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Communicating Diagnostic Preferences for a Chronic Urinary Tract Infection Among the Adult Female Population

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ABSTRACT

Background: Patient stories regarding their experiences of a urinary tract infection, and the language used in dialogue, details the severity and long-lasting consequences of their infection. The aim of this study was to understand the language and dialogue that patients use when discussing diagnosis and management processes that should be embedded as standard practice for their diagnostic bladder journey among the adult female population. **Methods**: This study adopted a descriptive-interpretive qualitative research approach. Thirty semi-structured interviews were conducted as part of a wider study which focused on diagnosis and management of a urinary tract infection. Data were analyzed using NVivo™ software to identify thematic insight. **Results**: The main concept that emerged from language expressed through dialogue, was that the patients used collective words and phrases that demonstrated their need for effective diagnosis and management of their urinary tract infection. Diagnostic screening processes that would be straightforward and accurate was their main priority, and having a true record of infection from the urine specimen they produced was frequently articulated in the language they used. **Conclusion**: Understanding language expressed through dialogue when discussing diagnosis and management of a urinary tract infection are important aspects that should be embedded as standard practice among the adult female population diagnosed with a urinary tract infection.

1. Introduction

A urinary tract infection is commonly caused by Uropathogenic Escherichia coli (UPEC) and is recognized as the responsible microbe for an acute and chronic urinary tract infection (Klein & Hultgren, 2020). This infection has been defined as two or more episodes of acute bacterial

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invasion of the urinary tract, accompanied by lower urinary tract symptoms within six months or three episodes within a year (Aydin et al., 2015). With antibiotic treatment being the first line management intervention (Asma et al., 2018), and urinalysis using microscopic digital imagery for urine testing and diagnostics (Szmulik et al., 2022). The complex nature of a urinary tract infection requires intricate and sound treatment interventions to attain positive health outcomes (Rando et al., 2022). The diagnosis of a urinary tract infection is frequently identified within the female population, accounting for more than 60% of diagnosed cases (Foxman & Brown, 2003). This is based upon the anatomical orifice of the female urethra being shorter in length in comparison to the male urethra (Aggarwal & Lotfollahzadeh, 2023), which makes the bladder more susceptible to an infection (Attari et al., 2021).

A urinary tract infection affects over 100 million people annually and globally, and is associated with severe symptoms which are recognized as a personal burden (Zeng et al., 2022). Female patients diagnosed with a urinary tract infection often report lower urinary tract symptoms (LUTS), such as urinary urgency (urgent need to urinate), dysuria (painful urination), urinary hesitancy (slow to start urinary stream) and urinary frequency (Bono & Reygaert, 2018). Patient stories regarding their experiences of symptoms and a urinary tract infection support the diagnostic process, but also details the severity and long-lasting negative consequences the symptoms have on their quality of life (QoL) (Scott et al., 2021). Patients regularly express in their own language the symptoms of a urinary tract infection which are not indicated by standard clinical outcome measures (Dacheva & Malone-Lee, 2012) thus, patient dialogue regarding symptoms and its associated impact on health and wellbeing could offer a unique insight into patient perspectives and management of their chronic urinary tract infection (Newlands et al., 2023). There is a need for patient language expressed through dialogue to be embedded as part of collaborative and integrative care (Sheppard, 2014), as well as for clinicians and researchers to incorporate condition-specific measures in the care of those diagnosed with a chronic urinary tract infection (Al Sayah et al., 2021).

Language, Healthcare, and Dialogue Theory

The seminal work by Byrne & Long in 1976 identified six main stages in medical consultations that elicit dialogue. These stages are 1: Establishing a relationship with the patient, 2: Discovering or attempting to discover the reason for the attendance, 3: Conducts a verbal and/or physical examination, 4: Doctor or patient considering the condition, 5: Doctor and occasionally the patient detail further treatment or investigations and, 6: Termination of consultation usually by the Doctor (Byrne & Long, 1976). Subsequent studies by Greenfield et al., (1985) and Roter (1977) explored the significance of patient involvement and interaction, to identify whether it strengthened patient participation in medical consultations and facilitated collaborative health outcomes. According to Greenfield et al., (1985) patient education through dialogue increased patient involvement, and reduced the impact of disease exacerbation 6 to 8 weeks after the medical appointment. It is evident that language plays an important part in dialogue and forms a relationship between the clinician and patient. Heritage & Maynard (2006) explored the impact of medical interactions, and the use of conversation analysis to analyze the doctor and patient interaction. Thus, medical consultations were described as an interactive process, strategically organized, in which the doctor and the patient alternately construct a verbal dialogue. The theoretical underpinning of language and dialogue in healthcare has provided a framework for embracing patient involvement, interaction and health screening practices as part of healthcare delivery (Kreuter et al., 2007).

Language, healthcare, and urinary tract infection

Contemporary work by scholars in the field of managing a chronic urinary tract infection have emphasized the depth of psychosocial challenges women are faced whilst living with the chronic disease, indicating severe and long-lasting negative consequences on their quality of life (Flower et al., 2015; Grigoryan et al., 2022; Scott et al., 2021). Lecky et al., (2020) identified that shared decision-making and effective communication methods is a strategic method to maximize patient empowerment, satisfaction with care and an integrative health management plan, incorporating the expressive language patients use when diagnosing their chronic urinary tract infection. Effective communication methods strengthen collaborative healthcare provision, recognizing and rewarding success in infection prevention (Gaughan et al., 2021) and timely diagnosis and management of infections through an intentional patient and healthcare provider relationship (McAlearney et al., 2022). Acknowledging and upholding patient recommendations relating to diagnosis, treatment and management of a chronic urinary tract infection improves patient experience from consultation to implementation of care (Grigoryan et al., 2022). The evidence that supports the concept of clearly communicated diagnosis and management of a urinary tract infection, focuses on the responsibility of healthcare professionals and their role in listening to, understanding patients concerns and being empathetic towards patients' perspectives (Tuinte et al., 2024).

The aim of this study was to understand the language and dialogue that patients use when discussing diagnosis and management processes that should be embedded as standard practice for their diagnostic bladder journey. Gaining further insight into the significance of patient language expressed through dialogue when managing an adult female population diagnosed with a chronic urinary tract infection is essential to fully understand the intricacies of the disease process from their individual experiences. This study explored the role of patient language and dialogue when discussing the diagnosis and management of their chronic urinary tract infection.

2. Methods

Study Design

This study adopted a descriptive-interpretive qualitative research approach. This qualitative method is utilized when exploring perceptions and experiences that are relevant to studies that seek exploratory evidence (Bradshaw et al., 2017).

Study Setting and Population

A specialist medical urology center in London, United Kingdom, was the clinical setting where the study was conducted. Adult female patients with chronic urinary tract infections and who were receiving care at the center, were identified as suitable participants for this study. The patients invited to participate in the study were adult female patients, aged eighteen and over, being treated for a chronic urinary tract infection and presented with lower urinary tract symptoms such as urinary hesitancy, painful bladder syndrome (PBS), urinary incontinence and overactive bladder (OAB). The patients were regarded as British but from different ethnicities and cultural backgrounds which included Arab, white British, white European, black African, black Caribbean, Asian. The female patients were cared for by a multi-professional team of urogynecologist and nurses trained to doctoral level with specialist knowledge and skills for managing chronic urinary tract infections. The multi-professional team were also from different ethnicities and cultural backgrounds. Convenience sampling was used for recruiting patient participation, as the patients were regularly attending the specialist medical urology center for urinary diagnosis and treatment. Letters were posted by mail to prospective participants, detailing information about the study. The exclusion criteria were patients under the age of eighteen, unable to provide informed consent, male patients and patients who were not registered for treatment at the specialist center. Patients who were interested in participating in the study were given additional information about the study, an information sheet, and the opportunity to ask questions about participating through a telephone call or in person. Written informed consent and verbal consent were obtained from each patient prior to participating in the study, and each patient was allocated with a non-identifiable number for anonymity. The patients who were enrolled into the study were given the opportunity to withdraw from the study at any time during the study process. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013) (The World Medical Association, 2016). IRB (institutional review board) approval was granted by the National Research Ethics Service (NRES) [Ref-11/LO/1096].

Data Collection and Data Analysis

Semi-structured interviews were conducted as part of a wider study which focused on diagnosis and management of a ***u***rinary tract infection. A semi-structured open-ended question facilitated a discursive dialogue which enhanced and expanded the interview process. The interview question was focused on urine diagnostics and management of a chronic urinary tract infection (Table 1). As this study was part of a wider investigation which took place in 2016, we focused the data collection specifically on the patients' dialogue relevant to the diagnosis and management of a chronic urinary tract infection. One important question from the wider study was explored in more detail for the purpose of understanding the diagnosis and management processes patients thought should be embedded as standard practice for their diagnostic journey. Interviews were conducted by an experienced PhD doctoral level research nurse who was female, part of the multi-professional team at the medical urology center and facilitated the interviews with the female patients. Patients were familiar with the research nurse, as the research nurse was frequently involved in the care, management and research processes of their urinary tract infections. This supported the concept and function of the nurse and patient professional relationship during the research process. Exploratory insight into patient experiences, stories and narratives of a urinary tract infection was a significant interest to the research nurse. Semi-structured interviews were supported with the use of probing to enhance the dialogue and the conscientious discussion.

The methodological choices in this study were designed to ensure data security, systematic analysis, and the generation of meaningful insights related to patient language and diagnostic practices. All interview data were audio-recorded for consistency, accuracy and playback, with durations of 30 to 45 minutes allowing for in-depth exploration of participant perspectives on the question presented. The recordings were stored securely on an encrypted device to maintain confidentiality, and later discarded in compliance with the research protocol once transcription was completed. For data analysis, transcriptions were securely stored and processed using the NVivo software, which allowed for the organization and thematic analysis of the data through descriptive coding (QSR, 2016). Descriptive coding was selected as a method to systematically categorize and identify key themes within the data. The two primary themes that emerged were (1) patient language and dialogue related to urine specimen collection and (2) patient language and dialogue regarding standard diagnostic practices. These themes were identified based on their relevance to the research question and observed occurrence in the narrative data. The validation of these themes was ensured through alignment with the original research question, the justification for the question, and a thorough review of the data. This triangulation of components, the research question, the question justification, and the data itself, provided assurance that the identified themes were appropriate and reflective of the study's aims.

The interview data collection process stopped when there was no evidence of new emerging data. This occurred within the data collection process whereby there was enough information to confidently understand the recurring patterns from the dataset, which helped draw conclusions and identify themes.

Table 1. Semi-structured interview question and the justification

Question type	Question asked	Justification
Interview question extracted from the wider study.	Which method of urine collection do you think should be used as a standard method and why?	Patients are vocal with regards to healthcare service provision, and gaining further insight into the significance of patient language expressed through dialogue was essential.

3. Results

A subset of data which focused on urine diagnostics and management of a chronic urinary tract infection was scrutinized from the 30 patients that had participated in the initial study. None of the patients withdrew consent to participate in the study.

Theme1: Patient Language and Dialogue Relating to Urine Specimen Collection

When the patients were asked about urine specimen collection and processes that could be embedded as part of standard practice for their diagnostic journey, the language used was often words and phrases that patients identified with, which helped them to articulate their personal thoughts (Table 2). Within this theme, personal thoughts were raw uncut descriptions of what they believed should emulate standard practice in a clinical setting. The quotes highlight that a non-invasive urine collection method was often perceived as the better option in comparison to an invasive method (Table 2). The quotes were a key indication of expressive language relating to preference and choice.

Theme 2: Patient Language and Dialogue Relating Standard Diagnostic Practice

During the interviewing process, the patients often articulated the need for diagnostic practices that would be straightforward enough to detect the presence of their urinary tract infection. Within this theme, the patients used language that represented their own personal preferences and of which related to their own diagnostic bladder journey. When the patients were asked about urine specimen collection and processes that could be embedded as part of standard practice, again, the language used were non-medical personal phrases that patients felt comfortable expressing, which helped with the articulation of their individual thoughts (Table 3). Individual thoughts were communicated in a way that best vocalized their partialities based upon separate experiences of urine specimen collection and personal choice. The quotes highlight uncoerced dialogue pertaining to non-invasive urine collection methods being preferred and straightforward, an iteration that is observed in Table 3.

Table 2. Participant quotes supporting Theme 1

Question asked	**Theme 1**	**Quotes**
Which method of urine collection do you think should be used as a standard method and why?	Patient language and dialogue relating to urine specimen collection.	'Well, I think I preferred peeing into a pot as there are no interpretations and you can do it in private. It was over in seconds and I didn't have to think about the midstream, I didn't have to do anything which was the key thing' (Participant 3861). 'It depends on the circumstances, but the easiest thing is for people to urinate into a pot. The cleansing wipes tend to be flushed down the toilet and blocks the plumbing system. In certain circumstances it would be hard to do the cleansing process' (Participant 2977). 'I think the standard practice should be the method that provides the cleanest sample. It all depends where you are when you are being asked for a sample. But from the patient's perspective the pee in the pot should be standard' (Participant 3456). 'I guess pee in the pot should be standard practice, as you have more control over it and more privacy as well. You can do it yourself, nobody else is needed' (Participant 4369). 'The standard should be the midstream urine specimen, because you wipe before producing the sample. The catheter specimen is invasive and can introduce infection and the pee in the pot is not as clean as the other methods' (Participant 3867).
		'Well, I think I preferred peeing into a pot as there are no interpretations and you can do it in private. It was over in seconds and I didn't have to think about the midstream, I didn't have to do anything which was the key thing' (Participant 3861). 'I think the midstream should be a standard practice. Peeing into something that funnels like the Peezy is fine. I think, being provided with a wipe to cleanse the vaginal area should be standard practice' (Participant 4165). Peeing into the pot and wiping beforehand. I would think that is enough, as long as the area is as sterile as it can be. The pot that I used today was very good, as opposed to the tiny bottles that other doctor's give you. To be given a container like the one I was given today was very pristine. Being able to give a urine sample in a discreet way should be on top of everyone's list' (Participant 3499).

Table 3. Participant quotes supporting Theme 2

Question asked	Theme 2	Quotes
Which method of urine collection do you think should be used as a standard method and why?	Patient language and dialogue relating standard diagnostic practice	'The pee in the pot is very uncomplicated and straightforward' (Participant 4300). 'I preferred the pee in the pot, because it is straightforward. I think the pee in the pot should be the standard method' (Participant 3965). The straightforward pee in the pot. Because it's simple and easy, you don't have to prepare for it. Its ease of use and I would go for just straightforward peeing in any doctor's office' (Participant 3963). 'I prefer just peeing into the pot because it is straightforward. I think it is better when you use a swab and you're cleaning the area, and therefore you're not getting any foreign matter in there' (Participant 3499). 'I prefer urinating into the pot. It's straightforward. I think, urinating everything into a pot is more reliable as you can detect whatever bacteria are there, and it will give a true record of infection. When using a catheter to obtain a urine sample, I feel as though it will enhance an infection as I have experienced this in the past' (Participant 2365). 'I think the pee in the pot should be the standard method, it's straightforward' (Participant 3965).

4. Discussion

This study explored patient language expressed through dialogue when discussing diagnosis and management processes that should be embedded as standard practice for their diagnostic bladder journey. It was evident that language was varied and unique to those who were expressing diagnosis and management processes that should be embedded as standard practice. The interview data highlighted the common words and phrases the patients used as part of their discursive language. Language is proficiently recognized as an essential determinant of health (Joshi et al., 2013) and words such as peeing, straightforward, simple and easy were frequently identified within their dialogue to describe factors that would improve their health outcomes. According to Van Rosse et al., (2016) language is an essential determinant of health, and language barriers can adversely affect health outcomes, healthcare access, health-providers' effectiveness, patient satisfaction and safety, hence yielding negative health outcomes.

These language barriers could also be identified as words and phrases patients use to describe their symptoms and of which are not recognized as standard measures used to treat patients. In this study, the patients were regularly attending the specialist medical urology center for urinary diagnosis and treatment, their words and phrases were familiar to the nursing and medical team who were multicultural and experienced in caring for patients of diverse ethnicities within the clinical setting. Thus, limiting the potential barriers of misinterpreting descriptive words and phrases used to explain their condition. The main concept that emerged from the language and dialogue was that the patients used collective words and phrases that demonstrated their need for effective diagnosis and management of their urinary tract infection. Diagnostic screening processes that would be straightforward and accurate was their main priority, and having a true record of infection from the urine specimen they produced was frequently articulated in the language they used. Patients often articulated their perspectives of what should be embedded as standard practice for diagnosing their urinary tract infection, and the patient language expressed through dialogue was a description of what patients could relate to from their personal experiences, whether it was medically correct or clinically accurate. Nundy et al., (2022) believe that health care professionals must attend to language differences to achieve the quintuple aim of health care delivery which are patient experience, clinician experience, outcomes, cost, and health equity. In this case, patient experience and health outcomes were significant factors that patients expressed through their language in dialogue. The psychosocial challenges associated with a chronic urinary tract infection, requires insight on how to promote an improved quality of life (Scott et al., 2021). Empathetic communication methods is a clinical approach to support patient empowerment, levels of satisfaction and integrative health management by listening, acknowledging expressive language used by patients and recognizing the value of their spoken words (Lecky et al., 2020). This approach strengthens collaborative healthcare and the patient and healthcare provider relationship (McAlearney et al., 2022). There is evidence that patient recommendations relating to diagnosis, treatment and management of a chronic urinary tract infection improves patient experience and outcomes (Grigoryan et al., 2022).

Although there is growing evidence that language barriers and discordance between patients and their health care teams yield worse quality of care (Jacobs et al., 2020), patient language expressed through dialogue when discussing diagnosis and management of their urinary tract infection can also be misunderstood if not clinically articulated. Having a multi-professional team from different ethnicities and cultural backgrounds played a significant role in making patients feel comfortable enough to express themselves the best way they could. According to Ho et al., (2017) culturally diverse teams are considered a crucial source of organizational success, quality performance, and outcomes. This was evident within the clinical setting, as the multi-professional team were skilled in understanding the diverse language, words and phrases being used by patients to articulate their bladder condition as well as their preferred methods of diagnostic testing. While there was a presence of a culturally diverse healthcare team and a patient group from different ethnicities and cultural backgrounds such as Arab, white British, white European, black African, black Caribbean, Asian, there was also the potential for interview bias with the ways in which words and phrases were spoken and the interpretation of dialogue between the interviewer and interviewee. According to Black et al., (2018) behavioral questions present the interviewee the opportunity to discuss a specific response to a prior experience, which can provide insight into how an interviewee may behave or what they would prefer in the future. This not only reflects possible preferences, but also demonstrates priorities, values and understandings from cultural beliefs which maybe unknown to the interviewer.

Thus, creates an interview bias, accepting spoken words during dialogue for face value, but not fully understanding the cultural meaning behind the discussion or the expressed words. This is a challenging concept that could be identified as a generalized limitation within this study.

The findings from this study highlight a broader clinical significance, predominantly in the context of patient-centered care and diagnostic practices. When patients discussed urine specimen collection that related to diagnostic processes, they frequently used language that resonated with their personal experiences and preferences. This not only facilitated the articulation of their thoughts, the importance of adequate diagnostic testing, but also provided insight into their values and expectations regarding clinical practices and their personal involvement in the care process. The preference for non-invasive urine collection methods over invasive methods, as highlighted in the narrative data, underscores the importance of considering patient comfort and autonomy in healthcare settings and as part of delivery of care. By emphasizing patient choice and expressing their desires for less intrusive diagnostic procedures, the findings point to a need for integrating less invasive options as standard practice where feasible. These insights are critical for improving patient satisfaction, enhancing the overall patient experience, and potentially increasing compliance with diagnostic procedures and the facilitation of clinical care. The data from this study has the propensity to inform clinical decision-making and the development of more patient-centered protocols (Sharkiya, 2023), aligning diagnostic practices with patient preferences, their collaborative involvement and ultimately contributing to better healthcare outcomes for women (Nagineviciute et al., 2023).

Clinical Recommendations

Adult female patients diagnosed with a chronic urinary tract infection are often vocal when describing bladder symptoms, the appropriateness of diagnostic methods or how they would like to be cared for in clinical practice (Collins & Khasriya, 2022). The language they use is an expression of how they feel and, in most cases, the best way in which they are able to articulate their concerns. According to Truong et al., (2023) the collaboration between health systems and community-based organizations are critical for enhancing health for minority linguistic communities, and this includes patient groups who express language in diverse ways to articulate the diagnosis and management practices regarding their urinary tract infection. Working collaboratively with patients to understand their language and dialogue is a crucial part of patient centered-care and the implicit and explicit ties between language are factors that can promote or inhibit health outcomes (Gerchow et al., 2021). The insights gained from the study can help shape the development of healthcare administration protocols that prioritize patient choice, patient voice and collaborative diagnostic management. Thus, leading to improved satisfaction and potentially higher rates of compliance with diagnostic urinary screening. Furthermore, by incorporating patient preferences into routine clinical practices, healthcare systems can ultimately contribute to better healthcare outcomes, as patient-centered care has been shown to improve treatment adherence, reduce anxiety, and increase trust in healthcare providers (Al Sayah et al., 2021).

Clinical Implications

Nurses are often the first professional point of contact for patients in healthcare systems (Gerchow et al., 2021), and it is essential that they are clinically and culturally diverse when assessing and documenting patients' language articulated as part of the assessment process. Although a nurse's own expressive language may not be similar to a patient's, being unfamiliar with different expressive forms of language has an impact on care management and delivery (Chae & Park, 2019). It is suggested that healthcare systems create professional development sessions that focus on language and dialogue. This would include the implementation of workshops and training sessions on different forms of expressive language in healthcare. Using real life case scenarios recognized as ethical dilemmas, this would be a mandatory professional development simulation class that would be embedded as a quality assurance program to help overcome challenges of language, patient assessment and interactive dialogue.

Methodological Considerations

Semi-structured interviews were an appropriate method of data collection. It supported the process of understanding patient language expressed through dialogue when discussing diagnosis and management that should be embedded as standard practice for their diagnostic bladder journey. During the interview process, it was evident that not all patients verbalized expressive language. As a result, this reduced pertinent responses from the overall data. Despite this being a small-scale study of a wider investigation, it is important to ensure credibility. It was also important that we addressed the aspect of rigor with regards to the sampling method used within this study (Burkholder et al., 2019). Convenience sampling was used for patient recruitment, and this recruitment method may not be representative of the wider population that could have participated in this study. Participant recruitment from a larger and more diverse patient population group of women may overcome this limitation in the future.

5. Conclusions

Understanding patient language expressed through dialogue when discussing diagnosis and management processes, is an important aspect that should be embedded as standard practice within their diagnostic bladder journey. This study highlighted the importance of language spoken by patients relating to the diagnosis and management of their urinary tract infection. Health equity includes having words and phrases that are significant and may impact care management processes as well as the facilitation of health care delivery, reducing the burden of severe symptoms and enhancing patients' overall quality of life.

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