Sexual dysfunction following traumatic pelvic fracture

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BACKGROUND: While sexual dysfunction (SD) in men following traumatic pelvic fracture is common, little is known of how men experience changes in their sexual health after injury. The aims of the present study were to explore the personal and interpersonal impacts of SD in men after pelvic injury and to understood how interactions with the health care system can be optimized to improve patient-centered trauma survivorship care.

METHODS: Fifteen semistructured interviews were conducted with men who had a history of traumatic pelvic fracture and self-reported SD. Interviews were audio recorded, transcribed, and uploaded to a web-based qualitative analysis platform. A codebook was developed, and intercoder reliability was verified. Inductive thematic analysis was performed to identify notable themes related to patient postinjury sexual health experiences.

RESULTS: Median age of interviewees was 46 years (interquartile range, 44–54 years), with a median time since injury of 41 months (interquartile range, 22–55 months). Five primary themes were identified from the analysis: (1) effects on self-image and romantic relationships, (2) unknown care pathways and lack of communication, (3) inconsistencies with health care provider priorities, (4) provision of sexual health information and resources, and (5) the importance of setting expectations. Interviewees suggested that improved communication, provision of information related to possible adverse effects of their injuries, and expectation setting would improve posttrauma experiences.

CONCLUSION: Men's experiences with SD after pelvic trauma can be heavily influenced by their interactions with health care providers and the value that is placed on sexual health as a component of survivorship. Incorporating these findings into a patient-centered trauma survivorship program may improve patient experiences. (*J Trauma Acute Care Surg.* 2021;90: 550–556. Copyright © 2020 Wolters Kluwer Health, Inc. All rights reserved.)

LEVEL OF EVIDENCE: Therapeutic, level V.

KEY WORDS: Pelvic fracture; sexual health; urotrauma; sexual dysfunction; qualitative.

The association between traumatic pelvic fractures and sexual dysfunction (SD) in men is well established, with prior studies estimating the prevalence of SD between 14% and 72% of injured men.[1–6] However, how these men navigate and cope with changes in their sexual function after injury remains unclear.[6] A number of previous studies have used qualitative methodologies to explore how men experience SD associated with various other medical ailments, such as colorectal cancer, stroke, and prostate cancer given the relatively high rates of sexual health impairment attributed to those conditions.[7–11] However, to date, no studies have explored in-depth men's experiences with SD after pelvic fracture. Because this population tends to be young and otherwise healthy, they are especially susceptible to the psychological, social, and emotional impacts of an abrupt change in sexual health.[6,12,13]

To develop appropriate survivorship and postinjury care pathways for men after pelvic trauma, it is imperative to understand how they experience the changes in their sexual health and functioning after injury, what sort of value they put on sexual health, and how they feel health care providers can most optimally provide care. With this framework in mind, this study was designed to explore in-depth the personal and interpersonal impacts of SD in men after pelvic injury. Furthermore, we sought to better understand patient interactions with the health care system in this setting to inform future patient-centered trauma survivorship care.

PATIENTS AND METHODS

Participants and Sampling

This study reports results from the qualitative interviews completed as part of a larger study examining barriers to care of sexual health problems following traumatic pelvic fractures in men. Details of the sample were described previously and included only men without overt genitourinary injuries.[6] Briefly, a retrospective cross-sectional survey addressing sexual health after pelvic trauma was administered, and respondents were given the opportunity to volunteer to participate in an in-depth telephone interview to discuss their experiences related to sexual health after injury. Of the 28 survey respondents who volunteered, 15 men who reported postinjury SD were purposively selected for interviews.[8] Sexual dysfunction was defined as any patient-perceived difficulty with erection, orgasm, ejaculation, sexual desire, sexual enjoyment, genital pain, or genital numbness.[6] These men had variable ages, relationship statuses, educational backgrounds, locations of residence, injury patterns, and comorbidities, which provided a diversity of experiences and insight. Severity of injury was quantified and expressed using the Injury Severity Score, a comprehensive injury grading system that allows comparison of multiply-injured patients with varying injury patterns.[14] Preinjury sexual function was based on subject recall and quantified using the International Index of Erectile Function.[15] Postinjury sexual function was similarly assessed. Participants were provided with a gift card for completion of the interview.

Interview Process

A semistructured interview guide was designed to explore the impact of SD on the individual's recuperation both personally and interpersonally as well as to determine how care and management of sexual health were experienced following injury (Table 1). The interview guide was jointly designed through multiple iterations by a fellowship-trained urologist with expertise in genitourinary trauma and men's sexual health (N.V.J.) and an experienced qualitative researcher (M.M.). Probes

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TABLE 1. Semistructured Interview Guide

Warm-up questions	▪ Tell me about how you have been feeling since your injury. ▪ What sort of new issues have you had to face?
Impact of injury on everyday life	▪ What impact has your injury had on your day-to-day life? ▪ How has this impacted you personally?
Impact of injury on sexual life	▪ How has your injury affected your sexual life? ▪ How has it impacted your relationships? ▪ How has it affected how you feel about yourself? ▪ How have you coped with these new issues?
Experiences and satisfaction with management of sexual health issues	▪ Have you discussed your sexual health with anyone, health care providers in particular, since your injury? ▪ If so, how helpful have these discussions been for you? ▪ If not, what information would have been helpful to you? ▪ How do you think information about sexual health after injury should be provided? ▪ What were barriers to you addressing your sexual health after injury with health care providers?
Final comments	▪ What do you feel would be important for individuals with pelvic injuries to know about sexual health? ▪ Do you have any final comments for health care providers seeing patients like you?

explored coping and management strategies related to new sexual health issues and the role that health care providers had played in addressing, managing, and helping postinjury sexual health. Subjects were asked about barriers to discussing or obtaining care for sexual health concerns after injury, and how these barriers both affected their experience and how they could be modified to improve the experiences of others in the future.

All interviews were conducted between April 26, 2019, and May 15, 2019, via telephone by a single male interviewer (N.V.J.). The interviews generally lasted 25 to 30 minutes depending on subject narrative, with a range of 14 to 31 minutes. When no new concepts or themes were observed, the team agreed that thematic saturation was achieved and no more interviews were conducted.[16] No study team member had a prior or ongoing clinical relationship with any subject who participated in the study. Each interview was recorded on a digital recording device and then transcribed verbatim by professional transcriptionists. These interview transcripts were then uploaded to Dedoose version 7.0.23 (SocioCultural Research Consultants, LLC, Los Angeles, CA) , a web-based application for managing, coding, and analyzing qualitative and mixed-methods data.

Data Analysis

An inductive, thematic analysis approach was undertaken to identify notable themes related to patient postinjury sexual health experiences. All transcripts were read multiple times by three authors (N.V.J., E.C., and T.J.) to identify key meanings and interpretations of the data. N.V.J., as previously discussed, is a fellowship-trained urologist with specialization in genitourinary trauma and men's health. E.C. and T.J. are both experienced qualitative researchers with backgrounds in social work. The authors initially open-coded the same three transcripts, then reviewed similarities and discrepancies in themes, chosen codes, and code applications. An initial codebook was created based on these selected transcripts that included definitions of each category, guidelines of code applications, and excerpts of the data exemplifying each code. The unified codebook was then applied subsequently to an additional three transcripts. Codes were again updated and edited based on consensus among the three coders until an agreed upon final codebook was created to capture the primary thematic elements of the data.

A collection of excerpts was then selected by the first author (N.V.J.) and coded using the final codebook. This excerpt group was used as a testing set to verify interrater reliability of code application among the three coders, as assessed via the Cohen's κ statistic testing program within Dedoose. This test showed good to very good agreement for all major codes (κ = 0.71–0.95). Two authors (E.C. and T.J.) subsequently applied the finalized codebook to all 15 transcripts, with each coder coding half of the transcripts. The third coder (N.V.J.) then reviewed all 15 transcripts and code applications to ensure consistency and accuracy of the chosen codes and classification schemes. Discrepancies were resolved via open dialog and consensus. Reporting of the data followed the Consolidated Criteria for Reporting Qualitative Research guidelines for reporting qualitative research.[17]

RESULTS

Sociodemographic factors and postinjury sexual function are displayed in Table 2. Median time from injury to survey response was 41 months (interquartile range, 22–55 months), with all patients having at least 14 months from injury to time of survey. Two participants reported resolution of SD without treatment, two were currently receiving treatment at the time of the interview, while the remainder[11] continued to have sexual health concerns that had yet to be addressed. The most common types of SD experienced by this group of respondents were erectile dysfunction (13 of 15 patients, 87%), difficulty with orgasm and ejaculation (12 of 15 patients, 80%), low sexual desire (10 of 15 patients, 67%), genital pain (5 of 15 patients, 33%), and genital numbness (5 of 15 patients, 33%).

A number of similar experiences, beliefs, and opinions that described the common experience of these men in navigating the postinjury period as it related to sexual health were expressed. Five primary themes emerged from the analysis: effects on self-image and romantic relationships, unknown care pathways and lack of communication, inconsistencies with health care provider priorities, provision of sexual health information and resources, and the importance of setting expectations.

Effects on Self-Image and Romantic Relationships

Men with SD after pelvic trauma struggled with the impact that their new sexual health difficulties had on how they viewed themselves and how they interacted with those with whom they had romantic relationships. They described feelings of embarrassment, anxiety, shame, and depression as a result of SD.

TABLE 2. Sociodemographic and Sexual Function of Interview Participants (n = 15)

Age at survey, median (IQR), y	46 (44–54)
Race, n (%)	
White	14 (93)
Asian	1 (7)
Time since injury, median (IQR), mo	41 (22–55)
ISS, median (IQR)	29 (17–34)
Primary insurance, n (%)	
Commercial	10 (67)
Medicare	1 (7)
Medicaid	4 (26)
LGBTQ, n (%)	1 (7)
Relationship status, n (%)	
Married/partnership	9 (60)
Single	6 (40)
Rural/urban, n (%)	
Rural	8 (53)
Urban	7 (47)
Educational attainment, n (%)	
High school	2 (13)
Some college	4 (27)
4-Year college	6 (40)
Master/higher	2 (13)
Other	1 (7)
Subjective preinjury SD, n (%)	0
Preinjury IIEF, median (IQR)	67 (65–72)
Subjective postinjury SD, n (%)	15 (100)
Postinjury IIEF, median (IQR)	41 (31–59)

IIEF, International Index of Erectile Function; ISS, Injury Severity Score; IQR, interquartile range; LGBTQ, lesbian, gay, bisexual, transgender, queer/questioning.

Furthermore, there was a feeling of hopelessness as sexual health issues persisted despite recovery from their other injuries.

> *"I'm not the same, you know, big man, that I used to be."*
> *"I need to depreciate my image."*
> *"You know, males …. usually define themselves by how virile they are."*

This alteration in their sense of manhood had further deleterious effects on their relationships. Diminishing self-confidence was found to lead to more pronounced feelings of discouragement, inadequacy, and hesitancy to be intimate with sexual partners. Fear of pain with intercourse, as well as fear of being unable to perform sexually, drove men to avoid intimacy with their partners altogether. Furthermore, many avoided having discussions about these issues with their partners because of embarrassment, feeling "silly," or harboring feelings of "defeat." While some acknowledged that their shame and sense of inadequacy were self-imposed, others felt that their partners made them feel this way. Many men stated that their partners no longer viewed them as capable of intimacy or of the ability to express desire or affection, with partners wondering "what's wrong with him," which further fostered the growth of shame and self-doubt.

> *"Because there's no physical attention. I do not give her any anymore because I cannot do anything about it. Like, you know, why bother starting it if I cannot finish it?"*
> *"She finally just reached her limit, you know, where she's, you know, just doesn't think I care about her anymore."*

However, not all men had significantly negative relationship changes. Men in longstanding relationships tended to have these negative impacts muted, which appeared to positively impact self-image and confidence.

> *"Since I'm with somebody who loves me and does not care about, you know, that part of it, it makes me feel better about things."*
> *"It wasn't about performance. It was about connection."*
> *"It wasn't a big deal because I've been married so long and married people just don't have as much sex as they did when they were younger."*

Unknown Care Pathways and Lack of Communication

As men recovered from their bony pelvic injuries, they realized that they had sexual health issues that had not been addressed and that they did not know where to turn for care. Men reported that, despite being acutely treated by numerous different health care professionals, no one specifically addressed sexual health and no guidance on how to obtain care for sexual health issues was provided.

> *"I had all these different doctors and no one that I could talk to, you know what I mean?"*
> *"I feel like I wasn't answering the questions right in order to get more help."*
> *"I mean, to me, it's I felt like I needed to talk to somebody about it and really try to work through it, but there's — I mean that's a sensitive subject, right? So I really feel like I should have been helped towards some counseling, if you, you know, and so that was never, never mentioned once by anybody."*

Men felt that there was a significant lack of communication not just in the responsibility to care for sexual health issues, but of these issues themselves. Men reported that discussions of sexual health "just did not come up" and that providers did not suggest that having SD may be a part of the postinjury recovery period. This lack of communication and unknown care pathway led to significant anxiety and a perception of loneliness among men experiencing SD, with one man stating, "it would have been good to know that I could, you know, ask somebody." Also, for those who did broach the subject, the answers they received did nothing to calm their anxiety and concerns.

> *"I realized I had been asking the right questions. It just did not seem like there was right answers."*
> *"I asked him hey, this is what's happening, you know, is it permanent? And of course, you know, he couldn't tell me."*
> *"Nobody ever had any solution or suggestion."*

Others acknowledged that the follow-up care for their sexual health likely falls in the realm of their primary care doctors. However, they felt that these physicians were likely not well suited to address this either.

> *"It did not even occur to me to ask him because it's like he would say, go talk to your surgeon or something like that."*
> *"Seeing my primary care doctor once a year does not really handle it, you know."*

Inconsistent Health Care Provider Priorities

For men who did bring up their concerns about their SD with providers after injury, they reported significant difficulty in obtaining appropriate information or guidance. Men felt that health care provider priorities were not in line with their own quality of life goals and priorities regarding their survivorship care. Men felt that providers were only concerned about the more immediate issues related to their physical injuries and not those of their long-term health. Discrediting of their sexual health concerns further emphasized feelings of hopelessness and discouragement.

> *"So the surgeon looked at my ankle, said looks good. The incision was good and looked at all the other incisions and said all right, you look great, and then I brought it up. I said, you know, I cannot get an erection and he goes, do you know that's the number one… and then he just, he just fired off, you know, that's the number one concern most men have when they have pelvic trauma. He goes, I mean geeze, all these other things just happened to you, like let us just, like why do people worry about that."*
> *"When I mentioned that, she goes that's interesting… you know most men are like focused on loss of their sexual ability when they have this massive injury that they should really be worried about. And I was like hey, come on, don't tell me what I should worry about."*

Many felt that their physicians simply did not want to address their sexual health. Although concerns were raised, men felt that these were passed over and ignored. As a result, men reported feeling that their concerns were delegitimized, inconsequential, or an unmodifiable part of how their lives would be moving forward.

> *"I told everyone about it, you know, when they asked how are you doing with your thing. Oh, this is still a problem? And then they just wrote it in their chart and we moved on… they did not do anything with that information."*
> *"They're more concerned about well, do you walk with a limp now, or you know, the physical, not the mental or sexual things."*

Provision of Sexual Health Information and Resources

Men stated that the information and resources that they received around the time of the injury about their sexual health and risks of SD were lacking. They felt that not understanding the sexual health impact of their injuries made them less likely to discuss these topics with health care providers. Two men, in particular, stated that, despite the fact that they had been dealing with SD for years since their injuries, the first time they had even associated the injury with their SD came when they received the survey for this study in their email.

> *"What the survey did was more about patient information than I've gotten at all."*
> *"That [the survey] was all I was looking for in the beginning."*

Men longed for information to help them put their experiences in context and to know if trouble with sexual health after pelvic injuries was common. Men reported significant distress and feelings of isolation because they felt that their experiences were unique and unsolvable. Furthermore, they craved information and felt that provision of this type of information should be standard at the time of discharge from their acute hospitalization, similar to information provided about physical therapy and mental health.

> *"When I was discharged, they gave me information on depression, you know, like meetings and other people I should talk to, and they gave me other information for mental health and that kind of thing. But, again, nothing as far as [sexual health]. I think it's germane to the injury you know, put it for everybody…. I think they should automatically throw them in."*
> *"Any kind of information, I think, would have been acceptable."*
> *"Maybe if I got something after surgery that said, you know, this is, this might be something normal that happens and, you know, we recommend maybe seeking treatment somehow from the urologist or something because they have ways to fix things like that. I just don't know enough of it."*

Importance of Setting Expectations

Coupled with the lack of information that men received about their condition was a lack of counseling regarding expectations of recovery of sexual function. Men struggled with balancing the hope of functional recovery and the acceptance that this may be a permanent state. This uncertainty resulted in men often attributing their sexual health difficulties to a multitude of non–injury-related factors despite otherwise good health and excellent preinjury sexual function. A lack of expectation setting and counseling left some men paralyzed from action and avoidant of addressing the issue with health care providers.

> *"I was just like well, this sucks. I'm really kind of hoping it would come back and I would not have to deal with it, which is kind of sad."*
> *"If [patients] had just some, you know, expectations where they might be, then maybe if it wasn't progressing to that point, maybe then they would feel more comfortable about asking questions."*

The concept of having a timeline was repeatedly raised, such that men could have a standard with which to compare their progress or lack of progress in terms of sexual function recovery. They felt having some understanding of "normal" would ease anxieties, open them up to raising the topic with providers, and help them understand what the possible outcomes were.

> *"For them to be like okay, let us say that you have an 80% chance of regaining 100% of your sexual ability.*

> *That is enough numbers for me to give me a little reassurance in myself, which is only going to help my mental, you know what I mean?"*
> *"Like I would have appreciated just even, even just like a general idea of what to expect maybe, you know, would have been like a lot of relief in my mind and shit."*
> *"You're not being weird. You're you know, we see that it happens to a lot of people who have had this kind of trauma, and therefore, don't be too worried about it. You know, here's the kinds of things that can maybe mitigate some of the affects, you know. I think that kind of conversation is helpful."*

DISCUSSION

Given the paucity of research on survivorship care following traumatic pelvic fractures, the purposes of this exploratory qualitative study were to better understand and describe the experience that men who develop SD after pelvic fracture have in navigating the health care system and to identify potential leverage points in this experience to create novel postinjury care pathways to improve the quality of care provided to these patients. Taken together, these results highlight the value that men place on sexual function in determining health-related quality of life and that the long-term impact of pelvic trauma extends well beyond their acute recovery. Furthermore, this study illuminates consistent deficiencies in addressing sexual health as part of routine initial and follow-up care.

A predominant theme from the present study is that men with SD have a number of unmet needs as it relates to sexual health. These unmet needs include the desire for information and resources related to the impact of their injuries on sexual function, the setting of appropriate expectations regarding timelines for potential recovery, and guidance as to when to seek treatment and with whom. This concept of unmet sexual health needs has been extensively addressed for many medical conditions including prostate cancer and stroke but has not previously been evaluated in pelvic trauma patients.[9,18–20] What these prior studies have shown, however, is that many of these unmet needs stem from the lack of clearly defined care pathways that incorporate sexual health evaluation and that a failure to address unvoiced sexual health agendas often leads to significant patient dissatisfaction.[21]

One notable area of unmet needs is due to insufficient or inaccurate expectations as it relates to sexual health. Unlike planned procedures for the treatment of other conditions, traumas are by definition unplanned. As a result, men lack prior knowledge and, without suitable guidance from health care providers after injury, have no means by which to establish appropriate expectations. Failure of the health team to communicate about these potential adverse effects of injury then often leaves patients ignorant of how to view SD in light of their injuries and how to manage it.

The lack of expectation setting is compounded by the rarity with which sexual health is discussed following injury. In a prior study, we found that only 20% of men after pelvic trauma recalled having discussions about sexual health with providers and that, of these conversations, 71% were patient initiated.[6] The present study goes further to illuminate the reasons that men are often unlikely to discuss their sexual health. Feelings of shame and embarrassment, that their concerns were illegitimate, and that there was no possible avenue for treatment often drove them to avoid seeking care. There is also widespread evidence that men not only use health services less frequently than women but are also less likely to discuss topics that can be considered to be associated with weakness or vulnerability.[22,23] As such, it becomes the responsibility of the health care system to seek out these issues in a systematic manner to provide guidance and reasonable expectations for these patients.

Despite the inherent difficulties in establishing a dedicated pelvic trauma survivorship program, there is ample opportunity to make systematic changes to the care of these patients. The present study showed that patients crave information about potential sexual health impacts of injury and resources to help them navigate the health care system to address their concerns. Inclusion of this information into the discharge paperwork after injury was suggested by a number of participants as a simple way to raise awareness. Prior work has shown that, for this to be effective, patients often need targeted and iterative communication strategies at the time of discharge that include patient-centered care summaries.[24–26] Incorporation of the International Index of Erectile Function questionnaire into routine follow-up care would similarly help to identify patients at risk for SD and also provide an avenue to stimulate conversation, as previous work has shown the importance of health care providers in framing and normalizing help-seeking behaviors for sexual health.[27] Lastly, establishing close working relationships between men's health providers, mental health care providers, and the trauma teams can stimulate innovative and collaborative efforts to improve the survivorship care of these patients.

There are a number of limitations to this study. As is true for qualitative studies, our sample is not intended to be representative of all subjects, but rather to be an in-depth descriptive analysis that provides a deeper understanding of the phenomenon of interest. The timing of our interviews in relation to injury likely influenced subject responses. It is possible that interests and needs change over time after injury and that what subjects report to be important at the present may have been less so in the past. The cohort for this study included only those with SD after injury, and, while their experiences are undoubtedly different than those without SD, the value of sexual health education and resources for them is likely different than those without SD. Similarly, men with SD who did not volunteer to participate in the in-depth interviews may have had different experiences than those who did. Specifically, we noted that a number of participants reported significant mental health concerns following injury and, while these individuals interviewed were all receiving care for these conditions, this could influence how they experience sexuality. All included subjects were from a single institution, so those managed at other facilities may have had different experiences with addressing sexual health. While there was heterogeneity for our sample in terms of age, relationship status, education, and urban/rural residency, there was significant homogeneity in terms of race and sexual orientation. Thus, the experiences of individuals with differing racial and sexual orientation demographics may differ. Lastly, the experiences of women were not addressed and deserve future in-depth evaluation.

CONCLUSIONS

Sexual dysfunction following traumatic pelvic fracture is common, and men's experiences can be heavily influenced by their interactions with the health care team. Nonetheless, both patients and providers are often reluctant to discuss sexual health issues after major trauma, despite the significant impact that this can have on overall recovery. Improvements in the provision of sexual health resources and the setting of realistic expectations for functional recovery are vital components of a patient-centered trauma survivorship program.

AUTHORSHIP

N.V.J. contributed in the literature search, study design, data collection/analysis, data interpretation, writing, and critical revision. E.C. contributed in the data collection/analysis, data interpretation, and critical revision. T.J. contributed in the data collection/analysis, data interpretation, and critical revision. M.S.V. contributed in the study design, data interpretation, and critical revision. F.P.R. contributed in the study design, data interpretation, and critical revision. M.M. contributed in the study design, data interpretation, and critical revision.

DISCLOSURE

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The data that support the findings of this study are available on request from the corresponding author, N.V.J. The data are not publicly available due to privacy concerns of survey participants.

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