4.3
> 20 years	168	72.7	74	81.3	94	67.1
Live with children						
Yes	70	30.3	27	29.7	43	30.7
No	156	67.5	61	67.0	95	67.9
Do not have children	5	2.2	3	3.3	2	1.4
Religion						
Catholicism	131	56.7	57	62.6	74	52.9
Protestantism	34	14.7	9	9.9	25	17.9
Spiritism	14	6.1	4	4.4	10	7.1
African religions	1	0.4	0	0.0	1	0.7
Other	36	15.6	15	16.5	21	15.0
No religion	15	6.5	6	6.6	9	6.4
Ethnicity						
White	148	64.1	59	64.8	89	63.6
Yellow	2	0.9	2	2.2	0	0.0
Black	10	4.3	5	5.5	5	3.6
Brown	65	28.1	23	25.3	42	30.0
Indigenous	1	0.4	0	0.0	1	0.7
Do not know	5	2.2	2	2.2	3	2.1

To be continued

Table 1 (concluded)

Variables			Sexual dysfunction			
			With dysfunction		Without dysfunction	
	n	%	n	%	n	%
Did you receive guidance on sexuality?						
Yes	29	12.6	9	9.9	20	14.3
Never	202	87.4	82	90.1	120	85.7
Sexual orientation						
Heterosexuality	186	80.5	61	67.0	125	89.3
Homosexuality	6	2.6	4	4.4	2	1.4
Bisexuality	2	0.9	2	2.2	0	0.0
Others	37	16.0	24	26.4	13	9.3
Brazilian region						
North	19	8.2	8	8.8	11	7.9
Northeast	38	16.5	14	15.4	24	17.1
Midwest	19	8.2	7	7.7	12	8.6
Southeast	77	33.3	29	31.9	48	34.3
South	78	33.8	33	36.2	45	32.1

Table 2 – Descriptive analysis of instruments, Ribeirão Preto, São Paulo, Brazil, 2020

Variables	M_d (IQR)
MSQ	
Sexual desire and interest	4.00 (4.00-5.00)
Self-confidence	4.00 (2.00-4.00)
Erection quality	9.00 (5.00-12.00)
Ejaculation control	2.00 (1.00-4.00)
Ability to achieve orgasm	5.00 (4.00-5.00)
Individual overall satisfaction	10.00 (8.00-12.00)
Partner overall satisfaction	7.00 (6.00-9.00)
Overall sexual function	68.00 (50.00-80.00)
ASESE	
Sexual activity	73.00 (65.00-80.00)
Affective relationships	72.00 (62.00-80.00)
Physical and social adversity	8.00 (6.00-10.00)
Overall sexuality	153.00 (136.00-165.00)
WHOQOL-Old	
Sensory abilities	75.00 (68.75-93.75)
Autonomy	68.75 (56.25-75.00)
Past, present, and future activities	68.75 (56.25-75.00)
Social participation	68.75 (50.00-75.00)
Death and dying	68.75 (50.00-87.50)
Intimacy	75.00 (68.75-81.25)
Overall quality of life	67.70 (60.41-75.00)

IQR - interquartile range; M_d – median.

In the correlation analysis between sexual function and sexuality, observed in Table 4, it is noted that the highest correlation coefficients were between partner overall satisfaction with sexual activity (ρ=0.601; p<0.001) and with affective relationships (ρ=0.526; p<0.001), both positive and with strong magnitude. Moreover, there is also a strong negative correlation between erection quality and physical and social adversity (ρ= -0.602; p<0.001). Finally, in overall, it is observed that sexual function correlates positively and moderately with sexuality (ρ=0.485; p<0.001).

According to Table 5, it is observed that all correlations of sexual function with QoL were positive, but with weak magnitudes. The highest coefficient found was between partner overall satisfaction and intimacy (ρ= 0.305; p<0.001). Finally, in overall, sexual function correlated positively, but with a weak magnitude with older adults' QoL (ρ= 0.325; p<0.001).

DISCUSSION

In our study, the highest prevalence of participants has a high level of education, represented by high school and higher education, in addition to being self-declared white. These characteristics are different from other investigations developed with older adults, in which there is a predominance of non-white individuals[20,35]

Table 3 – Comparison of sexuality and quality of life according to sexual function, Ribeirão Preto, São Paulo, Brazil, 2020

Variables	Sexual function		*p* value
	With dysfunction (n=91) M_d (IQR)	Without dysfunction (n=140) M_d (IQR)	
Sexuality			
Sexual activity	65.00 (58.00-73.00)	77.00 (71.00-81.75)	**<0.001***
Affective relationships	66.00 (55.00-73.00)	76.00 (68.00-82.00)	**<0.001***
Physical and social adversity	10.00 (8.00-12.00)	7.00 (5.00-8.00)	**<0.001***
Overall sexuality	141.00 (126.00-154.00)	161.00 (147.25-169.00)	**<0.001***
Quality of life			
Sensory abilities	75.00 (62.50-87.50)	81.25 (68.75-93.75)	0.046*
Autonomy	62.50 (50.00-75.00)	68.75 (62.50-75.00)	**<0.001***
Past, present, and future activities	62.50 (50.00-75.00)	68.75 (56.25-75.00)	**0.001***
Social participation	62.50 (43.75-75.00)	68.75 (56.25-75.00)	0.025*
Death and dying	68.75 (43.75-81.25)	75.00 (50.00-87.50)	0.114
Intimacy	68.75 (56.25-75.00)	75.00 (70.31-81.25)	**<0.001***
Overall quality of life	64.58 (57.29-71.87)	69.79 (63.54-77.86)	**<0.001***

**Statistical significance for the Mann-Whitney U test (p<0.05); IQR - interquartile range; M_d – mean.*

Table 4 – Correlation between sexual function and sexuality, Ribeirão Preto, São Paulo, Brazil, 2020

Sexual function	Sexuality			
	SA ρ	AR ρ	PSA ρ	OS ρ
Sexual desire and interest	0.387*	0.300*	-0.167‡	0.337*
Self-confidence	0.431*‖	0.310*	-0.279*	0.344*
Erection quality	0.469*‖	0.382*	-0.602*§	0.380*
Ejaculation control	0.354*	0.316*	-0.385*	0.317*
Ability to achieve orgasm	0.292*	0.220†	-0.351*	0.223†
Individual overall satisfaction	0.544*§	0.462*‖	-0.341*	0.487*‖
Partner overall satisfaction	0.601*§	0.526*§	-0.444*‖	0.537*§
Overall sexual function	0.573*§	0.470*‖	-0.541*§	0.485*‖

*Statistical significance for Spearman's correlation (ρ): *(p<0.001); †(p=0.001); ‡(p=0.011); §Strong correlation; ‖Moderate correlation; SA - sexual act; AR - affective relationships; PSA - physical and social adversities; OS - overall sexuality.*

Table 5 – Correlation between sexual function and quality of life, Ribeirão Preto, São Paulo, Brazil, 2020

Sexual function	Quality of life						
	SA ρ	AUT ρ	PPFA ρ	SP ρ	DD ρ	INT ρ	OQOL ρ
Sexual desire and interest	0.121§	0.183‡§	0.200‡§	0.201‡§	0.096§	0.301*§	0.283*§
Self-confidence	0.223†§	0.252*§	0.250*§	0.261*§	0.156‡§	0.278*§	0.344*§
Erection quality	0.133‡§	0.234*§	0.190‡§	0.222‡§	0.115§	0.283*§	0.271*§
Ejaculation control	0.099§	0.111§	0.180‡§	0.161‡§	0.049§	0.249*§	0.185‡§
Ability to achieve orgasm	0.179‡§	0.216§	0.146‡§	0.071§	0.038§	0.156‡§	0.173‡§
Individual overall satisfaction	0.097§	0.204‡§	0.244*§	0.205‡§	0.087§	0.300*§	0.261*§
Partner overall satisfaction	0.180‡§	0.261*§	0.263*§	0.247*§	0.107§	0.305*§	0.312*§
Overall sexual function	0.169‡§	0.269*§	0.265*§	0.249*§	0.123§	0.343*§	0.325*§

*Statistical significance for Spearman's Correlation (ρ): *(p<0.001); †(p=0.001); ‡(p<0.05); §Weak correlation; SA - sensory abilities; AUT - autonomy; PPFA - past, present and future activities; SP - social participation; DD - death and dying; INT - intimacy; OQOL - overall quality of life.*

and with low education[19-20,35]. Perhaps our results may have been influenced by the online collection modality, given that people would need to know how to read to interact in the social network, in addition to sufficient socioeconomic conditions to have access to the internet and devices that provide access to networks, such as smartphones and computers.

Regarding the scores of the instruments used, we observed higher medians in individual overall satisfaction in the sexual function instrument, in the sexual activity in the sexuality instrument and, finally, in the QoL instrument's sensory abilities and intimacy facets.

The item referring to individual overall satisfaction assesses their own satisfaction with their conduct regarding warm-ups and their sexual performance, both in relation to the ability to feel stimulus for new acts and the ability to adapt to partners' sexual behavior[31]. The second item with the highest score was the sexual activity in the sexuality instrument, which, literally, deals with aspects related to the experiences and feelings of older adults in sexual relations[30]. The sensory abilities facet of QoL assesses how much sensory losses affect daily life, participation in activities and the ability to interact. The intimacy facet assesses the feeling of companionship, experience in love and opportunities to love and be loved[32].

Given these results, we observed that the older adults of our study are satisfied with their sexual conduct, which may also be a reflection of the higher prevalence of participants without sexual dysfunction, in contrast to other national and international studies[9,36-38]. This divergence may be explained by the variety of instruments available to assess the same construct, but with its own specificities, such as the International Index of Erectile Function (IIEF15)[9], The Aging Male's Symptoms Scale (AMS)[38] and even questions prepared by the researchers themselves without the use of a validated instrument[36-37].

Regarding the sexuality components, we revealed that male older adults have a better experience in sexual activity, followed by affective relationships in our study. This is a curious finding, given that other investigations[39-40] revealed that, in old age, older adults value the affective aspects of a relationship more, and sexual practice ends up positioning itself in the background. However, we emphasize that there are gender differences involved in the theme, because, overallly, men tend to value more sexual activity[40] as a form of relaxation and pleasure obtained in orgasm, while women value more the affective aspects[41].

Nevertheless, we emphasize that the sociodemographic characteristic of our sample, especially in relation to high education and, consequently, greater access to sexual information and resources, may have interfered with these results, given the wide availability of strategies and instruments that improve sexual performance. Perhaps the possibility of acquiring these resources is not accessible to male older adults of other investigations, because they have different sociodemographic characteristics from our[38].

Our results indicate that male older adults without sexual dysfunction better experience their sexuality in all dimensions assessed. These results reinforce the conceptual misconception between sex and sexuality that exists among older adults[19-20], because sexual dysfunction should not necessarily be the reason for the worst experiences of sexuality, since sexuality is a broader construct that makes it possible to obtain pleasure and satisfaction through new ways of experiencing their experiences, as already mentioned in introduction to our study.

Nevertheless, the lower median among older adults without sexual dysfunction in the physical and social adversity dimension means that they better cope with these dimensions related to their experiences in sexuality, such as health perception as an obstacle, the discomfort caused by the changes resulting from aging, the fear of prejudice in relation to attitudes taken to experience sexuality[30]. On the other hand, male older adults with sexual dysfunction had the highest scores in this dimension, which indicates that they have worse coping in these adversities.

Such results were already expected, because in a culture where male virility is translated by greater sexual capacity, older adults with some type of dysfunction could feel outside the pattern imposed by the social imaginary and, consequently, have a worse coping with this situation, especially with regard to erectile dysfunction.

This inference is in agreement with our results, in which there was a strong negative correlation between erection quality and the sexuality's physical and social adversity dimension, being considered the highest correlation identified. This result points to an inversely proportional relationship between these two variables. In other words, the decline in erection quality (reduction in the score on MSQ) is correlated with the worse coping with physical and social adversities related to sexuality (increase in this score on ASESE).

Erectile dysfunction is one of the main problems present in male older adults' sexual life, being conceptualized as the persistent inability to obtain and maintain an erection capable of satisfying individuals in sexual performance. This is a problem that can cause undesirable health outcomes, such as increased anxiety, depression, feelings of guilt and shame, loss of self-esteem, impairment of social relations, constituting a factor that causes the end of individuals' sexual life. However, we emphasize that there are currently several effective therapies to combat erectile dysfunction, such as psychotherapy, oral and injectable drugs, penile prostheses, surgical interventions, among other options[42].

The other two major correlations found in the comparison between sexual function and sexuality were between partner overall satisfaction with sexual activity and with affective relationships, both correlations were positive and with strong magnitude. These results indicate that the variables mentioned assume directly proportional behaviors. That is, the best experience in sexual activity and in affective relationships is positively and statistically significant correlated with partner best overall satisfaction.

Regarding QoL, our study identified that, in overall, male older adults without sexual dysfunctions have better QoL when compared to older adults who have some type of dysfunction. Nevertheless, in the analysis of the correlation between sexual function and QoL, it was observed that all correlations were positive, but with weak magnitudes. The highest coefficient found was between partner overall satisfaction with the intimacy facet.

The fact is that sexuality is an essential component for QoL promotion[43]. A study[13] developed with 203 Israeli Jews with an average age of 69.59 years revealed that the frequency of sexual activity was established as a predictor of participants' QoL, exerting a mediating effect between the attitudes towards older adults' sexuality and QoL. Another study[44], developed with 126 older Brazilian adults aged over 60 years, identified that 90.48% of participants consider sexual activity as an important factor for achieving happiness.

In addition to this, it is normal for sexual desires to remain in old age; however, such desires often become suppressed due to the moralism present in society. A reflection of this reality is that issues related to aspects of sexuality are frequently addressed with adults and adolescents. However, such frequency is significantly reduced when the target audience of care is older adults[43], prevailing the approaches centered on the diagnosis of chronic degenerative diseases[5].

Our results fully corroborate this reality, as we identified that most male older adults have never received guidance on sexuality from health professionals. In the same sense, another Brazilian study[44] identified that 73.81% of older adults reported difficulties in talking about sexual matters.

Still in this context, considering that older adults remain sexually active[13] and without guidance by health professionals, there may be an increase in the vulnerability of this public to Sexually Transmitted Infections (STIs), especially the Acquired Immunodeficiency Virus (HIV), especially due to the scarcity of campaigns directed to these problems with older adults[5].

In line with the Epidemiological Bulletin of the Ministry of Health of Brazil, between 2007 and 2017, there was an increase in the detection rate of Acquired Immunodeficiency Syndrome (AIDS) in older adults of both sexes. It was observed that, among older male adults, there was an increase from 10.3 to 13.4 detections per 100,000 inhabitants[45].

Furthermore, literature indicates significant growth of older adults using technologies, especially the internet, especially dating apps, which can be accompanied by risk behaviors for sexual infections[46]. In this perspective, a Brazilian study[46] conducted with 412 men with a mean age of 61.6 years identified an HIV prevalence of 11.7% among participants using affective/sexual apps. However, these results could have been higher, since 47.3% of participants did not undergo serological tests in the last 12 months prior to the survey[46].

In this way, it is revealed that, in addition to the approach to sexuality of older adults covering health promotion, it also crosses the field of disease and injury prevention, as it can contribute to greater adherence to preventive practices related to STIs.

In this sense, it is essential that health professionals implement strategies that weaken the stigmatizing conception of sexuality in old age[43], being able to promote guidance and encouragement to older adults, whenever they wish, with a view to fulfilling active aging, including older adults who live with some type of dementia[6], dependent[47] and in palliative care[48], due to their biopsychosocial benefits[6].

Study limitations

We emphasize that this research has some limitations. First, the fact that only older adults with internet access were selected and only on a social network may have increased the restriction of the public and, therefore, caution is required in the interpretation and comparison of our results. However, we tried to mitigate this possible bias by calculating the sample and complying with the post boosting strategy.

Moreover, there was no way to verify the veracity of participants' personal information, which may have favored the participation of fakes profiles and/or individuals outside the inclusion criteria. We also emphasize that there were no questions about the presence and/or absence of chronic diseases, use of drugs or hormonal factors that, in turn, could interfere with experiences in sexuality. These limitations can be used as a guideline in future studies on the subject, in order to fill this gap.

Finally, there is a quantitative and current limitation of similar studies that used the same instrument to assess sexual function, which made it difficult to compare our results with other investigations.

Contributions to nursing

Through our study, health professionals, especially those in primary care, will obtain innovative and current information about male older adults' sexuality, contributing to the expansion of care to older adults and the rupture of prejudices that culminate in negligence in care practices. We also emphasize that, due to the rapid process of population aging and the difficulty of male insertion in preventive practices, it is necessary to adopt new non-pharmacological strategies that add better quality to the additional years of life and attract male older adults to health services. Sexuality may be a theme capable of becoming one of these strategies and, therefore, bringing older adults closer to primary care.

Thus, Primary Health Care managers can use the results of this study to systematize nursing care to older adults with regard to their sexuality. This systematization can be operationalized through its own forms that direct assistance and even support networks that explore sexual aspects and sexuality, such as erotization, self-knowledge, use of bodies, techniques and various instruments to obtain pleasure, among others. It is understood that primary care is the space with the best capacity to offer such care, especially for the promotion of health and QoL of its users. Nurses stand out as the main agent holding technical-scientific knowledge that will guarantee the effectiveness of the actions developed.

CONCLUSIONS

Male older adults' sexual function correlated positively and with moderate magnitude with sexuality, in addition to correlating positively with QoL, but with weak magnitude. We also found that male older adults without sexual dysfunctions better experienced their sexuality, thus confirming the hypothesis of this study, as if sexuality could be experienced only with involvement of sexual organs.

Given these results, we need to implement educational strategies to demystify this idea of sexuality restricted to sexual activity and, thus, provide older adults with new forms of discovery and pleasure through the recognition of bodies and affectivity that culminate in experiences in sexuality.

We believe, therefore, that our results have the potential to guide care practices for the male public, especially in the Family Health Strategy. It is known that there is little male compliance with health services, especially in educational activities. Perhaps, if the sexual function subject is addressed more frequently, in combination with other individual biopsychosocial-spiritual needs, it may contribute to greater male compliance with health services and, consequently, greater positive outcomes in their health conditions and QoL. Finally, we highlight the need to develop further future studies on the subject, especially with a longitudinal design/intervention to detect possible causality between experiences in male older adults' sexuality, sexual function and QoL.

SUPPLEMENTARY MATERIAL

SciELO Data. Doi: https://doi.org/10.48331/scielodata.QZWBKB.

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