Sex Disabil (2017) 35:313–330
DOI 10.1007/s11195-017-9495-7

CrossMark

ORIGINAL PAPER

The Sexual Health Needs of Women with Spinal Cord Injury: A Qualitative Study

Marjan Akhavan Amjadi[1,2] · Masoumeh Simbar[3] · Seyyed Ali Hosseini[4] · Farid Zayeri[5]

Published online: 21 July 2017
© Springer Science+Business Media, LLC 2017

Abstract Sexual health as an important aspect of reproductive health, is a foundation for physical and emotional health which also affects couples and families' wellbeing. Furthermore, disability could impact couple's sexual relationships. Studies show that people with physical disability receive less sexual education which in turn exposes them to a higher risk for sexually transmitted infections. This qualitative study explored the sexual needs of women with spinal cord injury (SCI) aged 18–55 years old living in Tehran. In depth and individual semi-structured interviews were hold for data collection until data saturation was reached. They were recruited from the Organization of Welfare and Protection Center of Spinal Cord Disables of Iran. In this study 23 individuals were chosen using purposive sampling. The collected data was analyzed using the content analysis approach suggested by Graneheim and Lundman. The sexual health needs of women with SCI was explained in two themes and nine categories. The themes were "physical rehabilitation" and "couples' sexual consultation". The categories of the first theme were "resolving physical problems contributing to sexual relationships" and "complementary medicine application". The categories of the second theme were "the husband's emotional support", "concentration", "protecting sexual health", "the need for having sexual relationships", "diminishing factors for unpleasant sexual relationships", "paying attention to wife's readiness to start sexual relationships" and "decreasing factors that suppress

✉ Masoumeh Simbar
msimbar@sbmu.ac.ir; msimbar@yahoo.com

[1] International Branch, Shahid Beheshti University of Medical Sciences, Tehran, Iran

[2] Department of Midwifery, Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran

[3] Department of Reproductive Health and Midwifery, School of Nursing and Midwifery, Midwifery and Reproductive Health Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran

[4] Social Determinants of Health Research Center and Department of Occupational Therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

[5] Proteomics Research Center and Department of Biological Statistics, Paramedical Faculty, Shahid Beheshti University of Medical Sciences, Tehran, Iran

spouse's sexual desire". This study showed that women with spinal cord injury require sexual rehabilitation. They overcome their physical problems with the help of complementary medicine and sexual counselling around the aforementioned categories for promoting the quality of their sexual health.

Keywords Sexual health · Sexual reproductive health · Spinal cord injury · Women with disabilities · The Islamic Republic of Iran

Introduction

Improving the quality of health provides individuals in the society with sustainable development [1]. Sexual health as an important aspect of reproductive health, is a foundation for physical and emotional health. [2]. Sexual health is a major aspect of human health contributing significantly to the general health of families [3] and it also aims to provide individuals with a conscious, joyful, mutually respectful, and safe sexual relationships [4]. An appropriate understanding of sexual health is required for promoting reproductive health as a basic component of human health. Sexual health is affected by physical, psychological, social, spiritual and instinctive factors [1]. Physical disability as any inability in legs and hand, spinal cord injury, hearing loss can affect sexual relationships [5]. Spinal cord injury is a kind of physical impairment leads to the restriction of mobility [6].

According to the World Health Organization (WHO), more than one billion people (15% of the world's total population) suffer from one kind of disability that 10% of them are women and mainly live in developing countries. About 8.5 million people with moderate to severe disabilities are added yearly to the disabled population across the world. Therefore, it is necessary to provide them with appropriate healthcare services [5]. In Australia, 490–886 cases of post-traumatic spinal cord injuries occur in every one million people [7]. Around 52,000 women with spinal cord injuries live in the U.S.A [8]. The prevalence of spinal cord injury in Iran is 4.4 in every 10,000 people with an incidence rate of 2.2 in every 10,000 people in 2003–2008 [9]. According to a report 82.2% of spinal cord injuries in Iran happen due to traumas, car accidents, and war [10].

In the field of reproductive health, it is assumed that women with disability do not need sexual relationships. Physical disability and its consequences such as anxiety, loss of self-confidence, and sexual impotence, makes sexual relationships and intimate sexual relationships complicated. However, studies demonstrate that sexual desires and the need for their expression remain intact [11]. A few healthcare providers truly understand the impact of disability on women' reproductive health. Since such topics have never been discussed at medical schools, medical doctors have insufficient knowledge to help women with disability with alternative contraception, pregnancy or hormone-therapy techniques [12].

According to a study conducted in Iran, the rate of sexual consultation by women with disability is low [13]. However, there is a need for a system in which women with sexually transmitted diseases are provided with preventive healthcare services through primary healthcare [14]. Another study illustrated that sexual satisfaction and the degree of spinal cord injury have no correlations among Iranian veterans with disability. While, half of them reported sexual impotency, a small percentage of them were outstandingly satisfied with their conjugal relationships and a few of them were dissatisfied [15]. A

study conducted in the USA found no relationships between disability and female sexual function index or their desire scores among non-hospitalized disabled people or those ones with spinal cord injury [16].A study in Denmark indicates that the majority of women had no problem with vaginal lubrication. Also, less than half of them gave birth to a child after injury and most of them were satisfied with their sexual life [17]. However, in Turkey, all women with disability expressed the experience of sexual dysfunction [18].

Given recent advancements in the diagnosis and treatment of chronic diseases and disabilities, women with physical disability have this opportunity to reach puberty age. Therefore, many physicians should make society aware that chronic diseases or disabilities cannot hinder their sexual activities and the chance for pregnancy. They can be sexually active and exercise it by the expression of love, masturbation, caressing, kissing and doing sexual intercourse. Therefore, improving our knowledge about individuals with disability, is required for the application of techniques applied with the aim of conforming the family/society and disabled individuals. This situation could be ended in the improvement of rehabilitation services in the near future [19].

Over the past decade, a special attention has been paid to identify the reproductive and sexual needs of women with disability. However, there is a need to create changes in the healthcare system for improving women's reproductive and sexual health [1]. On the one hand, limited qualitative studies are available for explaining the needs of women with disability with regard to their sexual health care needs. There are many shortcomings in this area affecting women's general health [5]. Therefore, this qualitative study explored the sexual needs of women with spinal cord injury (SCI) aged 18–55 years old living in Tehran. The findings of this study can help with the improvement of healthcare conditions of this group in the society.

Materials and Methods

This study was one part of a mixed methods study with a sequential explanatory design that explained and identified reproductive-sexual health needs in women with spinal cord injuries. For this article, the qualitative part using a content analysis approach was presented. The following inclusion criteria were used to choose participants: Iranian married women living in Tehran aged between 18 and 55 years, suffering from spinal cord injuries, being supported by the Organization of Welfare or Protection Center of Spinal Cord Disables of Iran. Also the spouses of the women without spinal cord injuries who lived with their wives with disability at least for six months, and healthcare providers such as social workers, occupational therapists, physiotherapists, gynecologists, authorities of rehabilitation centers, and the general director of the Protection Center of Spinal Cord Disables of Iran each with at least three years of records of service were recruited as participants. The research zone was chosen based on the researcher access to women with spinal cord injuries and availability of private places for conducting interviews including Jalayipour Martyrs Rehabilitation Center, Narmak Welfare Center and Protection Center of Spinal Cord Disables of Iran at Molavi and Tajrish branches. Data collection was conducted by either the researcher's referral to the above mentioned centers or accompanying a social worker to the houses of women with disability. Gynecologists were interviewed at

their offices. In-depth and individual semi-structured interviews were hold for data collection until data saturation was reached [20].

Sampling began on June 2015 and ended on October 2015 in Tehran, Iran. Permissions were obtained from nursing and midwifery school of Shahid Beheshti University of Medical Sciences and the Organization of Welfare and Protection Center of Spinal Cord Disables of Iran. Before the interviews, the researcher (M. Akhavan) explained the aim and method of the study, voluntary nature of participation in this study, confidentiality of data collection, and possibility of withdrawal from the study at any time without being penalized. The written consent form was signed by those participants who willingly agreed to take part in this study.

The interviews were started with two general open-ended questions. Each interview lasted for 60–90 min and was tape-recorded. Moreover, the nonverbal clues during the interviews were recorded. The interviews were transcribed verbatim and listened several times, by the researcher. In total, 23 interview sessions were held with 15 married women suffering from spinal cord injuries and eight key informants including three husbands of the women with disability.

The criteria suggested by Lincoln and Guba were used. In order to enhance the credibility of findings, the researcher dedicated sufficient time to collect data as well as she reviewed the provided transcripts. Integration of data collection methods (individual interviews and observations), integration of data resources (women suffering from spinal cord injuries, key informants, and literature review), integration of research environments (two welfare centers and two branches of the Protection Center of Spinal Cord Disables of Iran) and variation in participants' characteristics (different educational levels, different locations, levels of spinal cord injuries, and causes for getting impaired) also enhanced the credibility of data. The transcription of the interviews and a brief report of data analysis were returned to the participants to ensure that their perspectives were reflected in findings. The process of data analysis was validated by some researchers including reproductive healthcare specialists and occupational therapists who were not directly engaged in this study. The researcher attempted to avoid involving her own pre-assumptions in the data collection and analysis processes. To check the study's comprehensiveness, the researcher presented findings to five women with disability who were not engaged in this study. Also, a comprehensive description of personal backgrounds and cultures, participants' characteristics, data collection and analysis methods along with some examples of participants' statements were presented [21].

The collected data was analyzed using the qualitative conventional content analysis method suggested by Graneheim and Lundman [22]. The data collection and data analysis were performed concurrently. The researcher carefully read the transcriptions several times and checked them against the recorded interviews to enhance the precision of data analysis. Reading the transcriptions helped with getting the sense of whole and general ideas behind the data. Meaning units in the text were specified and labeled with codes. Similar codes were classified for developing subcategories. Next subcategories were placed under categories according to their common characteristics. The categories with a common concept formed themes. The ethical considerations of this study was issued by the Ethics Committee (code: 2015/12/15 with IR.SBMU.IASB.REC). Also, the university in which the researchers worked supported this study financially and approved its research protocol (decree: 8217).

Findings

Majority of them were housewives who had a diploma degree education (Table 1). The key informants also included a social worker, an occupational therapist, a physiotherapist, a gynecologist, the chief executive officer of the Iran's Protection Institute of the Spinal Cord Disabled, and the spouses of women with spinal cord injuries (Tables 2, 3).

The sexual health needs of women with SCI was explained in two themes and nine categories. The themes were "physical rehabilitation" and "couples' sexual consultation". The categories of the first theme were "resolving physical problems contributing to sexual relationships" and "complementary medicine application". The categories of the second theme were "the husband's emotional support", "concentration", "protecting sexual health", "the need for having sexual relationships", "diminishing factors for unpleasant sexual relationships", "paying attention to wife's readiness to start sexual relationships" and "decreasing factors that suppress spouse's sexual desire" (Fig. 1). An example is presented of the codes and categories extracted the codes, and categories extracted from these themes (Tables 4, 5).

"Physical Rehabilitation"

This theme was composed of two categories as resolving physical problems contributing to sexual relationships and supplementary medicine application.

Resolving Physical Problems Contributing to Sexual Relationships

All participants referred to the need for resolving physical problems contributing to sexual relationships. This category was composed of four codes including physical ability for having sexual relationships, the spouse's help for taking proper positions during sexual intercourse, and controlling urinary and fecal incontinence. They also mentioned the necessity of physical ability for having sexual relationships and the spouse's help for taking a proper position for sexual intercourse. To this regard, one of the participants said:

> I feel that my lower back is too heavy to bend for holding my legs upward (A 45 years old woman with spinal cord stenosis).
>
> Another interviewee said:
>
> During sexual intercourse, my spouse helps me to keep my legs in a position that makes me feel comfortable (A 30 years old woman with myelomeningocele, Master degree education).

Controlling urinary and fecal incontinence during sexual relationships was a big challenge for the women. One of participants said:

> My big problem for having sex… I have urinary incontinence and sometimes, fecal incontinence (A 30 years old woman with myelomeningocele, Master degree, education).

Table 1 The demographic characteristics of the women in this study

Age (mean of ages)	Education level (number/%)			Occupation (number/%)		Level of injury (number/%)			
	Guidance-school or less	High-school diploma	University degree	Housewife	Employee	Cervical	Thoracic	Lumbar	Unknown
25–52 (39.13)	4 (26.7)	6 (40)	5 (33.3)	13 (86.7)	2 (13.3)	1 (6.7)	8 (53.3)	3 (20)	3 (20)

Age (mean of ages)	Causes for Injury (number/%)			Pregnancy in the post-injury period (number/%)			
	Car accident	Congenital	Others	Non	Once	Twice	More
25–52 (39.13)	11 (73.3)	2 (13.3)	2 (13.3)	10 (66.7)	2 (13.3)	2 (13.3)	1 (6.7)

Table 2 Characteristics of spouses of women with spinal cord injuries

Row	Age	Educational level	Occupation	Physical health status	Cause for the spouse's injury	Duration of marriage (years)	Duration of injury (years)	Level of spouses' injury	Location of interviews
1	36	Master degree	Employee	Healthy	Car accident	3	14	L1, L2	The Protection Center of Spinal Cord Disables of Iran, Molavi branch
2	60	Diploma	Driver	Healthy	Accident	36	9	C6, C7	Protection Center of Spinal Cord Disables of Iran, Molavi branch
3	34	Diploma	Employee	Healthy	Accident	8	5	T8, T9, T10	Protection Center of Spinal Cord Disables of Iran, Tajrish branch

Table 3 The characteristics of the key informants in this study

Row	Age	Occupation	Records of service (years)	Educational level	Location of interviews
1	35	Social worker	5	Master degree	Protection Center of Spinal Cord Disables of Iran, Molavi branch
2	25	Occupational therapist	3	Bachelor degree	Protection Center of Spinal Cord Disables of Iran, Molavi branch
3	48	Physiotherapist	20	Master degree	Narmak Welfare Center
4	45	Gynecologist	12	Doctoral degree	Private office
5	41	General director of Protection Center of Spinal Cord Disables of Iran	10	Master degree	Protection Center of Spinal Cord Disables of Iran, Tajrish branch

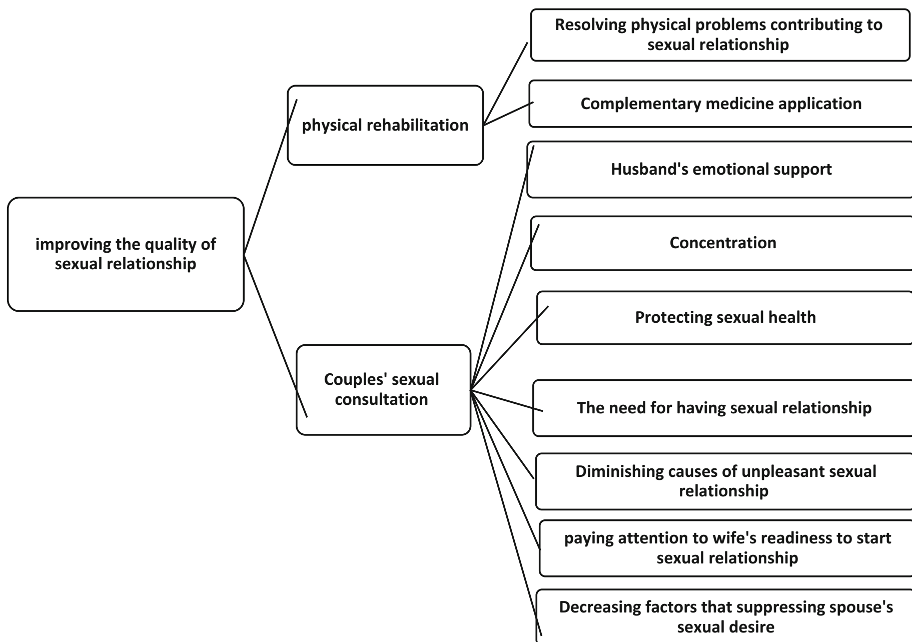

Fig. 1 The schematic illustration of the sexual health needs and dimensions of the theme of "improving the quality of sexual relationships in women with spinal cord injuries"

Complementary Medicine Application

Some women described the effect of supplementary medicine on their physical rehabilitation. This category is composed of two codes including acupuncture for controlling

Table 4 Codes and categories extracted from the theme "physical rehabilitation"

Category	Code
Resolving physical problems contributing to sexual relationships	Physical ability for having sexual relationships
	The spouse's help for taking proper positions during sexual intercourse
	Controlling urinary incontinence
	Controlling fecal incontinence
Complementary medicine application	Acupuncture for controlling urinary and fecal incontinence
	Acupuncture for the recurrence of orgasm

Table 5 Codes and categories extracted from the theme of "couples' sexual consultation"

Category	Code
The husband's emotional support	Emotional relationship despite the lack of sexual relationships
	Paying attention to sexual demand
	Attention to orgasm
	Proper reaction to fecal incontinence during sexual relationships
Concentration	Visualizing sexual pleasure
	Focusing to reach mental orgasm
Protecting sexual health	A lack of sexual abuse
	A lack of sexual violence
The need for having sexual relationship	Non-compulsory sexual relationships
	Unblushing sexual relationships
	Post injury sexual relationships
Diminishing factors for unpleasant sex	Feeling of sexual intercourse
	Enjoying sexual relationships
	The spouse's unawareness about the wife's dissatisfaction
	Pretending satisfaction with sexual intercourse
	Lubricated vaginal discharge
	Persistency of sexual desire in the woman
Paying attention to wife's readiness to start the sexual relationships	Interest in sexual relationships and thanking the spouse's high sexual desire
	The husband's interest in getting sexual relationships proposal on the part of the wife
Decreasing factors that suppress the spouse's sexual desire	Genital health
	Elimination of spasm during sexual relationships

urinary and fecal incontinence and acupuncture for the recurrence of orgasm. One of the women commented:

> Acupuncture really influenced my urinary incontinence and many my feminine feelings returned even sexual orgasm (A 25 years old woman, Associate degree education, thoracic injury).

Couples' Sexual Consultation

> The theme was as the main need for promoting the quality of sexual relationships. This theme was consisted of seven categories: as "husband's emotional support", "concentration", "protecting sexual health", "the need for having sexual relationships", "diminishing factors for unpleasant sexual relationships", "paying attention to the wife's readiness to start sexual relationships", and decreasing factors that suppress the spouse's sexual desire".

The Husband's Emotional Support

According to participants, the spouse's emotional support in sexual relationships was critical. This category was composed of four codes including emotional relationship despite having no sexual relationships, paying attention to sexual demands, attention to orgasm and proper reaction to fecal incontinence during sexual relationships. With regard to emotional relationships despite having no sexual relationships, a participant mentioned:

> There is no [sexual] relationship between us, not even kissing and touching (A 30 years old woman, Bachelor degree education, Lumbar injury).

Another interviewee stated her concern about sexual demands:

> I went to the bathroom to get cleaned and then I said lets have sexual relationships…He slept and didn't care at all (A 30 years old woman with myelomeningocele, Master degree education, myelomeningocele).

Paying attention to sexual orgasm was described by a participant as follow:

> What is more important is that I am satisfied. My husband is really experienced and he always cares about it (A 25 years old woman, college degree education, Thoracic injury).

The spouse's proper reactions following fecal incontinence during sexual relationships was a big challenge for the women. A participant commented:

> If in sexual relationships my stomach gets upset, he [the husband] pauses for some seconds and no longer continues the sexual relationships, (A 30 years old woman with myelomeningocele, Master degree education).

Concentration

The quality of sexual relationship in such people could be improved through spouses' sexual consultations with an emphasis on concentration. This category was composed of two codes as "visualizing sexual pleasure" and "focusing to reach mental orgasm". One of participants said:

> I solely engage my mind to sexual relationships… Ok, this is my check list for sexual relationships and I should tick each item to get to the next one… My feeling is subjective…at that moment I entirely inculcate in my mind that … (A 30 years old woman with myelomeningocele, Master degree education).

Protecting Sexual Health

Some participants mentioned the necessity of protecting sexual health through couples' sexual consultations which could promote the quality of sexual relationships. This category had two subcategories as "a lack of sexual abuse" and "a lack of sexual violence". One of the social workers said:

…. They [men] say that they want to get married but they [men] just abuse such women without getting married with them (A social worker, 35 years old, 5 years record of service).

One interviewee shared her experience with regard to a lack of sexual violence:

He just satisfies himself forcefully and does not do anything for me to reach orgasm (A 30 years old woman with myelomeningocele, Master degree education).

The Need for Having Sexual Relationships

All participants needed to have sexual relationships. This category was consisted of the following subcategories as "non-compulsory sexual relationships", "unblushing sexual relationship", and "post-injury sexual relationships".

With regard to the need for non-compulsory sexual relationships, a participant said:

My husband however is a man and I accept all his difficulties with my all heart for sexual relationships (A 35 years old woman, guidance school, thoracic injury).

Another participant emphasized unblushing sexual relationships:

We had no [sexual] relationships for 2 or 3 months. I had a catheter that upset me (A 48 years old woman, elementary school education, lumbar injury).

A participant described her need for post-injury sexual relationships as follows:

After the accident we didn't have sexual relationships at all (A 30 years old woman, bachelor degree education, lumbar injury).

Diminishing Factors for Unpleasant Sexual Relationships

Through couples' sexual consultations, causes for unpleasant sexual relationships were found for improving the quality of such relationships. This category was composed of six subcategories as "the feeling of sexual intercourse", "enjoying sexual relationships"," spouse's unawareness about the wife's lack of satisfaction", "pretending to be satisfied with sexual intercourse", "lubricated vaginal discharge" and "persistency of sexual desire in the woman".

A participant said about the need for sexual intercourse:

Just at the time of sexual intercourse I feel pressure and my vagina is numb (A 30 years old woman with myelomeningocele, Master degree education).

Another interviewee emphasized the need for enjoying sexual relationship:

I don't enjoy it at all (A 52 years old woman with Human T cell Lymphotropic Virus, diploma degree education)

A participant stated her spouse's unawareness of lack of sexual satisfaction:

> My husband doesn't know that I have no feelings in sexual relationships. I haven't told him (A 37 years old woman, bachelor degree education, lumbar injury).

Pretending to being satisfied with sexual intercourse was an important issue from the women's perspectives:

> By making sound I pretend to be satisfied (A 37 years old woman, bachelor degree education, lumbar injury)

Another interviewee told about lubricated vaginal discharge:

> As soon as we begin kissing and caressing, I have lubricated vaginal discharge (A 37 years old woman, bachelor degree education, lumbar injury).

Another participant refers to the persistency of female sexual desire as follows:

> I think that I have lost my sexual desire (A 30 years old woman, bachelor degree education, lumbar injury).

Paying Attention to the Wife's Readiness to Start Sexual Relationships

From some of participants' perspectives, the husband's attention to the wife's readiness to start sexual relationships is critical. This category was composed of two subcategories as "Interest in sexual relationships and "thanking the spouse's high sexual desire" and "the husband's interest in getting sexual relationships proposal on the part of the wife".

A participant commented:

> He enters the house and wants me to be ready. He solely keeps saying why you are so apathetic and you never give me proposal for sexual relationships (A 52 year old woman with Human T-cell Lymphotropic Virus, diploma education degree).

Decreasing Factors that Suppress the Spouse's Sexual Desire

The detection of factors that suppressed sexual desire through couples' sexual consultations could help with the promotion of the quality of sexual relationships. This category was composed of two subcategories as "genital health" and "the elimination of spasm during sexual relationships".

A husband of a women who participated in the study said:

> Her genital health has slowed down our sexual activity and her legs cramp (A 36 years old man, 3 years of married life with the women with spinal cord injury).

Discussion

This research was the first study aimed to explain the sexual needs of women with spinal cord injuries in Iran. The data analysis led to the exploration of the women's sexual needs in two dimensions as "physical rehabilitation" and "couples' sexual consultations". Physical problems affecting sexual relationships were described by the participants. However, the severity and variation of physical problems affected the quality of the women's sexual relationships.

The needs for physical rehabilitation was described by the women. This could be achieved through the elimination of physical problems for creating greater abilities to have sexual relationships because the women had a limited mobility besides physical weaknesses resulting from spinal cord injuries. Therefore, they needed rehabilitation to reinforce their physical abilities for improving the quality of their sexual relationships. According to our findings the sexual life of a person with spinal cord injury is influenced by physical injuries, through most women are sexually active and the frequency of sexual intercourse and ability to reach orgasm is reduced. However, they are satisfied with their sexual life [23].

The majority of the participants highlighted their husband's help to taking proper positions during sexual intercourse in physical rehabilitation. A lack of support and sexual education was another challenge described by the women. The women believed that education about taking sexual positions and how they could adapt positions with their level of injury promoted the quality of women's sexual relationships [24]. Kreuter et al. [25] state that mobility problems and taking a proper position during sexual intercourse affected the women's sexual life. Therefore, the cooperation of sexual partners for taking an appropriate position helped with the improvement of their sexual relationships [26].

The participants mentioned that for physical rehabilitation, diminishing problems related to fecal and urinary incontinence during sexual relationships was required. Bladder and intestinal problems not only affect the sexual life of women with spinal cord injury [25] but also led to sexual disorders [27]. Sexual intercourse or orgasm may stimulate urinary and fecal incontinence [24]. Sale et al. [28] argued that urinary incontinence was correlated with sexual satisfaction, but fecal incontinence was not a predictive factor for sexual satisfaction. Some participants believed that acupuncture was helpful in physical rehabilitation and improvement of urinary and fecal incontinence. Acupuncture without posing any risk to physical health can improve sensory-mobility performance of bladder and intestines in people with spinal cord injuries [29]. The application of this method can increase the maximum cystometric bladder capacity through reducing detrusor muscle hyperreflexia leading to the improvement of urinary incontinence [30]. Some participants described the positive impact of acupuncture on orgasm and physical rehabilitation. Acupuncture improves sexual performance particularly sexual desire, sexual arousal, lubrication and orgasm [31]. Khamba et al. [32] argue that acupuncture improved sexual desire and lubrication in women and did not have a significant effect on other sexual stages. However, no study addressed the impact of acupuncture on sexual performance among women with spinal cord injuries so far.

All participants mentioned their needs for couples' sexual consultations, particularly for promoting their spouse's emotional relationships affected by cultural and familial differences [33]. Insufficient sexual education and consultation could have detrimental effects on the rehabilitation program [26]. Enhancing couples' knowledge through consultation redress wrong beliefs among couples and promote their sexual life. Abedi et al. [13] show that sexual consultations were not prevalent among Iranian married women with disability.

Some participants expressed their needs for sexual consultations about the spouse's emotional support despite the absence of sexual relationships. After short or long periods of rehabilitation, such women noticed that they had to encounter their physical and psychological problems and expressed their sexual interests to feel better about their emotional loneliness [34]. The results of this study suggested that the women needed their husbands' responses to their sexual demands. The majority of the participants referred to the persistence of their sexual desire. Research indicated that the frequency of sexual activities

were reduced in women with spinal cord injuries, but they were still interested in sexual intercourse and needed their partners' attention [35].

Most participants considered couples' sexual consultations necessary, especially for their husbands, to help them reach sexual orgasm. The findings of this study demonstrated that sexual desire and orgasm in the women with spinal cord injuries were reduced. Fisher et al. (2002) also indicated that the majority of the women did not expect to see any shift in the capacity of sexual orgasm compared to the pre-traumatic period.Within hospitalization and six months later, lower sexual motivation and orgasm, increased lubrication, and higher sexual satisfaction were reported [36]. Orgasm and the performance of reproductive system in such women are much lower than healthy women [37]. Biering-Sorensen et al. [17] refer to the existence of sexual satisfaction in women with spinal cord injuries. However, Soroush et al. [15] in a study on veterans with spinal cord injuries found no relationships between sexual satisfaction and level of spinal cord injury. Stettini [38] also argue that in physical disabled people, severity of disability is correlated to sexual satisfaction, self-confidence in sex, self-confidence about their bodies, anxiety and depression. Lee et al. [16] found no relationship between spinal cord injury and the indicators of female sexual performance. However, the results of a study conducted in Turkey showed that married women suffering from physical disabilities had sexual performance disorders [18]. During the rehabilitation program, sexual education is necessary to encourage such individuals, for creating the maximum sexual responses in them, and providing them with conditions to perceive and experience sexual pleasure and orgasm [35].

Some participants emphasized the necessity of consultations with their husbands about proper reactions in case of fecal incontinence during sexual relationships. They are worried to face sphincter problems that may lead to dissatisfaction in the marital life [34]. Therefore, couples' awareness about the probability of such problems and education about timely defecation before sexual intercourse can promote couples' sexual health.

The majority of the participants needed consultations to reinforce their concentration and imaginations to reach sexual orgasm. Some of the women with spinal cord injuries may reach an imaginative orgasm concurrent with their partner's orgasm accompanied by lassitude, slower pulse rate and drowsiness [39]. Most of them pretended to be sexually satisfied and emphasized that their husbands were unaware about their dissatisfaction. Studies indicated that there were three cognitive reasons that why women pretended to have reached orgasm: the improvement of their partner's sexual experiences, deception and disguising their own sexual reluctance [40].

Some participants considered sexual consultations necessary for avoiding sexual abuse and preserving of sexual health. According to a study conducted in Southern Africa, women with physical disabilities were more subjected to risk for sexual violence [41] and sexually transmitted infections. They not only are sexually active but also are more frequently subjected to high-risk sexual activities [42]. Women with disability have reported sexual violence and abuse by their husbands [43].

The results of a study on female disabled university students indicated that they experienced sexual abuse and violence on the part of their sexual partners [44]. Nepali's women with disability reported sexual violence during their pre-married life [45]. A study in Switzerland demonstrated that disabled people, particularly women were the victims of sexual contacts such as intercourse, touching and kissing and non-contact relationships such as gaudiness, verbal annoyance and exposure to sexual activities [46].

Most participants emphasized the need for couple's consultations to have an unblushing and non-obligatory sexual relationship. Bangladeshi's women reported physical, sexual and emotional abuse by their sexual partners [47]. Moreover, sexual intercourse or orgasm

stimulated urinary and fecal incontinence and, the one's shame at the time of sexual activities [24]. As a result, education on the preplanned intercourse reduces the possibility of such problem. More than half of such women wanted to have sexual activities and a low percentage of them had it. A sense of unattractiveness, lack of ability to satisfy the husband, lack of any feeling in vagina, inappropriate sexual position and vaginal lubrication were barriers to their sexual activities [48]. Fisher et al. [36] also indicated that concerns about their own and their partner's sexual desire following the rehabilitation period besides the lack of knowledge were the main challenges experienced by people with spinal cord injuries. They were worried about their attraction and romantic responses of their sexual partners. Not having a permanent partner and lack of feeling in genital organs are two main factors affecting sexual activities [49]. Most participants mentioned the necessity of couples' consultation for diminishing an unfavorable relationship, feeling pleasure in sexual relationships, pretending being satisfied in case of dissatisfaction, lubricating vaginal, and to having stability in the woman's sexual interests. Such women lose their genital organ's feelings in proportion to the level and scope of their spinal cord injuries. However, it does not mean that they do not enjoy sexual relationships [39]. Therefore, couples' consultations should emphasize the necessity of feelings during sexual intercourse and how to arouse this feelings in such women. Reduced feeling can affect sexual relationships in different ways. Lower sexual motivations may lead to vaginal abrasion as a result of unsuccessful lubrication [50]. Therefore, in couples' consultations, special attention should be paid to increasing lubrication for arising a pleasant feeling at the time of sexual intercourse and preventing vaginal injuries.

Most participants emphasized sexual consultations for promoting the husband's attention to the wife's readiness to start the sexual relationships. Different types of sexual desire among couples who had long romantic relationships have been reported. There are inconsistent results on sexual desire and interests of man and woman. However, women usually have showed less sexual interests. Indeed, sexual interests in women varies based on their ages and cultures [51]. Some studies have reported inconsistencies in sexual desires on the part of women because these women complained about their husband's lower sexual interests. Some studies suggested strategies that could be taken by women to handle their sexual desire against the lower sexual desire of their husbands and manage differences in their sexual interests [51]. Respecting both partners' sexual desires and presenting solutions to keep balance couples' sexual desires are needed.

The participants' husbands also stressed that couples' sexual consultations diminished those factors that hindered sexual drive such as spasm during sexual relationships or genital health issues. Washing genital organs and keeping them clean before and after sexual intercourse is necessary to ensure that the person is not affected by sexually infectious diseases. Vaginal discharge or urine collected in the wrinkles of genital organs smell odoriferous that may put an end on the husband's sexual desire and make him reluctant to continue sexual intercourse [39]. Genital health, particularly in those persons who have to use urinary catheter, should be included in couples' consultations. Moreover, in the majority of people with spinal cord injuries, spasm happens due to bending thighs or pelvis which may leave a negative impact on their sexual interest and performance. For diminishing spasm, some particular positions are recommended that require partner's cooperation [26]. However, a study indicated that spasm do not affect sexual activities [49]. Consequently, it is necessary to educate couple regarding those positions that make spasm less probable during sexual intercourse.

Limitations

Sexual issues are affected by social cultural norms. Although this study was conducted in an urban area of Iran but the generalizability of the findings should be done with caution. Talking about sexual issues are embracing and not all participants might be interested in sharing their sexual experiences.

Conclusions

This study described sexual health needs of women with spinal cord injuries for the first time in Iran. The women with spinal cord injury required physical rehabilitation through physical therapy and taking complementary medicine. Likewise, they needed couples' sexual consultations to promote their husbands' emotional support, increase concentration, protect their sexual health, diminish factors leading to unfavorable sexual relationships, attract their husband's attention to their own readiness for starting sexual relationships, and limit factors that suppressed the husband's sexual desire. Therefore, rehabilitation programs should focus on the improvement of couple's sexual relationships. The positive impact of rehabilitation on women's physical abilities are important for improving women's sexual relationships. In addition, inappropriate information may increase marital and family problems. Consequently, couples' sexual consultations based on their needs can promote the women's experiences of sexual relationships.

Acknowledgements The paper is taken from PhD Thesis of reproductive health submitted at International Branch of Shahid Beheshti University of Medical Science, Tehran-Iran. Hereby, I would like to appreciate all participants, International Branch of Shahid Beheshti University of Medical Sciences, Vice chancellor for research in Shahid Beheshti School of Nursing and Midwifery, Tehran Organization of Welfare and Protection Center of Spinal Cord Disables of Iran.

Funding This study was funded by Vice chancellor for research affiliated with Shahid Beheshti School of Nursing and Midwifery, Tehran, Iran (Grant Number 8217).

Compliance with Ethical Standards

Ethical Approval The ethical approval for this study was obtained from the Ethical committee affiliated with Shahid Beheshti University of Medical sciences (No. IR.SBMU.IASB.REC). Also, necessary permissions were obtained from the Vice chancellor for research and education affiliated with Shahid Beheshti School of Nursing and Midwifery and International branch of Shahid Beheshti University of Medical Sciences, Tehran, Iran. Also, permission to enter the research zone were granted by Tehran Organization of Welfare and Protection Center of Spinal Cord Disables of Iran.

Informed Consent Informed consent was obtained from all individual participants for taking part in this study and tape-recording the interviews. All measures were taken in this study to keep the collected data confidential and not to disclose their identities.

References

1. Rafaee Shirpak, K., Shariat, M., Ramezanzadeh, F.: Family Health. In: Hatami, H., Razavi, S.M., Eftekhar Ardebili, H., Majlesi, F., Sayed Nozadi, M., Parizadeh, S.M.J. Text Book of Public Health (in Persian), 2nd edn, pp 1590–1666. Arjmand, Tehran (2013)

2. Defining sexual health: report of technical consultation on sexual health. Geneva. Publishing World Health OrganizationWeb. http://www.who.int/reproductivehealth/topics/sexual_health/sh_definitions/en/(2006). Accessed 4 Sept 2016
3. Developing sexual health programmes: a framework for action. Geneva. Publishing World Health OrganizationWeb. http://www.who.int/reproductivehealth/publications/sexual_health/rhr_hrp_10_22/en/(2010). Accessed 4 Sept 2016
4. Comprehensive sexuality education, Giving young people the information, skills and knowledge they need. United Nations Population Fund. http://www.unfpa.org/public/home/adolescents/(2011). Accessed 4 Sept 2016
5. Mirkhani, M.: Principles of Rehabilitation, 3rd edn. University of Social Welfare and Rehabilitation, Tehran (2011). **(in Persian)**
6. Nodehi Moqadam, A.: Principles of Rehabilitation, 2nd edn. University of Social Welfare and Rehabilitation, Tehran (2006). **(in Persian)**
7. New, P.W., Epi, M.C., Baxter, D., Farry, A., Noonan, V.K.: Estimated the Incidence and prevalence of traumatic spinal cord injury in Australia. Arch. Phys. Med. Rehabil. **96**, 76–83 (2015)
8. Signore, C., Spong, C.Y., Krotoski, D., Shinowara, N.L., Blackwell, S.C.: Pregnancy in women with physical disabilities. Obstet. Gynecol. **117**(4), 935–947 (2011)
9. Rahimi Movaghar, V., Saadat, S., Rsouli, M.R., Ganji, R., Ghahramani, M., Zarei, M.R., Vaccaro, A.R.: Prevalence of spinal cord injury in Iran, Tehran. J. Spinal Cord Med. **32**(4), 428–431 (2009)
10. Ayoubian, M., Abdollahi, A., Amiri, M.: Study cause of SCI in client user of rehabilitation services. J. Rehabil. **5**(4), 18–23 (2005). **(in Persian)**
11. Morton, C., Le, J.T., Shahbandar, L., Hammond, C., Murphy, E.A., Kirschner, K.L.: Pregnancy outcomes of women with physical disabilities: a matched cohort study. PM R **5**(2), 90–98 (2013)
12. Nosek, M.A.: The John Stanley Coulter lecture. Overcoming the odds: the health of women with physical disabilities in the United States. Arch. Phys. Med. Rehabil. **81**(2), 135–138 (2000)
13. Abedi, S., Haji Kazemi, E.S., Jahdi, F., Hoseini, F.: Disabled women and reproductive health care services. Iran. J. Nurs. **17**, 30–40 (2004). **(in Persian)**
14. Rahmanian, F., Simbar, M., Rmezankhani, A., Zayeri, F.: Gender sensitive STIs/HIV/AIDS prevention policies: a qualitative study. Health **6**, 1246–1254 (2014)
15. Soroush, M., Modirian, E., Zamani, H., Attari, S.: Fertility and sexual function after spinal cord injury. IJWPH **1**(1), 22–35 (2008)
16. Lee, N.G., Andrews, E., Rosoklija, I., Logvinenko, T., Johnson, E.K., Oates, R.D., Estrada, CR.: The effect of spinal cord level on sexual function in the spina bifida population. J. Pediatric Urol. **11**(3):142.e1–142.e6 (2015). doi:10.1016/j.jpurol.2015.02.010
17. Biering-Sorensen, I., Hansen, R.B., Biering-Sorensen, F.: Sexual function in a traumatic spinal cord injured population 10–45 years after injury. J. Rehabil. Med. **44**, 926–931 (2012)
18. Kamile, A., Emel, E., Belgin, A., Esra, K.H., Ali, S.: An investigation of sexual/reproductive health issues in women with a physical disability. Sex. Disabil. **32**(2), 221–229 (2014)
19. Lopiano, J.: Contraceptive options for intellectually disabled women. Postgrad. Obstet. Gynecol. **30**(2), 2–6 (2010)
20. Adib Haj Baqeri, M., Parvizi, S., Salsali, M.: Qualitative Research Methods. Boshra, Tehran (2014). **(in Persian)**
21. Elo, S., Kyngas, H.: H,: The qualitative content analysis process. J. Adv. Nurs. **62**(1), 107–115 (2008)
22. Graneheim, U.H., Lundman, B.: Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse Educ. Today **24**(2), 105–112 (2004)
23. Ferreiro-Velasco, M.E., Barca-Buyo, A., Salvador de la Barrera, S., Montoto-Marques, A., Miguens Vazquez, X., Rodriguez-Sotillo, A.: Sexual issues in a sample of women with spinal cord injury. Int Spinal Cord Soc. **43**, 51–55 (2005)
24. Fritz, H.A., Dillaway, H., Lysack, C.L.: "Don"t think paralysis takes away your womanhood": sexual intimacy after spinal cord injury. Am. J. Occup. Ther. **69**(2), 1–10 (2015)
25. Kreuter, M., Taft, C., Siosteen, A., Biering-Sorensen, F.: Women"s sexual functioning and sex life after spinal cord injury. Int. Spinal Cord Soc. **49**, 154–160 (2011)
26. Hess, M.J., Hough, S.: Impact of spinal cord injury on sexuality: broad-based clinical practice intervention and practical application. J. Spinal Cord Med. **35**(4), 211–218 (2012)
27. Anderson, K.D., Borisoff, J.F., Johnson, R.D., Stiens, S.A., Elliott, S.L.: The impact of spinal cord injury on sexual function: concerns of the general population. Int. Spinal Cord Soc. **45**, 328–337 (2007)
28. Sale, P., Mazzarella, F., Pagliacci Agosti, M., Felzani, G., Franceschini, M.: Predictors of changes in sentimental and sexual life after traumatic spinal cord injury. Arch. Phys. Med. Rehabil. **93**, 1944–1949 (2012)

29. Dorsher, P.T., McIntosh, P.T.: Acupuncture's effects in treating the sequelae of acute and chronic spinal cord injuries: a review of allopathic and traditional Chinese medicine literature. Evidence-Based Complementary and Alternative Medicine. Article ID 428108 (2011)
30. Honjo, H., Naya, Y., Ukimura, O., Kojima, M., Miki, T.: Acupuncture on clinical symptoms and urodynamic measurements in spinal-cord-injured patients with detrusor hyperreflexia. Urol. Int. **65**(4), 190–195 (2000)
31. Oakley, S.H., Walther-Liu, J., Crisp, C.C., Pauls, R.N.: Acupuncture in premenopausal women with hypoactive sexual desire disorder: a prospective cohort pilot study. Sex Med. **4**, e1–e6 (2016)
32. Khamba, B., Aucoin, M., Lytle, M., Vermani, M., Maldonado, A., Iorio, C., Cameron, C., Tsirgielis, D., D'Ambrosio, C., Anand, L., Katzman, M.A.: Efficacy of acupuncture treatment of sexual dysfunction secondary to antidepressants. J. Altern. Complement Med. **19**(11), 862–869 (2013)
33. Kreuter, M.: Spinal cord injury and partner relationships. Spinal Cord **38**(1), 2–6 (2000)
34. Colombel, J.C.: Women's sexual life after spinal cord injury: psychological aspects. Prog. Urol. **22**(11), 622–627 (2012)
35. Perrouin-Verbe, B., Courtois, F., Charvier, K., Giuliano, F.: Sexuality of women with neurologic disorders. Prog. Urol. **23**(9), 594–600 (2013)
36. Fisher, T.L., Laud, P.W., Byfield, M.G., Brown, T.T., Hayat, M.J., Fiedler, I.G.: Sexual health after spinal cord injury: a longitudinal study. Arch. Phys. Med. Rehabil. **83**(8), 1043–1051 (2002)
37. New, P.W., Currie, K.E.: Development of a comprehensive survey of sexuality issues including a self-report version of the International Spinal Cord Injury sexual function basic data sets. Spinal Cord (2015). doi:10.1038/sc.2015.216
38. Stettini, P.: Sexual life and physical disability: an Italian research on neuromuscular disabled subjects. Sexologies **17**(1), 39 (2009)
39. Heroabadi, S., Borjian, M.: A Guide for Paralytic Partners, 1st edn. Fonoon Maoaser, Tehran (2006). **(in Persian)**
40. McCoy, M.G., Welling, L.I., Shackelford, T.K.: Development and initial psychometric assessment of the reasons for pretending orgasm inventory. Evol. Psychol. **13**(1), 129–139 (2015).
41. Van der Heijden, I., Abrahams, N., Harries, J.: Additional layers of violence: the intersections of gender and disability in the violence experiences of women with physical disabilities in South Africa. J. Interpers. Violence. (2016). doi:10.1177/0886260516645818
42. Kassa, T.A., Priv-Doz, T.L., Birru, S.K., Riedel-Heller, S.G.: Sexuality and sexual reproductive health of disabled young people in Ethiopia. Sex. Transm. Dis. **41**(10), 583–588 (2014)
43. Platt, L., Powers, L., Leotti, S., Hughes, R.B., Robinson-Whelen, S., Osbum, S., Ashkenazy, E., Beers, L., Lund, E.M., Nicolaidis, C.: The role of gender in violence experienced by adults with developmental disabilities. J. Interpers. Violence. **32**(1):101–129 (2015)
44. Findley, P.A., Plummer, S.B., McMahon, S.: Exploring the experiences of abuse of college students with disabilities. J. Interpers. Violence. **31**(17):2801–2823 (2015)
45. Puri, M., Misra, G., Hawkes, S.: Hidden voices: prevalence and risk factors for violence against women with disabilities in Nepal. BMC Public Health **15**, 261 (2015)
46. Mueller-Johnson, K., Eisner, M.P., Obsuth, I.: Sexual victimization of youth with a physical disability: an examination of prevalence rates, and risk and protective factors. J. Interpers. Violence **29**(17), 3180–3206 (2014)
47. Hasan, T., Muhaddes, T., Camellia, S., Selim, N., Rashid, S.F.: Prevalence and experiences of intimate partner violence against women with disabilities in Bangladesh: results of an explanatory sequential mixed-method study. J. Interpers. Violence **29**(17), 3105–3126 (2014)
48. Julia, P.E., Othman, A.S.: Bariers to sexual activity: counselling spinal cord injured women in Malaysia. Int. Spinal Cord Soc. **49**, 791–794 (2011)
49. Otero-Villaverde, S., Ferreiro-Velasco, M.E., Montoto-Marques, A., Salvador de Barrera, S., Arias-Pardo, A.I., Rodriguez-Sotillo, A.: Sexual satisfaction in women with spinal cord injuries. Spinal Cord **53**(7), 557–560 (2015)
50. Pendleton, H.M.H., Schultz-Krohn, W.: Occupational Therapy. Sexuality and Physical Dysfunction, 7th edn, pp. 295–312. Elsevier, St Louis (2013)
51. Herbenick, D., Mullinax, M., Mark, K.: Sexual desire discrepancy as a feature, not a bug, of long term relationships: women's self-reported strategies for modulating sexual desire. J. Sex. Med. **11**, 2196–2206 (2014)