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ORIGINAL RESEARCH

Evaluation of Sexual Dysfunction in Men With Spinal Cord Injury Using the Male Sexual Quotient

Eduardo P. Miranda, MD,[a] Cristiano Mendes Gomes, MD, PhD,[a] José de Bessa Jr, MD, PhD,[a] Carmita Helena Najjar Abdo, MD, PhD,[b] Carlos Henrique Suzuki Bellucci, MD,[a] Jose Everton de Castro Filho, MD, PhD,[a] Fabrício Leite de Carvalho, MD, PhD,[a] Daniel Rubio de Souza, MD,[c] Linamara Rizzo Battistella, MD, PhD,[c] Márcia Scazufca, PhD,[d] Homero Bruschini, MD, PhD,[a] Tarcisio Barros Filho, MD, PhD,[d] Miguel Srougi, MD, PhD[a]

From the [a]Division of Urology, [b]Institute of Psychiatry, [c]Institute of Physical Medicine and Rehabilitation, and [d]Department of Orthopedics, University of Sao Paulo School of Medicine, Sao Paulo, Brazil.

Abstract

Objective: To assess different aspects of sexual function in men with spinal cord injury (SCI) using the Male Sexual Quotient (MSQ), a newly developed tool to assess sexual function and satisfaction.

Design: Cross-sectional study.

Setting: Tertiary rehabilitation center.

Participants: Patients (N=295) older than 18 years (mean age ± SD, 40.7±14.5y) with SCI for more than 1 year (median time since SCI, 3.6y; range, 1.6–7.0y) were assessed from February to August 2012. Patients completed the MSQ questionnaire and the Sexual Health Inventory for Men (SHIM).

Interventions: Not applicable.

Main Outcome Measures: Performance in various domains of sexual function was evaluated using the MSQ and SHIM questionnaires.

Results: Erectile function, ejaculation, and orgasm were the most severely affected domains. The median MSQ score was 40 (range, 8–66), and the median SHIM score was 5 (range, 0–16). The diagnostic properties of the 2 instruments were similar in the discrimination of sexually active subjects. The area under the receiver operating characteristic curve was .950 (95% confidence interval [CI], .923–.979) for the MSQ and .942 (95% CI, .915–.968) for the SHIM. There was a strong correlation between the 2 instruments (r=.826; 95% CI, .802–.878).

Conclusions: Different domains of sexual function are severely impaired in men with SCI, although their sexual interest remains high. The MSQ and SHIM scores strongly correlate, but the MSQ provides a more comprehensive assessment of sexual dysfunction in male patients with SCI. Archives of Physical Medicine and Rehabilitation 2016;97:947-52

Spinal cord injury (SCI) has a major negative impact not only on the physical and emotional health of individuals, but also represents a huge burden to society globally.[1,2] Since young men are generally involved in riskier activities than are women, they are more susceptible to accidents and other forms of trauma. Accordingly, 80% of SCIs occur in men, and 50% to 70% occur in subjects aged 15 to 35 years. Sexuality plays a central role in quality of life and is severely impaired in this population,[3] greatly affecting well-being and interpersonal relationships.[4] Psychological assessment in men with and without SCI has demonstrated that sexuality is an area in which men with SCI report less satisfaction.[5] Studies have shown that sexuality after SCI remains

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a central motivating factor in life, and improvements in sexual function are considered the highest priorities in their rehabilitation.[4,6] Moreover, the overall rehabilitation outcome seems to be substantially influenced by a successful sexual recovery.[6]

Studies[6-8] have demonstrated that sexual desire, sexual activity, and sexual satisfaction decrease after SCI. The causes of sexual dysfunction are multifactorial and may include altered genital sensitivity, erectile and autonomic disturbances, psychological problems, difficult positioning for sexual intercourse, and side effects from medical therapy.[6,9] Furthermore, SCI is often accompanied by various medical problems, such as urinary and fecal incontinence, neuropathic pain, spasticity, and decubitus ulcers, which may have direct or indirect consequences on sexual activity and sexual satisfaction.[3]

Self-administered questionnaires are widely used in sexual medicine and are well accepted as a convenient way to measure aspects of sexuality. However, most studies evaluating sexual function in men with SCI used qualitative methodology, nonvalidated questionnaires, or both, rather than specific questionnaires to evaluate different domains of sexual function.[10] Because many aspects of sexuality are often severely affected in men with SCI, assessing their sexual function remains a challenge. Therefore, a more comprehensive evaluation would be desirable to assess the complex and multifaceted nature of sexual dysfunction in this population.

The Male Sexual Quotient (MSQ) is a validated, user-friendly questionnaire designed to measure sexual function and satisfaction with various aspects of male sexuality, which could be useful in men with SCI.[11,12] The MSQ was designed to evaluate satisfaction with different domains of the male sexual experience, including desire, confidence, performance, climax, and erectile function.[11] Furthermore, it has the unique ability to detect the presence of hypoactive sexual desire (question 1) as well as ejaculatory (question 8) and orgasmic (question 9) dysfunctions.[11] The abridged version of the International Index of Erectile Function, also known as the Sexual Health Inventory for Men (SHIM),[12] is the most widely used instrument for assessing sexual function in both clinical and research settings.[12] Although it has occasionally been used to assess the sexual function of patients with SCI,[4,8] it only evaluates aspects related to erectile function. The purpose of this study was to assess the sexual function of men with SCI and its impact on their sexual satisfaction by using the MSQ.

Methods

In a cross-sectional study, the sexual function of men with SCI presenting for evaluation in a tertiary rehabilitation center from February to August 2012 was assessed. All patients older than 18 years with SCI for more than 1 year and who presented for a routine medical visit were invited to participate. The only exclusion criterion was the presence of associated traumatic brain injury with confirmed cognitive impairment. Clinical and epidemiologic data such as age, SCI duration, level and completeness of SCI, and frequency and nature of sexual relations were evaluated.

Participants were instructed to complete the MSQ based on their previous 6 months of sexual activity. The MSQ includes 10 questions covering a range of physical and emotional aspects of the sexual experience, including sexual desire (question 1), confidence for seduction (question 2), satisfaction with foreplay quality (question 3), partner's sexual satisfaction (questions 3 and 4), quality of erections (questions 5−7), ejaculatory control (question 8), ability to achieve orgasm (question 9), and satisfaction with overall sexual performance (question 10).[11] The answers for such questions used a Likert scale from 0 to 5, with 0 indicating "never" and 5 indicating "always." Each individual question of the MSQ was analyzed to provide a critical overview of the different aspects of sexual function in this population. Responses between 0 and 2 on any given question were considered abnormal and were used to calculate the prevalence of specific dysfunctions.[11] The scores for each individual question were summed and multiplied by 2, resulting in a final transformed MSQ score based on a 100-point scale, with higher scores indicating greater sexual performance. Based on the total score, patients were classified as highly satisfied (MSQ score, 82−100), partially satisfied (62−80), average (42−60), dissatisfied (22−40), or highly dissatisfied (0−20).[11]

Patients also completed the SHIM, which contains 5 questions rated on a 5-point ordinal scale, with lower values representing worse sexual function. The SHIM includes 4 items exploring the erectile function domain in addition to a single item on intercourse satisfaction. Erectile function is categorized as no erectile dysfunction (ED) (SHIM>22), mild ED (17−21), moderate ED (8−16), or severe ED (<7).[12,13]

This study was approved by our institutional review board. Patients agreed to participate in the study after full disclosure of its purpose, and written informed consent was obtained from all participants. Trained interviewers were instructed to help patients fill out the questionnaires upon request. This group included 5 professionals: 3 urologists, 1 psychologist, and 1 expert in physical medicine and rehabilitation.

Data were expressed as mean ± SD, median and interquartile range, or absolute values and fractions. Accuracy of the MSQ and SHIM questionnaires for discriminating sexually active individuals was compared using receiver operating characteristic (ROC) curve analysis. Sensitivity, specificity, and likelihood ratios from both instruments to stratify patients in different score categories were also analyzed. The Pearson correlation coefficient was used as a measurement of correlation. In addition, both instruments were compared regarding their ability to assess erectile function alone. The correlation between the 3 questions about erectile function of the MSQ (questions 5−7) and the 4 questions of the SHIM that evaluate erectile function (questions A−D) was also evaluated. Analyses were performed using GraphPad Prism, version 5.0.3.[a] All tests were 2-sided with the level of significance set at $P<.05$.

List of abbreviations:

AUC	area under the curve
CI	confidence interval
ED	erectile dysfunction
MSQ	Male Sexual Quotient
ROC	receiver operating characteristic
SCI	spinal cord injury
SHIM	Sexual Health Inventory for Men

Results

A total of 295 men with a mean age ± SD of 40.7±14.5 years (range, 18−75y) were evaluated. The median time since SCI was 3.6 years (range, 1.6−7.0y). The median age at trauma was 31.3 years (range, 22.7−45.4y). The characteristics of SCI in the study