

A Survey on the Sexual Health of Elderly Patients with Cardiovascular Disease and Their Spouses

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Abstract: *Objective:* To investigate the sexual relationship and sexual health of elderly patients with cardiovascular disease and their spouses, as well as to explore the relationship between sexual health and the quality of life. *Methods:* A total of 206 CHD patients and their spouses (N = 206) as well as 238 age- and gender-matched healthy people were recruited and investigated by using a self-designed sexual relationship and sexual health questionnaire and the SF-36 questionnaire; data analysis and comparison were carried out by using SPSS 22.0. *Results:* The scores of perceived health, marital satisfaction, sexual satisfaction, sexual function, and quality of life were all significantly different among elderly CVD patients, their spouses, and healthy people ($F = 3.894$, $p < 0.05$). There was a significant correlation between perceived health, marital satisfaction, sexual satisfaction, and sexual function with quality of life ($p < 0.05$). *Conclusion:* Sexual behavior is an important aspect of quality of life. The sexual relationship, sexual health, and quality of life of elderly patients with cardiovascular disease and their spouses were significantly lower than those of healthy people. It is recommended that more attention should be paid on the sexual relationship and sexual health of these patients and their spouses, with counselling offered when needed.

Keywords: CVD; Elderly patients; Spouse; Sexual relationship; Sexual health; Quality of life

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1. Introduction

Cardiovascular disease (CVD), also known as circulatory system disease, includes diseases of the heart and vascular system, such as coronary heart disease (CHD), heart failure (HF), arrhythmia, and cardiomyopathy [1]. CVD mostly occurs in the elderly population [2]. Sexual behavior is an important component of the quality of life of CVD patients and their partners. A decreased in sexual behavior and sexual function is common in CVD patients [3]. After a cardiac event, changes in sexual relationship and sexual health can affect a patient's quality of life and strain marital relationships [4]. The deterioration of CVD patients' physical condition, complications, and the side effects of drugs are all factors that may lead to the decline in sexual function [5]. At present, only a few domestic studies have been paying attention to this issue. The purpose of this paper is to investigate the sexual relationship and sexual health of CVD patients and their spouses, as well as to explore the relationship between sexual health and the quality of life.

2. Participants and methods

2.1. Participants

From January 2021 to December 2021, 206 CVD patients who were hospitalized in the cardiology department of a tertiary hospital in a city and their spouses ($N = 206$) were included in the study. Among the CVD patients, 82 had CHD, 56 had recent myocardial infarction (MI), 46 presented with heart failure (HF), and 22 underwent coronary artery bypass grafting (CABG). Inclusion criteria: (1) patients ≥ 60 years old; (2) married with a living spouse; (3) patients with a definite diagnosis of CVD; (4) no cognitive impairment with normal communication skills; (5) informed consent given. Exclusion criteria: (1) inability to read; (2) answers that were considered as unaddressed; (3) incomplete questionnaire.

A total of 238 age- and gender-matched healthy people living in the community were also included in the study. Inclusion criteria: (1) age ≥ 60 years old; (2) no cognitive impairment; (3) no heart diseases or other complications, such as hypertension, diabetes, or arthritis.

2.2. Survey tools

2.2.1. Sexual relationship and sexual health questionnaire

After consulting several literatures^[6-8], and compiling them based on reviews by experts, the questionnaire consisted of 69 items in total, which can be divided into 5 domains: conscious health (subjective perception of health), marital satisfaction (marital status and relationship with spouse), sexual life satisfaction (subjective perception of sexual behavior), sexual function (presence or absence of sexual dysfunction), as well as sexual and cardiac status (the relationship between emotional and physical problems related to heart disease and sexual behavior). The spouses of the CVD patients and the healthy population were not investigated for the sexual and cardiac status domain. Except for the 4-point scale used for the sexual function domain, the rest of the items used the 5-point scale. The higher the score, the more positive the sexual attitude and the better the sexual relationship and sexual health. The reliability and validity of the questionnaire was proved to be applicable to CVD patients.

2.2.2. Chinese version of Short Form 36 Health Survey (SF-36)

The Short Form 36 Health Survey^[9] was used to assess the quality of life of the research subjects. The survey can be divided into eight domains: physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health, of which the first four dimensions are related to physical health, while the latter four dimensions are related to mental health. There are 36 items in total, in which the higher the score, the better the quality of life.

2.3. Statistical analysis

Statistical analysis was performed by using SPSS 22.0. The measurement data that conform to normal distribution were described in mean and standard deviation, whereas the count data were described in number and percentage. The comparison between multiple groups was performed by the analysis of variance. Pearson correlation analysis was used to determine the correlation between variables. $p < 0.05$ indicates a statistically significant difference.

3. Results

3.1. General information of the research subjects

The general information of the research subjects is shown in **Table 1**.

Table 1. General information of the research subjects

Items	CVD patients (n = 206)	Spouse (n = 206)	Healthy elderly (n = 238)	CHD (n = 82)	MI (n = 56)	HF (n = 46)	CABG (n = 22)
Age ($\bar{x} \pm s$)	65.08 \pm 4.26	66.10 \pm 4.56	65.76 \pm 4.43	64.52 \pm 3.86	64.78 \pm 3.89	65.45 \pm 4.46	65.57 \pm 4.74
Male	131 (63.4)	75 (36.6)	133 (64.6)	51 (62.2)	34 (60.7)	30 (65.2)	16 (72.7)
NYHA classification							
I	176 (85.4)	-	-	71 (86.6)	51 (91.1)	34 (73.9)	0
II-IV	30 (14.6)	-	-	11 (13.3)	5 (8.9)	12 (26.1)	22 (100)
Use of medication							
Beta blockers	47 (22.8)	-	-	11 (13.4)	12 (21.4)	37 (80.4)	2 (9.1)
Digitalis	71 (34.5)	-	-	26 (31.7)	26 (46.4)	22 (47.8)	5 (22.7)
Diuretics	15 (7.3)	-	-	8 (9.8)	5 (8.9)	1 (2.2)	2 (9.1)
Other drugs	121 (58.7)	-	-	61 (74.4)	13 (23.2)	29 (63.0)	22 (100)
No medication	52 (25.2)	-	-	21 (25.6)	16 (28.6)	8 (17.4)	0

3.2. Sexual health and sexual relationship of the research subjects

As seen in **Table 2**, the scores of perceived health, marital satisfaction, sexual life satisfaction, and sexual function of elderly CVD patients, their spouses, and healthy people were all significantly different ($F = 3.894, p < 0.05$).

Table 2. Sexual health and sexual relationship of the research subjects ($\bar{x} \pm s$)

Items	CVD patients (n = 206)	Spouse (n = 206)	Healthy elderly (n = 238)	CHD (n = 82)	MI (n = 56)	HF (n = 46)	CABG (n = 22)
Perceived health	2.35 \pm 0.55	3.81 \pm 0.65	4.14 \pm 0.86	2.74 \pm 0.86	2.35 \pm 0.57	2.20 \pm 0.32	1.90 \pm 0.21
Marital satisfaction	3.71 \pm 0.56	3.30 \pm 0.54	4.21 \pm 0.88	3.80 \pm 0.59	3.71 \pm 0.57	3.50 \pm 0.53	3.51 \pm 0.53
Sexual satisfaction	1.48 \pm 0.16	1.04 \pm 0.14	2.55 \pm 0.28	1.59 \pm 0.17	1.50 \pm 0.16	1.45 \pm 0.15	1.25 \pm 0.11
Sexual function	0.91 \pm 0.15	2.15 \pm 0.18	3.10 \pm 0.25	1.02 \pm 0.17	1.00 \pm 0.16	0.86 \pm 0.14	0.76 \pm 0.13
Sexual and heart status	2.00 \pm 0.28	-	-	2.21 \pm 0.28	2.16 \pm 0.27	1.85 \pm 0.25	1.72 \pm 0.23

3.3. Quality of life of the research subjects

Based on **Table 3**, the scores of SF-36, PCS, and MCS of elderly CVD patients were significantly lower than those of healthy people ($p < 0.05$), with HF and CABG patients having the lowest scores. There were significant differences in the scores of SF-36, PCS, and MCS between elderly CVD patients and their spouses ($p < 0.05$).

Table 3. Quality of life scores of the research subjects ($\bar{x} \pm s$)

Items	CVD patients (n = 206)	Spouse (n = 206)	Healthy elderly (n = 238)	CHD (n = 82)	MI (n = 56)	HF (n = 46)	CABG (n = 22)
SF-36	45.0 ± 0.9	53.5 ± 0.9	67.3 ± 0.8	48.3 ± 0.5	47.7 ± 0.6	42.1 ± 0.7	42.3 ± 0.6
PCS	45.6 ± 0.9	56.3 ± 0.8	68.3 ± 0.8	50.3 ± 0.4	50.1 ± 0.3	40.1 ± 0.5	40.3 ± 0.4
MCS	44.3 ± 0.8	50.6 ± 0.9	66.3 ± 0.7	46.3 ± 0.5	45.3 ± 0.8	44.1 ± 0.9	44.3 ± 0.7

3.4. Correlation between sexual health and quality of life in elderly CVD patients

According to **Table 4**, the perceived health, marital satisfaction, sexual life satisfaction, sexual dysfunction, as well as sexual and heart status of elderly CVD patients were found to have significant correlation with PCS and MCS ($p < 0.05$).

Table 4. Correlation between sexual health and quality of life in elderly CVD patients (r)

	Perceived health	Marital satisfaction	Sexual satisfaction	Sexual function	Sexual and heart status	PCS	MCS
Perceived health	-	0.15*	0.35**	0.27*	0.32**	0.46**	0.26*
Marital satisfaction	-	-	0.26*	0.23*	0.30**	0.25*	0.37**
Sexual satisfaction	-	-	-	0.46**	0.33**	0.36**	0.46**
Sexual function	-	-	-	-	0.45**	0.23*	0.18*
Sexual and heart status	-	-	-	-	-	0.22*	0.15*
PCS	-	-	-	-	-	-	0.37**
MCS	-	-	-	-	-	-	-

* $p < 0.05$; ** $p < 0.01$

4. Discussion

The risk of CVD in middle-aged and elderly populations is extremely high [10], and 60% to 87% of CVD patients have sexual problems, including a significant reduction in sexual interest and activity. Nearly 25% of patients are not even involved in any sexual activity [11]. Although the consequences of heart disease on sexual function are well understood, only a few studies have focused on the sexual health of elderly CVD patients, and the reports on their spouses are even scarcer [12].

Patients with CVD believe that their heart disease has an impact on their sexual life, which is manifested by physical changes, emotional changes, and medication [13]. Many cardiovascular drugs, especially diuretics and beta-blockers, can cause erectile dysfunction (ED). In individuals with thiazide-induced ED, loop diuretics can be used instead of thiazides. Spironolactone may have antiandrogen side effects, such as ED, decreased libido, and gynecomastia, in male patients, thus affecting their sexual function and sexual activity [14]. In this case, eplerenone can be used. Nebivolol and 5-phosphodiesterase inhibitors may be more reasonable when beta-blockers are not used, in order to improve systolic cardiac insufficiency after MI in men with ED induced by beta-blockers. These are some of the alternative strategies for treating ED.

Compared with their healthy peers, elderly patients with CVD have a reduced frequency of sexual behavior, discomfort in sexual contact, and a significant decline in sexual relationship as well as sexual health, which is consistent with previous research findings [15]. The symptoms of sexual discomfort include pain and numbness in the perineum during sexual activity as well as exhaustion and powerlessness [16].

Sexual behavior seriously affects the quality of life of patients [17]. In this study, 68.5% of CVD patients expressed a need for sexual information, 87.8% of patients only discussed sexual issues with their spouses, and only 13.4% of patients sought professional help, suggesting that medical staff should pay more attention to the sexual relationship and sexual health of elderly CVD patients [18].

Literature has shown that sexual activity is equivalent to light to moderate physical activity. Sexual activity is acceptable in patients with stable CVD who are asymptomatic or have mild symptoms during regular activities [19]. In patients with unknown exercise capacity or CVD risk, exercise stress test can be performed to assess the patients' exercise capacity and the risk of developing symptoms, ischemia, cyanosis, hypotension, or arrhythmias. Exercise training in cardiac rehabilitation has been shown to increase maximal exercise capacity and reduce maximum heart rate during intercourse. Regular exercise reduces the risk of myocardial infarction from sexual activity. Therefore, cardiac rehabilitation and regular exercise are reasonable strategies for patients with stable CVD who plan to engage in sexual activity. Sexual function is related to symptom status (NYHA classification and 6-minute walk distance) rather than ejection fraction. Many CVD patients place greater emphasis on improving their quality of life (including sexual relationships) rather than improving their survival.

The restoration of sexual life is a significant indicator of the improvement of quality of life. Due to the lack of relevant knowledge and sexual guidance, many patients have failed to resume sexual activity or regained the quality of sexual life that they had before the disease developed. Sexual activity, on the other hand, is a trigger for CVD and may lead to malignant cardiac events. Healthcare providers should attach great importance to the sexual health status of elderly CVD patients, include sex education in disease health education, provide patients with staged and personalized health consultation and education, as well as assist patients in returning to their normal sexual life as soon as possible, so as to improve their overall quality of life [20].

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