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Lived experiences, challenges and coping strategies of patients with spinal cord injury using intermittent catheterisation in Riyadh, Saudi Arabia: a qualitative study

Yacoub Abuzied ,[1,2] Rasmieh Al-Amer ,[3] Azura Abdul Halain ,[2] Salimah Japar [2]

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[1]Department of Nursing, Rehabilitation Hospital, King Fahad Medical City, Riyadh, Saudi Arabia
[2]Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Malaysia
[3]Faculty of Nursing, Yarmouk University, Irbid, Jordan

Correspondence to
Yacoub Abuzied; yabuzied2@gmail.com and Dr Salimah Japar; j_salimah@upm.edu.my

ABSTRACT

Objectives This study explored the lived experiences, challenges and coping strategies of Arab male patients with spinal cord injury (SCI) who rely on intermittent catheterisation (IC) to manage neurogenic bladder.

Design A descriptive qualitative approach was employed, with data analysed using a phenomenological framework.

Setting Rehabilitation Hospital, King Fahad Medical City, Riyadh, Saudi Arabia.

Participants Male patients with SCI undergoing rehabilitation and performing IC were included in the study. Although both male and female patients were approached to participate, all eligible female patients declined participation. During the recruitment process, some female patients informally expressed privacy concerns and discomfort related to discussing bladder management issues and genital care, which may have contributed to their decision to decline participation.

Results 10 male participants with SCI were recruited after eligible female patients declined participation. Three main themes, each with associated subthemes, emerged to reflect the participants' experiences. Theme 1: Frequent use of IC in daily life, comprised four subthemes: (1) frequency of practice, (2) environmental and health-related challenges, (3) privacy during IC and (4) fluid intake and output. Theme 2: Cleanliness and general care included two subthemes: (1) catheter cleaning and (2) incontinence. Theme 3 focused on body image and sexuality. Cultural and social norms, including privacy concerns and sensitivities surrounding intimate care in the local context, played a significant role in shaping participants' experiences and coping strategies.

Conclusions IC was associated with challenges affecting multiple aspects of daily life among patients with SCI, including social interactions and body image. Participants described various coping strategies used to manage the physical and psychological demands associated with IC. These experiences appeared to be influenced by cultural considerations, including privacy, modesty and sensitivity surrounding urinary care within the local Saudi context.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The phenomenological qualitative design enabled an in-depth exploration of patients' lived experiences and coping strategies related to intermittent catheterisation.
⇒ The relatively small sample size and single-centre setting may limit the transferability of the findings.
⇒ Cultural sensitivities, privacy concerns and reluctance to discuss intimate topics limited the inclusion of female participants.
⇒ The absence of objective clinical data on neurogenic lower urinary tract dysfunction and bladder management limited the interpretation of some patients' experiences.

BACKGROUND

Spinal cord injury (SCI) is a clinical condition involving damage to the spinal cord, often resulting in multiple complications, including neurogenic lower urinary tract dysfunction (NLUTD).[1 2] Bladder dysfunction is a common manifestation of NLUTD and may lead to urinary retention, incontinence, recurrent urinary tract infections and bladder overdistension.[3] In addition, individuals with SCI may experience broader physical and psychological challenges, including spasticity, infections, anxiety and reduced quality of life (QoL).[4 5] Globally, more than 500 000 new cases of SCI occur each year.[6] In the USA, SCI affects over 200 000 individuals, with approximately 10 000 new cases reported annually.[7]

In Saudi Arabia, SCI is predominantly caused by road traffic accidents, accounting for a substantial proportion of cases (often exceeding 50% and reaching up to 90%), particularly among young males, highlighting a significant public health and rehabilitation burden.[8] The incidence has been estimated at

approximately 62 cases per million population, although national epidemiological data remain limited.[9] Recent evidence suggests that the burden of SCI has increased over time, with incidence rising by approximately 25% in recent decades.[10] Together, these patterns highlight the substantial clinical and socioeconomic burden of SCI on healthcare and rehabilitation systems.

Impaired bladder emptying following SCI may result in serious complications, including renal impairment and urinary tract infections.[11] Delayed emptying can also trigger autonomic dysreflexia, a potentially life-threatening condition, particularly in individuals with lesions above T6.[12] Consequently, effective bladder management is essential, and 70%–84% of individuals require catheterisation.[13] Intermittent catheterisation (IC), which involves periodic insertion and removal of a catheter to empty the bladder, is widely recognised as a safe and effective method, typically performed 4–6 times daily.[14–16] IC has been shown to reduce complications and improve QoL, autonomy and self-esteem.[17 18]

Despite these benefits, patients often experience challenges when initiating and maintaining IC, including physical limitations, psychological distress and difficulties adapting to daily routines.[19] Patients with incomplete tetraplegia may face additional challenges due to reduced hand function and dexterity.[20] Long-term adherence may also be influenced by environmental, social and healthcare-related factors.[21]

Previous studies have explored experiences, adherence and QoL related to IC across different populations, highlighting psychological, physical and healthcare-related challenges.[22–26] However, research specifically examining the lived experiences of patients with SCI who rely on IC remains limited, particularly within Arab populations, where cultural and social factors may uniquely influence patient experiences. A qualitative study conducted in Saudi Arabia reported that IC significantly affects patients' daily lives, including social interactions, body image and QoL.[18] Discussions related to bladder management, genital care and IC may be considered highly sensitive and private among both male and female patients, particularly within conservative cultural contexts. However, these concerns may be more pronounced among female patients and may contribute to their underrepresentation in research involving intimate aspects of urinary care and bladder management. In the present study, both male and female patients were approached for participation. However, all eligible female patients declined participation due to privacy concerns and reluctance to discuss sensitive aspects of bladder management. Consequently, only male participants were included in the final sample. Therefore, understanding the lived experiences of Arab patients using IC is essential to developing culturally sensitive, patient-centred care strategies.

This study aimed to explore the lived experiences, challenges and coping strategies of Arab male patients with SCI using IC, and to understand how these experiences influenced their daily lives and adaptation following injury.

The Arabic context

Cultural norms play a significant role in shaping how patients perceive health risks and the importance they assign to health and illness.[27 28] It is important to note that limited research has explored the lived experiences of Arab patients with SCI using IC.[18] Accordingly, this study aims to provide insights into the perspectives of Arabic-speaking patients and the role of IC in their daily lives. Gaining a deeper understanding of the experiences and perspectives of patients with SCI who rely on IC can help healthcare providers develop individualised, culturally sensitive strategies that promote optimal health outcomes.

METHODOLOGY

This descriptive qualitative study was conducted at the Rehabilitation Hospital, King Fahad Medical City (KFMC), Riyadh, Saudi Arabia.

Study design

To generate rich and meaningful data on the lived experiences and coping strategies of patients with SCI, a qualitative descriptive approach informed by phenomenological principles was adopted. This design enabled an in-depth exploration of participants' experiences with IC. The study adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines. Husserlian phenomenology, supported by Colaizzi's method, was used to capture the essence of participants' experiences.[29] The COREQ checklist was applied to guide reporting and ensure transparency and completeness, and a completed checklist with page and line references is provided as a online supplemental file.[30]

Study setting

This study was conducted at a well-established tertiary care facility in Riyadh, Saudi Arabia, specifically within the SCI wards of the Rehabilitation Hospital at KFMC. Patients admitted to this ward receive comprehensive rehabilitation services, including nursing care, physiotherapy, occupational therapy, physical medicine and rehabilitation and other supportive interventions, commencing on the first day of hospitalisation. The nurse-to-patient ratio is maintained at 1:3, with continuous, round-the-clock rehabilitation care provided.

Population, sampling and recruitment

Both male and female patients with SCI undergoing inpatient rehabilitation were approached for participation in the study. However, although both male and female patients were approached to participate, all eligible female patients declined participation, citing privacy concerns and reluctance to discuss sensitive aspects of bladder management and genital care. Consequently, only male participants were included in the final sample.

Table 1 Participant characteristics (N=10)

Patient characteristics (N=10)		
Demographics	**n**	**%**
Age, mean (years)	33.5	—
Marital status		
Single	4	40
Married	6	60
Duration of IC use, mean (years)	3	—
Frequency of IC (times/day)	4–6	—
Educational level		
No formal education	1	10
Secondary school	4	40
Bachelor's degree	4	40
Master's degree	1	10
Health condition		
Paraplegia	10	100
Quadriplegia	0	0
History of		
Autonomic dysreflexia	10	100
Urinary tract infection	10	100
Interview duration, mean (minutes)	41	—

IC, intermittent catheterisation.

Arab male patients with SCI were recruited from inpatient rehabilitation wards and interviewed during their admission. Of the 15 eligible male patients approached, 10 agreed to participate, while five declined participation due to similar concerns regarding privacy and the sensitive nature of bladder management discussions. This recruitment experience may indicate potential cultural and privacy-related barriers to participation, which could contribute to the underrepresentation of women in IC research and highlight a gap warranting further investigation.

Participants were recruited using purposive sampling, and data collection continued until thematic saturation was achieved, defined as the point at which no new themes or meaningful insights emerged. Saturation was reached after 10 participants, consistent with qualitative research standards.[31]

All participants received written information about the study and provided informed consent before the interviews. They were informed of their right to withdraw at any time. Detailed demographic characteristics, including education and lifestyle factors, are presented in table 1.

Data collection tool

The study team developed a semistructured interview guide to outline key domains for exploring the lived experiences and coping strategies of patients with SCI who use IC (see box 1). The guide was initially piloted with two participants; data from these pilot interviews were not included in the final analysis. It was informed by the study objectives, relevant literature and established practices for conducting semistructured interviews. During data collection, the principal investigator (PI) maintained field notes documenting the interview process and observed interactions, and regularly reflected on and refined the interview approach as needed.

Box 1 Interview guide for exploring lived experiences and coping strategies among patients using intermittent catheterisation with SCI

⇒ Could you describe your life journey since you started using intermittent catheterisation for bladder management?
⇒ Can you share a significant experience you had while performing intermittent catheterisation of the bladder?
⇒ Could you walk me through a typical day in your life using intermittent bladder catheters?
⇒ Could you tell me about the time when you first began performing intermittent catheterisation?

Following written informed consent, all interviews were audio-recorded in accordance with Pope and Mays.[32] Interviews were audio-recorded to allow the interviewer to focus on active listening, ask relevant follow-up questions and maintain eye contact with participants. Each interview lasted approximately 45–50 min.

Data collection procedure

Following ethics committee approval and receipt of the necessary research permits, the PI conducted all patient interviews. Prior to each interview, the PI documented his preconceptions, views and prior knowledge regarding IC to acknowledge and mitigate potential bias. This reflexive practice enhanced engagement with participants' experiences and helped ensure deeper interpretation beyond the interview content.[33] This reflexive approach was maintained throughout the study to mitigate potential bias that could influence data interpretation, particularly during the descriptive and analytical phases. The research team comprised healthcare professionals with diverse clinical experience in patient care. The PI holds a master's degree in nursing with a focus on chronic care and is currently pursuing a PhD in nursing with a focus on SCI, while all co-authors hold doctoral degrees in nursing, qualitative research methods and patient-centred care. Importantly, the PI shared the participants' language and cultural backgrounds, which were essential to ensuring cultural sensitivity in exploring the lived experiences of Arab men using IC following SCI. Interviews were conducted between early April and late May 2022.

All interviews were conducted by the PI, who shared the participants' language and cultural background. As a male nurse with extensive experience caring for patients with SCI at KFMC, the PI was well-positioned to establish rapport and build trust with participants. Interviews were conducted in a private setting within the SCI ward. No non-participants were present during the interviews, which were specifically arranged to ensure confidentiality

and comfort. In line with best practices, all interviews were conducted in Arabic, with the PI being a native Arabic speaker from the same cultural context as the participants.

Face-to-face interviews commenced with an open-ended invitation for participants to describe their experiences with IC, beginning with the question, 'How has your life been since you started using IC?' Participants were encouraged to share their thoughts, feelings and perspectives freely. A flexible, semi-structured approach was adopted, allowing the researcher to use probing questions and explore emerging topics in greater depth as needed.[34] Given the relevance of IC to participants' daily lives, most participants openly discussed their experiences. The interviewer's role was limited to facilitating the discussion and providing prompts when needed.

Trustworthiness of data

All participants reviewed written study information and provided informed consent prior to the interviews, with the right to withdraw at any time. During interviews, the researcher remained attentive to participants' emotional responses and offered support as needed. Demographic data, including education and lifestyle factors, are presented in table 1. Given the sensitivity of the topic, face-to-face interviews were conducted. All participants consented to the use of their data. Interviews were audio-recorded, transcribed verbatim and returned to participants for verification. Numerical identifiers were assigned to ensure confidentiality.[35] All identifying information, including names and personal or professional details, was removed from transcripts to ensure confidentiality.

Data analysis

Data were analysed using Colaizzi's seven-step phenomenological approach. This process involved familiarisation with the data, extraction of significant statements, formulation of meanings, clustering of themes, development of an exhaustive description, identification of the fundamental structure of the phenomenon, and validation of the findings through participant checking. The analysis was conducted manually without the use of qualitative data analysis software, following a rigorous, systematic coding process, and was performed inductively with the involvement of multiple researchers to enhance credibility.[36]

Three research team members participated in a systematic coding process, beginning with initial codes and progressing to category development and theme generation through constant comparative analysis. An inductive approach allowed themes to emerge from the data without predefined classifications, enhancing dependability and trustworthiness. The analysis followed Colaizzi's phenomenological framework.[36] The researcher reviewed participants' accounts of their experiences with IC, including initial reactions. Further insights were explored, and direct quotations supported key findings, ensuring participants' perspectives were accurately represented. The research team interpreted the data, identified themes, and grouped related concepts. Finally, a comprehensive description of the phenomenon was developed, and findings were verified with participants to ensure accuracy.[37]

After categorisation into thematic clusters, the data were re-examined against the original transcripts to ensure accurate representation. Emerging findings were compiled and shared with participants for validation, confirming that interpretations reflected their intended perspectives. All participants reviewed the findings and raised no concerns, supporting the authenticity of the results. Reflexivity was maintained through ongoing documentation of the researcher's values, beliefs, and professional experiences. Representative feedback included statements such as, 'Everything reads correctly to me'.[38]

Patient and public involvement

Patients and the public were not involved in the design, conduct, reporting or dissemination plans of this research.

RESULTS

Participant characteristics

The sample comprised 10 male participants aged 23–63 years (mean 33.5). Most were married (n=6, 60%), while four were single (40%). Four participants (40%) had completed secondary education, and six (60%) held a bachelor's degree. Although eligible female patients were approached during recruitment, all declined participation due to privacy concerns and the sensitive nature of bladder management and genital care discussions. This remains a limitation of the study and warrants further research involving female patients with SCI. Participants were recruited from the inpatient rehabilitation unit and were undergoing active rehabilitation at the time of the study, although the time since injury varied from 1 to 5 years (mean 3.2 years). All participants had paraplegia resulting from automobile accidents, indicating a relatively homogeneous injury profile across participants. Further details are presented in table 1.

Identified themes

The identified meanings were grouped into 18 clusters derived from 420 coded meanings. These clusters were analysed for similarities and organised into three main themes with six subthemes, forming a thematic framework of IC experiences following SCI (figure 1).

Three main themes emerged: Theme 1: Frequent use of IC and daily practice, comprising four subthemes: (1) frequency of practice, (2) environmental and health-related issues, (3) privacy during IC and (4) fluid intake and output. Theme 2: Cleanliness and general care, comprising two subthemes: (1) catheter cleaning and (2) incontinence. Theme 3: Body image and sexuality.

Theme 1: the frequent use of IC and daily practice

This theme comprised four subthemes: frequency of practice, environmental and health-related challenges,

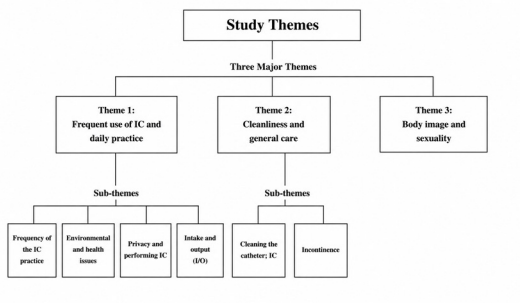

Figure 1 Thematic framework illustrating major themes and subthemes related to IC experiences following SCI. IC, intermittent catheterisation; SCI, spinal cord injury.

privacy during IC, and fluid intake and output. Participants described IC as a structured and integral part of their daily lives, involving repetitive yet essential tasks. Many referred to it as part of their 'daily lifestyle', characterised by time constraints, strict scheduling and limited privacy. IC was perceived as a routine activity requiring adherence to regular intervals and careful monitoring of fluid intake.

Subtheme 1.1: frequency of the practice

Participants described a highly structured, routine-based approach to IC, typically performed every 2–4 hours, with increased frequency during illness or when fluid intake was higher. Adherence to this schedule was considered essential, and deviations often led to discomfort. Several participants reported that performing IC every 2–3 hours was burdensome. As participants noted:

> I usually do it every two hours regardless of the situation as a routine. (P03)
>
> It was proposed that I do it every two to three hours, and this is a huge burden for me. (P09)

In contrast, some participants reported performing IC approximately every 4 hours, with frequency varying with fluid intake and daily routines. As one participant stated:

> We found doing it six times a day is excellent, so we tend to catheterize every four hours. (P06)

Similarly, other participants described IC as overwhelming, feeling as though it was required throughout the day, particularly with increased fluid intake or during certain seasons. As one participant explained:

> I do it early in the morning, after each meal, before each prayer, and before going to sleep. In winter, it is more frequent, and when I drink more water, it increases. (P04)

Subtheme 1.2: environmental and health issues

All participants reported that IC frequency varied with seasonal changes, weather conditions, and health status, with more frequent use in winter and less in summer. As one participant noted:

> I used the catheter very often; however, I might do it more frequently; it depends on many factors; for example, in the summertime, I use this catheter less than in the wintertime, as I might do more and more, even hourly. (P04)

Seven participants reported increased IC frequency during illness, often accompanied by higher fluid intake. As participants explained:

> With UTI, we might do it every hour, just drinking water and trying to flush it to have fewer symptoms and treat the UTI. (P03)
>
> If there is leakage, we do it very often. (P09)

Subtheme 1.3: privacy and performing IC

Participants identified privacy as a major concern when performing IC. They attempted to preserve privacy by selecting appropriate times and locations; however, the need for frequent catheterisation made this challenging. Many described IC as a highly personal and intimate practice that was difficult to discuss, and expressed concern about others' misconceptions. The frequency of IC further increased the burden of maintaining privacy.

As one participant noted:

> Nowadays, it is difficult to use such a catheter every day and keep it at lowkey. (P05)

Another participant highlighted the lack of appropriate facilities:

> It is challenging to obtain privacy for SCI because when I need catheterization, I cannot find specific areas to do it there. (P09)

Similarly, maintaining privacy in public settings was described as particularly difficult:

> Maintaining privacy in public is a big challenge; in particular, I need to find a suitable bathroom that enables me to empty my bladder. I cannot wait until I reach home. (P10)

Subtheme 1.4: fluid intake and output

Eight participants reported that IC frequency was largely influenced by fluid intake. Although healthcare professionals encouraged increased hydration, this led to more frequent catheterisation, which some participants found burdensome, particularly in social settings. As one participant noted:

> I am not consuming too much fluid based on what my doctor advised me to avoid infections, and I always feel that my bladder is full, and when I go out with my family, I feel it is uncomfortable for me to do many times, I have to drain the urine. (P03)

Participants were highly conscious of their fluid intake and the balance between overconsumption and underconsumption. Some reported intentionally restricting

fluid intake despite feeling thirsty to avoid frequent catheterisation. As one participant explained:

> Sometimes, even if I feel thirsty, I do not drink because I am aware that the more I drink, the more I need to empty my bladder. (P07)

Theme 2: cleanliness and general care

Participants emphasised the importance of hygiene in maintaining bladder health. This theme reflects practices related to cleanliness and catheterisation technique, including efforts to reduce infection risk before, during and after catheterisation. Key strategies included hand hygiene, maintaining a clean environment and minimising contact with the catheter prior to use.

Subtheme 2.1: cleaning the catheter

Participants emphasised the importance of personal hygiene and catheter cleaning in preventing infection. All reported ensuring that catheters and related equipment were clean before use. In hospital settings, catheters were typically used once, whereas at home, participants followed medical advice to reuse catheters for up to 24 hours. Cleaning practices included washing with soap and water and thorough drying between uses. As participants noted:

> I have a group of catheters supplied by the hospital; we wash out with soap and water once per use for a maximum of 24 hrs. (P04, P06)

Two participants reported that reusing catheters was impractical, particularly during travel and in hot weather, due to storage challenges and hygiene concerns. As one participant explained:

> Storing the reused catheter affects the tubes, especially during traveling and in the summertime with hot sunlight; this would jeopardize my health. (P05)

The same participant also expressed concerns about the effectiveness of cleaning practices:

> Not sure if the cleaning was perfect and prevented infection; reused catheter is tricky. (P05)

Subtheme 2.2: incontinence

Participants identified inadequate hygiene as a key factor contributing to contamination and infection, including urinary tract infections (UTIs) and renal complications, which could lead to incontinence between catheterisations. All participants described incontinence, either experienced or anticipated, as one of the most challenging aspects of IC. Many reported using medications to manage leakage.

To mitigate this issue, participants adopted protective measures, such as absorbent pads or sheets, particularly during catheterisation. As participants noted:

> I always use pads to prevent any urine leakage. (P01)

> I feel wet if I did not use sheets before draining my bladder; I know it takes time, but this is how I do it. (P09)

Theme 3: body image and sexuality

Participants consistently contrasted IC with indwelling catheters, noting that permanent devices, particularly those with leg bags, negatively affected their body image. In contrast, IC was preferred because it avoids the need for continuous drainage devices, allowing participants to feel more normal and maintain their daily routines. All participants reported improved body image and greater activity levels with IC compared with Foley catheters. As reflected in the following quotes:

> Never be happy with the leg bag and Foley's catheter having something attached to the legs, with the Foley's catheter, which makes attention, everyone looks to me. (P06)

> You know, IC helped me feel normal, and I felt that my body image was very close to my body before this accident; I feel I can live a normal life image. (P01)

Several participants emphasised that maintaining a positive body image helped them adapt to IC. As one participant stated:

> Listen, who does not care about body image? But I am ok with this catheter, as it is now; I am focusing more on how to adapt. (P08)

Participants also viewed sexuality as an integral aspect of body image. They expressed satisfaction with IC because it does not require a continuously attached device, reducing physical and psychological barriers during intimate interactions. In contrast, indwelling catheters were perceived as restrictive and intrusive. IC allowed participants to maintain a sense of normality and continue intimate relationships without visible drainage devices. As one participant noted:

> IC enhanced my intimate life, and it is the best in this matter; I feel I am the same person, even my partner accepts that. (P06)

DISCUSSION

The findings of this study, reflected in three main themes: daily practice and frequency of IC, cleanliness and general care and body image and sexuality, provide important insights into how patients experience and adapt to IC in their daily lives.

Participants described uncertainty, variability in IC practices and challenges related to privacy and routine, highlighting the need for more structured and individualised education. These findings suggest that patient education should be tailored, culturally sensitive and responsive to individual needs. Some participants appeared to have limited involvement in decision-making about bladder

management approaches, underscoring the need for shared decision-making.

These findings further emphasise the importance of equipping patients with the knowledge required to make informed choices. Previous research also suggests that both internal and external factors may hinder effective IC use, with internal barriers often related to physical and psychological challenges.[39]

Participants reported accepting their disability; however, bladder control remained a key limitation to maintaining an active life. IC was perceived as an effective method for bladder emptying, though its use was influenced by factors such as seasonal changes and privacy concerns, prompting participants to adjust their fluid intake. Appropriate catheterisation frequency is essential to prevent bladder overdistension and reduce infection risk.[40] Accordingly, IC frequency should be individualised based on patient needs and daily routines.[41] Bladder emptying is typically recommended 4–6 times per day to ensure complete drainage and reduce the risk of complications, as supported by clinical guidelines and previous literature.[42 43] Environmental factors, such as weather, further influenced fluid intake and IC frequency. Privacy concerns also emerged as a significant barrier, highlighting the need for tailored, patient-centred care.[44] Given the risk of rapid bacterial colonisation, IC is associated with potential complications, including sepsis, pyelonephritis and renal calculi, underscoring the importance of infection prevention.[45] Participants demonstrated a strong awareness of hygiene practices, emphasising the importance of cleanliness in preventing complications, as reflected in Theme 2.

Participants also reported that the time required for IC was burdensome, contributing to difficulties accessing appropriate environments, feelings of embarrassment and limited privacy. However, detailed descriptions of bathroom design or accessibility (eg, wheelchair access or designated facilities) were not consistently reported and should therefore be interpreted with caution. As reflected in participants' narratives, privacy concerns were a major challenge influencing how and where IC was performed. These challenges disrupted daily routines, including work, and increased psychological stress, potentially affecting adherence to IC, consistent with previous findings in the SCI population.[46]

However, catheterisation frequency is individualised based on clinical factors such as bladder function and management. Variations in prescribed frequency (eg, every 2 hours vs 4–6 hours) may influence perceived burden, thereby limiting direct comparison across participants.[43] Findings from Theme 1 indicate that the routine nature of IC and its time demands contributed to both physical and psychological burden.

Beyond participants' experiences, objective clinical factors may also influence bladder management and patient perceptions. Variables such as bladder function, detrusor overactivity, medication use and individualised treatment plans can affect both the frequency and complexity of IC. Evidence suggests that optimising detrusor overactivity improves QoL in patients with SCI.[47] The absence of such clinical data limits the interpretation of variations in patient experiences.[48]

Catheterisation speed and efficiency are essential for enabling patients with SCI to manage daily activities effectively. In Arabic cultural contexts, using such devices in public or workplace settings may be particularly sensitive, as disclosure of the condition can lead to embarrassment or social stigma affecting both the individual and their family. This cultural dimension adds a further layer of complexity to how patients approach IC.[49] As highlighted in theme 3, IC was associated with improved body image and greater comfort in maintaining social and intimate relationships.

Most participants demonstrated a strong understanding of catheter care and self-management practices. Although some reported uncertainties related to body image, sexuality, and lifestyle adaptation, they ultimately showed confidence and successfully integrated IC into their daily lives. Despite these challenges, Arab men appeared able to adapt, partly because of sociocultural factors that may offer greater social support and opportunities than those available to women. For example, although sexuality is often considered a sensitive topic in Arab cultural contexts, men may have relatively greater freedom to express their sexuality, whereas women may encounter stricter social norms and stigma.[50]

Female participants were not recruited because all approached eligible individuals declined participation, citing privacy concerns and the sensitive nature of discussions related to bladder management and genital care. This may reflect broader cultural and privacy-related barriers contributing to the underrepresentation of women in IC research, highlighting an important gap in the literature.

These findings provide a foundation for future research on QoL related to IC use. Participants demonstrated adaptability by identifying practical solutions and learning from others' experiences, supported by training, nursing care, and feedback.[51 52] Effective management, guidance and education on IC for patients with SCI may reduce hospital stays and improve financial, operational and clinical outcomes.[53 54]

Strengths and limitations of this study

This study has several strengths. The use of a phenomenological approach enabled an in-depth exploration of patients' lived experiences, providing rich and nuanced insights into the use of IC among individuals with SCI. Additionally, conducting interviews in participants' native language and within their cultural context enhanced the authenticity and depth of the data.

This study also has several limitations. The sample size was relatively small but sufficient to achieve data saturation. Future studies involving larger and more diverse samples may offer broader perspectives. The qualitative

descriptive design may also limit the transferability of the findings.

This study included only male participants because all eligible female patients declined participation. Although privacy concerns and discomfort discussing intimate bladder management issues may affect both sexes, these concerns may be particularly influential among female patients within conservative cultural settings. Consequently, the findings may not fully reflect the experiences of women with SCI using IC. This recruitment challenge highlights an important gap in the literature and underscores the need for future research involving female participants to better understand gender-specific experiences and barriers related to IC.

Additionally, the absence of objective clinical data, such as bladder function, medication use and individualised treatment plans, limits the interpretation of variations in IC frequency and patient experiences. Consequently, it was not possible to determine whether some reported challenges were directly related to IC itself or to differences in the underlying severity and management of NLUTD. This may affect the clinical interpretation and transferability of the findings.

Participants also reported emotional challenges, including frustration, anxiety, embarrassment and reduced confidence. It is possible that the relatively early stage of adjustment following SCI and initiation of IC influenced participants' willingness to discuss sensitive experiences. Individuals at later stages post-injury may have different perspectives and may be more comfortable sharing their experiences.

Despite these limitations, the phenomenological approach enabled an in-depth exploration of lived experiences, thereby enriching the data.

CONCLUSIONS

This study explored the experiences and challenges associated with IC among Arab male patients with SCI, including its influence on daily activities, social interactions and body image. Participants described various physical, psychological and social challenges, as well as coping strategies used to adapt to IC in daily life. The findings may help enhance understanding of patient experiences and inform culturally sensitive, patient-centred education and supportive care approaches. Further research involving larger and more diverse populations, including female participants and additional clinical data, is needed to better understand the relationship between IC use, NLUTD management and patient experiences.

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Contributors YA conceived and designed the study, conducted data collection, performed data analysis and drafted the manuscript. RA-A, AAH and SJ contributed to study design, data interpretation and critically revised the manuscript for important intellectual content. All authors reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work. YA is the guarantor of this study and accepts full responsibility for the integrity of the work and the conduct of the study.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval Ethical approval was obtained from the Institutional Review Board (IRB) of King Fahad Medical City (KFMC), Riyadh, Saudi Arabia (IRB log no. 22-262). Prior to data collection, the PI explained the study aims, methods and confidentiality procedures to potential participants. All participants provided written informed consent. The study was conducted in accordance with the Declaration of Helsinki, institutional ethical standards and relevant national regulations.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. The data that support the findings of this study are available from the corresponding author on reasonable request. Data are not publicly available due to privacy and ethical restrictions.

ORCID iDs
Yacoub Abuzied https://orcid.org/0000-0003-1388-4549
Rasmieh Al-Amer https://orcid.org/0000-0002-9411-7386
Azura Abdul Halain https://orcid.org/0000-0001-9801-9022
Salimah Japar https://orcid.org/0000-0001-9609-028X

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