

ORIGINAL ARTICLE

Sexual satisfaction in women with spinal cord injuries

S Otero-Villaverde, ME Ferreiro-Velasco, A Montoto-Marqués, S Salvador de la Barrera, AI Arias-Pardo and A Rodriguez-Sotillo

Study design: Structured interview based on a predesigned survey.

Objective: To examine the factors that affect the degree of sexual satisfaction in a sample of women with spinal cord injury (SCI).

Setting: The study participants were women with SCIs, from the area of the SCI Unit of A Coruña, a reference unit for the Community of Galicia in the northwest of Spain. All study participants were selected consecutively in the outpatient clinic in 2013.

Methods: The study included women with the American Spinal Injury Association (ASIA) A–D spinal injuries, between the ages of 18 and 65 years, who completed rehabilitation therapy and live in the community. A total of 32 women formed the final study group.

Results: When comparing the group of women who were sexually active with those who were not, variables such as age, neurological level, time since the SCI, ASIA or Spinal Cord Independence Measure score, urinary incontinence, chronic pain and spasticity were not related to sexual activity. The only factors that we found to be related to sexual activity were not having a stable partner ($P=0.017$) and a lack of sensation in the genital area ($P=0.039$).

Conclusion: The only variables related to sexual activity were not having a partner and a lack of sensation in the genital area. Improving sexual satisfaction, information and specific programs during rehabilitation can help women with SCI explore and investigate new erotic possibilities, thereby improving their self-esteem and social relationships.

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INTRODUCTION

Spinal cord injury (SCI) is a medical condition that causes significant disorders at the motor, sensory, psychosocial and sexual levels.¹ The World Health Organization defines sexual health as a state of physical, emotional, mental and social wellbeing related to sexuality, which is not only the absence of disease, dysfunction and disability. To achieve and maintain sexual health, sexual rights should be respected, protected and exercised to the fullest.

The importance of sexuality for an individual who experiences a SCI is demonstrated by the fact that improving sexuality is the main priority for paraplegic patients. For tetraplegics, it is second only to recovering the function of their arms,² although this fact encompasses both male and female sexuality.

The majority of women with SCIs maintain their ability to ovulate, menstruate³ and reproduce.^{4,5} In contrast, their sexuality undergoes changes due to urinary or intestinal incontinence, spasticity, pain or difficulty maintaining social relations,⁶ which frequently lead to a reduced desire for⁷ and frequency of sexual relations.⁸

It is worth emphasizing that in recent years more studies on sexual disorders in women with SCIs have emerged, although the literature remains highly limited on this topic.⁹

MATERIALS AND METHODS

The study participants were women with SCIs, from the reference area of the SCI Unit of the University Hospital of A Coruña, a reference unit for the Community of Galicia (population, 2 747 559 inhabitants) in the northwest of Spain. All study participants were selected consecutively in the outpatient clinic

over a period of 3 months in 2013. The study used the following inclusion criteria for the participants: SCI of any etiology, age between 18 and 65 years, complete or incomplete injuries, any level of injury, completed rehabilitation therapy and living in the community for at least 6 months after hospital discharge. The women were informed of the study's purpose and confidentiality. In terms of the medical–legal issues, participant anonymity was respected, and the study complied with the Spanish Organic Law for the Protection of Data (15/1999, 13 December).

A structured interview was conducted based on a predesigned questionnaire (Table 1), which recorded demographic aspects of the SCI, functionality according to the Spinal Cord Independence Measure (SCIM) version III, sphincter management, complications and drugs used. The questionnaire also included sexual issues such as the partner situation, sexual activity, presence of sensation in the genital area, exploration of new erogenous zones, ability to achieve orgasm, degree of satisfaction with the patient's sex life and degree of understanding of how the SCI affects the patient's sexuality. The interview was conducted by two nurses (always women) once the scheduled review consultation had been completed.

For the statistical analysis of the data, we used the χ^2 -test, Fisher's exact test, the Mann–Whitney U -test and the Wilcoxon W , assigning statistical significance when $P<0.05$.

RESULTS

Sample characteristics

Thirty-two women who met the inclusion criteria were interviewed; none of the women who met the inclusion criteria refused to participate in the study. The mean age at the time of the SCI was 29.8 years (median, 31; s.d., 13.9; range, 59 years) and 42.8 years at the time of the interview (median, 41; s.d., 10.5; range, 36 years). For five

Table 1 Questionnaire and results

	%
<i>Did you have sexual intercourse before SCI?</i>	
Yes	84.4
No	9.4
<i>Have you ever had sexual intercourse after SCI?</i>	
Yes	71.9
No	28.1
<i>Are you currently having sexual intercourse?</i>	
Yes	56.3
No	43.8
<i>Are you having sexual intercourses as frequently as before SCI</i>	
Yes	61
No	39
<i>Do you have sensation in your genital area?</i>	
Yes	56.3
No	43.8
<i>Can you reach arousal stimulating your genital area?</i>	
Yes	56.3
No	43.8
<i>Can you reach psychological arousal with your imagination, pictures, etc?</i>	
Yes	41.9
No	58.1
<i>Have you ever experimented with erogenous zone stimulation above the level of the injury?</i>	
Yes	53.1
No	46.9
<i>Have you ever experimented with erogenous zone stimulation at the same level of the injury?</i>	
Yes	31.3
No	68.8
<i>Are you capable reaching an orgasm?</i>	
Yes	42.9
No	57.1
<i>Why you are not having sexual intercourses?</i>	
Decreased libido	34.4
I do not feel attractive	18.8
I have not had any chance	9.4
It is not important for me	31.3
I have not got any sensation	15.6
Incontinence	6.3
Other	18.7
<i>Are you happy with your sexual intercourses?</i>	
Yes	66.7
No	33.3
<i>Do you think improving your sexual function would improve your quality of life?</i>	
Yes	41.4
No	58.6
<i>Do you think health care professionals should provide information about possible sexual dysfunctions during rehabilitation?</i>	
Yes	87.5
No	12.5

Abbreviation: SCI, spinal cord injury.

Table 2 Factors related to sexual activity

<i>Sexually active women</i>				
<i>No (n = 14)</i>		<i>Yes (n = 18)</i>	<i>P-value</i>	
8	Complete	10	0.9	
16	Tetraplegic	2	0.2	
35.1	Age at SCI, years	25.6	0.06	
46.2	Current age, years	39.9	0.12	
11.1	Time since injury	14.3	0.4	
62.5	SCIM	73.5	0.08	
15	Urinary losses	3	0.73	
11	Chronic pain	7	0.15	
11	Spasticity	7	0.5	
7	Orgasm post-SCI	9	0.09	
6	Currently in a relationship	15	0.017	
5	Sensation in the genital area	13	0.039	

Abbreviations: SCI, spinal cord injury; SCIM, Spinal Cord Independence Measure. Statistically significant factors related to sexual activity are indicated in bold.

of the participants, the SCI occurred before age 18 years. The mean time since the SCI was 12.9 years (median, 10.5; s.d., 12.9; range, 43.4 years).

The most common cause for the SCI was trauma (72% of cases). In terms of the neurological level, the most common was dorsal (59%), followed by lumbosacral (22%) and cervical (19%).

When the degree of disability was measured according to the American Spinal Injury Association (ASIA) scale, 44% of the participants corresponded to ASIA A, followed by 28% to ASIA D, 19% to ASIA B and 9% to ASIA C. In terms of the bladder management, almost half of the patients underwent intermittent catheterizations (47%), followed by voluntary voiding and indwelling catheter.

The median score on the SCIM scale was 68.7. Eighty percent of the women ($n=24$) maintained a stable relationship at the time of the SCI, and nine of these (37.5%) subsequently lost their partner.

Sexual relations

Of the 32 women, all but 5 (84.4%) had maintained sexual relationships before the SCI. We should consider the fact that three of the women were younger than 14 years when they experienced the injury. Seventy-two percent ($n=23$) of the patients had sexual relations at some point after the SCI, and 56.3% ($n=18$) continued to maintain regular sexual relationships at the time of the interview. Thirty-nine percent stated that the frequency of their sexual relations declined after the SCI.

The main reason cited for not maintaining sexual relations at present was a lack of sensation in the genital area (10 of 14 women).

We created two study groups, one that included women who had had sexual relations over the past year (56.3%; $n=18$) and another that included those who had not (43.7%; $n=14$). When we compared the groups, we observed no statistically significant differences in terms of neurological level, time since the SCI, ASIA or SCIM classification, urinary incontinence, chronic pain or spasticity. In other words, none of these variables affected the difference in sexual activity. We observed a trend to significance for age, given that we found greater sexual activity among the younger participants. This is applicable both at the time the interview was conducted (at which point the sexually active group had a mean age of 39.9 years and the non-active group had a mean age of 46.2 years ($P=0.13$)) and in terms of how early the injury occurred (25.6 years at the time of the injury compared with 35.1 years ($P=0.06$)) (Table 2).

The only two statistically significant differences between the two groups of women that influenced their sexual activity were whether the woman maintained a stable relationship with their partner ($P=0.017$) and whether sensation in the genital area was preserved ($P=0.039$) (Table 2). The presence of any of these two characteristics in a woman with a SCI determines a greater degree of sexual activity than when the woman has none of these characteristics.

In our sample, 62% of the paraplegic patients maintained relations, as opposed to only 33% of the tetraplegic patients ($P=0.2$). In contrast, we found barely any variations between those women with complete and incomplete injuries; 56% of those with incomplete injuries maintained relations, whereas those with complete injuries had a very similar percentage (57%).

Sixty-six percent of the women in our study were satisfied with their sex life, and, for those who were not, the main reason indicated was that they did not currently maintain relations. Only three of the women who maintained sexual relations were not satisfied, citing decreased libido ($n=1$) and a lack of genital sensation ($n=2$) as the reasons.

Forty-two percent of the women reported achieving psychogenic sexual arousal, and 56% reported achieving sexual arousal with physical stimulation in erogenous zones. Only 53.1% of the women had experimented with erogenous zone stimulation above the level of the injury, and 37% reported orgasmic feelings.

Thirty-seven percent of the women indicated that improving their sex life would improve their quality of life. Eighty-nine percent admitted having little understanding of how SCI affects female sexual function but considered this information important in the initial phases of the injury.

Regarding marital condition there was one woman who refused to answer this point, so we had at the time of the interview 16 married women and 15 single women. There are 5 single and 10 married women who have had children before SCI, and 2 single and 2 married women who have had children after SCI.

DISCUSSION

SCI negatively affects the sex life of women who experience this type of injury. The related factors that we found in our study are not having a stable partner and the lack of sensation in the genital area, results that agree with the literature published to date.^{6,10}

Important factors in SCIs, such as the neurological level, ASIA or SCIM scores, age, time since SCI, urinary incontinence, chronic pain and spasticity, were not found to be related to sexual satisfaction.

In our sample, we found a tendency towards statistical significance in terms of sexual satisfaction according to age, given that satisfaction was greater in younger women, both at the time of the SCI and at the time of the interview. This result is supported by the published literature,³ owing mainly to the fact that younger patients find it easier to adapt to their new condition.

The presence of sensation in the genital area is indicative of the preservation of the sacral reflex arc, and this significantly increases the likelihood of achieving orgasm.¹¹ According to the literature, women with SCIs have reduced ability to achieve orgasm; 50% are able to achieve it with level T12–L1 injuries, and <17% are able to achieve it with level S2–S5 injuries.¹² In our sample, 37% of the women were able to achieve orgasm. All women with SCIs should be informed that they might need longer or more intense genital stimulation to achieve orgasm¹³ and that it might be less intense than previously enjoyed. It is important to consider that orgasm is a psychological experience that depends on the sexual centers of the brain and that it is possible to achieve it without motor or sensory function in the genitals.¹⁴ But it

would obviously be easier if at least either sensory or motor neurons were intact.

The study by Taleporos and McCabe¹⁵ supports our findings concerning the fact that women with a stable partner have a greater degree of sexual satisfaction. The authors found that disability affects the self-esteem of women in stable relationships to a lesser degree, a very important fact according to Mayers *et al.*,¹⁶ given that damage to self-image and self-esteem can negatively affect the level of satisfaction with one's own life, the willingness to establish personal relationships and the ability to experience pleasure.

Most SCIs are acquired and are the result of trauma. It is therefore typical that women who experience them initially feel overwhelmed by the significant impact the injuries have on their lives. Coupled with this initial trauma is the frequent loss of self-esteem and self-image, the fear of not pleasing their partner and depressive symptoms that can lead to a lack of sexual desire. Approximately 6 months after the injury, interest in sexual relations begins to resurge¹⁷ but does not reach the frequency of sexual relations before the injury.⁹ This agrees with our data in that 84.4% of the women had had sexual relations before the SCI and only 56.3% reported regular sexual activity.

Around 66% of the women in our sample indicated that they were satisfied with their sex life, which is similar to the rest of Spanish women without SCIs (75%), according to a 2011 European report on sexual habits,¹⁸ and agrees with previous studies.³

It is important to remember that sexual function and pleasure are mainly psychological; patients can undergo considerable physical damage but maintain their intact sexual desire and the desire to have a full sex life. The role of medical personnel is therefore fundamental, because the great majority of women want to have information about sex following their injury,¹⁹ as this would improve their quality of life.²⁰ These data are confirmed by our study, given that 37% of our patients believed that their quality of life would improve if their sex life improved, and 89% believed that they had little information and wanted more, even in the initial stages of rehabilitation.

We should also take into account that there are alternatives to the lack of sensation in the genital area and that erogenous zones can be found in other areas of the body that still have sensitivity, including, for example, the head, neck, nipples and so on. Psychological arousal and imagination are essential.

Study limitations

We are aware that there are at least two main limitations in this study. The first one is the small sample, 32 women, although statistical analysis was possible and significant. The other possible bias could be the use of an own questionnaire for evaluating female sexuality instead of a validated one.

CONCLUSIONS

Most women with SCIs are satisfied with their sex life, at a similar although slightly lower rate than the population without the disability. Satisfaction was greater the younger the patient was at the time of the injury and at the time of the interview.

The only two factors we found that influenced whether the women in our study were sexually inactive were not having a stable partner and a lack of sensation in the genital area.

It is essential that teams who treat individuals with SCIs provide sexual information during rehabilitation, because this information is an integral part of recovery. The information could also be considered subsequently to help women adapt to their new condition.

In the event the patient is unable to achieve orgasm or there is a lack of sensation in the genital area, it is important to stress that

pleasure is mainly psychological and that patients can have a satisfying sex life despite having a SCI.

DATA ARCHIVING

There were no data to deposit.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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