Socialeconomic factors, lifestyle habits, and the health of older women with and without sexual experience in a municipality in the interior of Minas Gerais

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Abstract

Objective: To assess and compare socioeconomic factors, lifestyle habits, and the health of older women with and without sexual experience. *Method:* A quantitative, analytical, observational, and cross-sectional population-based study was conducted. Participants were divided into two groups: the CVS group (with sexual experience) and the SVS group (without sexual experience), based on the question: "Do you have an active sexual life?". Socioeconomic variables, sleep patterns, comorbidities, and the level of physical activity were analyzed using a question from the SRQ-20, a list based on the Work Ability Index, and the long version of the IPAQ, respectively. Descriptive analysis was performed using absolute frequencies and percentages. Mann-Whitney U test, chi-square test, and multiple linear regression were used with a significance level set at $p<0.05$. *Results:* The total sample consisted of 494 older women, with 100 of them in the CVS group. Having a stable partner ($p<0.0001$), a younger age ($p<0.0001$), higher family income ($p<0.0001$), duration of vigorous physical activity ($p=0.005$), and walking ($p<0.0001$) were significant and positive factors for continued sexual experience in the analyzed sample. *Conclusion:* The study identified significant differences when comparing the groups, highlighting the influence of socioeconomic and health factors on the expression of sexuality in older women, thus emphasizing the challenges they face. Public policies and health education initiatives are necessary to safeguard rights, dignity, and promote positive changes in the lives of this population.

Keywords: Sexuality. Female Health. Aged.

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INTRODUCTION

A World Health Organization (WHO) defines sexuality as a broad concept that encompasses much more than just sexual intercourse. This phenomenon, which is an integral part of human identity, is expressed through values, beliefs, thoughts, and fantasies. Sexuality is revealed as an energy that drives the pursuit of intimacy, connection, and emotions, thus also influencing physical and psychological well-being[1]. As one advances in age, the reduction in the expression of sexuality is perceived by many as a physiological change. However, this perspective is overly simplistic, as the aging process is influenced by various complex and individual factors, including psychological and socioenvironmental changes[2].

Although it is a phenomenon that occurs worldwide, the social and economic effects of the aging process differ in countries like Brazil, which are considered to be developing[3,4]. Studies offer perspectives on demographic and health factors influencing sexuality, but socioeconomic factors within this specific population, particularly income, remain relatively unexplored in relation to this phenomenon. Lifestyle habits are evaluated for their influence on the sexuality of the older adults in both national[6] and international[7,8] studies. The literature's findings indicate a relationship between lifestyle and the continuity of sexual experience, with less healthy lifestyle habits being associated with a higher likelihood of sexual dysfunction in older adults[6].

Given the feminization of aging, the significance of sexuality for healthy aging, and recent pension reforms that have altered the economic reality of older adult population in the country, particularly affecting more vulnerable social strata[3,4], this study is justified in evaluating and comparing socioeconomic factors, lifestyle habits, and health among older women with and without sexual experience. The aim is to discuss and gain a better understanding of the complexity of these factors in the context of female aging and to identify the primary vulnerabilities so that actions can be planned to promote a higher quality of life for these women. As a hypothesis, it is assumed that older women with sexual experience have better socioeconomic conditions and healthier lifestyle habits when compared to those without sexual experience.

METHOD

This is a cross-sectional study with a quantitative approach, part of the "Women's Health Survey" (*Inquérito de Saúde da Mulher* - ISA MULHER), conducted in Uberaba, Minas Gerais, Brazil, in 2014 and 2015, representing the female population of the municipality. Sampling was carried out using a probabilistic multi-stage method. In the first stage, 24 out of 36 neighborhoods were randomly selected, taking into account the proportion of each district relative to the number of neighborhoods. In the second stage, within each neighborhood, 25% of the census tracts were randomly chosen, respecting the population proportion of each neighborhood relative to the number of census tracts. Through the previously selected census tract, households were systematically selected based on a sample interval, dividing the number of households in the census tracts by the number of women. Within each neighborhood, the census tract was randomly selected at the first visited household. The remaining households were selected at a sampling interval of 32 households.

For the sample size calculation, it was assumed that there was no prior knowledge about the estimates of the prevalence of the events of interest (all were considered to be equal to 50%). A confidence level of 95%, a maximum margin of error of 2.5%, and a 20% loss were considered, resulting in a sample size of 1,530. The composition of the sample respected strata of age, income, education, and skin color, based on data from the IBGE (Brazilian Institute of Geography and Statistics) Census. The total sample for ISA MULHER consisted of 1,556 adult women residing in Uberaba, Minas Gerais, who were interviewed after signing an Informed Consent Form (ICF) and comprehending the research's purpose. For this study, older adult participants (aged 60 and older) were included, while older adult individuals with cognitive deficits that prevented them from responding to assessment instruments and institutionalized older adult individuals were excluded, resulting in a total of 494 women.

Data collection took place in the homes of the volunteer participants with approval from the Research Ethics Committee of the Universidade Federal do Triângulo Mineiro (UFTM), under protocol number 6.220.923, and it complies with Resolutions Nº. 466/2012 and Nº. 510/2016. The instruments used were administered by 22 interviewers, undergraduate students from various courses at UFTM, who received prior training to conduct the protocol in an ethical and standardized manner.

The participants were divided into two groups: the CVS group (with sexual experience) and the SVS group (without sexual experience) based on the question: "Do you have an active sexual life?" Questions regarding sleep quality, physical exercise, and dietary habits were used to collect information about lifestyle. Sociodemographic variables (gender, age, income, education, marital status, and self-reported skin color) were collected using a questionnaire developed by the ISA MULHER group. To assess the sleep variable, the question "Do you sleep poorly?" from the Self-Report Questionnaire - SRQ-20[9] was used to screen for Common Mental Disorders (CMD). The level of physical activity was assessed using the International Physical Activity Questionnaire (IPAQ)[10] long version, which estimates the weekly time spent on moderate and vigorous physical activities in different daily contexts, such as work, transportation, household chores, and leisure, as well as the time spent in sedentary activities performed in a seated position. The Body Mass Index (BMI) was used to calculate the sample's body composition, using the formula: weight (kg)/height^2 (m).

Comorbidities were assessed using a list based on the Work Ability Index[11] questionnaire, which categorizes morbidities into different groups as follows: Endocrine/Metabolic; Musculoskeletal; Cardiovascular/Circulatory; Neurological; Emotional; Genitourinary; Respiratory; Digestive; Dermatological; Tumorous; and Hematological. It is worth noting that for each group, there were options and related diseases. For this study, the average number of diseases per category was calculated.

The descriptive analysis was conducted using frequencies and percentages for categorical variables and means and standard deviations for continuous variables. Data normality was assessed using the Kolmogorov-Smirnov test. To compare CVS and SVS participants, the chi-square test was used for categorical variables, and the Mann-Whitney test was used for continuous variables. The association between lifestyle, diseases, BMI, and socioeconomic factors with sexual activity was examined using a linear regression model in three blocks. Model 1: lifestyle; Model 2: diseases/BMI; Model 3: socioeconomic factors. The significance level adopted was 5%, with 95% confidence intervals (CI).

RESULTS

The final sample consisted of 494 aged women, with 100 of them reporting sexual experience (CVS). According to Table 1, the mean age of women in the CVS group was 65.22 (±5) years, while in the group without sexual experience (SVS), it was 70.3 (±7.3) years. Regarding marital status, 15.8% of the CVS group were in a union with a stable partner, whereas 57.3% in the SVS group were without a stable partner. In terms of education, women in the CVS group had a higher average (7.06 ±5.6 years), and this group also had a higher income (R$2,981.34 ±3,097.9). When observing variables related to skin color, religion, contributors in the household, and the number of people living in the same house, no observable differences were found between the groups (Table 1).

Regarding the health-related questions described in Table 2, overweight was identified in both groups. The average number of diseases per category was higher (7.93 (±5.26) in SVS. The percentages of former smokers were similar in both groups.

In terms of eating behavior, the frequency of having main meals every day was higher among women in the CVS group. In physical activities, the CVS group had a significantly higher average in work-related activities, especially in vigorous activities (90.6 minutes ± 639.11). When using

physical activity as a means of transportation, SVS had a higher average. Regarding physical activities at home, women in the CVS group had a higher average time spent in all types of activities. The highest average in light recreational and leisure activities was among SVS women, while in moderate and vigorous activities, it was among CVS women. As for the time spent sitting, women without sexual experience (SVS) had a higher average.

According to the results of the multivariate analysis, among the lifestyle variables, the time spent walking for at least 10 minutes at work, vigorous activities, and time spent sitting had an influence on a higher level of sexual experience (Model 1). After the inclusion of the Diseases/BMI domain (Model 2), the time spent walking for at least 10 minutes at work and vigorous activities remained significant. These relationships were also maintained in Model 3 when variables from the socioeconomic domain were included, and they remained significant along with age, the presence of a fixed partner, and family income, all related to the sexual experience in older women (Table 3).

Table 1. Characterization of sociodemographic variables in older women without sexual experience (SVS) and with sexual experience (CVS) (N=494). Uberaba, MG, Brazil, 2014.

Socioeconomic variables	SVS	CVS	*p*
	n (%)	n (%)	
Marital status			<0.0001*
without a steady companion	283(57.3%)	22(4.4%)	
in union with a steady companion	111(22.5%)	78(15.8%)	
Skin color			0.417
White	263(53.2%)	60(12.2%)	
Black	30(6.1%)	15(3.0%)	
Mixed race	86(17.4%)	23(4.7%)	
Other	15(3.0)%	2(0.4%)	
Religion			0.729
Catholic	252(51.0%)	62(12.8%)	
Spiritist	62(12.5%)	19(3.8%)	
Protestant	66(13.3%)	14(2.8%)	
Other	7(1.4%)	4(0.8%)	
Atheist	5(1.0%)	1(0.2%)	
No response	0	2(0.4)%	
	Mean (SD)	Mean (SD)	
Age	70.3 (±7.3)	65.22 (±5.0)	<0.0001**
Education (Years)*	5.7 (±4.9)	7.06 (±5.6)	0.006
Family Income (R$)*	1722,.9 (±1572)	2981.34 (±3097.9)	<0.0001**
Number of People in the Household	2.5 (±1.2)	2.8 (±1.2)	0.032**

*Chi-square test; **Mann-Whitney test (p<0.05).

Table 2. Characterization of lifestyle and health variables in older women with sexual experience (CVS) and without sexual experience (SVS) (N=494). Uberaba, MG, 2014.

Lifestyle Habits	SVS n (%)	CVS n (%)	*p*
Smoking			0.123
Yes	59 (12.0%)	7 (1.4%)	
No	265 (53.6%)	75 (15.2%)	
Former smoking	67 (13.6%)	18 (3.6%)	
No response	3 (0.6%)	0	
Sleep quality			0.171
Sleeps well	245 (49.6%)	70 (14.2%)	
Sleeps poorly	148 (30.0%)	30 (6.0%)	
No response	1 (0.2%)	0	
Eating Behavior			
Breakfast			0.064
Every day	355 (71.9%)	96 (19.5%)	
3-6 times a week	18 (3.6%)	2 (0.4%)	
1-2 times a week	9 (1.8%)	2 (0.4%)	
Rarely or never	12 (2.4%)	0	
Lunch (food)			0.113
Every day	365(73.9%)	97(19.7%)	
3-6 times a week	18(3.6%)	2(0.4%)	
1-2 times a week	8(1.6%)	1(0.2%)	
Rarely or never	3(0.6%)	0	
Lunch (snack)			0.218
Every day	3 (0.6%)	0	
3-6 times a week	10 (2.0%)	1 (0.2%)	
1-2 times a week	14 (2.8%)	3 (0.6%)	
Rarely or never	365 (73.9%)	96 (19.5%)	
No response	2 (0.4%)	0	
Dinner (food)			0.640
Every day	175 (35.5%)	48 (9.7%)	
3-6 times a week	69 (14.0%)	6 (1.2%)	
1-2 times a week	48 (9.7%)	13 (2.6%)	
Rarely or never	102 (20.6%)	33 (6.7%)	
Dinner (snack)			0.772
Every day	175 (35.4%)	29 (5.9%)	
3-6 times a week	69 (14.0%)	12 (2.4%)	
1-2 times a week	48 (9.7%)	8 (1.6%)	
Rarely or never	102 (20.7%)	51 (10.3%)	

to be continued

Continuation of Table 2

Lifestyle Habits	SVS n (%)	CVS n (%)	*p*
Health	Median (25-75)	Median (25-75)	
Diseses per block	7 (4-11)	6 (3.0-9.0)	
BMI	26.5 (23.1-30.6)	26.8 (24.3-31)	
IPAQ (minutes)			
Physical Activity at work			
Time/day walking for at least 10 min*	0(0-0)	0(0-0)	
Time/day of moderate activity for at least 10 min	0(0-0)	0(0-0)	
Time/day of vigorous activity for at least 10 min*	0(0-0)	0(0-0)	
Physical Activity as a Means of Transport			
Time/day of cycling for at least 10 min	0(0-0)	0(0-0)	
Time/day of walking for at least 10 min	0(0-0)	0(0-0)	
Physical Activity at Home			
Time/day of moderate activity for at least 10 min in the garden or yard	0(0-60)	0(0-240)	
Time/day of moderate activity for at least 10 min indoors	0(0-420)	120 (0-465)	
Time/day of vigorous activity for at least 10 min in the garden or yard*	0(0-0)	0(0-0)	
Recreation, Sports, Exercise, and Leisure Physical Activity			
Time/day of walking for at least 10 min in leisure time	0(0-0)	0(0-0)	
Time/day of moderate activity for at least 10 min in leisure time	0(0-0)	0(0-0)	
Time/day of vigorous activity for at least 10 min in leisure time	0(0-0)	0(0-0)	
Time spent sitting	1080 (360-2100)	960 (360-1500)	

*Mann-Whitney test ($p<0.05$).

Table 3. Linear regression using the insertion method (N=494). Uberaba, MG, Brazil, 2014.

Variables	β (IC)	β (IC)	β (IC)
Lifestyle			
Lunch (food)	0.039 (-0.073/0.151)	-0.019(-0.099/0.061)	-0.024(-0.1/0.053)
Lunch (snack)	-0.032 (-0.119/0.066)	-0.031(-0.092/0.039)	-0.02(-0.079/0.046)
Diner (food)	-0.09 (-0.089/0.032)	-0.008(-0.046/0.041)	0.004 (-0.04/0.042)
Diner (snack)	-0.058 (-0.08/0.043)	-0.002(-0.044/0.043)	0.013(-0.038/0.046)
Smoking	-0.05 (-0.098/0.028)	-0.044(0.043/0.015)	-0.041(-0.073/0.015)
sleep	0.052(-0.031/0.117)	0.028(-0.031/0.078)	0.025(-0.032/0.072)
time/day walking for at least 10 min at work	-0.128 (-0.001/0)*	-0.063(-0.001/0)*	-0.065 (-0.001/0)*
moderate activity	0.034(0/0)	0.011(0/0)	0.012(0/0)
vigorous activity	-0.084(0/0)*	-0.114(0/0)*	-0.099 (0/0)*

to be continued

Continuation of Table 3

Variables	β (IC)	β (IC)	β (IC)
time/day walking for at least 10 min as a means of transportation	0.04 (0/0)	0.014 (0/0)	0.018 (0/0)
Time/day of moderate activity for at least 10 min in the garden or yard	-0.039(0/0)	-0.014 (0/0)	-0.04 (0/0)
Time/day of moderate activity for at least 10 min inside the house	-0.038(0/0)	-0.062 (0/0)	-0.029(0/0)
Time/day of vigorous activity for at least 10 min in the garden or yard	-0.052 (-0.001/0)	0.008 (0/0)	0.011(0/0)
Time/day of walking for at least 10 min in leisure time	0.043(0.001)	0.048 (0/0)	0.036(0/0)
Time/day of moderate activity for at least 10 min in leisure time	0.013 (0//0.001)	0.038 (0/0)	0.022(0/0)
Time/day of vigorous activity for at least 10 min in leisure time	-0.05(-0.003/0.001)	-0.058 (-0.002/0)	-0.034(-0.002/0.001)
time spent sitting	0.069(-0/0.129)*	0.028 (0/0)	0.024(0/0)
Diseases/BMI			
Diseases		0.059(-0.001/0.01)	0.061(0/0.01)
BMI		-0.031 (-0.006/0.002)	-0.02(-0.005/0.003)
Socioeconomic			
Age			0.108(0.002/0.01)*
Fixed partner			-0.165(-0.192/-0.081)*
Education			0.043(-0.002/0.009)
Skin color			-0.032(-0.041/0.014)
Religion			-0.013 (-0.033/0.022)
People living in the house			0.029 (-0.014/0.032)
Contributing individuals			0.031(-0.02/0.049)
Family income			-0.129(0/0)*

*p<0.05; BMI=Body Mass Index; β=standard coefficient; CI=confidence interval.

The categorical variables were included with the highest-value category as the reference. Therefore, for lunch food, lunch snack, dinner food, and dinner snack, the option "never or almost never" was considered as the reference, for smoking, "ex-smoker" was considered the reference, for sleep, "sleeps poorly" was considered the reference, and for marital status, "in union with a fixed partner" was considered the reference.

DISCUSSION

The results of this research indicate significant differences between the profiles of older women with and without sexual experience concerning certain socioeconomic factors, lifestyle habits, and health.

Regarding socioeconomic characteristics, it was identified that older age was associated with a negative impact on the continuation of sexual experiences. Another study[12] asserts that older women are considered less attractive and desirable, a notion reflected in North American media representations and their lack. Additionally, ageism practiced by society leads older individuals to believe that sex is directly linked to youth, causing them to refrain from expressing their sexuality, as they may think such behavior is unacceptable at their age. Moreover, structural sexism, which the generation of these

women often endured, viewed sexual intercourse as an obligation within marriage rather than a pleasurable activity[14]. Therefore, the results of this study also reflect the idea that as they age, individuals may stop having an active sex life, seeing it as a liberation from an activity that was never pleasurable to them.

In the present study, the majority of women who reported sexual experiences had a fixed partner. Studies show that older women are more likely to be alone due to widowhood or because men of the same age typically seek younger partners, which is a negative factor for the continuation of sexual relationships for older women[12,15]. Another justification for this finding is that sexuality is redefined by many seniors, and the importance attributed to penetration is replaced by other acts of intimacy such as affection, partnership, and even conversations[16]. Thus, a fixed partner facilitates this more intimate sense of companionship, being an important factor for the expression of female sexuality in aging[16].

Another important factor pertains to family income. In the present study, the CVS group had significantly higher income than the SVS group. Low income contributes to a decline in sexual interest, and considering the social determinants of health and the relationship between financial well-being and physical and mental health, women who are not concerned with financial matters have a better interaction with the factor of sexuality[17]. Data demonstrate that higher levels of education lead to higher income due to more opportunities in the job market[18], which supports the higher level of education and income identified among sexually active women in the present study.

In another study[19], only 31 individuals from a sample of 200 older adults considered religion as an inhibitory factor for sexuality. In this study, religion was also not a significant factor; however, other authors[20-22] report that beliefs related to spirituality are relevant to how older people experience sexuality. Many religions view sex as something solely for procreation within marriage and condemn sex for pleasure as sinful, leading to restrictions in the expression of sexuality, especially for women[22].

Contrary to the findings of this study, skin color appears to be an important factor in the expression of female sexuality, partly due to the lack of representation of older Black and non-White women in studies on sexuality and the difficulty of being part of this demographic in a society that glorifies youth, men, and White individuals[23].

Although smoking was prevalent in a significant number of women without sexual experience, it was not a significant factor. While the effect of smoking on female sexual function remains inconclusive in the literature[24], studies have demonstrated the impact of nicotine on sex hormones and blood flow to the clitoris, which can lead to reduced lubrication and affect female sexual function[24].

A healthy lifestyle has been considered necessary for a better quality of life in studies[25]. While the literature does not show a direct relationship between sleep quality and sexuality, studies have demonstrated that older women, due to hormones and harmful behaviors for restorative sleep, are more prone to sleep disorders such as insomnia[26]. These sleep disorders can be responsible for reducing the quality of life in these women, causing physical and emotional repercussions, impairing their well-being and socialization, which may impact the expression of their sexuality[14].

With regard to dietary behavior, considering daily meals, the Ministry of Health recommends for older adult individuals the habit of having at least three meals a day, including breakfast, lunch, dinner, and two healthy snacks[28]. It is also recommended not to skip important meals. According to the findings of this study, older women without sexual experience showed a lower frequency of important meals and a higher frequency of replacing food with snacks, which characterizes an unhealthy or necessary habit, considering the lower income of this group. However, the dietary variable did not show significance in relation to the continuation of sexual experiences, only a tendency to be more common in older women who had breakfast.

Some health conditions can directly affect sexual function, while the progression of other diseases can have an indirect impact. The results of this

study demonstrate that older women with more diseases correspond to the group that does not have a sexual experience, a result that is consistent with the literature[28-30], where older women with diabetes and acute myocardial infarction reported that sexuality was no longer a significant factor in their lives, not solely due to their health condition, but also due to their age, which relates again to ageism regarding the expression of sexuality in older individuals.

It was observed that the mean BMI of the interviewed older women was very close, and in both groups, it indicated overweight. Even though it was not significant in this study, this can occur due to factors related to physical health and also psychological factors stemming from low self-esteem caused by a negative self-perception due to overweight[2]. Given that in older women, self-image can be negatively affected by age-related changes and social pressure[31], combined with overweight, it can be a limiting factor for the continuation of a sexual life.

Regarding the impact of physical exercise, we found a higher level of vigorous physical activity in women with a sexual life. The literature emphasizes the importance of physical activity in the self-esteem and self-confidence of older individuals. For women who engage in moderate-intensity activities, the likelihood of being sexually active is twice as high as in women who do not engage in such activities[32], which is consistent with the findings of this study. Furthermore, older individuals who remain physically active prevent the onset of chronic diseases, promote the maintenance of neurological functions and functionality, resulting in improved factors contributing to sexual experiences[33-35].

The limitations of this study include the elapsed time since data collection and the limitations stemming from the question "Do you have an active sex life?" which was not explained in the interview regarding all aspects of sexuality to which it refers. Many women may have interpreted it as merely the act of penetration itself, and it did not include same-sex sexual relationships or transgender women. All the information collected is self-reported, and because it deals with a sensitive topic considered taboo by many people, some information may have been omitted due to embarrassment. However, considering the two years of the pandemic and the robust numbers, the research provides relevant results in line with its objectives and demonstrates the perception these women have regarding what constitutes an active sex life, without the influence of a predefined researcher's definition. Further studies in different regions and post-pandemic periods are necessary.

CONCLUSION

The results lead to the conclusion that older adult individuals with an active sex life who were assessed were younger, had higher education levels, higher family income, lived with fewer people in the same household, and had a partner. Regarding lifestyle, the older women with an active sex life walked for at least 10 minutes or engaged in vigorous activities for at least 10 minutes. It is worth noting that the factors identified as predictors for the continuation of an active sex life were younger age, higher income, and having a fixed partner. We can infer that the practice of having breakfast can also be considered an important factor in maintaining an active sex life.

Indeed, it is crucial for public policies to be implemented to protect and ensure the rights and dignity of older adults, providing them with appropriate living conditions in old age. Therefore, this work is relevant as it promotes research and discussions in the field of sexuality in aging. It also provides pertinent results to help plan actions that meet all the demands of this population.

Health education and the support provided by healthcare professionals are crucial, not only for preventing diseases but mainly for their power to change these women's perception of their own sexuality and, in the long run, to challenge society's stigmatized views on the topic.

AUTHORSHIP

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- Gabriel Felipe Arantes Bertochi - contribution to data analysis and interpretation

- Maycon Sousa Pegorari - critical manuscript review
- Isabel Aparecida Porcatti de Walsh - data analysis and interpretation, and approval of the version to be published
- Lislei Jorge Patrizzi Martins - data analysis and interpretation, critical manuscript review, and approval of the version to be published

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