

Assessment and Cognitive-Behavioral Treatment of Paruresis (Shy Bladder) in a Transgender Woman With Klinefelter Syndrome: A Case Report With 10-Year Follow-Up

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Case Report

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Abstract

Paruresis (shy bladder syndrome) is difficulty voiding in public or shared restrooms because of the actual or anticipated presence of others, affecting 2.8% to 6.6% of the general population. Although 59% of transgender persons avoid public restrooms, often for reasons distinct from paruresis, to our knowledge its assessment and treatment in this population remain undocumented. A 53-year-old transgender woman with Klinefelter syndrome (47,XXY) and paruresis since age 5 was referred for treatment. Over the first 14 visits (about 9 months), she received a cognitive-behavioral, schema-informed, and minority-stress-informed protocol integrating psychoeducation, imagery rescripting, cognitive restructuring, breath-holding, and graduated in vivo exposure with paradoxical intention, then supportive psychotherapy. On the Shy Bladder Scale (SBS), she achieved reliable and clinically significant change by Visit 8 (43 to 31, meeting a clinician-defined goal of ≤ 33 ; $RCI = 3.60$, $p < .05$) and her SBS decreased to 8 by Visit 24 in a supportive phase; the reliable-change statistic being defensible only over short intervals, later changes are described by clinical-range and goal status. At 10-year follow-up, the SBS was 18, still below the treatment goal, with minimal depressive and mild anxiety symptoms and improved well-being (PHQ-9 = 4; GAD-7 = 6; WHO-5 = 80%).

Introduction

Paruresis is difficulty initiating urination in public or shared restrooms because of the actual or anticipated presence of others, impairing social and occupational functioning (Deacon et al., 2012; Hammelstein et al., 2005). Also called shy bladder syndrome or bashful bladder, it is classified as a form of social anxiety in which anticipated scrutiny triggers inhibition of the micturition reflex (Hammelstein & Soifer, 2006; Knowles & Skues, 2016). Severity ranges from mild discomfort in crowded restrooms to a complete inability to void in any restroom outside the home, with consequences for daily living, employment, healthcare access, physical health, and quality of life (Kuocho et al., 2017).

The diagnostic classification of paruresis has long been debated (Hammelstein & Soifer, 2006). Paruresis is not a separate diagnosis in the DSM-5-TR (American Psychiatric Association, 2022); it has typically been coded under social anxiety disorder or other specified anxiety disorder (Kuocho et al., 2017). Whether its somatic mechanism of involuntary external urethral sphincter contraction warrants recognition as a distinct entity remains contested (Kuocho et al., 2019). Paruresis can share features with social anxiety disorder while being compounded by gender minority stress and body-related fears that existing diagnostic categories do not fully capture.

Prevalence estimates for paruresis are limited to Western, predominantly cisgender samples, ranging from 2.8% among cisgender adult men in Germany (Hammelstein et al., 2005) to 6.6% for fear of using public restrooms in the U.S. National Comorbidity Survey (Kessler et al., 1998), with a recent UK survey that used the Shy Bladder Scale and linked paruresis to adverse school-toilet experiences (Hutchings & Kehinde, 2024); prevalence among transgender individuals remains unmeasured. The 2015 U.S. Transgender Survey (James et al., 2016; $N = 27,715$) reported that 59% of respondents avoided public

restrooms in the past year, citing fears of discrimination or harassment, a pattern the 2022 survey replicated (James et al., 2024); an analysis also linked discrimination experiences and nonbinary identity to avoidance (Lerner, 2021). A conference abstract reported restroom-avoidance rates of 60% to 90% among transgender individuals (Okoli et al., 2025), with documented urinary-health sequelae of chronic retention (Kuocho et al., 2017; Nørregaard et al., 2023). The mechanisms underlying transgender restroom avoidance likely go beyond classical paruresis to include realistic threat appraisal based on experienced or anticipated discrimination (Meyer, 2003; Testa et al., 2015).

For a transgender patient, restroom avoidance may reflect classical paruresis, realistic threat appraisal in response to documented anti-transgender hostility, or both at once. Attributing avoidance solely to sociopolitical realities risks missing treatable paruretic symptoms; attributing it solely to anxiety pathology risks pathologizing a partly adaptive response to environmental threat (Mizock & Lundquist, 2016). Disentangling these contributions requires functional assessment of features specific to urinary inhibition, independent of the safety concerns that often coexist. A commonly used standardized measure of paruresis severity is the Shy Bladder Scale (SBS; Deacon et al., 2012), a 19-item self-report instrument assessing urinary inhibition, with scores at or above the clinical threshold of 40; it was normed on predominantly cisgender respondents (Deacon et al., 2012), and its psychometric properties in transgender populations are unknown.

Beyond its psychological burden, the urinary retention that results from paruresis also carries medical risks: recurrent urinary tract infections, attributed to the compensatory fluid restriction common in paruresis, and, in severe cases, compromised renal function (Kuocho et al., 2017; Nørregaard et al., 2023); a recent case linked a transgender adolescent's restroom avoidance to pyelonephritis (Lieberman et al., 2025), and in an extreme reported case, prolonged retention was linked to spontaneous bladder rupture (Zhuang et al., 2022). Paruresis also complicates medical care requiring urination on demand, such as urine collection for diagnostic or drug testing and post-procedural voiding trials; the unfamiliar setting, lack of privacy, time pressure, and observation of output can trigger inhibition, yet because the condition is poorly recognized, these difficulties often go unaddressed (Soifer et al., 2009).

Cognitive-behavioral interventions are most commonly recommended, combining graduated exposure, cognitive restructuring, and relaxation training (Boschen, 2008); Hambrook et al. (2016) reported clinically significant SBS improvement in a cisgender man, and group workshops (Soifer et al., 2010) and a controlled trial (S. Liang et al., 2023) provide support, whereas selective serotonin reuptake inhibitors and benzodiazepines are adjunctive (Hammelstein & Soifer, 2006). Practical strategies to facilitate voiding include breath-holding (Zgourides, 1987) and, from the broader micturition literature, warm-water immersion (Shafik, 1993) and running-water cues (Kwon et al., 2015). To our knowledge, no case reports or clinical trials have examined these interventions in gender and sexually diverse populations.

This case report documents the assessment and cognitive-behavioral treatment of paruresis in a 53-year-old transgender woman with Klinefelter syndrome, in whom early adverse restroom experiences,

gender minority stress, body-related distress, and urinary inhibition co-occurred. It details a multicomponent protocol adapted for this patient and reports outcomes using validated measures.

Case Presentation

Identifying Information and Presenting Concern

The patient was a 53-year-old transgender woman (assigned male at birth, female gender identity) with genetically confirmed Klinefelter syndrome (47,XXY), referred by her psychiatrist to a clinical health psychologist embedded in an endocrinology-based gender clinic at a large academic medical center for assessment and treatment of paruresis, with symptoms since age 5. She reported difficulty initiating urination in public and multi-stall restrooms and in any restroom situation in which she believed others were aware of her use. A urological consultation did not identify outflow obstruction, urethral stricture, detrusor underactivity, or neurogenic bladder, supporting a functional etiology. She had recurrent urinary tract infections secondary to chronic functional retention and extreme reluctance to participate in urological procedures; during a prior voiding cystourethrogram for hematuria, she waited over an hour before she was able to void.

Medical History

In addition to Klinefelter syndrome, the patient's history included dyslipidemia, rheumatoid arthritis, idiopathic peripheral neuropathy with chronic pain, chronic migraine, unspecified anxiety disorder (with generalized anxiety, illness anxiety, and somatic symptom features), gender dysphoria (post-transition), and a prior major depressive episode. As part of gender-affirming hormone therapy, she took estradiol and spironolactone, a potassium-sparing diuretic used as an anti-androgen, which increased her urinary frequency without distress; however, her difficulty was specifically with initiating voiding in observed settings, consistent with functional urinary retention rather than a pharmacological side effect. The urological evaluation that supported this functional etiology was conducted while she was receiving this regimen, arguing against a medication-only explanation. The increased frequency did, however, raise her exposure to triggers.

Early Adverse Experiences Associated With Restrooms

The patient reported several childhood restroom experiences that she related to the onset of her paruresis. The earliest, at age 5, was her father's admonishment for sitting to urinate ("Boys stand to pee, not sit!"), which set off persistent distress around her parents' reactions to her restroom behavior: "Me sitting to pee would make dad angry. I could never use a urinal," and "As a child, I always had to lock the door to use the restroom. My parents would get upset with me for locking the door." From ages 5 through 10, she reported a ritual of removing her shirt before using the restroom, which she recognized as a precondition for voiding; her father repeatedly questioned it, contributing to shame and secrecy.

Bullying at school later compounded these experiences: “I got picked on in the locker rooms in school. I was afraid others would see my penis.”

Functional Analysis

Precipitating Factors. The patient identified situational triggers including the number of individuals present, awareness that another was waiting, hearing others outside the restroom (activating an exaggerated sense of being the focus of others’ attention), bladder fullness, restroom configuration, time pressure, and fear that others could observe her genitalia.

Perpetuating Factors. Cognitive factors maintaining paruresis included negative automatic thoughts such as “Hell, I can’t go [urinate], screw it” and “You’re an idiot. Everyone else can go potty, why can’t you?” Avoidance and safety behaviors further perpetuated the cycle, including fluid restriction and restroom mapping, in which she pre-identified single-stall restrooms before leaving home; mapping reduced acute anxiety but narrowed her world and reinforced the belief that she could not cope with uncontrolled settings. Her Young Schema Questionnaire-Short Form 3 (YSQ-S3) profile showed very high emotional deprivation, self-sacrifice, and unrelenting standards/hypercriticalness; high negativity/worry/pessimism; and medium emotional inhibition.

Clinical Timeline

The full clinical course is summarized in Table 1. Paruresis began at age 5, Klinefelter syndrome was confirmed at age 49, and the patient presented at age 53 with paruresis as the primary concern; no treatment-related adverse events were documented.

Biopsychosocial Consequences

Paruresis affected the patient at work, in medical settings, and in her gender-affirming care. At work, her employer’s urine drug screening required direct observation, making it impossible for her to provide a sample; the clinician provided a letter documenting her diagnosis to support her request for an accommodation under the Americans with Disabilities Act (ADA; see Clinical Implications). Her chronic conditions required frequent clinic and Emergency Department visits where she could not produce a specimen on demand, and her inhibition obstructed urologic care, including a voiding cystourethrogram she could not complete. She limited herself to places with safe restrooms. Paruresis had also shaped her decisions about gender-affirming care: “I’m afraid that I will not be able to pee.” Acting on this fear, she had ruled out genital gender-affirming surgery, not from lack of desire but from worry about post-surgical voiding.

Treatment

Conceptualization

The case was conceptualized using cognitive-behavioral, schema-informed (Young et al., 2003), and minority-stress-informed perspectives. The patient's paruresis appeared to originate from early adverse restroom experiences, gender-related invalidation, and her father's enforcement of gendered urination norms. These experiences may have contributed to core schemas (including the emotional deprivation and self-sacrifice domains elevated on her YSQ-S3) that interacted with anticipatory anxiety; such schema domains have been reported to statistically mediate the association between minority stress and mental health outcomes in this population (Radford et al., 2024).

Gender minority stress, including internalized shame around gendered bodily norms and hypervigilance about bodily exposure, may have amplified urinary inhibition through mechanisms additional to those described in cisgender presentations. Her gender congruence was high (Transgender Congruence Scale [TCS] = 4.67; Kozee et al., 2012) and her social interaction anxiety only mild (Social Interaction Anxiety Scale [SIAS] = 24; Mattick & Clarke, 1998) because dysphoria was well-managed; the minority-stress contribution appeared primarily historical and internalized, plausibly rooted in childhood experiences before transition. We inferred this contribution clinically rather than with validated instruments such as the Gender Minority Stress and Resilience scale (Testa et al., 2015) or the Sexual and Gender Minority Adverse Childhood Experiences Scale (Schnarrs et al., 2023); the amplification hypothesis cannot be tested without a cisgender comparison.

To weigh the anxiety-driven against the threat-driven account of her inhibition, we considered three features, all of which indicated a predominantly anxiety-driven process. First, symptoms began at age 5, decades before she had language for her gender identity or faced any contemporary restroom-policy threat, so the onset predates present-day anti-transgender hostility. Second, inhibition generalized to single-stall and home-adjacent restrooms where realistic social threat is minimal and no observer could scrutinize her. Third, the inhibition was involuntary and somatic rather than a reasoned decision: when the performance demand was removed at Visit 6 (via breath-holding and paradoxical intention together; see Treatment Phases), she voided in a single-stall restroom she had been unable to use, more consistent with conditioned sphincter inhibition than with deliberate avoidance. The realistic-threat component (observed workplace drug screening, documented hostility) was real but circumscribed and largely separable from these features, though it informed safety planning throughout. Given Klinefelter syndrome's association with autistic traits, a negative autism spectrum disorder screen made an autism-related contribution less likely.

Treatment Protocol

The focal protocol combined cognitive-behavioral, schema-informed, and somatic components with graduated in vivo exposure. The patient was referred specifically for paruresis-focused treatment, the primary target across the first 14 visits (approximately 9 months); by Visit 8 she met clinical-significance criteria (SBS = 31; see Results), and by Visit 14 she self-reported at least 80% improvement, her SBS (18) remaining below the clinical threshold and goal, and focal intervention concluded. She then continued

with the same clinician for 14 additional visits (Visits 15 through 28, approximately 22 months) at lower frequency, addressing caregiver burden, work stress, chronic pain, and gender-affirming care decisions; paruresis techniques were not reintroduced, though SBS scores continued to decline (8 at Visit 28). She has since continued supportive psychotherapy every 2 to 3 months. Session-by-session delivery is detailed in Supplementary Table S1, which reports only the parameters the clinical record documents.

Table 1
Selected Treatment Visits, Content, and Key Outcomes

Visit	Week	Content	Key Outcome
1	0 (Baseline)	Assessment; paruresis psychoeducation with referral to International Paruresis Association (www.paruresis.org); minority stress normalization; high stress due to required urine samples	SBS = 43; SIAS = 24; TCS = 4.67
2	4	YSQ-S3 administration and review; schema-based conceptualization; imagery-based schema assessment with float-back technique	YSQ completed; schema links confirmed
3	6	Patient voided after anticipating she could not; diaphragmatic breathing rehearsal (5 min, 5 times/day)	Spontaneous voiding noted
4	8	Imagery rescripting: childhood restroom memory with father; healthcare memory of nurse demanding urine sample	Processing of two formative memories
5	11	Cognitive-affective-behavioral chains; portable toilets; false alarms; schema mode conceptualization	Deepened formulation
6	13	Cognitive restructuring; breath-holding technique and flowing-water imagery introduced; paradoxical intention; in vivo exposure to single-stall restroom with clinician waiting outside	First successful voiding in clinical setting
7	15	Discussion of gender-affirming surgery given treatment gains; graduated exposure planning	SBS = 40 (at clinical-range boundary; no reliable change); surgery discussion initiated
8	17	Progressive muscle relaxation; exposure to novel single-stall restroom	SBS = 31 (treatment goal met)
12	27	Reported partially voiding in a multi-stall public restroom; second attempt unsuccessful	SBS = 26; generalization to multi-stall
13	29	Worry about work urine specimens; clinician provided a urine specimen container for graduated exposure and placed written instructions for her coping techniques inside it for home practice	SBS = 23
14	38	"At least 80% better than when I first came in"; discussed endpoints; wished to continue	SBS = 18; 80% improved (self-report)

Note. SBS = Shy Bladder Scale; YSQ-S3 = Young Schema Questionnaire-Short Form 3; SIAS = Social Interaction Anxiety Scale; TCS = Transgender Congruence Scale. Only selected visits are shown; 28 visits occurred during the documented tracking period (approximately 2.5 years). All 14 SBS administrations are plotted in Fig. 1. Visits without SBS scores indicate the measure was not administered at that visit. Week numbers are referenced to Visit 1 (Week 0). FU = 10-year follow-up.

Visit	Week	Content	Key Outcome
15	49	Reconsidering genital surgery due to increased confidence in voiding	Surgery reconsideration
16	52	Paruresis no longer primary concern	Shift to general functioning
21	78	Continued general support; periodic SBS monitoring	SBS = 10
24	104	Ongoing support; low-frequency supportive phase	SBS = 8
25	106	Transient elevation during a hospitalization for surgery for another medical condition, reactivating restroom-related fears	SBS = 17
28	137	Penultimate SBS score (supportive psychotherapy continued thereafter)	SBS = 8
FU	~ 525 (10 year)	10-year follow-up; continuing supportive psychotherapy for co-occurring concerns	SBS = 18; PHQ-9 = 4; GAD-7 = 6; WHO-5 = 80%; 97% improved (self-report)
<i>Note.</i> SBS = Shy Bladder Scale; YSQ-S3 = Young Schema Questionnaire-Short Form 3; SIAS = Social Interaction Anxiety Scale; TCS = Transgender Congruence Scale. Only selected visits are shown; 28 visits occurred during the documented tracking period (approximately 2.5 years). All 14 SBS administrations are plotted in Fig. 1. Visits without SBS scores indicate the measure was not administered at that visit. Week numbers are referenced to Visit 1 (Week 0). FU = 10-year follow-up.			

Treatment Phases

Treatment unfolded in three phases (Table 1), with component-level delivery detail and the autonomic rationale in Supplementary Table S1 and Note S1. In the intensive phase (Visits 1 through 8), schema-informed conceptualization, somatic and cognitive components, and graduated in vivo exposure were established, and the patient met the goal ($SBS \leq 33$) by Visit 8. At Visit 6, the breath-holding technique and paradoxical intention together preceded her first successful in-session void. In the consolidation phase (Visits 9 through 14), she began to generalize gains to a multi-stall public restroom (partial voiding) and received the urine specimen container for graduated exposure, and the focal paruresis intervention concluded at Visit 14, with paruresis formally deprioritized in the record at Visit 16. In the supportive phase (Visits 15 through 28), lower-frequency visits addressed general stressors and caregiver burden; a transient elevation to 17 at Visit 25 coincided with a hospitalization for surgery for another medical condition, after which the SBS returned to 8 by Visit 28.

Results

Primary Outcome: Shy Bladder Scale

At baseline (Visit 1), the patient scored 43, within the clinical threshold (≥ 40). At Visit 7 the score was 40, a 3-point change below the reliable-change threshold and at the clinical-range boundary (no reliable change). At Visit 8 it was 31, below the clinical threshold and below a clinician-defined treatment goal (≤ 33 , one reliable-change increment below that threshold). With a single pre-treatment SBS, no baseline-stability phase, and the treating board-certified clinical psychologist as sole rater of an in-session self-report, the 12-point baseline-to-Visit-8 reduction (43 to 31) cannot be distinguished from regression to the mean, single-administration variability, or demand characteristics; nonetheless, we interpret it alongside the Visit 6 exposure result (the first successful in-session voiding). After Visit 8 the score decreased to 8 by Visit 24 (week 104); a transient rise to 17 at Visit 25 preceded a return to 8 by Visit 28. At 10-year follow-up it was 18, still well below the clinical threshold and that goal.

To evaluate whether the within-treatment change was reliable, we computed the Reliable Change Index (RCI; Blampied, 2022; Jacobson & Truax, 1991) for the defensible short-interval comparison, the baseline-to-treatment-goal change from Visit 1 (Week 0) to Visit 8 (Week 17). Using the SBS total-scale internal consistency reliability ($\alpha = .93$) and the paruresis-sample standard deviation of 8.91 (Deacon et al., 2012; that study did not assess test-retest reliability), the reliable-change threshold at $p < .05$ was 6.53 points ($SE_m = 2.36$, $SE_{diff} = 3.33$). The 12-point reduction (43 to 31) yielded $RCI = 3.60$, indicating reliable change at $p < .05$. We restrict the RCI significance test to this short within-treatment interval, where its assumptions are most defensible (McAleavey, 2024). We therefore characterize the 2.5-year (43 to 8) and 10-year (43 to 18) changes by clinical-range and treatment-goal status rather than significance tests (Criterion C; Jacobson & Truax, 1991): both decreased well below the clinical threshold (≥ 40) and the goal (≤ 33) after nearly five decades of chronicity. The 14 SBS administrations are shown in Fig. 1, with selected visits detailed in Table 1.

These SBS-based conclusions warrant a construct-validity caveat. Because the SBS was validated in predominantly cisgender samples (Deacon et al., 2012), to the extent some items index threat-appropriate avoidance rather than involuntary inhibition, the score and its reduction may partly track reduced exposure to realistic restroom threat rather than reduced paruresis. The change least confounded with realistic threat concerned her low-threat single-stall and home-adjacent restrooms, where inhibition had persisted despite minimal risk.

Figure 1
Shy Bladder Scale Scores Across Treatment and 10-Year Follow-Up

Note

Shy Bladder Scale (SBS) scores at each assessment occasion on which the measure was administered, across the treatment course (approximately 2.5 years) and at 10-year follow-up. The horizontal axis is scaled to elapsed time (weeks since Visit 1), so the intervals between assessments are shown proportionally rather than as equal steps; the double slash (//) denotes an axis break, and the 10-year

follow-up is plotted past the break and is not drawn to scale. Line segments connect consecutive administrations and do not imply measurement at intervening times. The transient rise to 17 (week 106) occurred at a supportive-phase visit. The dashed line indicates the clinical threshold (≥ 40) and the dotted line the clinician-defined treatment goal (≤ 33). The patient met that goal by Visit 8 ($RCI = 3.60, p < .05$ for the within-treatment baseline-to-goal comparison); later and follow-up scores are shown relative to the clinical-range and goal thresholds rather than as RCI significance tests. The shaded region spans the Visit 1 to Visit 8 interval, the within-treatment comparison to which the reliable-change index applies, and marks scores at least $1.96 \times SE_{diff}$ (6.53 points) below the Visit 1 baseline of 43. Both figures were produced in R using ggplot2.

Secondary Outcomes

Table 2
Selected Standardized Assessment Scores Across Treatment

Measure	V1	V3	V4	V7	V8	V28	10-yr FU
SBS	43	n/a	n/a	40	31	8	18
PHQ-9	3	14	13	7	5	8	4
GAD-7	5	15	14	8	9	5	6
WHO-5 (%)	56	n/a	n/a	64	36	n/a	80
<i>Note.</i> V = Visit; SBS = Shy Bladder Scale (clinical threshold ≥ 40); PHQ-9 = Patient Health Questionnaire-9; GAD-7 = Generalized Anxiety Disorder-7; WHO-5 = World Health Organization Well-Being Index. “n/a” indicates measures not administered at that visit. V28 PHQ-9 and GAD-7 were the final in-treatment administrations; WHO-5 was not administered at Visit 28. The Visit 25 SBS elevation (SBS = 17, week 106) is reported in Table 1 and plotted in Fig. 1; it is omitted here because only the SBS was administered at that visit, not the PHQ-9 or GAD-7. 10-yr FU = 10-year follow-up.							

Depressive and anxiety symptoms (PHQ-9; Kroenke et al., 2001; GAD-7; Spitzer et al., 2006) followed a parallel pattern (Fig. 2). From baseline (PHQ-9 = 3, minimal; GAD-7 = 5, at the conventional mild cutoff), both rose at Visits 3 and 4 (PHQ-9 = 14 and 13; GAD-7 = 15 and 14) coinciding with diaphragmatic breathing and imagery rescripting, then declined, though not monotonically, fluctuating over the remaining visits (PHQ-9, 2 to 12; GAD-7, 3 to 10) before settling at 8 and 5, respectively, by Visit 28. These transient mid-treatment increases may reflect therapeutic emotional processing or concurrent stressors rather than clinical worsening; no treatment-related adverse event required protocol change, and the patient attended essentially all sessions, engaged with between-session practice, and tolerated the protocol well. At 10-year follow-up, the PHQ-9 was 4 and the GAD-7 was 6, consistent with baseline.

Subjective well-being (WHO-5; Topp et al., 2015) was reported as the raw score (0 to 25) and percentage of maximum. The WHO-5 was administered at seven visits: 14 (56%) at baseline, rising to 16 (64%) at Visit 7, then 9 (36%) at Visit 8 and remaining between 8 and 9 thereafter, before recovering to 20 (80%) at 10-year follow-up. We interpret the in-treatment decline as most likely reflecting caregiver stress rather

than paruresis-related deterioration; the patient was the sole caregiver for a non-ambulatory family member.

Figure 2

Secondary Outcome Measures Across Treatment and 10-Year Follow-Up

Note

Secondary outcome measures across treatment and at 10-year follow-up. (A) PHQ-9 depressive-symptom and (B) GAD-7 anxiety-symptom scores; the dotted line indicates the mild cutoff (5) and the dashed line the moderate cutoff (10). (C) WHO-5 subjective well-being (percentage of maximum); the long-dashed line indicates the poor-well-being threshold ($\leq 50\%$). The horizontal axis is scaled to elapsed time (weeks since Visit 1), so intervals between assessments are shown proportionally rather than as equal steps; the double slash (//) denotes an axis break, and the 10-year follow-up is plotted past the break and is not drawn to scale. Every administration is plotted: PHQ-9 at 20 occasions, GAD-7 at 18, and WHO-5 at 7 (raw scores converted to percentage of maximum), each including the 10-year follow-up; line segments connect consecutive administrations. PHQ-9 and GAD-7 were tracked across treatment, whereas WHO-5 was administered through week 38 and again at follow-up.

Patient Perspective

The patient identified normalization of her restroom fears within the minority stress framework as most helpful early in treatment, feeling validated about a long-hidden condition. She also valued the breath-holding technique, flowing-water imagery, and specimen-container exposure. At follow-up she reported being 97% improved, not fully cured, the residual difficulty preventing her from pursuing genital gender-affirming surgery.

Discussion

This case documents the assessment and treatment of paruresis in a transgender woman with Klinefelter syndrome. Following an integrated cognitive-behavioral protocol adapted to her presentation, the patient achieved reliable and clinically significant change on the SBS by Visit 8, although a cisgender-normed instrument may not fully separate paruretic inhibition from realistic threat appraisal. Because outcomes derive from a single self-rated case without a baseline-stability phase or independent rater, we interpret this as consistent with treatment benefit, not established efficacy; gains were maintained at follow-up.

The SBS trajectory falls into two segments that differ in interpretability. The change while paruresis was the active target (43 at baseline to 18 by Visit 14, when focal intervention concluded) is the primary treatment-related signal, coinciding with the paruresis components and the reliable-change and

treatment-goal crossings. The further decline during the supportive phase (from 18 at Visit 14 to 8 by Visit 28), when paruresis-specific techniques were not reintroduced, is more plausibly consolidation of uncertain attribution (continued contact, incidental practice, or regression to a lower stable level). We therefore do not interpret the full 43-to-8 decline as a direct measure of the protocol's effect. Alongside this primary-outcome trajectory, the mid-treatment increases in PHQ-9 and GAD-7 are consistent with exposure-based and trauma-processing interventions (Foa & Kozak, 1986; Craske et al., 2014) but, in a single case, are equally compatible with concurrent life stressors or measurement variability and cannot be unambiguously attributed to treatment.

Intersection of Gender Identity and Paruresis

This case illustrates how gender minority status may have contributed to both the onset and maintenance of paruresis in this patient, plausibly through mechanisms that differ from those in cisgender populations, though a single case cannot establish this. The patient's symptoms predated any language for her gender identity, and the minority stress framework (Frost & Meyer, 2023; Meyer, 2003; Testa et al., 2015) helps explain how distal and proximal stressors interact with paruretic cognitions. Her anxiety about post-surgical voiding led her to rule out genital gender-affirming surgery, constraining her own pursuit of gender-affirming care.

Role of Klinefelter Syndrome

The patient's Klinefelter syndrome (47,XXY) added a further body-related dimension to the presentation. Klinefelter syndrome is the most common male sex chromosome aneuploidy, affecting approximately 1 in 450 to 600 male births, often undiagnosed (Mehmet et al., 2025). Self-consciousness about anatomical features she experienced as incongruent appeared to contribute to hypervigilance in restroom settings, which we hypothesize intensified urinary inhibition, though unquantifiable in a single case. Klinefelter syndrome also carries psychosocial sequelae, including social difficulty and elevated anxiety, that can heighten such hypervigilance (Clark et al., 2024; B. Liang et al., 2022). We do not regard it as explaining her gender identity, secure and congruent at treatment (TCS = 4.67). Klinefelter syndrome is more common among transgender cohorts (B. Liang et al., 2022), and gender questioning is documented in some affected adults (Harkin & Elander, 2025), though not causal.

Treatment Adaptations for Transgender Individuals

In our experience, several adaptations were clinically important. Minority stress normalization validated the realistic basis for the patient's restroom fears while distinguishing adaptive vigilance from maladaptive avoidance. Imagery rescripting (Pajak & Kamboj, 2014; Wild & Clark, 2011) required sensitivity to the gendered nature of her earliest memories and the invalidation embedded within them. The breath-holding technique and paradoxical intention (Zgourides, 1987) appeared to provide a physiological bypass of the anxiety-driven sphincter contraction, plausibly allowing micturition without conscious relaxation (autonomic rationale in Supplementary Note S1); we speculate they may be

particularly useful for transgender individuals whose restroom anxiety is compounded by hypervigilance about observation, a possibility that warrants testing in controlled studies.

Limitations

Several limitations constrain generalizability. As a single case, causality cannot be inferred; the absence of a baseline-stability phase, randomization, or control condition precludes ruling out placebo effects, therapeutic relationship factors, or natural fluctuation. Outcomes were patient self-report administered within session, without blinding or an independent rater, and the same clinician treated and rated, raising demand-characteristic and rater-bias concerns. The single follow-up limits characterization of the long-term course, and the unique Klinefelter-transgender intersection and U.S. context further limit generalizability. Although her spironolactone dose and broader gender-affirming hormone regimen remained stable across the 2.5-year treatment and the decade to follow-up, reducing one potential history confound, other unmeasured time-varying influences cannot be ruled out.

Clinical Implications and Future Directions

This single case suggests clinicians treating transgender patients may benefit from awareness of paruresis, particularly when evaluating for gender-affirming surgery, and from assessing the anxiety-driven and threat-appraisal contributions independently. The differentiating features in the Conceptualization point toward a paruretic mechanism, whereas avoidance confined to high-threat settings points toward realistic appraisal (Mizock & Lundquist, 2016). Routine screening for paruresis also risks over-pathologizing adaptive restroom vigilance in a population for whom restrooms are genuinely less safe. Legislative restrictions on restroom access add a realistic legal threat; although much of the evidence is from youth samples (DeChants et al., 2025; Price-Feeney et al., 2021), a qualitative study of LGBTQIA+ adults links such policies to chronic worry and hypervigilance (Last et al., 2026), and the barriers are likely lifespan-wide (Supplementary Note S2 gives the fuller legislative and renal-risk context).

At the systems level, paruresis has been described as warranting accommodation under the ADA in workplace urine drug screening (Soifer et al., 2010), and the Substance Abuse and Mental Health Services Administration (SAMHSA, 2023) has issued guidelines for oral fluid testing as an alternative, and psychologists in medical settings can advocate for such accommodations locally. Medication-induced urinary retention can also compound paruresis (Crisafulli et al., 2022; Trinchieri et al., 2021; Verhamme et al., 2008), so prescribing and non-prescribing clinicians should collaborate.

Priorities for future work include establishing paruresis prevalence among transgender individuals with validated instruments, evaluating SBS psychometrics with transgender participants, testing adapted protocols in controlled trials, identifying which components drive response, and quantifying the urinary-health sequelae of chronic restroom avoidance (Kuoch et al., 2017; Nørregaard et al., 2023).

Conclusions

In this case, paruresis compounded by gender minority stress and body-related distress was treated with an adapted cognitive-behavioral protocol that distinguished anxiety-driven inhibition from realistic threat appraisal and paired exposure-based and somatic techniques with minority-stress normalization. The result was reliable, clinically significant, and durable improvement; as a single self-rated case, this is consistent with treatment benefit but does not establish efficacy. As transgender healthcare expands, we suggest clinicians remain attentive to paruresis in this population, especially when it shapes gender-affirming care decisions such as surgical planning and recovery.

Declarations

Funding: The authors received no specific funding for this work.

Conflicts of Interest / Competing Interests: The authors have no competing interests to declare.

Ethical Approval. This case report did not require institutional review board approval.

Reporting Guidelines. This case report follows the CARE reporting guidelines (Riley et al., 2017).

Consent to Participate and for Publication. The patient provided written informed consent to participate and for publication of this case report, including the use of direct quotations and clinical data. The patient reviewed the manuscript, provided feedback, and approved the final version for publication. A signed consent-to-publication form is on file with the corresponding author and available to the editor on request. All identifying information has been altered or omitted to protect confidentiality.

Data Availability. Data are not publicly available in order to protect patient confidentiality.

Author Contribution

C.G. conceived and designed the case study, conducted the clinical assessment and treatment, curated and analyzed the data, prepared the figures and tables, and drafted the manuscript. M.W. provided medical expertise relevant to the patient's care and critically reviewed and revised the manuscript for important intellectual content. E.F. critically reviewed and revised the manuscript for important intellectual content. All authors reviewed and approved the final manuscript and agree to be accountable for the work.

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We are profoundly grateful to the patient. After living with paruresis privately for most of her life, she approached treatment with courage and trust, and she chose to share her story so that others might be helped. We are honored to have been entrusted with her lived experience, and we hope it helps clinicians recognize and care for those living with a condition that often remains hidden.

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Figures

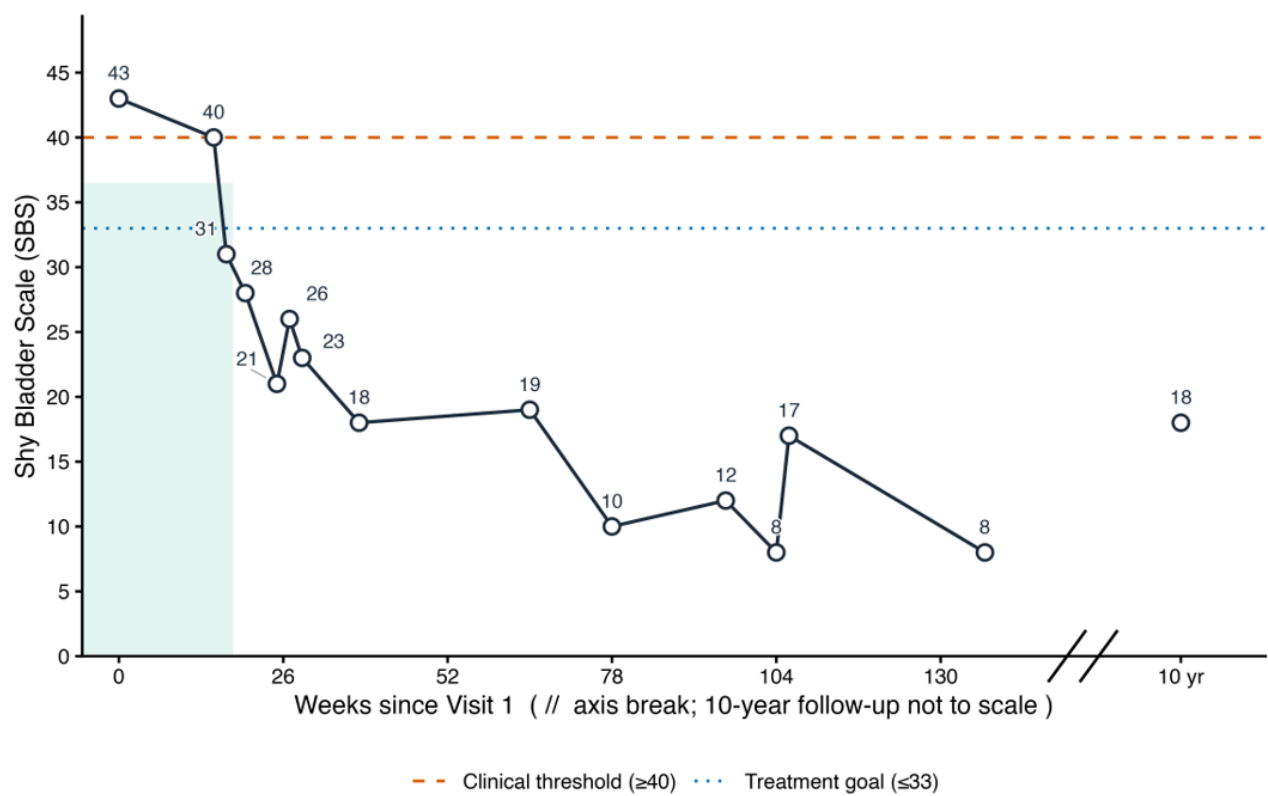


Figure 1

Shy Bladder Scale Scores Across Treatment and 10-Year Follow-Up

Note. Shy Bladder Scale (SBS) scores at each assessment occasion on which the measure was administered, across the treatment course (approximately 2.5 years) and at 10-year follow-up. The

horizontal axis is scaled to elapsed time (weeks since Visit 1), so the intervals between assessments are shown proportionally rather than as equal steps; the double slash (//) denotes an axis break, and the 10-year follow-up is plotted past the break and is not drawn to scale. Line segments connect consecutive administrations and do not imply measurement at intervening times. The transient rise to 17 (week 106) occurred at a supportive-phase visit. The dashed line indicates the clinical threshold (≥ 40) and the dotted line the clinician-defined treatment goal (≤ 33). The patient met that goal by Visit 8 ($RCI = 3.60$, $p < .05$ for the within-treatment baseline-to-goal comparison); later and follow-up scores are shown relative to the clinical-range and goal thresholds rather than as RCI significance tests. The shaded region spans the Visit 1 to Visit 8 interval, the within-treatment comparison to which the reliable-change index applies, and marks scores at least $1.96 \times SE_{\text{diff}}$ (6.53 points) below the Visit 1 baseline of 43. Both figures were produced in R using ggplot2.

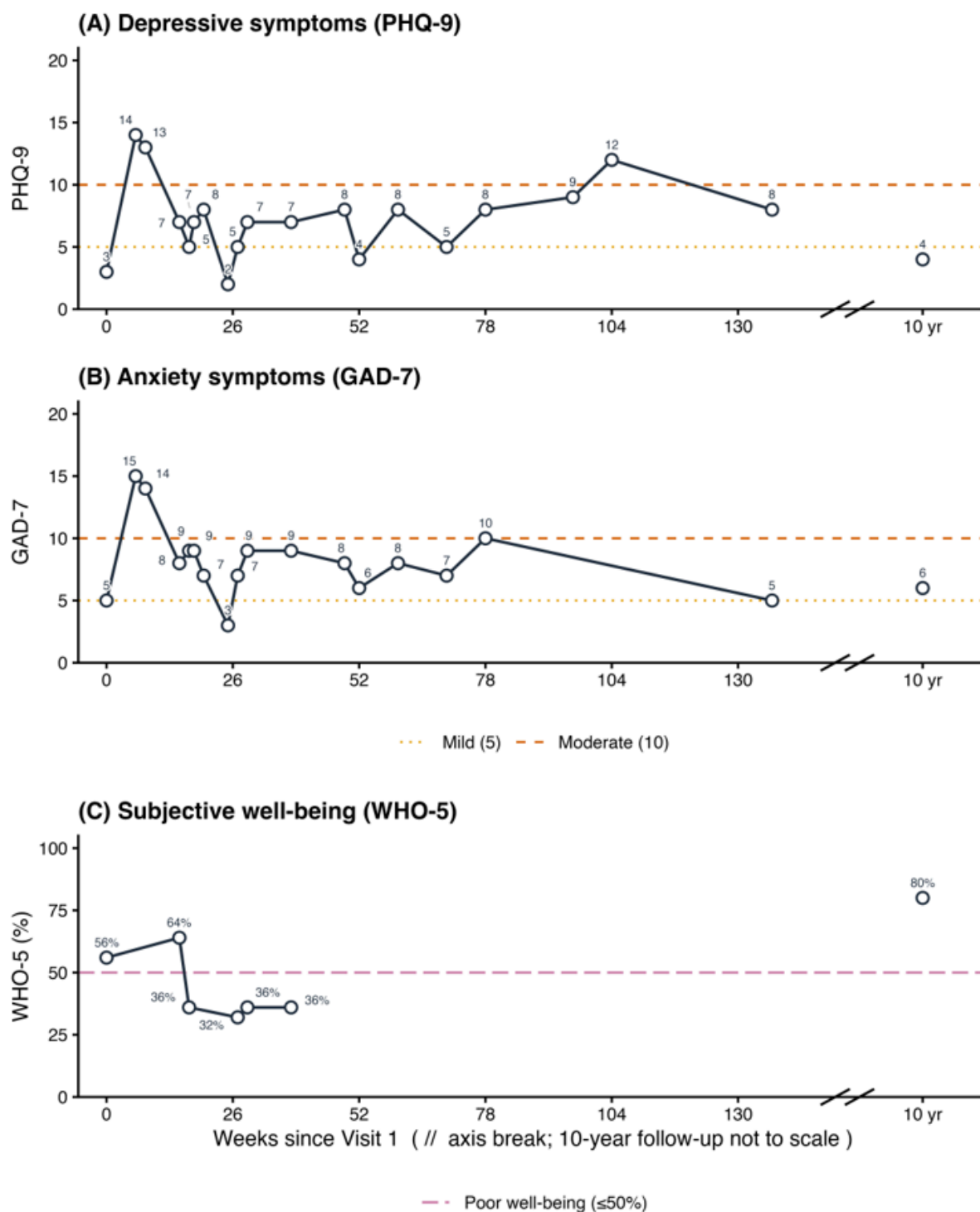


Figure 2

Secondary Outcome Measures Across Treatment and 10-Year Follow-Up

*Note.*Secondary outcome measures across treatment and at 10-year follow-up. (A) PHQ-9 depressive-symptom and (B) GAD-7 anxiety-symptom scores; the dotted line indicates the mild cutoff (5) and the dashed line the moderate cutoff (10). (C) WHO-5 subjective well-being (percentage of maximum); the

long-dashed line indicates the poor-well-being threshold ($\leq 50\%$). The horizontal axis is scaled to elapsed time (weeks since Visit 1), so intervals between assessments are shown proportionally rather than as equal steps; the double slash (//) denotes an axis break, and the 10-year follow-up is plotted past the break and is not drawn to scale. Every administration is plotted: PHQ-9 at 20 occasions, GAD-7 at 18, and WHO-5 at 7 (raw scores converted to percentage of maximum), each including the 10-year follow-up; line segments connect consecutive administrations. PHQ-9 and GAD-7 were tracked across treatment, whereas WHO-5 was administered through week 38 and again at follow-up.

Supplementary Files

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