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Research Article

An evaluation of the factors that affect the sexual satisfaction of people with spinal cord injuries

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Objective: To evaluate the relationships between the variables that affect the sexual satisfaction of patients with spinal cord injuries.

Design: Descriptive and cross-sectional survey.

Setting: The physical medicine and rehabilitation outpatient clinic of a university hospital in Turkey.

Participants: This study was performed from July to December 2018. It included 103 patients with spinal cord injuries.

Outcome Measures: The data were collected using an introductory information form, the American Spinal Injury Association Impairment Scale and the Golombok Rust Inventory of Sexual Satisfaction. Data were evaluated using the chi-square test, the Mann-Whitney U test, the Kruskal-Wallis test and linear regression.

Results: The total mean scores on the Golombok Rust Inventory of Sexual Satisfaction were 40.2 ± 21.6 for males and 44.9 ± 18.1 for females. According to the linear regression analysis, model VII presented the best results of the relationship between physiological and psychological determinants that affect the sexual satisfaction of patients with spinal cord injuries. Model VII consisted of the variables of ASIA A and B scores, age, injury due to falling from height, being a housewife, and thinking of being unable to reach future goals. These explained 75.4% of the variation in sexual satisfaction scores.

Conclusion: The participants' mean scores on the Golombok Rust Inventory of Sexual Satisfaction were found to be affected by various variables. A significant relationship between their mean scores on the American Spinal Injury Association (ASIA) Impairment Scale and the Golombok Rust Inventory of Sexual Satisfaction was determined.

Keywords: Sexuality, Spinal cord injury, Sexual dysfunction, Turkey

Introduction

Spinal cord injury (SCI) is a traumatic and life-changing event characterized by loss of motor and sensory functions. New cases of SCI across the world range from 133 to 226 thousand per year.¹ Although there are not many studies of the prevalence of patients with SCI in Turkey, a study reported its incidence to be 12.7 per million.² In addition to loss of mobility, individuals with SCI may experience vital changes, losses and complications in many bodily functions. Sexual issues are one of the severe complications that affect patients

with SCI.³ After SCI, individuals may have problems related to self-esteem in sex life, body image, libido, sensation, erection, position for coitus, ejaculation, orgasm and fertility.⁴ Studies have reported that women have sexual arousal and orgasm issues³ and men have erectile dysfunction and ejaculation issues.⁴

Sexuality is an important life activity that should be maintained. Although sex life of individuals with SCI is affected by physiological and psychological state, they may not necessarily be asexual.⁵ The severity of SCI and whether there is a complete or partial loss of motor functions are the main determinants of sexual function in individuals with SCI.^{4,6} Besides the severity of SCI, there are also a number of determinants of psychological and social life that affect the sex life of

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individuals with SCI. Studies have reported that a supportive spouse,⁷ partner satisfaction and relationship quality,⁶ affect sex life positively, that sexual satisfaction decreases with age, and that injured people at a younger age adapt their sexual activity after SCI more easily.^{7,8} Sexual satisfaction varies by pre-morbid sexual experiences and openness to sexual experimentation.^{5,6} Studies have reported that women have sexual arousal and orgasm issues³ and that men have erectile dysfunction and ejaculation issues.⁸ Studies have also reported that the risk of major depression, anxiety, post-traumatic stress, substance abuse and suicide increases in patients with SCI, as compared to those in general population.^{9,10}

Sexual health is considered a very private matter that it is also a sensitive topic in many cultures. It is also one of the most difficult subjects to talk about in Turkey. Therefore, the role of education and counseling in sex life is generally not taken into consideration by health professionals unless requested by the patients. Patients are afraid to discuss this issue and ask for help. Knowing the level of sexual satisfaction of patients with SCI and the variables that affect their sexual satisfaction will be beneficial for improving the health care services provided to them. Studies of tertiary health protection and development for these patients in rehabilitation services are important for improving their health and quality of life. Sexual health is important at this point as well as being an important dimension of quality of life. Therefore, this study was conducted to evaluate the relationship between the variables that affect sexual satisfaction of patients with SCI.

Methods

Participants and procedures

This descriptive and cross-sectional study was carried out from July to December 2018 with 103 SCI patients who were being treated and cared for in the physical medicine and rehabilitation polyclinic of a university hospital. Patients between 18 and 70 years of age, having a sex partner, and who were injured in spinal cord which operates sexual functions were included in the study on a voluntary basis. All of the patients were married. Patients who were diagnosed with psychiatric disorders according to *Diagnostic and Statistical Manual of Mental Disorders (DSM 5)* and those who were taking psychotropic medications were not included in the study. All interviews were conducted in a separate and quiet room to ensure confidentiality and reliable responses during data collection. After their written and oral informed consent was obtained, the patients were engaged in a small talk about current issues to

help them relax. Later, they were interviewed about sexuality. The interviews lasted 30 min on average.

Measures

The data were collected using an introductory information form, the American Spinal Injury Association (ASIA) Impairment Scale and the Golombok-Rust Inventory of Sexual Satisfaction.

Introductory information form

The introductory information form was prepared by the researchers after a review of the literature.^{4,9-11} It had two sections and 19 questions. The first section included 6 questions about sociodemographic characteristics including age, sex, marital status, education, occupation and social security. The second section included 13 questions about type of accident, pre- and post-accident employment status, sexual experience, sexual dysfunction, orgasmic sensation and frequency of sexual discourse, how the injury affected the patients' sexual desire and how the injury affected their partners' sex life.

The American spinal injury association (ASIA) impairment scale

The patients were classified neurologically using the American Spinal Injury Association (ASIA) Impairment Scale. Since the key muscles used to determine the motor level according to ASIA standards are not between the segments of C1-4, T2-L1 and S2-5, the motor level at these segments is presumed to be the same as the sensory level.¹² Accordingly, ASIA A (full lesion) indicates that there is complete loss of motor and sensory function (including segments S4 and S5). ASIA B (partial lesion) indicates that there is a complete loss of motor function, but the sensory function is preserved below the neurological level. ASIA C (partial lesion) indicates that there is a loss of motor and sensory function, but more than half of key muscle functions below the neurological level have a muscle grade <3. ASIA D (partial lesion) indicates that there is a loss of motor and sensory function, but at least half (half or more) of key muscle functions below the neurological level have a muscle grade ≥ 3 .¹²

The Golombok-Rust inventory of sexual satisfaction

The Golombok-Rust Inventory of Sexual Satisfaction (GRISS) was developed by Rust and Golombok in 1986.¹³ It is used to evaluate the quality of sexual intercourse and sexual dysfunctions. The male and female versions both had seven sub-dimensions, five of which were the same for both sexes: avoidance, satisfaction, communication, touching and sexual frequency. The female

version included vaginismus and anorgasmia, and the male version included premature ejaculation and impotence domains. The responses were assessed using a five-point Likert scale consisting of: never, rarely, sometimes, mostly and always. High scores pointed to dysfunction in sexual functions and low quality of intercourse. The Turkish validity and reliability study of the GRISS was performed by Tugrul *et al.* in 1993.¹⁴

Statistical analysis

The data were analyzed using Statistical Package of Social Science (SPSS 21.0). The data were assessed using descriptive statistical methods (frequencies, percentages, mean scores and standard deviations). The Kolmogorov–Smirnov test was used to evaluate normal distribution. The qualitative data were compared using the chi-square independence test, and the quantitative data were compared using the Mann–Whitney U test in cases with two group parameters. The Kruskal–Wallis test was used in cases with more than two groups. Linear regression was performed to evaluate the relationship between the factors that affect sexual satisfaction. The results were evaluated in a 95% interval, the $P < 0.05$ was the threshold for significance.

Results

The participants' characteristics

The participants' mean age was 42.7 ± 10 years. Of them, 70.9% of them were male, 36.9% had an in-vehicle traffic accident, and 93.2% had sexual experience before the injury. There were statistically significant relationships between the participants' mean scores on the entire GRISS, occupational groups and type of accident. Advanced analysis found that the differences were caused by sexual lives of the retired patients and the patients injured by falling from heights being more adversely affected by their injuries (Table 1). There were statistically significant differences between the participants' mean scores on the entire GRISS with respect to the injury's effects on the patients' future goals, how the injury affected the patients' sexual lives and how the injury affected their partners' sexual lives. The advanced analysis found that the differences were caused by the patients who failed to reach their future goals, the patients whose sexual desire was lost and the patients whose partners did not accept the situation ($P = .020, .001, .007$, Table 1).

Descriptive Statistics

The GRISS total mean scores were 40.2 ± 21.6 for the males and 44.9 ± 18.1 for the females. The patients' mean scores on the entire GRISS did not vary

significantly by sex, but there was a statistically significant difference by sex in their mean scores on the satisfaction and touching sub-dimensions ($P = .026, P = .003$). This study found the Cronbach's alpha reliability coefficient of the scale to be 0.782. This value shows that the reliability of the scale is high for the study findings. Table 2 shows the pre- and post-accident sex life of the participants by sex. For both males and females, there were statistically significant differences between their pre- and post-accident percentages of sexual dysfunctions, being able to have an orgasm and frequency of sexual intercourse (Table 2).

There was a statistically significant relationship between the participants' mean scores on the GRISS and the ASIA. Statistically significant differences were found between all sub-dimensions of both scales except for the avoidance and vaginismus sub-dimensions of the GRISS. The advanced analysis found that the differences were caused by the ASIA D patients in the avoidance and impotence sub-dimensions, and the ASIA A and B patients in the frequency, satisfaction, touching, anorgasmia, premature ejaculation sub-dimensions and total scale scores (Table 3).

Linear regression analysis

A statistically significant difference was found by univariate linear regression analysis (Table 4, $P < 0.05$). The variables of ASIA scores, age, occupation, type of accident, post-accident employment status, the effects of the injury on future goals, and the effect of injury on partners' sexual lives were used in the model because they were close to the threshold for significance and can be considered important for the study's purpose. The stepwise method was used to decide which variables would be included in the model. The most significant model was obtained in step 7. The first model with ASIA A score explained 44.5% of the variance ($P < .001$). The change in the explained variance (ΔR^2) resulting from the addition of one or more predictors to the model increased by 13.6% in the second model that was created by adding the variable of age, by 6.7% in the third model that was created by adding the variable of ASIA B score, and by 3.6% in the fourth model that was created by adding the variable of SCI not affecting future goals. It increased by 3.1% in the fifth model that was created by adding the variable of being a homemaker, by 1.9% in the sixth model that was created by adding the variable of being injured by falling, and by 2.0% in the seventh model that was created by adding the variable of having trouble reaching future goals due to

Table 1 The participants' GRISS mean scores according to their introductory information and sexual life characteristics.

		X ± SD	Min-Max
Age		42.7 ± 10	23–68
Average number of sexual intercourse per month before the injury		7.7 ± 3.3	0–16
Average number of sexual intercourse per month after the injury		3.5 ± 2.4	0–10
Education level	n (%)	GRISS TOTAL	P
Literate	5 (4.9)	55.00 ± 18.36	KW = 4.126
Primary education	33 (32.0)	40.06 ± 19.69	P = .127
Secondary education	37 (35.9)	45.59 ± 17.58	
High education	28 (27.2)	43.11 ± 20.73	
Sex			
Male	73 (70.9)	44.98 ± 21.65	MW-U = -1.256
Female	30 (29.1)	40.23 ± 21.65	P = .209
Occupation			
Homemaker	22 (21.4)	44.23 ± 21.63	KW = 12.497
Public official	24 (23.3)	33.87 ± 16.95	P = .029
Worker	36 (35.0)	46.83 ± 18.28	
Retired	8 (7.8)	57.87 ± 19.36	
Athlete	4 (3.9)	34.00 ± 10.80	
Self-employed	9 (8.7)	46.66 ± 15.28	
Type of accident that caused the injury			
Traffic accident (in vehicle)	38(36.9)	43.52 ± 19.08	KW = 7.972
Traffic accident (not in vehicle)	5(4.9)	29.60 ± 19.54	P = .047
Falling from height	29(28.2)	50.52 ± 18.42	
Other (surgery, gunshot wound)	31 (30.1)	43.60 ± 18.53	
Pre-accident Employment Status			
Yes	73(70.9)	41.85 ± 18.02	MW-U = -1.311
No	30(29.1)	47.87 ± 21.61	P = .190
Post-accident Employment Status			
Yes	20(19.4)	35.45 ± 14.86	MW-U = -1.952
No	83(80.6)	45.57 ± 19.71	P = .05
Sexual Experience before the Injury			
Yes	96(93.2)	43.44 ± 19.46	MW-U = .347
No	7(6.8)	45.71 ± 16.79	P = .728
What happened to the patient's future goals after the injury?			
They were destroyed	39(37.9)	43.13 ± 20.93	KW = 9.805
They were not reached	31(30.1)	51.52 ± 17.24	P = .020
They were not changed	20 (19.4)	34.70 ± 15.12	
New achievable goals were set	13(12.6)	39.85 ± 18.25	
Sexual life after the injury			
It was bad after the accident, but now it's better	22(21.4)	35.77 ± 14.61	KW = 28.571
The frequency and duration of sexual intercourse decreased	32(31.1)	38.09 ± 16.99	P = .001
I don't have sexual problems	14(13.6)	46.43 ± 26.23	
I have no sexual desire	17(16.5)	60.00 ± 11.02	
Despite lack of my sexual drive, I push myself to have sex for the sake of my spouse	18(17.5)	45.28 ± 19.30	
Ever Received Sexual Counseling?			
Yes	13(12.6)	46.46 ± 22.00	MW-U = -.452
No	90(87.4)	43.18 ± 18.89	P = .651
How was the partner's sexual life was affected after the injury			
Sexual desire decreased	32(31.1)	44.87 ± 18.48	KW = 17.623
My spouse did not accept the situation	22(21.4)	54.91 ± 19.49	P = .007
It was bad at first, but now it is good	24(23.3)	39.96 ± 17.62	
It didn't affect my spouse very much	11(10.7)	35.63 ± 19.84	
My spouse has always supported me	9(8.7)	29.89 ± 12.03	
My spouse is physically disabled, so there is no problem	3(2.9)	56.67 ± 12.90	
My spouse married me, knowing that I was physically disabled, so there is no problem.	2(1.9)	28.50 ± 4.95	

SCI (P < .001). The final model explained 75.4% of the variance (P < .001, Table 4).

Discussion

This study found that SCI negatively affected the patients' sex life, and its results are consistent with

the literature.^{4,6,15} Post-injury changes in sex life are expected as a result of SCI.⁷ There were statistically significant relationships between ASIA scores and post-injury sex life status. Sex life was also affected by the variables of age, occupation, type of injury and patients' opinions about their future goals

Table 2 The pre- and post-accident conditions of the participants by gender.

The situations affected	Female				Male			
	Pre-accident n(%)	Post-accident n(%)	χ^2	P	Pre-accident n(%)	Post-accident n(%)	χ^2	P
Employment								
Yes	8 (26.7)	1 (3.3)	-2.971	.006***	65 (89.1)	19 (26.0)	-11.075	.000***
No	22 (73.3)	29 (96.7)			8 (10.9)	54 (74.0)		
Sexual dysfunction								
Yes	0 (0.0)	18 (60.0)	6.595	.000***	2 (2.7)	67 (91.8)	21.372	.000***
No	30 (100.0)	12 (40.0)			71 (97.3)	6 (8.2)		
Frequency of sexual intercourse								
0-5/month	5 (16.7)	21 (70.0)	8.930	.000***	14 (19.2)	63 (86.3)	10.605	.000***
6-10/month	19 (63.3)	9 (30.0)			51 (69.8)	10 (13.7)		
11-16/month	6 (20.0)				8 (11.0)			
Having orgasms								
Yes	24 (80.0)	21 (70.0)	7.189	.000***	65 (89.0)	39 (53.4)	-5.415	.000***
No	6 (20.0)	9 (30.0)			8 (11.0)	34 (46.6)		

*P < .05. **P < .01. ***P < .001.

Table 3 Comparisons of Participants' GRISS and ASIA mean scores.

GRISS	ASIA					P
	A n(%) 35(34.0) X ± SD	B n(%) 19(18.4) X ± SD	C n(%) 21(20.4) X ± SD	D n(%) 28(27.2) X ± SD	Total n(%) 103(100) X ± SD	
Frequency	6.80 ± 1.02	5.79 ± 2.17	4.28 ± 1.90	4.14 ± 1.88	5.37 ± 2.05	.000***
Communication	3.88 ± 2.26	3.68 ± 2.26	3.62 ± 1.96	3.21 ± 1.68	3.61 ± 2.26	.711
Satisfaction	8.60 ± 3.58	8.00 ± 4.69	5.90 ± 3.86	4.50 ± 3.84	6.82 ± 4.24	.000***
Avoidance	5.88 ± 3.81	5.89 ± 3.46	5.00 ± 3.49	3.28 ± 3.06	5.00 ± 3.62	.021*
Touch	6.09 ± 3.35	6.32 ± 3.71	3.48 ± 2.58	3.68 ± 3.51	4.94 ± 3.63	.004***
Vaginismus	5.00 ± .52	7.50 ± .53	5.45 ± 4.27	5.40 ± 4.33	5.80 ± 3.59	.656
Impotence	13.69 ± 3.42	10.23 ± 5.43	9.60 ± 3.63	7.72 ± 2.32	11.04 ± 4.37	.000***
Anorgasmia	11.00 ± .52	15.00 ± 1.09	7.64 ± 5.90	6.50 ± 5.13	9.06 ± 5.58	.011
Premature Ejaculation	13.45 ± 3.35	11.74 ± 5.02	8.57 ± 4.94	7.29 ± 3.54	10.49 ± 4.81	.000***
Total	56.80 ± 13.33	48.47 ± 16.85	34.76 ± 17.86	30.42 ± 16.24	43.60 ± 19.22	0.000***

*P < .05. **P < .01. ***P < .001.

(Table 1). Both female and male patients with SCI had trouble returning to work after SCI, experienced sexual dysfunction, and had problems with being able to have orgasms and sexual intercourse frequency (Table 2). Both females and males had similar sexual issues, but females had more problems in the satisfaction and touching sub-dimensions than males with SCI. Studies have reported that sex life of female patients with SCI was negatively affected by it, and the number of women who had an active sexual health after SCI decreased significantly.¹⁶⁻¹⁸ Women with SCI may prefer activities that focus on touching rather than having sexual intercourse to increase sexual satisfaction. The psychological functioning of the relationship is more important than physical aspects of sex. Women may prefer sexual activities such as kissing, hugging and caressing, which are a part of sexual touching rather than sexual intercourse.⁷

One study found that women's expectations of sexuality differ from men's entertaining and satisfying sexual expectations, they are more affected by psychological parameters, and they long for their pre-injury sexual lives.¹⁹ The reason why women are more affected by touching and satisfaction, which are a part of sexual activity, may be that they have different perceptions of sexual activity than men. Model V suggested that sexual satisfaction of female homemakers was more affected by SCI (Table 4). For women, sexual activity goes beyond sexual intercourse and involves more emotional intensity, which affects their relationships and intimacy with their husbands. Although the results show that women are more affected by the psychological aspects of sexual activity, they are less likely to report a preference for the physical aspect of sexual activity due to stigma and sex bias/societal expectations.

Table 4 Regression model of GRISS.

	Model I			Model II			Model III			Model IV		
	B(SE)	β	t	B(SE)	β	t	B(SE)	β	t	B(SE)	β	t
ASIA A	18.05(3.62)	.44	4.99***	19.46(3.32)	.48	5.86***	23.64(3.20)	.58	7.13***	25.26(3.17)	.62	7.96***
Age				.70(.15)	.37	4.59***	.66(.14)	.36	4.62***	.67(.14)	.36	4.80***
ASIA B							15.21(4.05)	.31	3.76***	15.85(3.90)	.32	4.06***
My goals were not affected										-10.69 (3.60)	-.22	-2.37**
Homemaker												
Fall												
I'm having trouble reaching my goals.												
ΔR^2	.445***			.136***			.067***			.036***		
Total R ²	.445***			.581***			.648***			.684***		

	Model V			Model VI			Model VII		
	B(SE)	β	t	B(SE)	β	t	B(SE)	β	t
ASIA A	25.26(3.17)	.62	7.96***	24.74(3.11)	.61	7.95***	24.23(3.03)	.59	7.99***
Age	.70(.13)	.37	5.23***	.61(.14)	.33	4.45***	.58(.13)	.31	4.36***
ASIA B	16.77(3.77)	.34	4.45***	17.92(3.72)	.36	4.82***	17.52(3.62)	.35	4.84***
My goals were not affected	-10.98(3.47)	-.23	-3.17**	-11.28(3.39)	-.23	-3.32***	-8.43(3.48)	-.17	-2.42***
Homemaker	10.18(3.44)	.22	2.96**	10.41(3.37)	.22	3.09**	10.44(3.27)	.22	3.19***
Fall				7.34(3.13)	.17	2.34*	8.11(3.06)	.19	2.65**
I'm having trouble reaching my goals.							7.71(3.01)	.18	2.56**
ΔR^2	.031***			.019***			.02***		
Total R ²	.715***			.734***			.754***		

*P < .05. **P < .01. ***P < .001.

This study found that 87.4% of the patients with SCI did not receive sexual counseling; however, those who received such counseling and those who did not had similar sexual satisfaction issues (Table 1). The first six months after the hospital discharge are deemed a turning point for the sexual education and counseling of SCI patients.¹⁸ The duration of hospitalization, accompanying physiological, psychological and social considerations, not being ready to resume sex life and relationship issues with spouses can delay sexual counseling.¹¹ The fact that patients address overcoming their sexual issues may affect the results of their sexual counseling.

Knowing the relationship between the factors that affect sexual satisfaction of patients with SCI is important for improving their health and quality of life. The sex life of the ASIA D patients was less affected in the avoidance and impotence sub-dimensions of the GRISS (Table 3), and the sex life of the ASIA A and ASIA B patients was less affected in the frequency, satisfaction, touching, anorgasmia, and premature ejaculation sub-dimensions and total score on the entire GRISS (Table 3). In contrast to this study, a study that did neurological classification by natural levels of spinal cord (cervical, thoracic/lumbar/sacral) without using ASIA scoring found no association between neurological classification and sex life.⁷ Another study found that knowing the neurological level of SCI patients is the best way to understand their sexual potential and to determine proper counseling and treatment to improve it.²⁰ The ASIA A and B patients were found to have more sexual issues. Neurological classification is important for determining SCI patients' sexual capacity and planning their care and counseling.

As other studies suggested, this study determined that sexual satisfaction decreased with age.^{3,7,21–23} Valtonen *et al.*⁷ reported that the negative relationship between sex life and age was because younger SCI patients adapted their sexual activity more easily than older SCI patients.⁷

Sexual satisfaction of the patients who were injured because of falling from heights was found to be the most adversely affected of types of accident (Model 6, Table 4). Burst fractures are commonly seen in cases of falling from heights.²⁴ This type of fracture is often accompanied by retropulsion of bone fragments into the spinal canal, reducing the area available for neurological structures.²⁵ Dai *et al.*²⁶ reported a significant correlation between the rate of canal narrowing and neurological recovery as a result of 7-year follow-up study of 31 patients with burst fractures.²⁶ Thus,

sexual dysfunction is more likely in patients with burst fractures, that is, in cases of falling from heights.

This study determined that sexual satisfaction was affected negatively in SCI patients who could not reach their future goals, who lost sexual desire and whose spouses did not accept the current situation ($P = .020, .001, .007$, Table 1). In addition to the severity and neurological level of the injury, personal characteristics such as pre-morbid sexual experiences and openness to sexual experimentation, partner sexual satisfaction and adaptation to social life are also important factors that affect the sex life of patients with SCI.^{6,27} If patients always think that they cannot sexually satisfy their partners, then they may feel inadequate, leading to a lack of confidence. Engaging in sexual activity positively affects intimacy between partners. Partners' satisfaction with sexual intercourse is the most important determinant of one's own sexual satisfaction.^{6,11,27} This study determined that patients with SCI who had no trouble reaching their future goals had higher sexual satisfaction (Model IV, Table 4), and those who had troubles reaching their future goals had significantly lower sexual satisfaction (Model VII, Table 4). The level of physical damage caused by SCI negatively affects not only sex life, but also psychosocial life, and therefore, psychological well-being. SCI patients need to be open to communication and have more an independent life, productivity, self-confidence, self-esteem, psychological well-being and motivation to maintain their social lives.⁶ Patients with SCI should be open to communication for more independent and productive social life, which they are in need of. Considering that all these parameters affect sex life, it is very important to address all kinds of issues as a whole with SCI patients.

In accordance with this study, other studies have found that SCI patients' sexual satisfaction is very low,^{7,28} and that, in general, the frequency of sexual activity and intercourse declines after SCI.⁶ It is important for patients with SCI to maintain their active and satisfying sex lives. Thus, routine counseling, education, care and treatment services should be provided systematically, instead of expecting patients to ask for help on sexual issues, which are not discussed openly in Turkish society. Sexual problems both affect and are affected by physical, psychological and social life. They can negatively affect people's entire lives.

Limitations

This study has some limitations. Its universe and sample included patients hospitalized only in one hospital. Therefore, its results cannot be generalized to the entire population.

Conclusion and recommendations

The patients' mean scores on the GRISS were affected by the variables of being classified as ASIA A and ASIA B, age, being injured by falling from heights, being a homemaker and thinking of being unable to reach future goals.

It may be advisable to carry out further studies with generalizable and larger populations and samples, in order to support SCI patients with sexual issues, which are not discussed openly and about which they tend to delay seeking help, and to increase their awareness of sexuality and resuming sex life.

Data archiving

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Disclaimer statements

Contributors All authors have contributed significantly to the design, analysis and writing of this manuscript. ST (chief investigator) was responsible for conceiving the research question, designing the research protocol, data analysis and writing up the study for publication. EG was responsible for assisting in the design of the study, assisting in the data analysis and approving the write-up of the study. AIM was responsible for assisting in the design of the study, recruitment at one research site approving the write-up of the study. EII was responsible for assisting in the design of the study, recruitment at one research site and approving the write-up of the study. This study represents original work and has not been published elsewhere.

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Conflicts of interest None.

Ethical Considerations Ethics committee approval was obtained from the Cukurova University Faculty of Medicine Ethics Committee before the study was conducted. The purpose of the study was explained to the participants, and their written and signed informed consent forms were obtained.

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