Case Report

Occupational Therapy Interventions for Urinary Dysfunction in Primary Care: A Case Series

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Urinary dysfunction is commonly reported in primary care contexts. A shortage of primary care providers is affecting access to relevant services. Occupational therapy practitioners work in primary care settings and typically address urinary dysfunction in an outpatient context. Evidence regarding the delivery of occupational therapy interventions for urinary dysfunction in primary care has been limited. In this study, 3 women received 9–14 occupational therapy sessions in a primary care setting to address urinary symptoms. Plan-of-care duration, assessments, and urinary dysfunction interventions were individualized to accommodate personal and environmental factors. Across all case-series participants, Canadian Occupational Performance Measure scores demonstrated clinically significant improvement. Mixed results were found for SF–36 health-related quality-of-life subscale scores. Assessment scores specific to urinary dysfunction decreased, indicating reduced symptom severity and functional impact. This article provides preliminary evidence regarding the feasibility of occupational therapy interventions addressing urinary dysfunction in primary care settings.

Typical urinary function can be disrupted by motor deficits, sensory deficits, or a combined presentation. Depending on the type of dysfunction, symptoms such as urinary urgency, frequency, retention, incontinence, and hesitancy can occur (Newman & Wein, 2009). People with urinary dysfunction tend to present with secondary issues, including sleep disturbance, falls, social isolation, and comorbid anxiety and depression (Mishra et al., 2015; Pahwa et al., 2016). Urinary dysfunction is a frequent complaint among middle-age and older women, with higher rates of urinary incontinence among women older than age 85 yr (Coyne et al., 2009; Wiers & Keilman, 2017).

Recognized treatment methods for urinary dysfunction address behavioral, lifestyle, psychosocial, emotional, and physical issues. Behavioral and lifestyle interventions are the recommended first-line treatment for urinary dysfunction (Newman & Wein, 2009). Techniques include bladder training, food and fluid management, compensatory strategies, and urge control techniques (Newman & Wein, 2009). Psychosocial and emotional interventions focus on increasing the ability to cope with urinary symptoms while reducing pain and sympathetic nervous system activation. Relaxation and mindfulness training increase awareness of pelvic floor and urinary function and can decrease related pain and muscle tension (Baker et al., 2012; Callif, 2018; Huang et al., 2019; Patil et al., 2012). Pelvic floor muscle training, biofeedback, and functional activity training can be used to address physical issues. These treatment methods increase muscular awareness, coordination, and endurance of the pelvic floor musculature, resulting in reduced incontinence, frequency, and urgency (Celiker Tosun et al., 2015; Yoo et al., 2011).

Although rigorous research regarding the delivery of interventions by occupational therapy practitioners to address urinary symptoms in women is lacking, evidence suggests that occupational therapy interventions are effective for managing urinary dysfunction, particularly in populations with neurological conditions, such as multiple sclerosis (MS), and poststroke (Carver, 2009; Dumoulin et al., 2005; Gallagher & Bell, 2016; LaBan et al., 1998; Smith et al., 2016).

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Addressing Urinary Dysfunction in Primary Care Settings

As the first point of contact with the health care system, primary care providers (PCPs) commonly screen for and treat urinary symptoms (Brown et al., 2018; Mazloomdoost et al., 2018). However, a worsening shortage of primary care physicians may limit patient access to services (Petterson et al., 2012). Studies have shown that nonpharmacological interventions for urinary management delivered by allied health professionals are effective and acceptable to patients when compared with physician-led interventions (Albers-Heitner et al., 2011; Huang et al., 2019).

Occupational therapy practitioners have been expanding their involvement in primary care over recent decades (Halle et al., 2018). These services can be provided through colocation, in which all providers are physically present in the primary care space, or via collaboration at a distance, in which providers use regular interprofessional meetings and technology to coordinate services between clinic spaces (McColl et al., 2009). In this setting, the effectiveness of occupational therapy interventions has been demonstrated to improve self-efficacy, disease management, activity participation, and quality of life for people with chronic conditions (Garvey et al., 2015; O'Toole et al., 2013; Pyatak et al., 2018).

Although evidence in the literature supports occupational therapist–delivered urinary dysfunction interventions and occupational therapy interventions in the primary care context, no current literature has paired the occupational therapy treatment of urinary symptoms and primary care settings. Therefore, in this article, we aim to provide preliminary evidence for occupational therapist–led interventions targeting urinary dysfunction in coordination with PCPs.

Method

The retrospective case-series design was selected to support detailed description of the intervention delivery in this unique setting. Three occupational therapy practitioners with training in treatment of urinary dysfunction implemented the study intervention. The setting of this case series is an occupational therapy clinic located within an academic medical center. This clinic engages in regular care coordination meetings with PCPs to enhance interprofessional communication and collaborative care efforts.

Participants

Participants were selected according to the following criteria: female, referred to occupational therapy by a PCP on the primary care team, reported symptoms of urinary dysfunction, and completed postintervention measures within the past 3 mo.

Participant 1, Emma (pseudonym), was a 24-yr-old White woman with a history of anxiety and hemiplegic migraines. She reported symptoms of urinary frequency, urgency, and infrequent incontinence that affected work performance and decreased quality of participation in health management activities. Emma did not receive other services for urinary dysfunction during her occupational therapy plan of care.

Participant 2, Marisol (pseudonym), was a 19-yr-old Hispanic woman with a history of MS and acute stress. Her MS symptoms included urinary urgency and frequency, which disrupted academic routines and daily commute and decreased quality of participation in social activities. Marisol did not receive other services for urinary dysfunction during her occupational therapy plan of care.

Participant 3, Rachel (pseudonym), was a 77-yr-old White woman with a history of mixed urinary incontinence. She also reported chronic stress, depression, and fecal incontinence. Her symptoms contributed to reduced community engagement, increased social isolation, and decreased quality of participation in home management and shopping. In addition to primary care and occupational therapy services, Rachel received physical therapy to address pelvic floor weakness and coordination deficits during her occupational therapy plan of care.

Standardized Assessments

The measures in this case series included the Canadian Occupational Performance Measure (COPM; Law et al., 2014), health-related quality-of-life measures on the 36-item Short-Form Health Survey (SF–36; Hays et al., 1993), the Pelvic Floor Impact Questionnaire (PFIQ–7; Barber et al., 2011), the Pelvic Floor Distress Inventory (PFDI–20; Barber et al., 2011), and the Multiple Sclerosis Quality of Life Inventory (MSQLI; Ritvo et al., 1997). Posttests were administered during the final occupational therapy session. Refer to Tables 1, 2, and 3 for each participant's individualized assessment battery.

The COPM is a self-report measure that assesses perceived performance and satisfaction in daily activities. Scores range from 1 to 10, with higher scores indicating better performance and satisfaction. A change score of 2 or more points is considered clinically significant (Carswell et al., 2004).

The SF–36 is a self-report measure that assesses eight health concepts. Each health concept produces a subscale score ranging from 0 to 100, with higher scores indicating better quality of life (Hays et al., 1993). No clinically significant change in scores is available for this assessment.

The PFIQ–7 and PFDI–20 are measures of health-related quality of life specific to symptoms of pelvic floor disorders. PFIQ–7 subscale scores range from 0 to 100, with higher scores indicating more severe functional impact of bowel, bladder, and pelvic symptoms on daily activities. PFDI–20 subscale scores range from 0 to 100, with higher scores indicating greater levels of distress related to bowel, bladder, and pelvic symptoms (Barber et al., 2011). No clinically significant change in scores is available for these assessments.

The MSQLI is formatted as a battery of short-form, self-report assessments addressing potential symptoms of MS, each with a unique scoring range. The Bladder Control Scale assesses urinary symptoms, including incontinence and frequency, with higher scores indicating greater functional impairment (Ritvo et al., 1997). No clinically significant change in scores is available for this assessment.

Intervention

All case-series participants were seen for evaluation and follow-up appointments in a primary care context by an occupational therapy practitioner. Practitioners individualized the selection of recognized urinary dysfunction treatments to meet the symptom management and occupational needs of each participant. This method was based on collaboration with the participant and primary care team members as well as the practitioner's clinical reasoning. The following treatment options were available:

- Education regarding typical bladder physiology and pathology
- Bladder diary analyses to determine current frequency and severity of symptoms
- Bladder retraining and fluid titration based on findings of bladder diary

Table 1. Participant 1 Outcomes: Emma

Outcome Measure	Preintervention	Postintervention	% Change	Score Interpretation
COPM				Score increase demonstrates improvement; 2.0 or more point increase is clinically significant (Carswell et al., 2004).
Bladder management performance	2.0	8.0	300	
Bladder management satisfaction	2.0	7.0	250	
SF–36				Score increase demonstrates improvement.
Physical Functioning	100	100	0	
Role Limitations Due to Physical Health	50	25	–50	
Emotional Well-Being	56	60	7.14	
Social Functioning	50	38	–24	

Note. COPM = Canadian Occupational Performance Measure; SF–36 = 36-item Short-Form Health Survey.

Table 2. Participant 2 Outcomes: Marisol

Outcome Measure	Preintervention	Postintervention	% Change	Score Interpretation
COPM				Score increase demonstrates improvement; 2.0 or more point increase is clinically significant (Carswell et al., 2004).
Bladder management performance	1.0	10.0	900	
Bladder management satisfaction	1.0	8.0	700	
MSQLI				Score decrease demonstrates improvement.
BLCS	9	0	–100	
SF–36				Score increase demonstrates improvement.
Physical Functioning	85	90	5.88	
Role Limitations Due to Physical Health	75	50	–33.3	
Emotional Well-Being	60	68	13.33	
Social Functioning	50	63	26	

Note. BLCS = Bladder Control Scale; COPM = Canadian Occupational Performance Measure; MSQLI = Multiple Sclerosis Quality of Life Inventory; SF–36 = 36-item Short-Form Health Survey.

- Modifications to food and fluid intake to reduce exposure to irritants
- Manual pelvic exam to assess muscle strength and coordination
- Training in a pelvic floor home exercise program to improve muscle strength and coordination
- Relaxation techniques to reduce sympathetic activation and risk of urge incontinence.

In addition to the delivery of recognized urinary dysfunction treatments, the occupational therapy practitioners used techniques to support the participants' integration of training into their existing habits and routines. This integration process included utilization of education, occupational self-analysis, and problem-solving techniques, which resulted in action planning and goal setting during each visit. The intent of this approach was to support the participants generalizing developed skills outside of the clinic setting to support sustainable improvements in activity participation and quality of life.

The primary care context and session count varied on the basis of each participant's needs. Emma was seen for an evaluation and eight follow-up visits over 19 wk in a colocated primary care environment. Marisol was seen for an

Table 3. Participant 3 Outcomes: Rachel

Outcome Measure	Preintervention	Postintervention	% Change	Score Interpretation
COPM				Score increase demonstrates improvement; 2.0 or more point increase is clinically significant (Carswell et al., 2004).
Community errands performance	4.0	9.0	125	
Community errands satisfaction	3.0	9.0	200	
Home management IADL performance	2.0	8.0	300	
Home management IADL satisfaction	1.0	8.0	700	
PFIQ–7				Score decrease demonstrates improvement.
Urinary Impact Scale	52.0	19.0	–63.5	
PFDI–20				Score decrease demonstrates improvement.
Urinary Distress	70.0	29.2	–58.3	
SF–36				Score increase demonstrates improvement.
Physical Functioning	60	80	33.3	
Role Limitations Due to Physical Health	50	100	100	
Emotional Well-Being	44	76	72.7	
Social Functioning	50	100	100	

Note. COPM = Canadian Occupational Performance Measure; IADL = instrumental activities of daily living; PFDI–20 = Pelvic Floor Distress Inventory; PFIQ–7 = Pelvic Floor Impact Questionnaire; SF–36 = 36-item Short-Form Health Survey.

evaluation and 11 follow-up visits over 36 wk in a clinic that supported collaboration at a distance. Rachel was seen for an evaluation and 13 follow-up visits over 36 wk in a clinic that supported collaboration at a distance.

Results

Pre- and postintervention data are displayed in Tables 1–3. Across all participants, COPM scores related to urinary symptoms and associated occupational deficits demonstrated clinically significant improvement. For all participants, scores on the SF–36 Physical Functioning and Emotional Well-Being subscales were maintained or improved. For Marisol and Rachel, scores on assessments specific to urinary symptoms improved. Marisol's MSQLI Bladder Control Scale score decreased. At baseline, Marisol presented with an elevated urinary frequency of voiding once per hour. After being discharged, Marisol reported that she was voiding once every 3 hr. Similarly, Rachel's PFIQ–7 Urinary Impact Scale and PFDI–20 Urinary Distress scores decreased. At baseline, Rachel was experiencing both urge and stress incontinence, and she presented with urinary incontinence most days of the week. After being discharged, Rachel reported that small leaks occurred twice per month.

Mixed results were found for the SF–36 Role Limitations Due to Physical Health and Social Functioning subscale scores. Only 1 participant's Role Limitations Due to Physical Health subscale scores increased, and 2 participants' Social Functioning subscale scores increased.

Functional improvements were reported by the participants in the final session. Emma implemented urge control techniques and titrated her fluid intake, which decreased the frequency of disruptions during work and incontinence episodes during exercise. Marisol engaged in bladder retraining and reduced exposure to irritants, which increased frequency of social participation and reduced frequency of disruption during academic activities. Rachel implemented pelvic floor exercises and relaxation techniques, which increased frequency of community integration activities and reduced frequency of incontinence with home management tasks.

Discussion

Through occupational therapy intervention in a primary care context targeting urinary symptoms and associated functional deficits, participants demonstrated improved self-efficacy with management of urinary dysfunction and engagement in daily activities. Across all participants, COPM scores demonstrated clinically significant improvement. These improvements in perceived performance and satisfaction included urinary symptom management routines and occupations negatively affected by urinary dysfunction. By developing urinary symptom management skills, participants' health-related quality of life increased, as indicated by improvement on the SF–36 Physical Functioning and Emotional Well-Being subscales. We believe that this outcome is likely due to decreased levels of distress and increased ability to cope with deficits associated with urinary dysfunction.

We attribute the mixed results for the SF–36 Role Limitations Due to Physical Health and Social Functioning subscale scores to the participants' comorbid conditions interfering with perceived function in these domains. Despite developing urinary symptom management skills, only 1 participant's Role Limitations Due to Physical Health subscale scores increased, and 2 participants' Social Functioning subscale scores increased. Emma and Marisol experienced decreased participation in social activities because of increased frequency of hemiplegic migraines and fatigue exacerbation secondary to MS, respectively.

In this case series, occupational therapy services were colocated or coordinated at a distance with PCPs. Two participants received occupational therapy in a coordinated care setting, and 1 participant received therapy in a colocated care setting. Regardless of the model of care, the interventions were an important adjunct to primary care service, as evidenced by the postintervention outcomes and self-reported functional improvements. The benefits of providing care in these settings included increased frequency of communication with the referring provider, ability to adjust treatment plan according to clinical insights provided by PCPs, and better access to occupational therapy

services. We have developed relationships with PCPs through colocation and ongoing coordination of services via interprofessional meetings. The PCPs may not have referred the participants to occupational therapy services if the providing occupational therapy practitioners had not been present and engaged in the primary care context. Therefore, we conclude that occupational therapy services provided in these models of care are feasible and accessible.

Further research is warranted to strengthen the evidence base to support the aforementioned discussion. The current evidence consists primarily of case studies and case series (Carver, 2009; Dumoulin et al., 2005; Gallagher & Bell, 2016; LaBan et al., 1998; Smith et al., 2016) that are not specific to the primary care setting. This article contributes preliminary evidence to support occupational therapy's role in urinary symptom management in primary health care contexts. The strengths of this case series include the range of demographics presented, individualization of interventions, and provision of diagnosis-specific assessments. The limitations include a small sample size of convenience, the lack of a control or comparison group, the lack of blinding of participants and researchers, and heterogeneity of outcomes, which limits generalizability. Thus, Class I and II research studies are necessary to enhance the evidence base for occupational therapy practice in this area.

Implications for Occupational Therapy Practice

Occupational therapy practitioners should advocate for their involvement on primary care teams to support the effective treatment of urinary symptoms. Their distinct skills in promoting healthy habits and routines can support increased independence with health management and reduce the negative impact of chronic symptoms on daily activity participation. Therefore, the results of this study have the following implications for occupational therapy practice:

- Occupational therapy practitioners can work in primary care settings to improve access to health promotion and chronic disease management services.
- Occupational therapy practitioners can collaborate with PCPs for screening and intervention planning.
- Occupational therapy practitioners should screen for urinary dysfunction and train patients to self-manage related symptoms as a part of usual and customary care.

Conclusion

Urinary dysfunction is a common complaint in primary care contexts. However, a shortage of PCPs is negatively affecting access to necessary related services. This article demonstrates the feasibility of occupational therapy–delivered interventions to address urinary dysfunction in primary care settings. We recommend that occupational therapy practitioners be included on primary health care teams to support effective treatment of urinary symptoms. Moreover, by providing interventions in this setting, occupational therapy practitioners can increase the visibility of the profession's role in this area of treatment and improve people's access to services that help them manage urinary dysfunction, occupational engagement, and quality of life.

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