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RESEARCH ARTICLE

Urinary incontinence post-stroke: a qualitative exploration of the multidisciplinary management in the acute stage post-stroke

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ABSTRACT

Purpose: To explore how staff on a hyperacute/acute stroke unit in the United Kingdom (UK) perceived the management of urinary incontinence (UI) and their role within this.

Materials and methods: Qualitative exploration using questionnaires and interviews. Data were analysed using descriptive statistics and themes were identified using framework analysis.

Results: Analysis of 43 questionnaires and 5 follow-up interviews identified 3 themes: "A focus on containment and the impact of UI on patient well-being," "Invisibility of UI as a rehabilitative goal," and "Readiness for change with recognition of the value of multidisciplinary working for UI rehabilitation."

Conclusions: Staff across all professional groups considered UI an important problem to address post-stroke. In contrast to other aspects of stroke rehabilitation, UI is less visible, despite staff recognising the impact of communication, cognition and sensorimotor deficits on this problem. Greater interprofessional working and goal setting may support a more rehabilitative continence culture.

IMPLICATIONS FOR REHABILITATION

- Urinary Incontinence (UI) following stroke is a common problem and is associated with a reduced quality of life, mortality, and institutionalisation.
- Conflicting clinical priorities in acute stroke care such as mobility practice, swallow therapy and discharge planning, challenge provision of a rehabilitative UI culture which is considered time consuming.
- Unlike other aspects of stroke rehabilitation, UI is invisible and often doesn't feature in multi-disciplinary meetings or goal setting.
- Improved knowledge and communication of post-stroke UI is needed to enable healthcare professionals to feel confident to include continence rehabilitation into their scope of practice.

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Incontinence; stroke, staff; perception; rehabilitation; qualitative; surveys

Introduction

Urinary incontinence (UI) affects an estimated 40–60% of people admitted to hospital after stroke and up to 25% are incontinent when discharged [1]. Urinary incontinence has been defined by the International Continence Society as "any involuntary leakage of urine" [2]. Post-stroke UI has been shown to be strongly associated with worse outcomes and a higher institutionalisation rate than for those who are continent, with feelings of shame and embarrassment preventing people from seeking advice for this problem [3–5]. A systematic review reported that on average individuals who are incontinent after stroke retain only 40% of their pre-stroke activities compared to continent individuals who retain 70% [6]. Stroke survivors with UI also report significantly lower health related quality of life and mental health compared with stroke survivors who are continent [7]. Studies show that the odds of mortality at two years among stroke survivors with UI were 4.43 times that of those who were continent [8]. Urinary incontinence costs the NHS nearly £2 billion every year [9] with poorly managed continence resulting in urinary tract infections, dehydration and skin breakdown which may cause pressure sores, each costing on average £4,638 [4,10].

A recent review of interventions for UI post-stroke showed that there was limited evidence to support best practice [1]. Despite this, current recommendations do set minimum standards for continence care delivery, with the first line priority being the rehabilitation of continence with a return to standard toileting to promote quality of life (QOL) rather than containment through use of pads or other devices [4]. UK audit data from the Sentinel Stroke National Audit Programme (SSNAP) however shows that provision of continence care plans in people with persistent UI is widely variable across the UK [11].

Causes and types of post-stroke UI are complex and multifactorial. "Functional incontinence" is a type of UI caused by communicative, cognitive and sensorimotor deficits indirectly impacting on a patient's ability to maintain continence despite having normal bladder function [12]. Communication difficulties may affect a person's ability to communicate the need to void and seek assistance, cognitive difficulties may hinder a person's ability to respond effectively to the sensation of needing to void and

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impaired manual dexterity, limb weakness and visual impairments may create difficulties in adjusting clothing, handling a urinal or transferring safely to a toilet [13]. Thus recommendations state that continence management after stroke should involve a range of professions including allied health professionals [14–16]. Despite this, continence management continues to be widely perceived as a nursing role rather than either a shared multidisciplinary team (MDT) or interdisciplinary team (IDT) responsibility [14].

Many stroke survivors with UI do not receive the recommended levels of interdisciplinary continence support for this complex clinical problem which leads to a lost opportunity for early intervention to enhance recovery [1]. Assessment and rehabilitative management of UI is considered time consuming and something to be balanced with other clinical priorities such as patient safety or medication rounds [14,17]. A UI culture of containment using pads or catheters is widely reported [14,17], with containment enabling other tasks to be prioritised. Research has separately explored nurses' and physiotherapists perceptions and knowledge of UI post-stroke but evidence about the perceptions of the wider MDT is lacking. Studies report a lack of interdisciplinary working with regards to UI post-stroke and describe poor communication and an absence of shared objectives or goals focused on continence [14,17,18]. All professions report a lack of knowledge and stroke specific continence training but it remains unclear whether a lack of knowledge or a lack of role identity related to UI is the main barrier to interdisciplinary working in continence rehabilitation [14,19].

In both published literature and this paper, the terms MDT and IDT are used interchangeably. However, important differences between these terms have been highlighted [20,21]. Choi & Pak [21] defines MDT and IDT working, with the former referring to a model that "draws on knowledge from different disciplines but stays within their boundaries" and the latter that "analyses, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole".

With such a limited evidence base to understand what impedes or supports an MDT/IDT approach to UI assessment and management post-stroke, the primary aim of this study was to explore how the current management of UI was perceived by different professions working within the stroke MDT including role identity as part of this. The secondary aim was to identify what was felt to impede or support best practice UI care in a typical mixed hyperacute (HASU)/acute stroke unit (ASU).

Methods

Study design/setting

To explore the perceptions of professionals working in the stroke MDT, the primary researcher (LH) used questionnaires and follow-up one-to-one interviews within a typical HASU/ASU in the UK. On this 50 bedded unit a structured continence care plan was available within the electronic records for use and referrals could be made to continence nurse specialists or community continence services if deemed necessary.

As the study did not involve a change in patient care, randomisation or generalisability of findings it was registered as a quality projects/service evaluation and approved by the hospital Clinical Audit Department as per local policy. No additional ethical approval was required.

Recruitment

All clinical staff working on the HASU/ASU between February and March 2023 were invited to complete a short anonymous questionnaire and express interest in taking part in an interview. Staff were provided with an information sheet and gave written consent to participate in the study. The responses gathered represented the diverse range of professional groups working on the unit and recruitment was ended when no further questionnaires were collected for one week. Interviews were conducted in May 2023. One staff member from each professional group was invited to take part. If more than one member from the same professional group expressed interest in taking part in the interviews, one was randomly selected from each of these groups using simple random sampling. This was to ensure one group wasn't overrepresented in the interviews compared to another.

Method: questionnaires

A semi-structured questionnaire was developed with open and closed questions which collected information on staff demographics, experience, confidence and knowledge of UI post-stroke, perceptions of current UI care and role identity related to UI (Supplementary Appendix A). No published, validated questionnaires on this topic were identified and therefore one was developed. This was piloted with two physiotherapy academics and four physiotherapy students linked to the university as well as five healthcare professionals representative of the final sample. This occurred prior to distribution to establish content and face validity. Those involved were asked to give feedback on how long it took to complete and how clear and relevant the questions were to the topic. Following piloting, questions were reworded for clarity and additional spines for care support workers were included to allow for a distinction from registered nursing staff. Closed questions were analysed using descriptive statistics to represent response frequencies. Open questions were used to enhance understanding and validate responses.

Method: interviews

The interviews were conducted by the primary researcher (LH) who worked on the unit. The interview questions were developed based on the responses from the questionnaire. Topics focused on staff perceptions of UI rehabilitation post-stroke, how an education programme may be best delivered, whether knowledge could change practice and what the barriers might be to the implementation of knowledge. The interview schedule is available in Supplementary Appendix B.

Acknowledging that prior assumptions and beliefs could introduce interviewer bias and influence the process, the interview schedule was designed to minimise this by having predetermined questions and a more structured format [22–24]. The interview schedule was piloted, reviewed and refined with SD (a physiotherapy academic with doctorate degree and qualitative research experience), a student on a neurophysiotherapy masters programme and a physiotherapy colleague. Feedback was sought regarding tone, direction, and duration of the interview process and the final interview schedule was agreed by LH and SD.

Data management and analysis

Interviews were digitally recorded and transcribed verbatim. Transcriptions were pseudo anonymised by replacing identifying information with a number which did not allow the individual to be identified in the study write-up and dissemination but could be linked back to the original data if needed. The data were analysed using a framework approach to thematic analysis which

is advocated for analysis of semi-structured interview scripts [22]. This method enables categorisation of data that covers similar topics and is easily adapted for use with deductive analysis where codes may have been pre-determined "*a priori*" [25]. Trustworthiness of the data was determined according to widely accepted criteria by Lincoln & Guba (1985) cited in [26]. Codes were reviewed with a researcher experienced in qualitative analysis (SD) and themes identified.

Results

Questionnaires

Demographics

Of the approximate 150 staff working clinically on the unit, 43 (29%) returned the questionnaire with representation from a broad range of professions: Care Support Worker (CSW) ($n = 4$, 9%), Nurse ($n = 6$, 14%), Doctor ($n = 5$, 12%), Occupational Therapist (OT) ($n = 9$, 21%), Physiotherapist (PT) ($n = 8$, 18%), Speech and Language Therapist (SALT) ($n = 5$, 12%), and Therapy Assistant (TA) ($n = 6$, 14%). Most respondents were experienced in caring for patients post-stroke and had worked within stroke for over a year ($n = 33$).

Role responsibilities

Figure 1 details who participants felt could be responsible for completing the initial UI assessment and care plan, with most respondents indicated nursing ($n = 42$). The "other" category included nursing assistants ($n = 1$), family/carers ($n = 1$) and continence nurse specialists ($n = 2$).

Figure 2 illustrates the professions that staff felt needed to be involved in the management and rehabilitation of UI post-stroke.

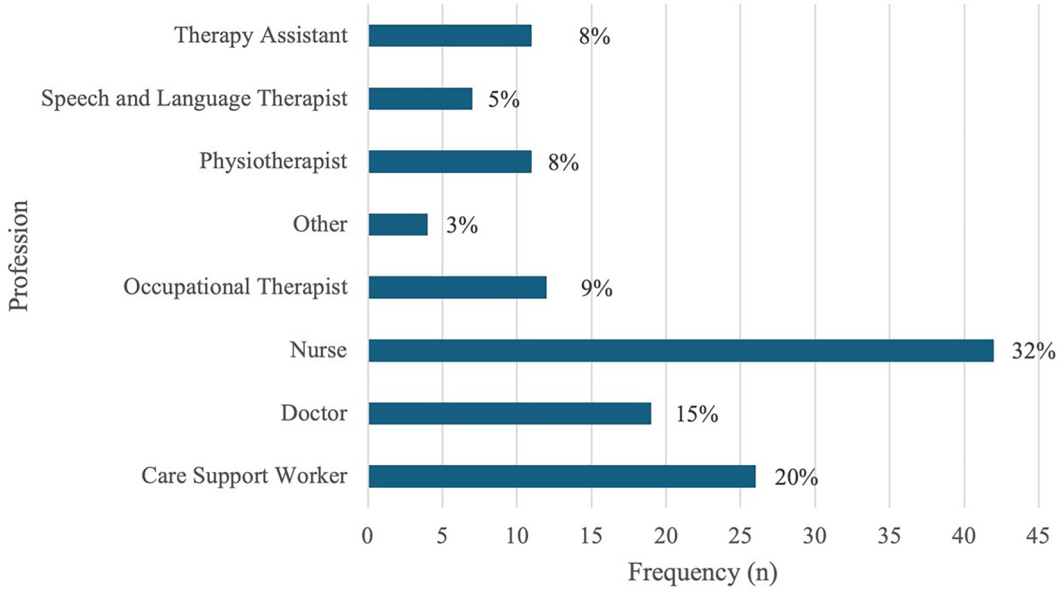

Figure 1. A frequency chart to illustrate who participants felt could be responsible for completing the initial urinary continence assessment and care plan.

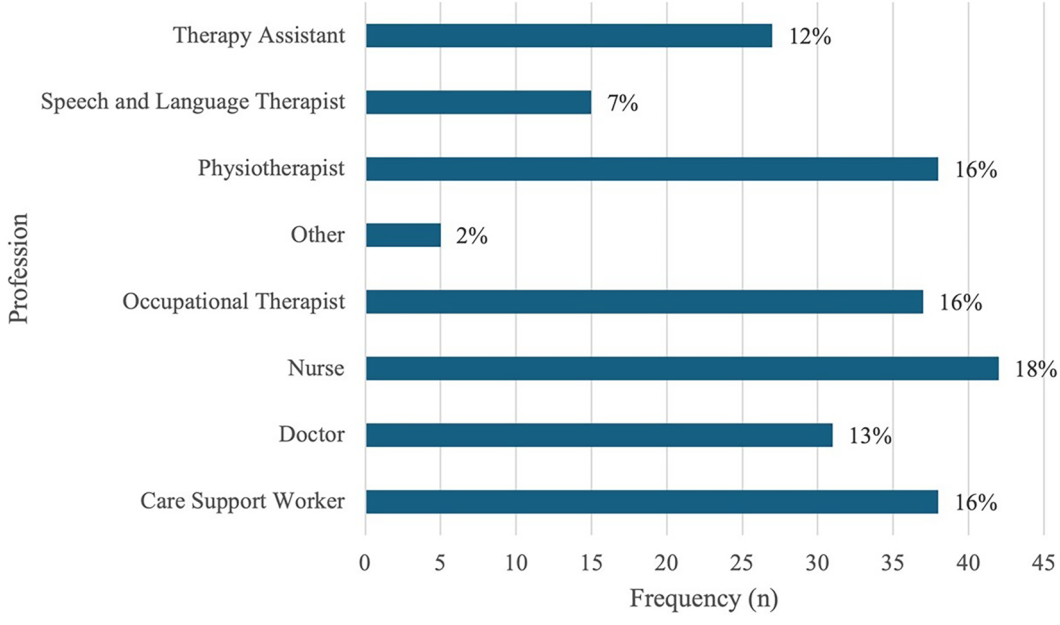

Figure 2. A frequency chart to illustrate the professions that staff felt needed to be involved in the management and rehabilitation of UI post-stroke.

The "other" category included carers/family ($n=1$), continence nurse specialist ($n=2$), nursing assistants ($n=1$), and urologist ($n=1$).

When reporting perceived importance of management and rehabilitation of UI post-stroke in respect to job role and other work priorities, the majority 72% felt it was important, 14% felt it was neither important nor not important and 14% felt it was not important.

Current clinical practice

Table 1 details responses to questions exploring current clinical practice. Over 50% reported asking a patient if they had any problems controlling their bladder in the past week. Only 5 reported never having asked the question. Of the respondents who had asked a patient, 47% ($n=18$) reported patients as having communication or cognitive difficulties. In these cases, most had asked family/carers to clarify the information ($n=11$), only 1 person reported using communication strategies to acquire the information from the patient. Most respondents 84% ($n=36$) felt that bladder management was part of the patient's rehabilitation programme. More reported feeling either somewhat dissatisfied or extremely dissatisfied 49% ($n=21$) with how the team managed UI on the unit, compared to the number who felt extremely satisfied or satisfied 16% ($n=7$).

Training needs

Out of 43 responses, just one felt extremely confident in the assessment and identification of the different types of UI post-stroke, 13 (30%) felt confident, 9 (21%) reported feeling neither confident or unconfident, 16 (37%) felt unconfident and 4 (9%) felt extremely unconfident.

Opportunities

To support delivery of enhanced post-stroke UI care, 34 (27%) respondents felt an improved awareness of referral pathways for individuals with persistent UI post-stroke would be beneficial, 31 (24%) indicated a greater involvement of other members of the MDT through discussion and joint goal setting, 29 (23%) felt UI post-stroke should be made a higher priority, and 27 (21%) supported access to specialist training.

Interviews

Seven staff members volunteered to be interviewed. To ensure equal representation across the different professional groups, one was randomly selected in the two professional groups that had two volunteers. Five health care professionals (HCP) participated in the interviews, one Doctor, Nurse, OT, PT, and SALT. All had worked in stroke for over a year. The final framework consisted of 17 codes clustered into three major themes which reflected the voices of all the interviewees: "A focus on containment and the impact of UI on patient well-being", "Invisibility of UI as a rehabilitative goal", and "Readiness for change with recognition of the value of multidisciplinary working for UI rehabilitation" (Figure 3).

A focus on containment and the impact of UI on patient well-being

Participants expressed a deep sense of empathy and insight into the effects UI may have on a patient's well-being. Incontinence was viewed by all as an important problem that could be

Table 1. Questionnaire responses looking at current clinical practice.

Question	Categories	N (%)
When was the last time you asked a patient if they had any problems with controlling their bladder?	In the past week	22 (51.2)
	Not in the past week, but in the past month	15 (34.9)
	Not in the past month, but in the past 6 months	1 (2.3)
	Never	5 (11.6)
Did this patient have any communication or cognitive difficulties?	Yes	18 (47.4)
	No	20 (52.6)
If yes, who did you get the information from?	Family/carers	11 (69)
	"I used communication strategies to get the information from the patient."	1 (6)
	MDT	3 (19)
	Documentation	1 (6)
Do you feel that bladder management is part of the patient's rehabilitation programme?	Yes	36 (84)
	No	5 (12)
	Maybe	1 (2)
	Missing	1 (2)
If yes, please specify why.	"Yes – because it can affect discharge. It can also be one of the patient's goals."	
	"Yes – because of the evidence around increased mortality and depression."	
	"Yes – essential component of personal care and dignity."	
	"Maybe – some people have had ongoing continence problems prior to admission and therefore wouldn't be appropriate from a neuro rehab perspective."	
	"Yes – It is part of recovery. Can be distressing/difficult to manage independently."	
	"Yes – It may strongly influence the success of rehabilitation. We do need more external support (urology) to evaluate underlying causes and to initiate management."	
Overall, how satisfied, or dissatisfied are you with how the team manages UI on the unit?	Extremely satisfied	0 (0)
	Somewhat satisfied	7 (16)
	Neither satisfied nor dissatisfied	11 (25)
	Somewhat dissatisfied	12 (28)
	Extremely dissatisfied	9 (21)
	Prefer not to say	0 (0)
	Missing	2 (5)
	Other: "Unaware of how well we are doing."	2 (5)
	"Unsure I'm aware of it enough to know."	

MDT, multidisciplinary team; UI, urinary incontinence.

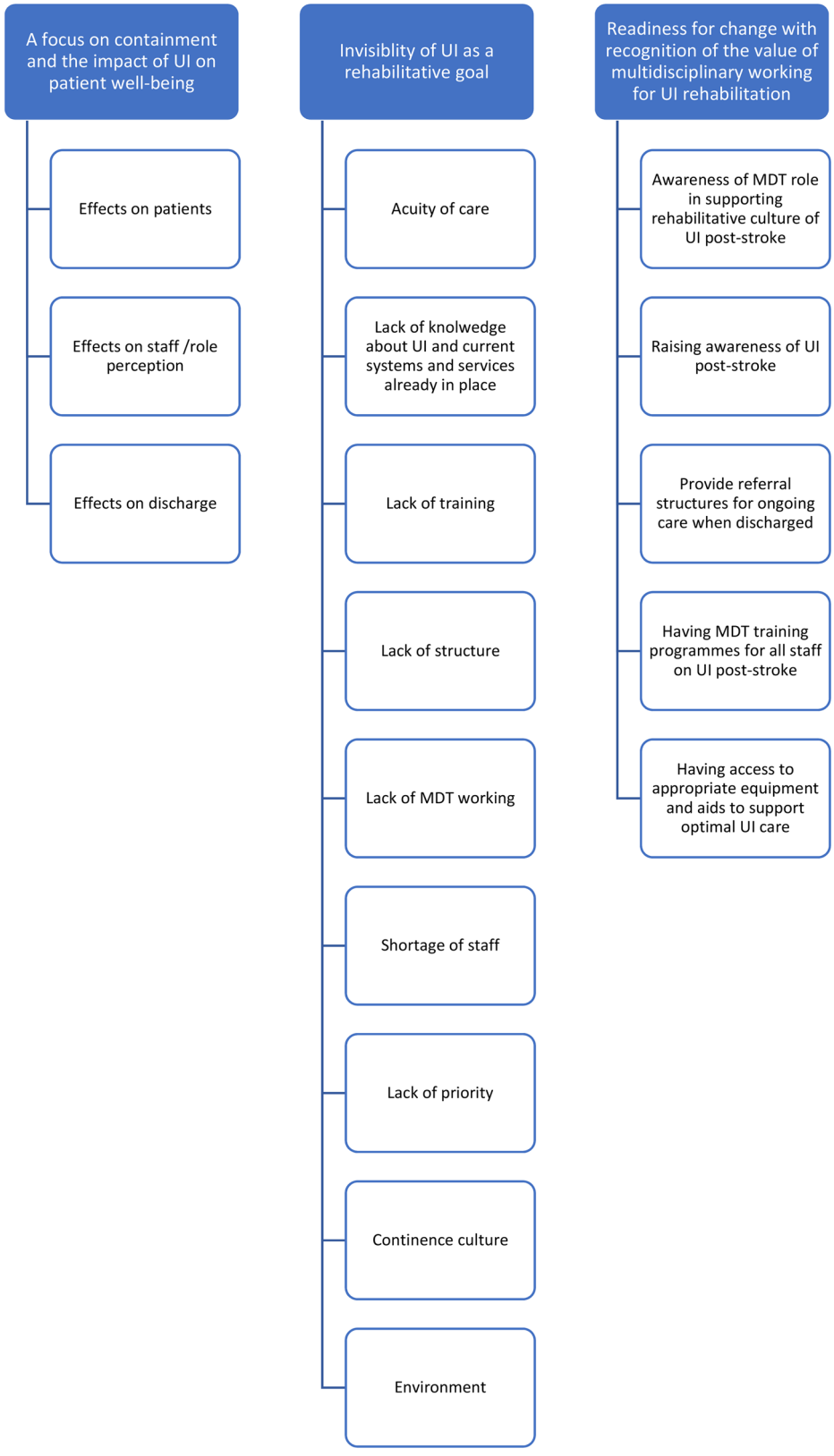

Figure 3. Overview of themes and codes developed from interviews.

profound for some people and impacted on a person's dignity, QOL and perceived self-image:

> "Urinary incontinence can be life changing for the patient, particularly if they were continent before. It can be quite embarrassing for the patient so there should be lot of onus on, you know, maintaining privacy and dignity…" (P4)

Yet there was ambiguity about how it would be managed on discharge and the longer-term impact it would have on the person and their family/carers:

> "People can use pads and use commodes and carers are expected to obviously empty commodes, whereas patients and families, it's difficult for them to get their head round…" (P2)

Although nurses were perceived to be the experts in continence care, there was wide-spread acknowledgment that continence lacked an interdisciplinary rehabilitative approach. Participants identified that other HCPs could play a role in contributing to the assessment and management of continence care:

> "… helping that person communicate that they need to do that process." (P3)

> "…it could be a reason that you're not so mobile anymore so you can't get to the toilet in time…and that's something that we need to work with…" (P1)

Invisibility of UI as a rehabilitative goal

Despite the potential impact of UI on a person's QOL, it was identified by the participants that there was limited interdisciplinary discussion and joint working in this area of stroke rehabilitation. This was in contrast with other rehabilitation goals and felt to be due to several factors. Knowledge gaps in the assessment and management of UI post-stroke were identified by all the participants and extended beyond practice guidelines to the systems and structures already in place to support patients with UI both in the hospital and on discharge.

Communication about continence between HCPs was reported to be lacking. Continence assessments were undertaken separately by multiple professional groups (Nursing, OT, PT), yet three participants reported that continence wasn't a topic for discussion at the weekly MDT meeting nor on admission or discharge from the unit. This was felt to be a barrier to shared interdisciplinary goal setting around continence and implied a lack of joint working:

> "We have the continence assessments on EPR (electronic patient record) …that obviously tends to get done by the nursing staff. I don't think therapies particularly do the continence assessment, although I know particularly on their initial assessments, they're usually the ones that are, you know, looking to see what their baseline was." (P4)

Most participants reported challenges of providing UI rehabilitation in an acute care environment due to the high level of clinical need, as well as contextual factors such as staffing levels and environment.

Two participants reported feeling frustrated to witness the inappropriate use of containment methods such as pads and catheters due to continence care on the unit being de-prioritised by other demands on staff time:

> "I get very frustrated when you know the patient rings the bell and says can I go to the toilet and they've got this big incontinence pad on and it's like, why?" (P4)

One participant felt that continence care was best addressed in the community due to time pressures on an acute unit.

Readiness for change with recognition of the value of multidisciplinary working for UI rehabilitation

There was widespread support for both MDT training and interdisciplinary working to support a more rehabilitative culture in UI care. A lack of knowledge about post-stroke UI was identified by all professions and there was a strong desire to learn more.

"I think that having training as a whole MDT …" (P1)

Many staff felt that the weekly MDT meeting would provide a good opportunity to establish a patient's continence status and to discuss continence care goals, as representatives from all professional groups consistently attended. One participant described how despite several attempts at discussing continence in the MDT, it had not consistently featured:

> "I think it should form part of the MDT… we've been in and out of addressing it or not addressing it … but I think continence is a big part of rehabilitation and it should be featured." (P5)

Other suggestions offered to improve communication, raise awareness and support interdisciplinary working around UI care included once weekly continence rounds, development of robust care pathways to support evidence-based continence care for patients whilst on the unit and appropriate referral to specialist continence services on discharge if required.

The importance of involving the patient and their family/carers in supporting an individual's rehabilitation of continence was also highlighted:

> "I think definitely encouraging the whole MDT to think about a toileting regime and trying to retrain the bladder…but also talk to the patients and the family about it …" (P2)

Discussion

This study has started to address the gap in current literature exploring how staff across all professional groups perceive the assessment and management of UI on a typical UK HASU/ASU. This is important to determine if we are to deliver an effective programme involving truly collaborative working between professions, to enable effective post-stroke UI rehabilitation.

All professions within the stroke team felt that UI was an important problem which could negatively impact a person's QOL, dignity and well-being as well as that of their family/carers. Despite this, many who took part in both the questionnaire and interviews reported a practice of continence containment which lacked an individualised assessment and management programme. The staff described how high levels of clinical need combined with limited time and resources afforded little time for continence rehabilitation which had to be balanced against other priorities such as drug rounds and observations – a finding similarly reported in other studies [17]. The culture for keeping patients dry and comfortable, avoiding skin breakdown and the development of pressure sores whilst in a busy and demanding work environment was an important factor in driving the culture of containment.

A lack of confidence in, and knowledge of UI care particularly in respect to stroke specific continence rehabilitation was widely reported amongst staff in this and other studies [14,18]. Many participants were keen to improve their knowledge of UI post-stroke and improve interdisciplinary working by attending multidisciplinary training. It was suggested that this training could facilitate interdisciplinary working, communication and goal setting for more effective assessment and rehabilitation of UI. This supported findings from other qualitative studies exploring staff perspectives of the treatment of UI post-stroke, including those on rehabilitation units [14,17,19]. Although such factors may account for the lack of engagement from the wider stroke team, the invisibility of UI as a problem which can be rehabilitated is in stark contrast to other areas of stroke care such as swallowing or walking. Highlighting the importance of UI rehabilitation through development of robust continence pathways

and a shift from MDT/IDT working to "interprofessional" working may provide an opportunity to improve the lives of those affected. Interprofessional working as defined by Baggs [20] as one which involves "collaborative interactions", may enhance rehabilitative continence care after stroke through development of both shared and individual professional responsibility in this area.

Strengths and limitations

This study included representation from a broad range of professionals working in acute stroke care. Multidisciplinary team perceptions of continence management post-stroke have not been explored as extensively as with nursing, with continence being historically considered a key nursing role. This perception continues despite clinical guidelines advocating an interprofessional approach to what is a complex problem with multifactorial causes which would benefit from a multidisciplinary skill set.

The study design using both questionnaires and interviews allowed for anonymity, with interviews chosen in preference to focus groups enabling self-disclosure for participants who may have lacked confidence speaking up in a group [22]. None of the studies identified in the literature review utilised questionnaires to explore staff perceptions in continence care post-stroke.

There were some study limitations. Firstly, staff opinions of one service were explored and therefore generalisability of results is not suggested. Secondly, participants knew the study was exploring perceptions of UI care before indicating if they wanted to participate, which may have created a source of self-selection bias. The study results may therefore over-represent HCPs with knowledge and experience of UI care. Thirdly, there was an important group of staff (CSWs and TA's) that did not volunteer to take part in the interviews. Both have key roles in assisting patients with personal activities of daily living and were in a unique position to inform the results of this exploration. Finally, dieticians were also not involved in the study despite having an important role in nutritional intake which can contribute to bladder and bowel dysfunction.

This work has highlighted a need for future research to explore the effects of interprofessional stroke specific continence training, the development of professional role identity related to UI and goal setting on a person's ability to recover continence after stroke.

Conclusion

Despite continence status being an important factor for someone's discharge, health and QOL, robust provision of interprofessional assessment, rehabilitative management and goal setting was not routine. This contrasts with other problems following stroke and may account for the wide variability of continence care identified by national audit. The factors felt to impede effective UI care were the invisibility of UI as a rehabilitative goal, the lack of role identity related to UI, and limited knowledge and communication. Greater visibility and belief of UI as part of the role of all team members supported by further education and improved communication may lead to HCPs feeling confident and empowered to include continence rehabilitation within their scope of practice.

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Disclosure statement

The authors report there are no competing interests to declare.

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