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Status of sexual health of married male traumatic paraplegics in Indian Population

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ABSTRACT

Background: About 1.5 million individuals with spinal cord injuries (SCIs) reside in India. Sixty to seventy percent of the 20,000 new cases of SCI that is added each year are from impoverished, illiterate people. SCI leads to life-altering experiences, encompassing physical, physiological, psychological, and social changes. The sexual orientation of an individual with SCI may directly impact their self-assurance and vice versa. **Aims and Objectives:** Patients with SCI may have physical, physiological, psychological, and social changes, including changes in their sexuality. After a SCI, individuals' sexual health is a crucial topic that is rarely addressed. The purpose of this study was to learn about the patients' experiences and feelings regarding sexual activity after a SCI. **Materials and Methods:** Patients with SCI were given a questionnaire. This study covered all male SCI patients between the ages of 18 and 50 who were married at the time of the injury and were followed up until December 2023. The purpose of this study was to talk about different facets of sexual activity and the issues that came with it. Second, these data will support SCI sufferer's sexual rehabilitation. **Results:** Of the 231 patients, 72.3% had erections but only 32% had ejaculations. 55.8% of patients experienced difficulties with sexual function as a result of other SCI sequelae, such as flexor spasm, bladder, and bowel dysfunction, among others. In response, almost 90% of patients said that they had never received sexual rehabilitation or advice on their sexuality. **Conclusion:** Health-care providers and clinicians do not frequently bring up sexuality with patients who have SCI. Patients who frequently inquire about sexual activity following SCI yet are seldom helped. Since there is stigma associated with the topic, every SCI clinic needs to have a specialized sexual rehabilitation staff.

Key words: Spinal cord injuries; Paraplegics; Sexuality; Erection; Dry ejaculation; Sexual rehabilitation

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INTRODUCTION

About 1.5 million individuals with spinal cord injuries (SCIs) reside in India. Sixty to seventy percent of the 20,000 new cases of SCI that is added each year are from impoverished, illiterate people. The majority of them are men in the 16–30 age range, signifying higher incidence in young, active, and productive population of society.[1]

SCI leads to life-altering experiences, encompassing physical, physiological, psychological, and social changes. The emotional, cognitive, and social sequelae following an SCI are individualized and fluctuate across time and are influenced by social, cultural, and contextual factors. It is evident that despite decreased sexual functioning, people with SCI do not lose their craving for intimate relationships, and it may be associated with other problems such as spasticity, weakness, contractures, reduced range of motion, positioning difficulties, neuropathic pain, poor physical endurance, incontinence, and psychosocial factors which may also interfere adversely with the sexual function.[2-4] The sexual orientation of an individual with SCI may directly impact their self-assurance and vice versa.

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Clinical experience has led to the development of a consensus that sexual adjustment for SCI patient can be facilitated by providing them with the knowledge of their capabilities. The topic of sexuality following SCI has gained more attention in the West. Patients with SCI are not well managed or rehabilitated in poor nations like India. In India, training of medical professionals about rehabilitation of SCI lags behind as compared to the western world. Sexual components of therapy are frequently disregarded in such circumstances.[5]

Indian society is based on principles with a very complex culture. Attitude toward sex is multicultural and diverse in India. India is home to Hinduism, Buddhism, Christian faith, Islam, Jainism, Zoroastrianism, and the youngest of all Sikhism thereby creating one of the world's most diverse cultures. In Indian culture and religious scriptures, abstinence from sex is considered a good habit. In addition to being widespread, sexual difficulties are primarily caused by ignorance, false beliefs, and unfavorable attitudes about sex in general and cultural taboos in particular. Sociocultural influences influencing sexual functions include the double standard of behavior for men and women, punishment for masturbating, religious views that sex is just for reproduction and not for pleasure, and sexual attitudes and values of parents and others that sex is "dirty."[6] In such a situation, talking about sex and the issues that surround it is taboo, and medical professionals also overlook or dismiss it.

In this study, physical, psychological, and social aspect of sexuality were examined. The purpose of this study was to assess the problem of sexual function in married male paraplegic patients (sexual intercourse in unmarried population is considered taboo in Indian society), to enable us to develop better management and rehabilitation for such patients.

Aims and objectives

The purpose of this study was to learn about the patient's experiences and feelings regarding sexual activity after a SCI. We included only married male patients in this study to exclude bias and to have all patients equal chance of sexual exposure.

MATERIALS AND METHODS

The research was a multicenter observational study with a questionnaire design that was carried out in several tertiary care hospitals between April 2021 and December 2023. Ethical approval for the study was obtained from the institutional review board. Informed consent was obtained from all participants before their inclusion in the study. Confidentiality and privacy of participant's data were strictly maintained throughout the study process.

Four distinguished institutions, Eras Lucknow Medical College and Hospital, Lucknow (Uttar-Pradesh); King Georg's Medical University, Lucknow (Uttar-Pradesh); Christian Medical College, Ludhiana (Punjab), from north India; and Apollo Institute of Medical Science and Research and Apokos Rehabilitation Hospital, Hyderabad, from south India, were used for this study. The following four institutes provide rehabilitation services to the following main states in North India (Uttar Pradesh, Bihar, Chhattisgarh, Punjab, Himachal Pradesh, Jammu Kashmir, Ladakh, Haryana, Rajasthan) and south India (Telangana, Andhra Pradesh, Odisha, Karnataka, Maharashtra, Tamil Nadu, Kerala).

Patients who provided written consent were included in the study after approval from the institutional ethics committee. We evaluated married male traumatic paraplegic patient's sexual health using a questionnaire-based survey. To ensure that every patient in the trial had an equal likelihood of sexual exposure, we limited the study to married male patients. In the 18–50 age range, we exclusively included male patients with traumatic paraplegia. This study did not include quadriplegics. A total of 231 patients were enrolled, and an examination was conducted using a particular questionnaire intended to identify various facets of sexual orientation. Offered assistance to patients who needed to understand questions of this study. The gathered data were evaluated with the help of Epi Info 7.2 Version.

RESULTS

Socio-demographic characteristics

Mean age of patients was 32.8 years and mean age of onset of SCI was 25.4 years. Majority of patients were found uneducated (32%) or educated up to matric (46.8%). 11.2% patients separated yet, after SCI in this study population (Table 1).

Sexual function and activity

The majority of the subjects reported a change in their sexual functions after injury. 72.3% of patients experienced erections and only 32% have ejaculation (Table 2).

Sexual interest and importance

After their injuries, all of the patients continued to be interested in having sex, and 95% of the participants recognized the value of having sex in life. Following trauma, half of the patients reported having more desire for sex, while 22.5% reported having less desire. 87.9% of participants thought that their sexual life was worse now than it was before the disability (Table 3).

Relationship with partner

56% of men despite the fact that 72% of patients had previously experienced an erection, paraplegic patients were nevertheless able to have successful coitus. Before the injury, every patient could successfully complete coitus. 35.9% of respondents said that they could usually or occasionally please their partner, while 45.5% said that they were generally or occasionally happy with their current sexual life. 55.8% of patients experienced difficulties with sexual function as a result of other SCI sequelae, such as flexor spasm, bladder, and bowel dysfunction, among others (Table 4).

72.3% of the subjects reported an overall hostile connection with their partner, whereas none of the subjects reported a friendly relationship. 64.1% of participants said that their spouse had never cooperated with them during a sexual encounter. In the study population, 4.8% desired separation and 11.2% were divorced. The divorced patients had no desire to get married again. 4.3% of participants went on to become parents after suffering a SCI, and all were with the help of *in vitro* fertilization. 35.9% would want to have more kids (Table 4).

Despite the fact that 35.9% of respondents reported improved sexual function following rehabilitation, 92.2% of respondents had never heard of sexual rehabilitation and 96.1% had never had professional sexuality counseling (Table 4).

Table 1: Sociodemographic characteristics of sample

Socio-demographic character	Range	Mean (%)
Age (Years)	21–50	32.8
Age of onset of injury (Years)	18–37	25.4
Educational status		
Uneducated	76	32
Matric	108	46.8
Graduate	27	11.7
Postgraduate	15	6.5
Professional	5	2.2
Length of marriage (Years)		
<1	0	0
1–5	72	31.2
5–10	52	22.5
>10	81	35.1
Separated after trauma	26	11

Table 2: Sexual function and activity

Questions	Yes (No.)	No (No.)	Yes (%)	No (%)
Do you get an erection?	167	64	72.3	27.7
Do you get ejaculation?	74	157	32	68

Table 3: Sexual interest and importance

Questions	Response (%)
Do you have any interest in sex?	Yes (100), No (0)
Do you understand the importance of sex in life?	Yes (95.2), No (4.8)
Do you find any change in desire for sex in your life?	Increase (50.2), No change (27.3), Decrease (22.5)
How does your current sex life compare to your sex life before your injury?	Better (0) No change (12.1) Worse (87.9)

DISCUSSION

Sexuality is often the most neglected aspect of the problems experienced by paraplegic and is often treated as an isolated entity, which is unfortunate. SCI affects sexual function causing intense despair and can potentially damage intimate relationships with far-reaching psychosocial implications. Counseling, health education, sexual rehabilitation, and medical management often help to restore confidence and reduce anxieties regarding sexual function and overall sexual performance may improve.

Table 4: Relationship with partner and knowledge about sexual rehabilitation

Questions	Response (Percentage)
Do you have intercourse after injury?	Yes (56.3), No (43.7)
How many time do you indulge in sexual activity?	Daily (4.3), every 3rd or 4th day (13.4), weekly (9.1), occasionally (30.7), Never (42.4)
Do you feel satisfied with sexual activity?	Usually (27.3), sometime (18.2), never (54.5)
Does your partner feel satisfied with sexual activity?	Usually (22.5), sometime (13.4), never (34.6), don't know (29.4)
Do you feel that your partner cooperate with you during sexual activity?	Usually (16), sometime (19.9), Never (64.1)
Do you face any problem of bladder bowel dysfunction or flexor spasm or any other problem during intercourse?	Yes (55.8), No (44.2)
Have you noticed any change in sexual relation with your partner in life?	More cordial (0), no change (27.7) more uncordial (72.3)
Do you have children after injury?	Yes (4.3), No (95.7)
Would you like to have more children?	Yes (35.9), No (64.1)
Do you find any help in improving sexual function with rehabilitation?	Yes (35.9), No (64.1)
Do you want divorce/breakage of relationship	Yes (4.8), No (84), separated (11.2)
Do you know or heard about sexual rehabilitation?	Yes (7.8), No (92.2)
Anyone counseled about sexuality?	Yes (3.9), No (96.1)

Neurophysiology of male sexuality following a SCI

After an injury, erectile dysfunction may last for 6–12 months. The spinal cord contains two neural systems that are involved in erection: The parasympathetic and sympathetic nervous systems.[7,8]

Reflexogenic erection

This happens in situations where there is no higher control present but the sacral segment is still intact. Physical genital stimulation can trigger this, whereby impulses travel from the sacral cord S 2–4 segments to the pudendal nerve. From there, the parasympathetic efferent travels through the pelvic splanchnic nerve to the genital nerves, causing reflex vasodilatation and congestion, which results in erection. The sacral reflex is unaffected in the upper motor neuron lesion, maintaining reflexogenic erection.[7,8] Erection can be achieved with stimulation when it is applied on the glans or frenulum.

Psychogenic erection

This originates from the higher senses in the cerebral cortex. It passes through the parasympathetic nervous system and the thoracolumbar sympathetic chain before arriving at the sacral cord. Thus, even in cases when the sacral reflex arc is destroyed, psychogenic erection is viable provided that the thoracolumbar sympathetic cord remains intact. A psychogenic erection is brought on by a variety of cues from the tongue, ears, nose, and eyes. A partial erection may result from sympathetic nervous system stimulation, but penetration is not possible.[7,8] This questionnaire was not able to differentiate whether erection was psychogenic or reflexogenic, but it was clear that about 72.3% patients have erection, and 56.3% were able to have successful coitus, despite being never exposed to sexual counseling and sexual rehabilitation. Sharma et al., found 64% of males experienced useful erections in Indian SCI population.[9]

Ejaculation is under the control of sympathetic, parasympathetic, and somatic nervous system.[7,8] Ejaculation and orgasm occur mostly at the same time in men, but both are different. Orgasm can occur without ejaculation known as dry orgasm.[10] Dry orgasm may happen in SCI due to impaired relaxation of the urethral external sphincter and this leads to incomplete or absent antegrade ejaculation. Men with SCIs may find that having a genital feeling enhances their sexual experience. When genital or anal sensation is lacking, Anderson et al., report the creation of new areas of sexual excitement above the level of lesion. Numerous variables, such as neuroplasticity and psychological adaptability, could be responsible for this.[11] Only 32% of the patients in this study ejaculated, although Sharma et al., observed that 60% of Indians had considerable ejaculation.[9]

After SCI, 56.3% of patients had effectively engaged in sexual activity, despite the fact that 100% of them were interested and that 50.2% of them had grown more desire for it. Dahlberg et al., discovered that among men with severe SCIs in Helsinki, Finland, 86% reported having a sexual desire and 68% reported having a sexual relationship in the previous year.[12] A person's overall interest in sexuality and willingness to pursue an active sexual life are greatly influenced by their sexual experiences. In addition, it might promote sexual activity and a greater interest in sexuality.[13] Among our patients, 57.5% engaged in sexual behavior on a daily to sporadic basis, compared to 50% in the Western world.[14,15] According to Alexander et al., male spinal cord injured individuals' inclination for penis-vaginal intercourse reduced.[16] According to White et al., being in a physical relationship was linked to learning useful information about sexuality. Counseling should be used to introduce this group to sexual activities besides intercourse.[3] The physical relationship and other forms of sexual activity should be covered in education.[17]

There were not many studies that addressed relationship or spouse satisfaction. We discovered that only 35.9% of respondents said that their partner was usually or occasionally satisfied with sexual activity, and 64.1% said that their partner had never cooperated during sex. Phelps et al., demonstrated that in men who were married or had sexual partners, having a partner, being able to please a partner, and knowing non-intercourse expressions were positive factors that influenced sexual satisfaction. They came to the conclusion that men who were married or had partners who reported low relationship satisfaction or low sexual desire should be referred for sexual counseling and evaluation for marital dysfunction.[4] In addition, these studies came to the conclusion that "sexual satisfaction behavior and enjoyment is strongly associated with the quality of the relationship and the partner's sexual satisfaction, in addition to being related to physiological parameters".

Patients who said they had never received counseling regarding their sexuality, potential treatments, or rehabilitation accounted for over 90% of the responses. Regretfully, there was no information provided regarding the management of sexual disability or sexual rehabilitation for patients with SCIs. "Personalized programmable interventions" are required, according to Lombardi et al., to enhance sexual recovery treatments. These researchers came to the conclusion that there is a dearth of qualified health professionals with competency in sexual health and that while there is a growing need for health professionals to receive education in sexual rehabilitation, many nations do not yet have this discipline.[18]

Limitations of the study

1. Small sample size.
   The data was limited to individuals in the northern and southern Indian populations.
2. Majority of patients came from the lower and middle socio-economic classes.
3. Religions, social norms, and cultural practices not covered in this study.
4. The data were based on patient's response only. Partner's response was not included.

CONCLUSION

Male SCI patients who participated in this questionnaire-based survey shared some fascinating insights regarding their sexual perspectives. The majority of patients said that this issue was not sufficiently addressed. Numerous research studies have demonstrated the importance of sexual health for both SCIs patients and their spouses. Difficulty with sexual activity should be considered as one of the problems like other activities of daily living. Patients may be reluctant to express their displeasure about how a SCI affects their ability to engage in sexual activities because the topic of sex is so delicate. They might just think that as long as their SCI gets better with treatment, their ability to have sex will naturally improve as well, but sadly, this is not always the case. The rehabilitation team must take extra steps to deal with the problem. One of the main obstacles in this region of the world is the dearth of physical medicine and rehabilitation (PMR) specialists as well as the lack of PMR education and training for medical graduates and the shortage of skilled rehabilitation personnel.

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REFERENCES

1. Singh R, Sharma SC, Mittal R and Sharma A. Traumatic spinal cord injuries in Haryana: An epidemiological study. Indian J Commun Med. 2003;28(4):184-186.
2. Teal JC and Athelstan GT. Sexuality and spinal cord injury: Some psychosocial considerations. Arch Phys Med Rehabil. 1975;56(6):264-268.
3. White MJ, Rintala DH, Hart KA, Young ME and Fuhrer MJ. Sexual activities, concerns and interests of men with spinal cord injury. Am J Phys Med Rehabil. 1992;71(4):225-231.
   https://doi.org/10.1097/00002060-199208000-00005
4. Phelps G, Albo M, Dunn M and Joseph A. Spinal cord injury and sexuality in married or partnered men: Activities, function, needs, and predictors of sexual adjustment. Arch Sex Behav. 2001;30(6):591-602.
   https://doi.org/10.1023/a:1011910900508
5. Boekamp JR, Overholser JC and Schubert DS. Depression following a spinal cord injury. Int J Psychiatry Med. 1996;26(3):329-349.
   https://doi.org/10.2190/cmu6-24ah-e4jg-8kbn
6. Singh R and Sharma SC. Sexuality and Women with spinal cord injury. Sex Disabil. 2005;23:21-33.
   https://doi.org/10.1007/s11195-004-2077-5
7. Tederko P, Krasuski M and Kiwerski J. Impact of spinal injury with neurological consequences on sexual function: Sexual dysfunctions in men. Med Rehabil. 2007;11(4):27-31.
8. Biering-Sorensen F and Sonksen J. Sexual function in spinal cord lesioned men. Spinal Cord. 2001;39(9):455-470.
   https://doi.org/10.1038/sj.sc.3101198
9. Sharma SC, Singh R, Dogra R and Gupta SS. Assessment of sexual functions after spinal cord injury in Indian patients. Int J Rehabil Res. 2006;29(1):17-25.
   https://doi.org/10.1097/01.mrr.00001855947.56810.fc
10. Elliott S. Ejaculation and orgasm: Sexuality in men with SCI. Top Spinal Cord Inj Rehabil. 2002;8(1):1-15.
    https://doi.org/10.1310/DKTR-K2LA-DG50-GJ7H
11. Anderson KD, Borisoff JF, Johnson RD, Stiens SA and Elliott SL. Long-term effects of spinal cord injury on sexual function in men: Implications for neuroplasticity. Spinal Cord. 2007;45(5):338-348.
    https://doi.org/10.1038/sj.sc.3101978
12. Dahlberg A, Alaranta HT, Kautiainen H and Kotila M. Sexual activity and satisfaction in men with traumatic spinal cord lesion. J Rehabil Med. 2007;39(2):152-155.
    https://doi.org/10.2340/16501977-0029
13. Siosteen A, Lundqvist C, Blomstrand C, Sullivan L and Sullivan M. Sexual ability, activity, attitudes and satisfaction as part of adjustment in spinal cord-injured subjects. Paraplegia. 1990;28(5):285-295.
    https://doi.org/10.1038/sc.1990.38
14. Kreuter M, Sullivan M and Siosteen A. Sexual adjustment after spinal cord injury (SCI) focusing on partner experiences. Paraplegia. 1994;32(4):225-235.
    https://doi.org/10.1038/sc.1994.42
15. Kreuter M, Sullivan M and Siosteen A. Sexual adjustment and quality of relationship in spinal paraplegia: A controlled study. Arch Phys Med Rehabil. 1996;77(6):541-548.
    https://doi.org/10.1016/S0003-9993(96)90292-0
16. Alexander CJ, Sipski ML and Findley TW. Sexual activities, desire, and satisfaction in males pre- and post-spinal cord injury. Arch Sex Behav. 1993;22(3):217-228.
    https://doi.org/10.1007/bf01541767
17. Gill M. Psychosocial implications of spinal cord injury. Crit Care Nurs Q. 1999;22(2):1-7.
    https://doi.org/10.1097/00002727-199908000-00002
18. Lombardi G, Del Popolo G, Macchiarella A, Mencarini M and Celso M. Sexual rehabilitation in women with spinal cord injury: A critical review of the literature. Spinal Cord. 2010;48(12):842-849.
    https://doi.org/10.1038/sc.2010.36

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YVS - Definition of intellectual content, literature survey, prepared first draft of manuscript, implementation of study protocol, data collection, data analysis, manuscript preparation and submission of article; **AC -** Concept design, clinical protocol, data collection, manuscript preparation, editing and manuscript revision; **VK -** Design of study, statistical analysis and interpretation, editing and manuscript revision; **AAK -** Design of study, statistical analysis and interpretation, editing and review manuscript: **AP -** Literature survey, preparation of tables and review manuscript; **AKS -** Coordination, review manuscript and manuscript revision

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