TITLE PAGE

Talking about post-injury sexual functioning: the views of people with spinal cord injuries. A qualitative interview study.

Let’s talk about sex too!

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AUTHORSHIP CRITERIA

Both authors confirm that they meet the authorship criteria and are in agreement with the content of the manuscript.

SN and VM made substantial contributions to conception and design, analysis and interpretation of data. SN collected the data. SN and VM drafted the manuscript and revised it critically for important intellectual content. SN and VM gave final approval of the version to be published and have participated sufficiently in the work to take public responsibility for appropriate portions of the content. SN and VM have agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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CONFLICTS OF INTEREST STATEMENT

The authors declare no conflict of interest.

ABSTRACT

Aim: to explore perceptions of people with spinal cord injuries regarding the information they received during their rehabilitation programme on post-injury sexual functioning.

Background: spinal cord injury is a traumatic, life-altering event that is associated with loss of motor and sensory function and sexual impairment. Existing evidence suggests that sexual issues are poorly handled during the rehabilitation phase of the patient’s journey.

Design: a descriptive qualitative design was utilised in this study.

Methods: twenty-nine people with spinal cord injury participated in qualitative in-depth interviews between November 2017 and April 2018, and data were analysed using the Burnard (1991) thematic analysis framework.

Results: some participants indicated they were sexually inactive prior to their spinal cord injury. They testified that they had not received information on post injury sexual functioning. Many participants who received post-injury information on sexual functioning, reported dissatisfaction with the content and timing of this information.

Conclusion: personal conversations between spinal cord injured patients and dedicated members of the interdisciplinary health team can enhance the quality of rehabilitation care and patients’ satisfaction with rehabilitation care. Nurses are central clinicians in the rehabilitation programme of spinal cord injured patients and should engage in individually designed conversations about post-injury sexual functioning.

SUMMARY STATEMENT

*What is already known about this topic?*

* Spinal cord injury causes significant disturbances of sexual functions and sexuality with potential serious implications for sexual relationships.
* Sexual health issues are considered important aspects of holistic care but are not routinely addressed in healthcare settings.
* Spinal cord injuries units provide rehabilitation for people with spinal cord injuries.

*What this paper adds:*

* There are multiple barriers to providing high quality information on sexual functioning within the rehabilitation setting, associated with personal, clinician, and systems related factors.
* Determinations regarding individualised plans for sexual health conversations must be collaborative with the patients and possibly their family members, considering the individual views of patients regarding the best timing, content and most appropriate method for such interventions.
* The experiences and views of people with spinal cord injury are diverse and probably culturally dependent, and there are inherent risks associated with stereotypical attitudes to sexual behaviour and age.

*The implications of this paper:*

* Spinal cord rehabilitation services must respond to the identified unmet needs of people with spinal cord injury regarding education on sexual functioning.
* Multidisciplinary teams that utilise a holistic approach designed collaboratively with the individual with spinal cord injury will have the best potential for success.
* To be able to successfully realise rehabilitation standards, clinicians must be immersed in techniques and strategies that motivate and guide them in discussing sexual functioning and other sexual health related issues.

KEYWORDS

Interdisciplinary Communication, Interview, Nursing, Patient Care Team, Qualitative Research, Rehabilitation, Sex Education, Spinal Cord Injuries.

INTRODUCTION

The World Health Organization (2013) defined spinal cord injury (SCI) as damage to the spinal cord resulting from trauma, disease or degeneration. The annual global incidence of SCI has been estimated at between 250,000 and 500,000, of which approximately 55% are traumatic (Donovan, Francis, Muter, Nevin, & Warren, 2017). It is estimated that 50,000 people are living with SCI in the United Kingdom (UK) (Spinal Injuries Association, 2020).

SCI is a traumatic, life-altering event that is often associated with loss of motor and sensory function as well as sexual impairment (Choi, Kang, & Shin, 2015). Individuals are faced with devastating loss and an abundance of new information that can cause extreme stress and anxiety (Hess & Hough, 2012). Literature suggests that concerns associated with sexual functioning are poorly handled during the rehabilitation phase of the patient’s journey (Donovan et al., 2017), and while sexual functioning is an important aspect of holistic care (Bodner, 2011), it is not routinely (Gianotten, Bender, Post, & Höing, 2006) nor adequately (Evans, 2013; New & Currie, 2016) addressed in healthcare settings.

People with SCI are faced with a lengthy rehabilitation process with life-changing physical adaptations imposed by the injury. While initially reliant on clinicians within an unfamiliar hospital environment, a prolonged rehabilitation phase supported by family and professional carers in their own homes or other rehabilitation settings ensues. Rehabilitation aims to minimise disabilities and assist individuals to work towards recovery of activities and maximum participation in society. While sexuality is acknowledged as a key domain in health that is important for well-being and quality of life, many rehabilitation professionals find sexual issues difficult to address with patients (Simpson, Eng, Hsieh, & Wolfe and the Spinal Cord Injury Rehabilitation Evidence (SCIRE), Research Team, 2012).

Awareness of sexual functioning issues in people with SCI increased in the 2000s and is reinforced by publications emphasising the importance of sexual function as a component of the individual’s rehabilitation process (Hartshorn, D'Castro, & Adams, 2013). Individual injury-related and personal factors combine with clinician-associated and health care systemic factors to influence post-injury adjustment to sexual functioning. Barriers to the provision of education on sexual functioning include limited staff knowledge and skills, staff discomfort, cultural issues and perceptions of clinicians that the expertise lies somewhere else (Choi et al., 2015; Julia & Othman, 2011; Othman & Engkasan, 2011; Parker & Yau, 2012).

Education on sexual functioning (such as genital arousal, ejaculation, and orgasm) should be integral to the rehabilitation programme as maintaining a healthy sex life after SCI is important to many individuals (Hartshorn et al., 2013; Othman & Engkasan, 2011; Saif, Saif, & Sarhan, 2013).

SCI impacts the sexuality of men and women differently. In men, erectile dysfunction and infertility have merited considerable attention in the literature (Spinal Injuries Association, 2014). As women’s ability to become pregnant and deliver a child is largely unaffected following SCI, other aspects of women’s sexual functioning are often assumed unaffected and resulting in less focus on research into women’s compared with men’s sexual functioning after SCI (Celik et al., 2014; Cramp, Courtois, & Ditor, 2015; Iezzoni, Chen, & McLain, 2015; Singh & Sharma, 2005).

It is recommended that effective and holistic rehabilitation is best provided within specialist centres that aim to care for and support people to live a fulfilled and independent life (National Health Service, 2015). NHS England (2014) emphasised that the rehabilitation process, defined as “…the restoration, to the maximum degree possible, of an individual’s function and/or role, both mentally and physically, within their family and social networks and within the workplace where appropriate”, is a shared activity between the person, his or her family and inter-disciplinary team members. While excellent examples of collaborative rehabilitation services had been reported to them, Wessex Strategic Clinical Networks (2015) noted that clinicians and service users across the UK reported that rehabilitation services did not meet service users’ needs.

The opportunities for people with SCI to live productive lives have increased greatly with the development of medical (Intracytoplasmic sperm injection (ICSI), surgical vas aspiration of semen (VASAP)) and information technology (Spinal Injuries Association, 2014). Rehabilitation programmes designed by SCI specialist centres should have such advances in technology imbedded in their rehabilitation practice. This study aims to use qualitative methodology to add to the evolving evidence base.

METHODS

Aim

The aim of this study was to explore perceptions of people with spinal cord injuries about the information they received during their rehabilitation programme on post-injury sexual functioning.

Design

A descriptive qualitative design was chosen. “The goal of qualitative descriptive studies is a comprehensive summarization, in everyday terms, of specific events experienced by individuals or groups of individuals” (Lambert & Lambert, 2012), and can improve our understanding of human beliefs, perceptions, motivations, intentions and behaviours (Parahoo, 2014). The methodology is presented in accordance with the Consolidated Criteria For Reporting Qualitative Research (COREQ) (Tong, Sainsbury, & Craig, 2007) (Table 1).

INSERT TABLE 1 HERE

Participants

The study was conducted at a single centre SCI Unit in Northern Ireland that provides intensive rehabilitation for people with SCI. The unit covers a population of 1.8 million people. To be included, participants:

* had to have a SCI,
* be minimum 18 years old,
* have participated in the centre’s rehabilitation programme,
* and deemed medically fit to participate in the study by their consultant.

Participants were excluded if they were unavailable during the data collection period. A total population purposive sampling approach was implemented, commonly used when the population is small or difficult to access (Etikan, Musa, & Alkassim, 2016).

Data collection

Data were collected through individual face-to-face in-depth interviews between November 2017 and April 2018, guided by an interview framework consisting of open-ended questions focused on major concepts synthesized from the literature (who presented the information, content of the information). The major concepts were agreed within the research team, and the duration of interviews ranged from 45 to 60 minutes. To enhance truthfulness of the interpretation of the narrative data, probes such as ‘In what way?’, ‘What do you mean by that?’, and ‘Can you give an example?’ were used by the interviewer when required. Rigour of the data collection process was enhanced as interviews were audio recorded and a reflexive diary was employed. Validation of findings were assured as transcripts were returned to participants for comments or corrections, and themes were agreed within the research team. The voice of participants is clearly heard in the results section where multiple direct quotations from participants are used to illustrate their views.

Ethical considerations

All participants were given a participant information sheet and a consent form. A date and time for the interview were arranged with individuals who consented. The study was approved by a UK National Health Service research ethics committee, a university research ethics filter committee and the Research Governance Department at the participating health and social care trust.

Data analysis

The qualitative interviews were transcribed verbatim and analysed using the Burnard (1991) fourteen stage thematic content analysis framework. Analysis involved reading and re-reading the transcripts and taking notes on emerging themes from each interview, and data were prepared, reviewed, and categorised into broad themes. Where appropriate, data from the reflexive diaries, which captured non-verbal aspects of the interviews, were merged with the respondents’ narrative to ensure a truthful representation of the experiences of the respondents. To enhance dependability, the transcripts and subsequent analysis were triangulated by one additional research team member to validate themes. Data were member checked against each participant enhancing credibility and confirmability of the findings.

RESULTS

Thirty-one individuals were invited to participate from a total of forty-three people that were discharged from the rehabilitation centre during the data collection period. Participants’ age ranged from 18-96 years. Two individuals declined to participate. Nine participants reported they had received information on sexual functioning during their rehabilitation programme or at out-patient appointments, however all 29 participants expressed their views and experiences on the topic. Five broad themes emerged from the data, illustrated by the participants’ own voice: *It’s a very essential part of my life*, *I wasn’t told anything*, *I’m happy enough*, *One-to-one, face to face, is the best way to go*,and *The timing was right for me.*

*It’s a very essential part of my life*

Some participants explained that they were not sexually active prior to their injury due to marital status, age, or pre-existing illness, and their perceptions reflected such personal contexts.

…I’m divorced for the past twenty years. Because of my illness … I never enjoyed it … just went along with that sex thing. (Female Patient A)

I never married and never had sex. (Female Patient B)

I’m too old for sex…that’s important for the young ones. (Male Patient A)

Participants who had been sexually active prior to their injury affirmed that restoring their sexual function was a key priority for them, and actively sought information on sexual functioning from staff in the rehabilitation centre or online.

… essential part of my life … to know what changes there would be. (Male Patient C)

I really need to know what is going on. (Female Patient C)

Other participants suggested it should be left to the individual to ask for information on sexual functioning while others thought these issues should not be discussed at all during rehabilitation.

It should be up to the patient to ask if he wants to know about these things. (Male Patient E)

I don’t think they should be talking about these things, don’t think there’s a need for it. We are here to learn to walk. (Male Patient F)

*I wasn’t told anything*

Most participants reported that they had not received information on sexual functioning as part of their rehabilitation programme, with some indicating this was acceptable to them.

No … I wasn’t told anything, why are they supposed to talk about things like that? (Male Patient F)

… you are the first person to ask me about that. I didn’t talk about it or want to talk about it, so I didn’t ask anything. (Female Patient B)

Some participants suggested their age may have influenced the education on sexual functioning from some staff members, hinting at age discriminatory attitudes.

Most of the people here are all of an age where I don’t think they, or me, require sex education … I’m sure the staff think the same. (Male Patient G)

They probably looked at me and thought that auld [old] doll is too old for that. (Female Patient E)

A range of individuals provided information on sexual functioning.

Yeah, the consultant mentioned a little bit about sensation, feeling, periods and birth control. (Female Patient C)

Peer support worker [charity worker who visits the centre two days a week] mentioned it, then my social worker … said speak to your consultant. (Male Patient C)

*I’m happy enough*

Some participants reported that receiving information on sexual functioning was not a priority for them during rehabilitation and they had no interest in discussing these issues; other needs were more important.

It was the last thing on my mind at that time, I was more interested in walking again. (Female Patient F)

Never really thought about it, sex never entered my head in the beginning, … [the consultant] mentioned it … said … would talk about it when I came up for out-patient appointment. (Male Patient H)

Other participants were content not receiving information on sexual functioning.

I was not given any information about this … but I don’t need any. I’m happy enough, I only asked questions and got answers to questions that are relevant to me. (Female Patient G)

I was fine and I was happy enough not to talk about sex or sex education. (Male Patient I)

Other participants were not satisfied with the amount of information they received on sexual functioning, considering this as important and wanting more time to discuss the impact of their SCI on sexual function.

I wasn’t given any information … a short discussion at the end of my family meeting, but only because I asked. I would have liked … more information on how my injury would impact on my sex life. (Female Patient I)

I wasn’t given the full range of everything … specific to my injury. (Male Patient D)

*One-to-one, face to face, is the best way to go*

Most participants affirmed that one-to-one discussions with a nurse was their preferred method of receiving information on sexual functioning.

One-to-one, face to face is the best way to go. (Male Patient C)

The only way to discuss that sort of thing would be in private, with a nurse probably. (Female Patient D)

Other participants indicated they would prefer group sessions as they would feel less embarrassed discussing such issues within a group; they could simply listen and hope that someone else would ask the questions they wanted answered.

I think group sessions are the best way … people feel more comfortable … you are not under pressure to talk. Other people asking questions can encourage others to talk. (Female Patient J)

The group might be good if you didn’t want to speak … get answers to the questions you want to know with someone else asking … just listening. (Male Patient J)

Groups, everyone gains from conversation. (Female Patient H)

Some participants considered that information leaflets would be helpful to consolidate the verbal information they had received.

Yes, leaflets would be good, I like reading … could take these home and read them when I have more time. Support groups would be good, I could contact them when I’m at home. (Female Patient I)

I like to look at leaflets and have a contact number of a support group to contact if I need to. (Female Patient F)

The use of digital versatile discs (DVDs) to present information on sexual functioning was not considered appropriate by participants.

DVDs would be too sterile. (Male Patient C)

Would not want a DVD lying around for everyone to see. (Male Patient K)

Other participants liked the option of discussing these issues with a peer support worker and some mentioned a book on the life stories of SCI people given to them by a peer support worker.

… was the only one to mention sex to me and … gave me a book … I took it home to read. Suppose until you have an injury you don’t think about these things, so the book was good to get. (Male Patient J)

I liked talking to … and … give me a book about life stories of people with spinal cord injury, I like reading that sort of thing. (Female Patient F)

*The timing was right for me*

Participants who had received information on sexual functioning suggested these issues be introduced in hospital and followed up during out-patient appointments.

Yeah it was fine … not too invasive. Peer support worker was very good … mentioned it in a casual manner. (Male Patient C)

Doesn’t make any difference when it was given out as long as it is. (Male Patient D)

Yes, it was just right for me. Some other people might not like talking about sex, but I don’t mind. I would like to talk about it again at the six-week review when I have been home for a while. (Male Patient L)

Some participants intimated they were not ready to receive information on sexual functioning during their in-patient rehabilitation programme and suggested that the best time to discuss this was at the six weeks out-patient review appointment.

Yes, the timing was right … me being quiet and backward, awkward. It’s good to know that I can talk about this … as out-patient … would be better then. (Male Patient J)

It wasn’t just the time for me. It was mentioned gradually throughout my stay, it was there if I wanted it. (Female Patient J)

I would like to get home … back to normal …at six-week review appointment, might have some questions then. (Female Patient F)

The least preferred times to present information on sexual functioning was during the medical ward rounds or as part of family meetings, with participants citing their own or their partner’s embarrassment.

One-to-one talk would be less awkward than on the ward rounds with all the student nurses or medical students – it doesn’t make you feel comfortable. I would like a talk with [a senior nurse] rather than the family meeting. (Male Patient D)

I didn’t like to bother you all on the ward rounds … a lot happier when I got to speak to [a senior nurse] on my own. (Female Patient C)

Don’t like the idea of the consultant, me and my husband at … the family meeting, he is quiet and would be embarrassed. (Female Patient J)

In a comfortable, quiet, private environment – not at … the family meeting, don’t know how my husband would feel about that. (Female Patient F)

DISCUSSION

This study aimed to explore the views of people with SCI on the education on sexual functioning they received during their rehabilitation programme. Key findings suggest that many (but not all) people with SCI believe that information on sexual function post injury is important, best facilitated through one-to-one personal discussions between the person with SCI and a professional. Our respondents have confirmed that information on post injury sexual function is not systemised within the rehabilitation programme but is sporadic and contingent on particular professionals and other key workers with a particular interest in such information provision.

The people in this study who were sexually inactive prior to their spinal cord injury due to marital status, age or pre-existing illness, suggested that education on sexual functioning was unnecessary. Such views would be consistent with a culture in Ireland of traditional values and religious beliefs on sexual activity outside marriage and between older people (Catholicscomehome.org, 2021; The General Synod of the Church of Ireland, 2016; Wallace, 2012), but are contrary to much existing literature that affirms that education on sexual functioning are of paramount importance to people with SCI and should be treated as a priority during rehabilitation (Abramson, McBride, Konnyu, Elliott, & the SCIRE, 2007; Hartshorn et al., 2013). In our study, such views were offered by participants who were sexually active prior to their injury, validating that sexual functioning was important to them, and many actively sought information on sexual functioning. Discussions about sexual functioning (and other aspects of sexual life) appear to be neglected by multidisciplinary rehabilitation teams within spinal rehabilitation centres (Burch, 2008; Fritz, Dillaway, & Lysack, 2015).

The timing of the provision of information on sexual functioning has received considerable attention in the literature, much of this literature advocating that such information should be introduced during the in-patient acute rehabilitation stage of the patient’s journey (Saif et al., 2013). However, the discrepancy in our respondents’ views regarding best timing for this education is also reflected in the literature (Fritz et al., 2015). Not all individuals are ready to embrace information on sexual functioning during in-patient rehabilitation, in which critical needs such as mobility, hypothesised to belonging to *physiological needs* in Maslow’s model, take priority (Moreno, Zidarov, Raju, Boruff, & Ahmed, 2017). For these individuals, this educational need, matching *love and belonging* needs in Maslow’s model, could be better situated within their out-patient review appointments (Abramson et al., 2007; Hess & Hough, 2012). This is indeed reflected in some of our respondents’ narrative. Other literature recommends a six months post-injury timeframe for information on sexual functioning, nevertheless, the challenge for clinicians is to appreciate how individuals’ needs change over time so that each individual’s preferred time for education on sexual functioning is ascertained and addressed appropriately (Moreno et al., 2017). Some participants in our study indicated that they wanted information on sexual functioning introduced during their in-patient rehabilitation and further enhanced at their subsequent out-patient appointments. Existing evidence suggests that a majority of people with SCI do not receive sexual functioning education at any stage during or after their acute rehabilitation (in-patient) programme (Burch, 2008). Our study adds to existing evidence by recommending individualised exposure to key sexual functioning messages during in-patient rehabilitation with detailed follow-up during clinic appointments (Lombardi, Del Popolo, Macchiarella, Mencarini, & Celso, 2010).

Existing evidence has testified that people with SCI report poor satisfaction with the provision of information on sexual functioning within rehabilitation programmes (New, Seddon, Redpath, Currie, & Warren, 2016), and some participants in our study corroborate this dissatisfaction. Poor quality information provision can have devastating effects on people’s marriage and sexual relationships (Abramson et al., 2007; Consortium for Spinal Cord Medicine, 2010; Evans, 2013; Gianotten et al., 2006). In our study, many respondents reported satisfaction with information provided, confirming that needs prioritisation is highly individual amongst people with spinal cord injury. Person-centred interventions must reflect the different needs between men and women (Hartshorn et al., 2013; Stoffel, Van der Aa, Wittmann, Yande, & Elliott, 2018; Tong et al., 2007) and also between people with traumatic versus non-traumatic SCI (Moreno et al., 2017). As the quality of programmes on education on sexual functioning and the regularity of their implementation are so inconsistent, rehabilitation services’ ability and capacity to respond to such evolution of sexual needs require thorough scrutiny and evaluation.

The detrimental effects of SCI can reduce quality of life by changing or restricting frequency and content of sexual functioning (Pakpour et al., 2016). In our study, participants of both genders indicated they wanted more information on how their individual SCI would impact on their sexual function. Although most participants preferred to discuss sexual functioning in one-to-one conversations with a senior nurse, group sessions were favoured by others, reinforcing the importance of individualising information sharing to mirror the needs of the individual. Education on sexual functioning should be provided by qualified health professionals who have appropriate knowledge and experience (New & Currie, 2016). The training of such clinicians needs careful consideration as there is limited evidence on what constitutes the best education format or content (Elliott & Querée, 2018).

Embarrassment, privacy and confidentiality emanated as key reasons why participants did not want sexual functioning addressed during the ward round or during family meetings. This embarrassment was sensed implicitly during the interviews as some participants initially only answered in one or two words. As time lapsed and they became comfortable with the conversation, their embarrassment eased, and they started to express their views openly. Our data recommends one-to-one conversations, at least initially, as this allows clinicians to evaluate the readiness of individuals to engage with sexual functioning matters with a view to design personalised education plans (Celik et al., 2014). Group sessions may be introduced at a later stage, as some respondents indicated a preference for this. However, it is important to remember that clinicians’ style of presentation, body language, attitude, subject knowledge and personal discomfort can influence patients’ receptiveness, confidence, amount of disclosure and level of satisfaction with information received on sexual functioning (Consortium for Spinal Cord Medicine, 2010; Hess & Hough, 2012; Simpson et al., 2012).

STUDY LIMITATIONS

The arguments presented in this discussion must be interpreted within the limitations of the study. The data were collected from a single centre within one region of the UK, with participants embedded in the cultural and religious norms of this region, which potentially reduces transferability to other regions of the UK and other countries in the world. As all participants had been treated by clinicians at the spinal centre and participated in the centre’s rehabilitation programme, participants may have felt a moral obligation to provide more positive, or at least less negative, views than those representing their true feelings. The initial reluctance by respondents to provide detailed responses during interviews may be an indication of this. As such it was difficult to ascertain if data saturation occurred.

CONCLUSION

Our study confirms that high-quality education on sexual functioning is not consistently provided to people with SCI. Satisfaction from people with SCI is variable but there is evidence of good quality interventions provided by individual rehabilitation team members that were highly rated by individuals. Determinations regarding individualised plans for sexual functioning conversations must be collaborative with individuals and, in some cases, their family members, considering the individual’s views about the best timing, content and method for such interventions. Sexual functioning conversations should be undertaken by clinicians trained for such conversations, while acknowledging personal and cultural factors that may inhibit or enhance the quality of such conversations. There are multiple barriers to providing high quality information on sexual functioning within the rehabilitation setting, associated with personal, clinician, and systems related factors. The experiences and views of people with SCI are diverse and probably culturally dependent, and there are inherent risks associated with stereotypical attitudes to sexual behaviour and age, which may create considerable challenges to educational programmes that aim to inform and support normalisation of sexual activities for people living with SCI.

Spinal cord rehabilitation services must respond to the identified unmet needs of people with SCI regarding education on sexual functioning. Rehabilitation is an essential component of quality health care services and is an investment for the future with benefits for individuals and society alike.

Considering our findings in the context of existing research, it is concluded that co-designed educational plans between clinicians, immersed in techniques and strategies that motivate and guide them in discussing sexual functioning and other sexual health related issues, and the person with SCI, may have the greatest potential for success. Such rehabilitation plans may be realised through the implementation of culturally sensitive, evidence informed conversations.

DATA SHARING AND DATA ACCESSIBILITY

Due to the risk of breach of confidential and sensitive personal information, the data in this study cannot be shared.

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**TABLE 1 COREQ CHECKLIST (Tong et al., 2007)**

|  |
| --- |
| **Domain 1: Research team and reflexivity** |
| **Personal characteristics** |
| Interviewer/facilitator SN |
| Credentials BSc, RN |
| Occupation Ward sister, MSc student |
| Gender Female |
| Experience and training Basic MSc research training but had extensive clinical experience of interviewing patients about clinical  matters |
| **Relationship with participants** |
| Relationship established As ward sister on the ward, a relationship was  established prior to study commencement with most of  the participants |
| Participant knowledge of the All participants knew the researcher was the ward interviewer sister and that she was doing her MSc. This was  explained in the participant information sheet and  invitation letter also |
| Interviewer characteristics The interviewer was the ward sister on the spinal unit  and had a key interest in the topic and was the  instigator of the study and refined the focus |
| **Domain 2: Study design** |
| **Theoretical framework** |
| Methodological orientation and The methodological orientation was underpinned by theory a descriptive qualitative, exploratory philosophy and  Burnard (1991) fourteen stage thematic content  analysis framework |
| **Participant selection** |
| Sampling Purposive |
| Method of approach Face-to-face |
| Sample size Twenty-nine |
| Non-participation Two individuals declined participation, giving no  specific reason |
| **Setting** |
| Setting of data collection Ward setting, confidential clinical room |
| Presence of non-participants None other than the participants and the interviewer |
| Description of sample Participants were sampled from a single specialist  spinal centre within the UK, participants’ age ranged  from 18-96 years, included females and males, and  sampling took place between November 2017 and  April 2018 |
| **Data collection** |
| Interview guide A brief overview of topics explored is provided, along with examples of probes used by the interviewer to  facilitate exploration of the topic. The interview  schedule was not pilot tested but was agreed within  the research team |
| Repeat interviews Repeat interviews were not carried out |
| Audio/visual recording Interviews were audio recorded |
| Field notes Field notes were gathered during the interviews to  facilitate reflexivity |
| Duration 45-60 minutes |
| Data saturation Data saturation could not be ascertained |
| Transcripts returned Transcripts were returned to participants for  comment and/or correction |
| **Domain 3: Analysis and findings** |
| **Data analysis** |
| Number of data coders The interviewer also coded the data |
| Description of the coding tree A coding tree was not described |
| Derivation of themes Themes were derived from the data |
| Software Data management software was not used  |
| Participant checking Participants provided feedback on the findings |
| **Reporting** |
| Quotations presented Participants’ quotations were used to illustrate the  themes, and each quotation was identified using a  synonym patient descriptor |
| Data and findings consistent Findings are consistent with the data |
| Clarity of major themes Major themes are clearly presented in the findings |
| Clarity of minor themes There is description of some diverse cases but minor  themes were not identified |