

Sexual disorders in male with spinal cord injury: systematic review

Aspectos sobre a etiopatogênese e terapêutica do vitiligo

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ABSTRACT: *Introduction:* Spinal cord injury poses multiple challenges to the subject and his / her relatives. Sensory-motor damage, autonomic and / or sphincteric dysfunction are some of the consequences, caused by spinal cord injuries, negatively affecting the quality of life. *Objective:* to know and describe the main sexual dysfunctions in patients with marrow sequelae; to explain new horizons from the physiotherapeutic point of view and the main methods of physiotherapeutic treatments available for this population. *Methods:* This is a systematic review of the literature that searched for articles in the Lilacs, PEDro, PubMed and SciELO databases using the terms spinal cord injury, sexual dysfunction, physiotherapy, rehabilitation. Observational articles and clinical trials published between 2001 and 2017, in the languages of Portuguese, English and Spanish, which addressed sexual dysfunction in men who had some type of spinal cord injury were included. Articles that addressed the female audience, articles that associated physical therapy with another type of treatment and abstracts were excluded. *Results:* 11 studies were found that addressed sexual impairments in spinal cord injured persons. The reported dysfunctions were erectile dysfunction, followed by premature ejaculation or absence of ejaculation, with the aim of reducing sexual desire. *Conclusion:* Erectile dysfunction, specifically neurogenic, was the most common sexual dysfunction, followed by premature ejaculation or absence of ejaculation, with the aim of reducing sexual desire.

Keywords: Sexual health; Spinal cord injuries; Erectile dysfunction; Premature ejaculation; Physical therapy specialty.

RESUMO: *Introdução:* A lesão medular espinal impõe múltiplos desafios ao sujeito e seus familiares. Danos sensório-motores, disfunção autonômica e/ou esfíncteriana são algumas das consequências, causadas por lesões da medula espinhal, impactando negativamente na qualidade de vida. *Objetivo:* conhecer e descrever as principais disfunções sexuais em pacientes com sequelas medulares; explicar novos horizontes do ponto de vista fisioterapêutico e os principais métodos de tratamentos fisioterapêuticos disponíveis para esta população. *Métodos:* Trata-se de uma revisão sistemática da literatura que buscou por artigos nas bases de dados do Lilacs, PEDro, PubMed e SciELO utilizando os termos lesão medular, disfunção sexual, fisioterapia, reabilitação. Foram incluídos artigos observacionais e ensaios clínicos publicados entre 2001 e 2017, nos idiomas de português, inglês e espanhol, que abordassem a disfunção sexual em homens que tiveram algum tipo de lesão medular. Foram excluídos artigos que abordassem o público feminino, artigos que associassem fisioterapia com outro tipo de tratamento e abstracts. *Resultados:* foram encontrados 11 estudos que abordaram os comprometimentos sexuais em lesados medulares. A disfunções relatadas foram a disfunção erétil, seguidas da ejaculação precoce ou ausência da ejaculação, tendo por fim a redução do desejo sexual. *Conclusão:* A disfunção erétil, especificamente a neurogênica, foi a disfunção sexual mais encontrada, seguidas da ejaculação precoce ou ausência da ejaculação, tendo por fim a redução do desejo sexual.

Descritores: Saúde sexual; Traumatismos da medula espinhal; Disfunção erétil; Ejaculação precoce; Fisioterapia.

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INTRODUCTION

An injury to the spinal cord both from an organic and psychological point of view, imposing, throughout its course, multiple challenges for the patient and his family¹, because the spinal cord is the conduction pathway for afferent and efferent stimuli between the periphery and the brain, so that affections of the neural elements of the spinal cord can generate sensorimotor impairments, autonomic and/or sphincter dysfunction, which will impact negatively on the individual's quality life^{1,2}.

Spinal cord injury alters human sexual response due to disturbance or interruption of neural stimuli responsible for this function. Particularly, lesions of the lumbar and lumbosacral are frequent and affect urinary, evacuation and sexual functions³.

However, even after years of injury, the patient can be potentially productive and independent⁴, so, although it is unquestionable that the presence of spinal cord injury brings motor and sensory deficits, this does not preclude the individual from expressing and manifesting his sexuality when taken in his enlarge concept⁵.

Sexuality is a broad and important dimension of the human being, not only for reproduction, but also for self-satisfaction. It establishes a relationship of personality, physical aspect, and also, psychological and behavioral. The person who suffered spinal cord injury should be encouraged, and needs the support of family, partner and a multidisciplinary team to restore their sexual functions in the best possible way⁶. In these patients the type and degree of sexual dysfunction will depend on the level and degree of spinal cord injury, but erectile dysfunction stands out - difficulty in erection and maintenance; ejaculatory –

and may be absent or retrograde; fertility – reduction in the number of sperm; hypersensitivity, among others⁷.

Since 2000, good scientific attention has been given to sexual dysfunctions, both male⁸ and female^{9,10}, however, knowledge about sexuality in spinal cord injury is not well disseminated among patients and therapists¹¹. The level of misinformation about sexual practice among men with spinal cord injury is still high⁵.

In view of the above, the present study aimed to verify which sexual dysfunctions are most commonly found in men with spinal cord injury and which methods of treatments are available for rehabilitation.

METHODS

This is a systematic review, which used the lilacs, PEDro, PubMed and SciELO databases. The descriptors used were: spinal cord injury, sexual dysfunction, spinal cord injury and sexual dysfunction.

The search was conducted in January and February 2018. Observational studies and clinical trials published between 2001 and 2017 in the languages of Portuguese, English and Spanish, addressing sexual dysfunction in men who had some type of spinal cord injury were included. Articles addressing the female public, articles that associated physiotherapy with other types of treatment and abstracts were excluded.

Two independent evaluators conducted the extraction of the following data: type of study, sample size, characteristics of the participants, type of intervention and outcome values. Disagreements among the reviewers were resolved by consensus.

The flow of studies through the selection process is presented in Figure 1.

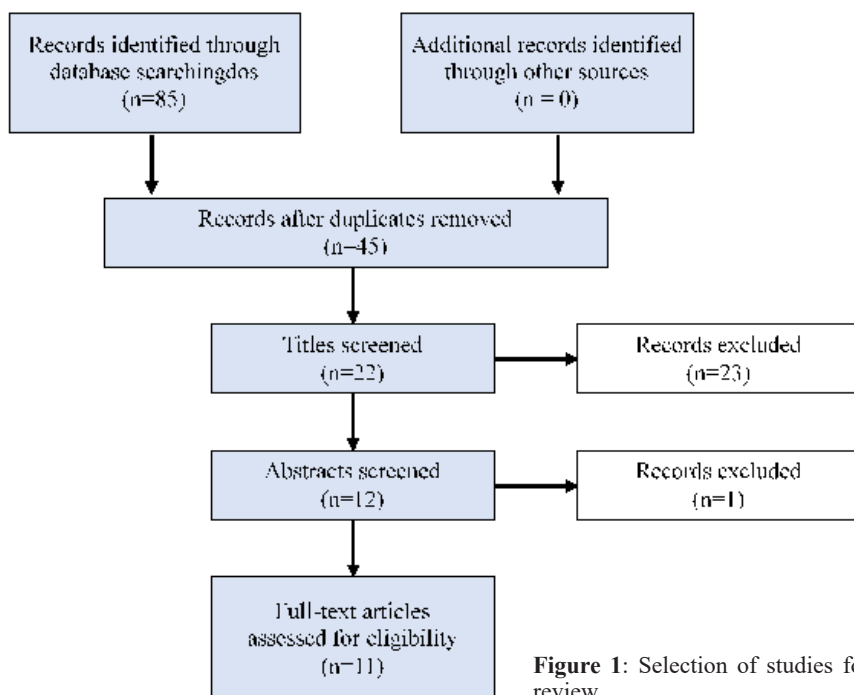


Figure 1: Selection of studies for inclusion in the systematic review

RESULTS

The searches comprised a total of 85 scientific articles, returning 17 articles from Lilacs, 28 from PEDdro, 36 from PubMed and 4 from SciELO; 11 articles addressing

sexual dysfunctions in men with sequelae of spinal cord injury were included (Table 1). It is observed that erectile dysfunction was the dysfunction most found in the selected articles, followed by premature ejaculation or absence of ejaculation, aiming at reducing sexual desire.

Table 1. Selected articles

Author	Sample	Sexual dysfunction
Schmid et al. ¹²	n=32 men with spinal cord injury	Erectile dysfunction
Hamid et al. ¹³	n= 74 men with spinal cord injury at T10 level, with complete and incomplete lesion	Erectile dysfunction
Yilmaz et al. ¹⁴	n=7 men with complete thoracic spinal cord injury	Erectile dysfunction
Virseda-Chamorro et al. ¹⁵	n= 98 men with spinal cord injury	Erectile dysfunction Premature ejaculation Reduced sexual desire
Linstow et al. ¹⁶	n=53 people: 27 women and 26 men	Erectile dysfunction Premature ejaculation Anorgasmia Decreased vaginal lubrication
Rodríguez-Castiñeira et al. ¹⁷	n= 50 men with spinal cord injury	Sexual dysfunction: Absence of ejaculation
Lee et al. ¹⁸	n= 28 women, 17 men participated in the study	Women: anorgasmia Men: erectile dysfunction
Cuenca et al. ¹⁹	n=85 men with spinal cord injury	Erectile dysfunction and premature ejaculation
Akman et al. ²⁰	n= 47 men with complete spinal cord injury, 28 with injury above T10, 15 with injury between T11 and L2, and 4 with equine tail injury	61.7% of the sample reported sexual activity, 93.6% reported some degree of erection, and 87.3% had moderate to severe erectile dysfunction.

DISCUSSION

Good sexual function is important for the quality of life and satisfaction of the individual²¹. In this sense, this study aimed to verify which sexual dysfunctions are found in men with spinal cord injury. Erectile dysfunction was the most common dysfunction found in the selected articles, followed by premature ejaculation.

Sexual response and erectile function depend on the level and degree of injury, whether the lesion is upper or lower motor neuron, so that the lower the level of spinal cord injury, the lower the degree of erectile dysfunction¹⁸. The causes of sexual dysfunction after spinal cord injury have been described by Schmid et al.¹² who observed that erectile dysfunction occurred due to erectile reflex deficiency and loss of cavernous bulb reflex and detrusor and by Yilmaz et al.¹⁴ evaluated the effects of electrodiagnosis on ischiocavernous activity on the erectile function of seven men with complete thoracic spinal cord injury, in addition to six other men scheduled for pelvic surgery (radical cystoprostatectomy), with no difference in latency and amplitude of cavernous activity and postoperative sympathetic response compared to the preoperative one,

indicating the preservation of sympathetic fibers. In men with spinal cord injury above the sympathetic trunk, ischiocavernous activity was absent, which may explain erectile dysfunction, since the ischiocavernous muscles are fundamental for the increase of intrabody pressure during erection²², and its failure culminates in erectile dysfunction due to failure to close the peripheral venous bed.

Delgado et al.²³ evaluated the bulbocavernous reflex by means of electromyography (electrodes positioned on the glans and base of the penis, respectively), for diagnosis of erectile dysfunction in men with spinal cord injury of organic cause. Triggering stimulation of the dorsal nerve of the penis, the author determined a set of transmissions of nerve impulses evoked through the synapse in the spinal cord and the neuromuscular junction, until the contraction of the bulbospongiosus muscle, concluding that the latency period of the bulbocavernous reflex is useful for determining the integrity of the S2-S4 segments of the spinal cord, allowing to diagnose erectile dysfunction of neurological origin.

Sexual dysfunction affects the individual's quality of life. For example, Rodríguez-Castiñeira et al.¹⁷ reported that young people with high and complete injuries divorced

after the injury, and oral sex was the most used alternative and few patients received guidance. Cuenca et al.¹⁹ and established a relationship between depression, anxiety, self-esteem and sexual dysfunction of men with spinal cord injury. Akman et al.²⁰ point out that the continuation of sexual activity after injury is very important and has a great impact on the quality of life and interpersonal relationship of men injured in the spinal cord and, therefore, more attention should be paid to sexuality after spinal cord injury.

Most male sexual dysfunctions today have an important kinesiological-functional component, sometimes decisive in the etiology of the problem, and pelvic physiotherapy is an efficient and effective option in the treatment of these dysfunctions^{8,22,24}, often non-reactive to surgical or drug treatment. Today pelvic physiotherapy has an accurate kinesiological-functional diagnostic algorithm, that allows the punctual identification of the type of kinesiological dysfunction on the pelvic floor musculature failure in strength, power, resistance or involuntary activity²⁵ from which the training of this muscle develops in four specific phases proprioception, coordination, reinforcement and functional and home training, or "Training of the 4 Fs", enhancing results in a faster time²⁶.

Authors contributions: *Latorre GFS* - anticipated in the conception, design interpretation of the results; *Padilha AP* - writing of the scientific article; *Amorim L* - writing of the scientific article; *Duminelli KG* - writing of the scientific article; *Nunes EFC* - review and forwarding of the scientific article.

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CONCLUSION

Erectile dysfunction, specifically neurogenic, was the most common sexual dysfunction, followed by premature ejaculation or absence of ejaculation, aiming at reducing sexual desire.

The lack of information and sexual orientation, punctual and specific for the spinal cord injured, seem to lead the spinal cord injured to abandon the coital sex, even if there are possibilities for this, and assume oral sex, which can potentially worsen sexual function by disuse.

Thus, further studies on the sexual function of spinal cord injured and treatment should be explored, in particular, clinical trials involving pelvic physiotherapy.

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