

# 'Making Sense' of Urinary Incontinence: A Qualitative Study Investigating Women's Pelvic Floor Muscle Training Adherence

E. Jean C. Hay-Smith *PhD*

Professor of Rehabilitation, Department of Medicine, University of Otago, Wellington, New Zealand

Mark Pearson *PhD*

Reader in Implementation Science, Wolfson Palliative Care Research Centre, Hull York Medical School, University of Hull, United Kingdom

Sarah G. Dean *PhD*

Professor in Psychology Applied to Rehabilitation and Health, University of Exeter Medical School, United Kingdom

## ABSTRACT

Urinary incontinence is common and disabling. Pelvic floor muscle training is recommended as first-line therapy for uncomplicated urinary incontinence. The effects of such behavioural therapies depend in part on adherence. We explored women's experiences of incontinence treatment and training adherence in a longitudinal qualitative design. Six women (40–80 years) with stress, urgency or mixed urinary incontinence symptoms were interviewed twice; once at the start of treatment and again after discharge about 3 months later. Interviews were transcribed and analysed using principles of Interpretative Phenomenological Analysis. Experiences were represented by four themes: *Past experiences and meanings of leakage; the supervised treatment period; going on and looking ahead; and the relationship with and experience of others*. Variable adherence was explained by how women 'made sense of it all'. Women with the least difficulty in making sense of their incontinence and in overcoming training inertia had the best self-reported outcomes. Conversely, variable adherence, poorer self-reported outcomes, and ambivalence about engaging in treatment were characteristic of women who struggled to make sense of their apparently intermittent or unpredictable condition. Helping women make sense of incontinence and overcome inertia and ambivalence could improve adherence, but this may be a prolonged process.

**Hay-Smith, E. J. C., Pearson, M., & Dean, S. G. (2023). 'Making sense' of urinary incontinence: A qualitative study investigating women's pelvic floor muscle training adherence. *New Zealand Journal of Physiotherapy*, 51(1), 6–13. <https://doi.org/10.15619/NZJP/51.1.02>**

Key Words: Adherence, Interpretative Phenomenological Analysis, Pelvic Floor Muscle Training, Qualitative Research, Urinary Incontinence

## INTRODUCTION

Urinary incontinence (UI) is common. While reported prevalence varies considerably by study and country, most studies have estimates in the range of 25% to 45% of women experiencing any incontinence in the last year (Milsom et al., 2013). Urinary incontinence is associated with poor quality of life (Pizzol et al., 2021), depression and anxiety (Cheng et al., 2020), and a range of other physical and psychological harms including stigma (Murphy et al., 2022). International guidelines recommend it is initially managed conservatively (Abrams et al., 2018), which includes lifestyle adaptation (e.g., diet and fluids), physical therapies (e.g., pelvic floor muscle training [PFMT]), and voiding-related strategies (e.g., urgency suppression, timed toileting). There is moderate to high quality evidence of benefit (symptomatic cure/improvement, fewer leakage episodes) for PFMT (Dumoulin et al., 2018).

Generally, adherence to rehabilitation exercise programmes over the longer term is problematic; some people may not adhere sufficiently to gain initial benefit but many will fail to adhere over the longer term to maintain ongoing therapeutic benefit (Sluijs et al., 2020). The same pattern is observed for PFMT. For instance, Borello-France et al. (2010) found 81% of women with urgency predominant UI were completing a

therapeutic PFMT dose during the supervised intervention, yet one year later adherence levels were at about one-third. While the benefits of PFMT can be retained longer term, this requires that exercise dose continues at or above the threshold required to maintain therapeutic benefit or a decline in effect is observed (Dumoulin et al., 2015). In order to conduct a fair test of PFMT effectiveness over the longer-term we first need to identify what contributes to ongoing PFMT adherence. A possible contributor to low levels of adherence is a mismatch between patients' understanding of their condition and its rehabilitation (Dean et al., 2005).

Urinary incontinence is experienced as 'normal' by many women – they associate it with being mothers and getting older. However, a sense that this is a loss of bodily control and that it is not socially acceptable to leak leads people to question whether it is normal or a legitimate medical illness (Toye & Barker, 2020). This, and many other issues (such as stigma, difficulties broaching the topic, finding the right health professional, and language barriers), create barriers to help-seeking (Toye & Barker, 2020). There are also multiple cognitive, physical, and affective barriers to PFMT adherence (Hay-Smith et al., 2015). Women's experiences of PFMT suggest their capability is reduced by poor knowledge and skills, conscious motivation is

limited by the cognitive demands of PFMT (e.g., remembering), and multiple competing external demands decrease opportunity to exercise (e.g., work and family commitments) (Hay-Smith et al., 2015). However, none of the studies summarised in either of the qualitative evidence syntheses (Hay-Smith et al., 2015; Toye & Barker, 2020) cited above specifically explored women's experiences of PFMT adherence during treatment or over time. It is unclear how women experience the interaction between their symptoms and treatment, or how this impacts adherence.

Our study involved six women and their continence specialists. We interviewed participants separately and present findings from the women; another paper will report findings from the professionals. We aimed to explore in-depth women's experiences of conservative management of UI with a focus on their PFMT adherence.

## METHODS

We used a qualitative approach, Interpretative Phenomenological Analysis (IPA) (Smith et al., 2009), to understand the lived experience of the participants.

Researchers were sent contact details of eligible women, identified by continence specialists (physiotherapists or continence nurses) in two New Zealand cities. The women were aged between 40 and 80 years old; referred for conservative management of symptoms of stress, urgency, or mixed UI; and offered PFMT with or without other interventions. Women were provided written and verbal explanations of the research, the opportunity to ask questions, and written consent to audio-taped semi-structured interviews at the start of treatment (time one: T1) and again after discharge (time two: T2). Interviews were arranged at a convenient, private location (at work, clinic, or woman's home). No woman wished to have a support person present.

Separate schedules were prepared for initial and follow-up interviews and drew on researchers' expertise in exercise adherence (SGD) and conservative management of UI (EJCHS). Questions were piloted prior to data collection. Women were asked to tell us about their bladder problem, the information and advice they had been offered and how they had managed to use that, the treatment they were undertaking, what helped them or made it more difficult to undertake the treatment, any concerns they had about treatment, and their thoughts about why this treatment was necessary. Each woman was interviewed twice by the same experienced female qualitative researcher, who was not known to them before the study. Researchers debriefed after the initial interview, but minimal question changes were required. The follow-up interview schedule also included bespoke prompts for each woman, based on their first interview content. On average interviews lasted one hour. All data were transcribed verbatim.

Step-by-step analysis (Smith et al., 2009), commenced with proof reading of transcribed data and coding of the first four interviews. IPA is an inductive or data-driven process performed on a case-by-case basis where themes are iteratively refined and compared across cases. As coding and theme development

continued there were several layers of verification. First, participants were given the opportunity to comment upon their transcripts (none did). Second, two researchers commented on codes, emerging themes, and the extent to which raw data represented the themes. Third, three researchers refined the interpretation, checking that no further themes were present, and finally confirmed which transcript examples were to illustrate the themes. Pseudonyms are used to ensure anonymity.

## RESULTS

### Participants

The six women (see Table 1 for descriptive summary) received individualised treatment including recommendations about frequency strategies, urgency suppression techniques, defecation positioning, caffeine reduction, fluid management, and other lifestyle advice. All women were offered PFMT, and exercises were personalised for intensity, frequency, contraction duration, progression, etc.

### Themes

Our findings confirmed much of what is known from the salient literature such as the potential stigma of UI, the normalisation of symptoms, the meaning of incontinence as a loss of control, and reasons for delayed help-seeking (Toye & Barker, 2020). We give a brief explanation of the four themes below. The remainder of the results focuses on our phenomenon of interest – PFMT adherence. Adherence was influenced by the ways women made sense of the whole (i.e. the four themes) (Figure 1).

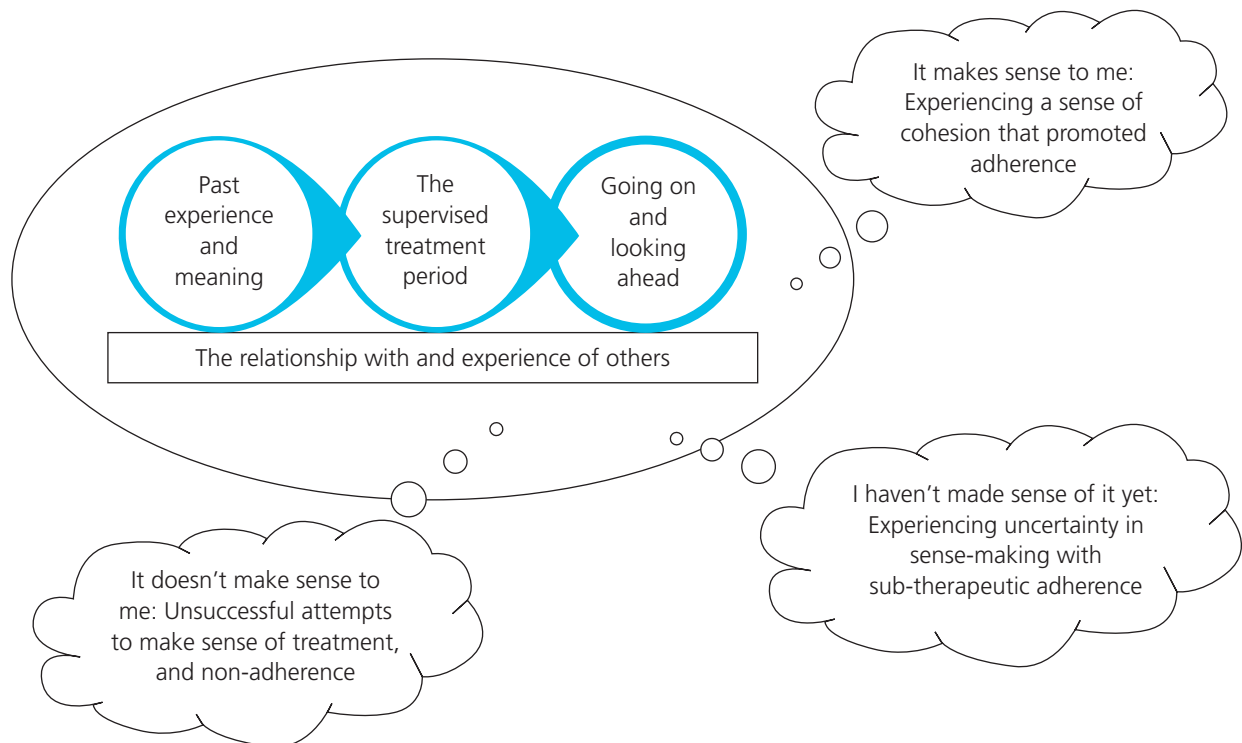
The first theme *Past experience and meanings of leakage* depicted the process of re-visiting, amending, or reinforcing prior beliefs about incontinence and its treatment. During *The supervised treatment period* (theme 2) women initiated and tried to maintain a PFMT programme. New information offered by the continence nurse or physiotherapist was tested and sifted by women according to prior beliefs, and their observations of symptom change (or not) during treatment. Clinician confirmation of a correct pelvic floor muscle contraction provided confidence in the basic skill required for PFMT, yet this initial buoyancy quickly diminished as women faced the challenge of developing a regular exercise habit. After supervised treatment ceased the acceptability of longer-term exercise was assessed in *Going on and looking ahead* (theme 3). Women considered the potential burden of maintenance exercises, the treatment benefit to date, their fear of worsening symptoms or life restrictions in future, and other life priorities. *The relationship with, and experience of, others* (theme 4) was a pervasive influence on women's thoughts and actions. Trust and belief in the clinician supported the women's attempts to exercise. Conversely, if credible others (e.g., female friends) expressed a lack of belief in PFMT this weakened the women's conviction to adhere.

We observed, and describe below, three patterns of making sense of the whole (that is, past experiences, the supervised treatment, doing PFMT in future, and the influence of others). All themes were represented in each of the three patterns. The extent to which women could make coherent sense of the whole appeared to influence adherence.

**Table 1***Summary of Participant Characteristics*

Participant pseudonym	Referred by	Treated by	Symptoms	Duration of symptoms (causal or associated events <sup>a</sup> )
Catherine	Neurologist	Nurse continence advisor	Overactive bladder syndrome with urgency urinary incontinence	Many years (part of her neurological condition)
Janice	GP	Physiotherapist	Stress urinary incontinence; rectal fullness and incomplete emptying.	18 years (following childbirth)
Deborah	GP	Physiotherapist	Stress urinary incontinence	5 years (following childbirth)
Bernice	GP (after medical specialist referral)	Physiotherapist	Stress urinary incontinence	5 years (following hysterectomy)
Heather	GP (after medical specialist referral)	Nurse continence advisor	Overactive bladder syndrome with urgency urinary incontinence and nocturia	Many years (had previous vaginal repair)
Ruby	GP (after medical specialist referral)	Nurse continence advisor	Overactive bladder syndrome with urgency urinary incontinence and nocturia	Many years (had previous colposuspension and tension free vaginal tape)

Note: <sup>a</sup> As attributed by the women.

**Figure 1***Diagrammatic Representation of Themes*

## The phenomenon of adherence

### *It makes sense to me: Experiencing a sense of cohesion that promoted adherence*

Bernice and Catherine gave the two most lucid, integrated accounts of treatment experience; they also reported the best outcomes. Initially, Bernice was bothered by leakage when walking downhill; by treatment end this no longer happened. Catherine planned her work around toilet localities to manage her urgency. After treatment she had less frequency and urgency, and longer voiding intervals. At T2 Catherine thought “it’s gone very well” and Bernice was “probably a bit of a success story really”.

Both women attributed symptom improvement to their adoption of the recommended treatment. Both perceived an almost immediate treatment response but also times when they had a crisis of confidence. Catherine vividly described her successful self-talk about not getting up to void in the night after her first appointment but then for “the first few weeks [I] went backwards rather than forwards” (T2); however, support from a nursing friend encouraged her to continue with treatment.

Bernice and Catherine overcame negative feelings about PFMT, which arose from persisting guilt for failure to exercise in the past. Both had been introduced to PFMT as young mothers but neither had done any, explaining that “I didn’t do them because I was just exhausted ... I should have been doing them since then really” (Bernice, T1).

Clinician support and reassurance provided an environment that facilitated engagement with treatment for both women. For example, Bernice repeated at both interviews how, when she told her GP that she was using a panty-liner, the GP’s response was to share that she too experienced some leakage; for Bernice this “felt better ... having that first contact with a reassuring person” (T1). Both women took responsibility for PFMT as it was felt “this is for me to do, nobody else can do this. They [continence therapists] can help with information but the actual incentive has to be mine” (Catherine, T1).

At T2 Catherine and Bernice did regular PFMT. Catherine “anchored” (T2) the exercises to bus rides and toileting while Bernice completed her PFMT in bed morning and night. Both made similarly positive statements of PFMT intention longer-term. “I think I will just keep on doing the exercises, hopefully throughout life. It seems to me to be the thing [to do]” (Catherine, T2).

These two women were the least ambivalent about, and expressed greater consonance with, the treatment and observed symptom response. We interpreted the experiences of Bernice and Catherine as achieving sense-making that fostered adoption of PFMT and intentions of longer-term adherence.

### *I haven’t made sense of it yet: Experiencing uncertainty in sense-making with sub-therapeutic adherence*

Ruby, Heather, and Deborah all described at T1 the boost in confidence and hope for a good outcome generated by their initial contact with the continence therapist. By T2 none were convinced their symptoms were better and each was uncertain about the worth of continuing PFMT. All three wished to have

open access to the continence therapist if their symptoms got worse or changed: clinician contact was helpful but once it had ended there was insufficient carry-over to support longer-term PFMT.

The biggest difficulty these three women faced was relating changes in the symptoms to the treatment rather than to the apparently cyclical or unpredictable nature of their leakage or symptom severity. For example, Deborah’s leakage was worst when running, and markedly worse in the pre-menstrual week. Her periods were erratic so clinical tests (e.g., pad test) did not demonstrate her problem because test timing never matched the timing of her symptoms. Deborah tried “pulling things in and tucking things up” while running, and could feel the muscles “tightening”, but still leaked. Prior to the second interview Deborah was on holiday, less “stressed”, running less and cycling more (which did not provoke leakage); she reasoned this was why she had “more control” and less leakage rather than due to doing PFMT. Deborah ended treatment, frustrated at her inability to demonstrate her symptom severity and believing clinicians were unconvinced of the extent of her problems, without experiencing direct benefits of a stronger pelvic floor while running, and with an alternative plausible explanation (not related to her adhering to PFMT) for her reduced leakage at T2.

Heather and Ruby ended treatment with similar uncertainty about treatment efficacy. Both had nocturia as their most bothersome symptom and both initially observed an apparent link between PFMT and fewer night-time voids. Heather recounted:

The other night when I woke at two in the morning I needed to go. I thought I’m not getting up bladder. I did some exercises and went back to sleep. It worked until half past five in the morning and I felt so proud of myself. (T1)

At T2 both were disappointed because sometimes it seemed the exercises and urgency suppression techniques worked and other times they did not. Heather offered an explanation about why treatment did not make sense: “[bladder behaviour is] very varied ... I need it to be much more simple – I do my exercise and things get better – but in fact lots of variables (are) in this” (T2).

For these women PFMT adherence at T2 was, at best, intermittent. For example, Heather and Ruby described cycles of remembering and forgetting, and exercised intermittently. At T2 Heather’s PFMT was “random, as the case requires”. Ruby said, “I’d probably go two or three days and then remember after a sudden leak and then do it constantly”.

Ruby and Heather were particularly influenced by past experiences of continence surgery that was initially helpful but not effective long-term. The lack of permanent cure from surgery, which both women considered should have the most certain and enduring effect, influenced their views about PFMT; both were hopeful, yet neither was sure that exercises could help if surgery had not.

Interviews with these three women were characterised by shifting perceptions between PFMT benefit and lack of benefit. We interpreted their experiences as demonstrating unresolved

uncertainties about how PFMT made sense for improving UI symptoms, resulting in sub-therapeutic PFMT adherence at T2 and the possibility that adherence would decrease further without ongoing clinician contact.

### *It doesn't make sense to me: Unsuccessful attempts to make sense of treatment, and non-adherence*

Janice had the most difficulty making sense of her experience in a way that would promote PFMT adherence. Janice had an inconsistent leakage pattern with running and high-impact activities, although it was a sudden increase in leakage frequency and volume with a cold and cough that precipitated her treatment referral. At T2 Janice no longer had leakage with "ordinary" running yet she doubted this was due to PFMT. Because of the long delay between referral and first appointment it was hard to connect symptom improvement with PFMT, as she no longer had a cough, which was her "acid test". Thus, in looking ahead Janice said:

There's no reason for me to think that I can't do the exercises if I continue getting better but in my head there's this kind of barrier that says ... I'm not entirely convinced that it [the leakage] will get better, that it will go away. (T2)

From T1 Janice found it difficult to reconcile her beliefs with the treatment recommendations. Janice's continence therapist suggested she did not run or lift weights while she started PFMT, yet Janice liked both these activities: they helped maintain her weight which was also "a problem" (T1). Janice compromised and did "the exercises she tells me, going to the toilet the way she tells me, and I won't do any weights standing up" (T1). By time T2, Janice was not doing any PFMT per se although she did do the lower/deep abdominal muscle exercises suggested by the continence therapist because she:

Could actually incorporate into your day without any great [difficulty] 'cause I do a lot of exercise and they're always talking about tightening your core so it's actually just a continuation of what I was doing outside of seeing [the continence therapist]. (T2)

Another disparity between her experience and perception of PFMT arose from Janice's work as a health professional in chronic conditions management. She was profoundly influenced by her observations; she believed that "it's just too hard" (T1) for some patients to adhere to self-management strategies. Janice considered that UI was a chronic condition that:

Can be controlled but you have to control it and in order to control it you will have to do A, B, C and that's true of every chronic disease because the onus is off the professional and on to the patient. (T1)

As a patient herself Janice found PFMT adherence too hard, saying:

I went back for the second visit and got more exercises to do. I think then it hit me actually that there was going to be no kind of cure ... I probably got a bit disillusioned 'cause I realised that this was just something I'd have to do for the rest of my life ... they're not going to ever end. (T2)

Both interviews with Janice were riven with ambivalence. She regularly exercised for weight control yet could not see the

sense in continuing PFMT to control leakage. She promoted self-management of chronic conditions to her patients yet felt continuing PFMT as her own UI self-management strategy was overwhelming. We interpreted Janice's experience as representing an unsuccessful attempt to make sense of treatment, resulting in PFMT non-adherence.

### *Two common difficulties*

One consistent problem in making sense about PFMT was the difficulty of attributing a causal effect of PFMT on leakage reduction. Initial excitement at perceived symptom improvement was followed by lost confidence if symptoms fluctuated or quickly reached an apparent plateau. Changes in contraction performance were encouraging if noticed, yet it was hard to keep exercising for long enough (e.g., 12 weeks or more) to see if symptoms improved enough to make a difference. Making the link between PFMT and symptoms was made more difficult because stopping the exercises did not have an immediate opposite effect. This lag between behaviour and consequence was captured well by Deborah, who said "if I did the exercises regularly it probably could help at the other end and until I do those exercises regularly, I can't prove that it's not working".

The second problem was exercise inertia, which all women experienced in varying degrees. By inertia we mean the tendency to default to inaction (not doing PFMT) and non-adherence. Inertia is observed as a (passive) resistance to changing behaviour. Inertia was expressed as reluctance to exercise, due to competing priorities; being time poor, and the difficulty of fitting exercise in; apathy about PFMT including misunderstanding about the exercises; doubts about exercise efficacy based on past experience or conversations with others, and insufficient benefits to continue longer-term; and passivity characterised by unchanged exercise behaviour unless reminded or held accountable by an external other such as the continence therapist. Interaction of the four components of making sense could compound or diminish inertia. Those women who made more sense of treatment and its relationship with symptom response seemed more successful in overcoming PFMT inertia.

## **DISCUSSION**

### **Main findings**

Our findings suggest that women's past experiences, evaluations of supervised treatment, the credibility of influential others (including the continence therapist), and attitudes to doing life-long PFMT all contributed to whether women made sense of PFMT. The relative contribution of each component varied case by case, and the interaction between the elements could compound or diminish the experience of exercise inertia and ambivalence. All this had consequences for the uptake of, and long-term adherence to, PFMT.

### **Strengths and limitations**

The in-depth analysis of this qualitative data has produced a richer understanding of a complex, sensitive issue. Our use of an analytic process, in which analysis of both interviews from each woman was conducted in parallel, is unique in the field and provided additional insight into women's sense-making processes over time; the longitudinal approach highlights the fluctuations in women's thoughts and feelings about the effects and worth of treatment and how this influenced adherence.

Moreover, interviewing women who represented a range of common presentations to continence therapists for conservative management meant we heard how and why treatment adherence is so complex; treatment needed to make sense to women based on past and current experiences of UI (including prior treatments), current symptoms, and symptom response to treatment, otherwise PFMT adherence diminished. This study has therefore opened up new areas of understanding about PFMT adherence that can be more comprehensively explored in future research.

There is a risk of selection bias (due to the opportunistic nature of recruitment) and of non-response bias (as we do not know the characteristics of women who declined to participate or their reasons), and with the small sample it is only possible to move cautiously towards any generalisation of our findings.

## Interpretation

### *Inertia and ambivalence*

In the physical sciences, inertia is a resistance to motion or changing state and is overcome by an external force sufficient to change the speed or direction of matter. Ambivalence is somewhat different, and usually means having mixed or contradictory ideas or feelings about something. When interpreting the way the women made sense of treatment for UI and PFMT adherence it seemed women had to overcome inertia to begin the exercises, and once 'in motion' this was not self-sustaining if existing or new uncertainties were not successfully addressed. The more ambivalent the woman was or became about how to successfully manage her UI and the role of PFMT in management, the more PFMT adherence reduced accordingly.

The women's narratives contained examples of how the continence therapist acted as an 'external force' for change by providing useful information, teaching necessary skill (i.e., correct pelvic floor muscle contraction), and encouraging behaviour change (e.g., accountability). For Bernice and Catherine initial contact with the continence therapist seemed sufficient to amplify exercise intention to overcome any obstacles to PFMT, and once started they appeared to maintain their exercise momentum. Even though both women talked about day-to-day difficulties of exercising (developing an exercise routine, finding time, and so on) they were least ambivalent about PFMT as they noticed symptom improvement attributable to PFMT and had a growing sense of exercise self-efficacy. In contrast, while contact with the therapist enabled Ruby, Heather, Deborah, and Janice to start PFMT this was not enough to surmount past experiences, detrimental influences of others, the mismatch between doing the exercises, and whether or how symptoms changed. All four spoke about treatment with varying degrees of ambivalence; their longer-term views of PFMT were characterised by reluctance, apathy, and passivity.

Surprisingly, we found only one other qualitative study about exercise for general health/fitness that named inertia as an influence on exercise adherence (Lees et al., 2005). Lees et al. (2005) reported this was the most identified barrier for exercisers and the second most frequent barrier for non-exercisers. While our study was contextually different (being about PFMT rather than physical activity) the finding of exercise inertia was common to both studies. Also congruent with Lees

et al., we found that inertia was experienced with regard to PFMT in general and to specific exercise episodes (i.e., doing PFMT at all, and doing PFMT now in response to a trigger or cue). In our study, past experiences and meanings were potentially de-motivating for initiating PFMT, as was looking ahead to a lifetime of doing PFMT, because both past and future were ridden with doubts about the cost/benefit ratio of PFMT. In addition, on a day-to-day basis, the women in our study prioritised PFMT (or not) when confronted with many reasons not to exercise (such as competing priorities, time pressures, and so on). Thus, interventions to encourage exercise adherence probably need to include behavioural strategies that: (a) address what women think about UI and PFMT (past, present, and future), because thinking influences feelings and negative feelings influence automatic motivation; and (b) support the choice to exercise in response to triggers and cues.

Ambivalence about therapeutic exercise (as distinct from physical activity), arising from patient perceived uncertainties and contradictions, reduces ongoing engagement with sustained exercise (Davenport et al., 2019). In a systematic review, with meta-ethnographic qualitative evidence synthesis, Davenport et al. (2019) concluded "Patients held many contradictory positions and uncertainties which often resulted in ambivalences about engaging in and practising exercise. Under these circumstances, patients either failed to engage in prescribed practice or stopped prematurely" (p. 1972). Like Davenport et al. we found the clinician had a key role in supporting engagement and ongoing contact was desirable for encouraging women to practise PFMT. There was tension between women's personal responsibility for taking up the exercise but needing the impetus from an external source such as a clinician. Women's perception of benefit helped sustain practice, and it was much harder to sustain exercise if change was not observed fast enough or if high expectations for benefit were not met. Therefore, continence therapists need to develop a good working alliance as the basis for their multiple roles – educator, trainer, persuader, and enabler – to facilitate adherence (Hay-Smith et al., 2015).

### *Techniques for supporting exercise behaviour and adherence*

Frawley et al. (2017) explain why PFMT is both a physical and a behavioural therapy. Inclusion of psychologically informed cognitive and behavioural elements may support the adoption and maintenance of sufficient PFMT for intervention effectiveness. As PFMT adherence decreases with time (Borello-France et al., 2010; Dumoulin et al., 2015) behaviour change support may be particularly important in the transition from short-term to sustained exercise. For example, while Bernice and Catherine were generally adherent and exercised daily, all six women described past or present instances of partial, cyclical, or discontinued exercise adherence at T2. These data highlight the need for specific attention to relapse management as an integral part of supervised PFMT to equip women to be life-long exercisers.

Two strategies that might be particularly useful to address relapse management are 'problem solving' and 'action planning'. These are two of 93 evidence-based behaviour change techniques (BCTs) named and described by Michie and colleagues (Michie et al., 2013), in their taxonomy. Problem

solving requires analysing what has or might happen and then generating and choosing actions that overcome barriers or increase the facilitators. For instance, working with women on options if they stop exercise and must overcome the inertia of starting again without the external 'force' from the continence therapist. Action planning is a detailed plan for doing PFMT. While a continence therapist would typically negotiate a plan for where and when to exercise and how often, action planning also includes awareness of the emotional and cognitive environment for exercise. Thus, conversations about noticing feelings of ambivalence and ways to address those may be important in supporting a return to exercise after a break. These are two examples among many documented in the BCT taxonomy (Michie et al., 2013).

## CONCLUSION

The variety of women's experiences and the interaction between life circumstances and motivations emphasised the individual nature of women's PFMT adherence. Adherence may be facilitated if the clinician is able to elicit what sense the woman is making of treatment when PFMT is introduced and monitored. Components of making sense may include the women's prior experiences of PFMT, her expectations about UI and its treatment, and what she feels about the information she has from others about PFMT and UI. Continence therapists are potentially powerful agents of change and their attention to what women are thinking and feeling and how that influences what they do is an important part of supporting PFMT adherence longer-term. Our research findings provide the opportunity to develop interventions that are based on how women make sense of PFMT and that incorporate BCTs specifically to address the capabilities and motivations of women seeking treatment for UI. Inclusion of such techniques in the content and delivery of PFMT interventions has potential to enhance their effect both short and longer term.

## KEY POINTS

1. Like most forms of therapeutic exercise, long-term adherence to PFMT is often poor.
2. Adherence might decrease if a woman is not able to make sense of her past and current experiences of urinary incontinence and its treatment.
3. Addressing exercise inertia, and ambivalent thoughts and feelings about PFMT, may help support adherence.
4. Conscious integration of evidence-based behaviour change techniques in PFMT programmes could encourage adherence.

## DISCLOSURES

The study was funded by a University of Otago Research Grant, University of Otago, New Zealand. MP and SD's time was partially supported the National Institute for Health Research (NIHR) South West Applied Research Collaboration. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care. The authors report no conflicts of interest that may be perceived to interfere with or bias this study.

## PERMISSIONS

The study was approved by the Multi Region Ethics Committee of New Zealand (reference number MEC/05/04/046). All study participants provided written informed consent.

## CONTRIBUTIONS OF AUTHORS

SD initiated the research, secured the grant and ethics approvals, and led data collection supported by JHS. JHS analysed the data and all authors were involved in theme development. MP drafted the paper, and all authors edited it. JHS was responsible for the final version and responding to peer review comment.

## ADDRESS FOR CORRESPONDENCE

Jean Hay-Smith, Rehabilitation Teaching and Research Unit, Department of Medicine, University of Otago Wellington, PO Box 7343, Wellington South 6242, New Zealand.

Email: jean.hay-smith@otago.ac.nz

## REFERENCES

- Abrams, P., Andersson, K.-E., Apostolidis, A., Birder, L., Bliss, D., Brubaker, L., Cardozo, L., Castro-Diaz, D., O'Connell, P. R., Cottenden, A., Cotterill, N., de Ridder, D., Dmochowski, R., Dumoulin, C., Fader, M., Fry, C., Goldman, H., Hanno, P., Homma, Y., ... Wein, A. (2018). 6th International Consultation on Incontinence. Recommendations of the international scientific committee: Evaluation and treatment of urinary incontinence, pelvic organ prolapse and faecal incontinence. *Neurourology and Urodynamics*, 37(7), 2271–2272. <https://doi.org/10.1002/nau.23551>
- Borello-France, D., Burgio, K. L., Goode, P. S., Markland, A. D., Kenton, K., Balasubramanyam, A., Stoddard, A. M., & the Urinary Incontinence Treatment Network. (2010). Adherence to behavioral interventions for urge incontinence when combined with drug therapy: Adherence rates, barriers, and predictors. *Physical Therapy*, 90(10), 1493–1505. <https://doi.org/10.2522/ptj.20080387>
- Cheng, S., Lin, D., Hu, T., Cao, L., Liao, H., Mou, X., Zhang, Q., Liu, J., & Wu, T. (2020). Association of urinary incontinence and depression or anxiety: A meta-analysis. *Journal of International Medical Research*, 48(6), 0300060520931348. <https://doi.org/10.1177/0300060520931348>
- Davenport, S., Dickinson, A., & Minns Lowe, C. (2019). Therapy-based exercise from the perspective of adult patients: A qualitative systematic review conducted using an ethnographic approach. *Clinical Rehabilitation*, 33(12), 1963–1977. <https://doi.org/10.1177/0269215519868797>
- Dean, S. G., Smith, J. A., Payne, S., & Weinman, J. (2005). Managing time: An interpretative phenomenological analysis of patients' and physiotherapists' perceptions of adherence to therapeutic exercise for low back pain. *Disability and Rehabilitation*, 27(11), 625–636. <https://doi.org/10.1080/0963820500030449>
- Dumoulin, C., Cacciari, L. P., & Hay-Smith, E. J. C. (2018). Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD005654.pub4>
- Dumoulin, C., Hay-Smith, J., Frawley, H., McClurg, D., Alewijnse, D., Bo, K., Burgio, K., Chen, S.-Y., Chiarelli, P., Dean, S., Hagen, S., Herbert, J., Mahfooza, A., Mair, F., Stark, D., & Van Kampen, M. (2015). 2014 consensus statement on improving pelvic floor muscle training adherence: International Continence Society 2011 state-of-the-science seminar. *Neurourology and Urodynamics*, 34(7), 600–605. <https://doi.org/10.1002/nau.22796>
- Frawley, H. C., Dean, S. G., Slade, S. C., & Hay-Smith, E. J. C. (2017). Is pelvic-floor muscle training a physical therapy or a behavioral therapy? A call to name and report the physical, cognitive, and behavioral elements. *Physical Therapy*, 97(4), 425–437. <https://doi.org/10.1093/ptj/pzx006>

- Hay-Smith, J., Dean, S., Burgio, K., McClurg, D., Frawley, H., & Dumoulin, C. (2015). Pelvic-floor-muscle-training adherence “modifiers”: A review of primary qualitative studies—2011 ICS state-of-the-science seminar research paper III of IV. *Neurourology and Urodynamics*, *34*(7), 622–631. <https://doi.org/10.1002/nau.22771>
- Lees, F. D., Clark, P. G., Nigg, C. R., & Newman, P. (2005). Barriers to exercise behavior among older adults: A focus-group study. *Journal of Aging & Physical Activity*, *13*(1), 23–33. <https://doi.org/10.1123/japa.13.1.23>
- Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine*, *46*(1), 81–95. <https://doi.org/10.1007/s12160-013-9486-6>
- Milsom, I., Altman, D., Cartwright, R., Lapitan, M., Nelson, R., Sillén, U., & Tikkinen, K. (2013). Epidemiology of urinary incontinence (UI) and other lower urinary tract symptoms (LUTS), pelvic organ prolapse (POP) and anal incontinence (AI). In P. Abrams, L. Cardozo, S. Khoury, & A. J. Wein (Eds.), *Incontinence: 5th International Consultation on Incontinence, Paris, February 2012* (pp. 15–107). ICUD-EAU. [https://www.ics.org/Publications/ICL\\_5/INCONTINENCE.pdf](https://www.ics.org/Publications/ICL_5/INCONTINENCE.pdf)
- Murphy, C., Avery, M., Macaulay, M., & Fader, M. (2022). Experiences and impact of living with incontinence associated stigma: A protocol for a systematic review and narrative synthesis of qualitative studies. *Plos One*, *17*(7), e0270885. <https://doi.org/10.1371/journal.pone.0270885>
- Pizzol, D., Demurtas, J., Celotto, S., Maggi, S., Smith, L., Angiolelli, G., Trott, M., Yang, L., & Veronese, N. (2021). Urinary incontinence and quality of life: A systematic review and meta-analysis. *Aging Clinical and Experimental Research*, *33*(1), 25–35. <https://doi.org/10.1007/s40520-020-01712-y>
- Sluijs, E. M., Kerssens, J. J., van der Zee, J., & Myers, L. B. (2020). Adherence to physiotherapy. In K. Midence, & L. Myers (Eds.), *Adherence to treatment in medical conditions* (pp. 363–382). CRC Press.
- Smith, J., Flower, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. Sage. <https://doi.org/10.1201/9781003072348>
- Toye, F., & Barker, K. L. (2020). A meta-ethnography to understand the experience of living with urinary incontinence: ‘Is it just part and parcel of life?’. *BMC Urology*, *20*, 1. <https://doi.org/10.1186/s12894-019-0555-4>