Does self-motivation improve success rates of pelvic floor muscle training in women with urinary incontinence in a secondary care setting?

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Abstract

Introduction and hypothesis Pelvic floor muscle training (PFMT) is the recommended first-line treatment for women with urinary incontinence (UI). Success rates are variable and dependent on a number of factors. The development of an incontinence treatment motivation questionnaire (ITMQ) provides us with a tool to assess patient self-motivation with respect to PFMT and UI. The aim of this study was to determine the effect of women’s self-motivation to perform PFMT on outcome.

Methods Women with stress predominant UI completed an ITMQ and a 24-h pad test and then underwent a 12-week course of supervised PFMT. At the end of their treatment they completed a patient global impression of improvement questionnaire (PGI-I) and a second 24-h pad test. The PGI-I scores and the difference in pad test weight correlated with the ITMQ according to Spearman’s correlation coefficient.

Results Sixty-five women were recruited. Thirty-two (49 %) patients perceived themselves as having improved, 28 women (43 %) did not experience any change in symptoms and 5 women (8 %) felt that their symptoms deteriorated following treatment. When correlating the PGI-I with the ITMQ, 3 of the 5 domains: MQS1 (positive attitude for treatment; \( p = 0.003 \)), MQS3 (frustration of living with incontinence; \( p = 0.002 \)) and MQS4 (desire for treatment; \( p = 0.002 \)) correlated significantly with outcome. Desire for treatment was the only domain to correlate with change in pad weight (\( p = 0.001 \)).

Conclusion Self-motivation is essential in order to determine improved success rates with PFMT.

Keywords Pelvic floor muscle training · Incontinence treatment motivation questionnaire

Introduction

Stress urinary incontinence (SUI), defined as the involuntary leakage of urine experienced on effort or on exertion, such as coughing, sneezing and physical activity [1], is common and significantly affects quality of life [2]. The current recommendations from the latest Cochrane review suggest that pelvic floor muscle training (PFMT) should be the first line of treatment for any patient presenting with urinary incontinence [3]. Evidence from the literature suggests that supervised PFMT is more effective and hence the national guidelines in the UK recommend a 12-week course of supervised PFMT for all women with SUI [4]. Whilst PFMT has no significant side effects, success rates are variable and range from 30 % to 65 % [5, 6].

A number of factors may play a potential role in determining success rates following treatment with PFMT. Women with more severe incontinence are thought to have lower success rates [7]. Patients who perform their exercises more regularly are more likely to achieve greater improvement [8].Whilst patients’ self-motivation has been studied and has been shown to play a part in other areas of medicine [9], there has to
our knowledge been very little work looking at patient motivation in relation to PFMT and urinary incontinence (UI).

The incontinence treatment motivation questionnaire (ITMQ) is a validated [8] questionnaire that has been developed to assess self-motivation to perform PFMT for SUI. It consists of 18 items, each of which is scored on a Likert scale from 1 to 5, where 1 is strongly disagree and 5 is strongly agree. The items are divided into five domains, each of which addresses a different area of motivation as follows:

• Domain 1 (MQS1) Positive attitudes to treatment. It contains four questions and the score for the domain is calculated as ((Q1+Q2+Q3+Q4) / 4)
• Domain 2 (MQS2) Excuses for not doing PFMT. It contains four questions and the score for the domain is calculated as ((Q5+Q6+Q7+Q8) / 4)
• Domain 3 (MQS3) Living with incontinence. It contains three questions and the score for the domain is calculated as ((Q9+Q10+Q11) / 3)
• Domain 4 (MQS4) Desire for treatment. It contains three questions and the score for the domain is calculated as ((Q12+Q13+Q14) / 3)
• Domain 5 (MQS5) Incontinence severity affecting PFMT. It contains four questions and the score for the domain is calculated as ((Q15+Q16+Q17+Q18) / 4)

*Reverse score before scoring

A higher score on the ITMQ represents a higher level of motivation.

Although validated, the questionnaire has not been used in a symptomatic cohort of patients to identify whether motivation predicts outcome. The original validation of the ITMQ only targeted patients following completion of PFMT. The aim of this study is therefore to determine the effect of women’s self-motivation to perform PFMT on outcome by assessing them both pre- and post-treatment with PFMT.

Materials and methods

Women were recruited over a 6-month study period from three urogynaecology clinics. This study is part of a larger prospective cohort looking at pelvic muscle training. All women were referred with stress-predominant urinary incontinence. The exclusion criteria were:

• Urgency predominant mixed incontinence
• Pregnancy and breastfeeding
• Symptomatic prolapse
• Surgery for incontinence or prolapse in the last 6 months
• Haematuria
• Urinary tract infection
• Bladder or urethral pain

• Anticholinergic medication

At their initial consultation they were asked to complete an ITMQ. The women were also asked to perform a 24-h pad test prior to starting any treatment and subsequently underwent a 12-week course of PFMT. They had four visits (every 4 weeks) during the study period. Four specialist pelvic floor physiotherapists were involved. Throughout the whole period each patient was under the care of the same specialist physiotherapist. At the first visit a digital pelvic examination was performed in order to ensure that women were using the correct technique. Their Oxford grade was determined. Treatment consisted of a home exercise programme of a minimum of three sets of eight pelvic floor muscle contractions per day. Patients were also taught the “knack” [10].

At the end of the 12-week study period women were asked to complete a Patient Global Impression of Improvement (PGI-I) questionnaire. This is a validated scale, with good reproducibility, that gives a simple evaluation of outcome that is comparable to outcome data obtained from health-related quality of life assessment, incontinence episode frequency and pad tests [11]. This was used to assess overall improvement from treatment. Women also performed a second 24-h pad test following completion of treatment to assess objective improvement. Both the PGI-I scores and the difference between the initial and final pad tests correlated with the ITMQ according to Spearman’s correlation coefficient. Statistical analyses were performed using SPSS v17. The study was approved by Kent Research Ethics Committee.

Results

One hundred and two women were screened. Of these 65 completed the study (Fig. 1). Their age range was 24 years to 76 years (mean 50.5 years). Their mean parity was two. Fifty-four (83 %) women had undergone previous pelvic floor muscle treatment. Of these 10 women (18.5 %) had learnt PFMT less than a year earlier, 7 (12.9 %) women had been taught PFMT between 1 and 5 years earlier and 37 women (68.6 %) had undergone PFMT more than 5 years earlier.

A digital examination at the initial visit showed a mean Oxford scale of 2.5 (range 0–4). Figure 2 shows the distribution of the women’s Oxford scale at the initial presentation.

The PGI-I scores at the end of the 12-week period of intensive physiotherapy are shown in Table 1.

Thirty-two out of the 65 patients (49 %) perceived themselves to have improved post-physiotherapy. Twenty-eight women (43 %) did not experience any change in symptoms. A small proportion of 5 women (8 %) felt that their symptoms deteriorated following treatment. Table 2 shows the mean values for each domain of the motivation questionnaire.
The correlation of the PGI-I scores with the ITMQ is shown in Table 3.

The results show that three of the five domains: MQS1 (positive attitude to treatment), MQS3 (frustration of living with incontinence and MQS4 (desire for treatment) significantly correlated with PGI-I outcome. However, MQS2 (excuses for not performing PFMT) and MQS5 (severity of incontinence affecting PFMT) did not significantly correlate with outcome.

The mean change in the 24-h pad test weight following the 12-week period was 6 g. There was a wide range of difference in pad test weight. The range was from an increase in pad weight of 33.9 g to a decrease of 47.7 g (standard deviation 20.8 g). The women who had reportedly got better after physiotherapy (that is, those who scored 1, 2 or 3 on their PGII) had a mean improvement of 11.5 g in their pad weight.

Discussion

The results of our study show that certain aspects of a woman’s motivation including a positive attitude towards treatment and an actual desire for treatment were associated with a better outcome following a supervised course of PFMT. The frustration of living with incontinence significantly correlated with a poorer outcome. Objective measurements obtained from the 24-h pad tests confirm the desire for treatment as an important predictor of a reduction in pad weight. This study therefore concludes that self-motivation is essential in order to determine improved success rates with PFMT. These results show that the ITMQ can be used to predict the outcome of PFMT and provide external validation of the original questionnaire.

Whilst the study results are promising, there are some weaknesses. Patients referred to secondary care may be a select population. They may be more motivated to obtain treatment or have more severe incontinence than patients in primary care. This is difficult to determine. Patients recruited into the study were also all willing to undergo PFMT training. Those patients who did not attend after initially agreeing to enter the study or declined PFMT probably have lower motivation. This in itself creates an element of bias as those women taking part are a self-selected group who are willing to comply with the treatment regimen. Motivation also seemed to correlate much better with subjective rather than objective outcomes, indicating a further element of potential bias in that patients who are motivated to do well, are more likely to feel that they have gained some benefit. One hundred and two women were screened for the study, but only 65 completed. If non-completers and those refusing PFMT are counted as failures, the success rate for PFMT will be less than the 49 % improvement rate identified. It would be 32 %.

Fig. 1 Screening process for patient recruitment

Fig. 2 The distribution of the women’s Oxford scale at the initial presentation, where 0 = no contraction; 1 = flicker of muscle; 2 = weak contraction; 3 = slight lift of the examiner’s fingers; 4 = strong lift of the examiner’s fingers; 5 = very strong lift of the examiner’s fingers
The treatment outcomes identified in this study may be replicable in other settings as only 15% of the patients had previously been treated by a physiotherapist. Hence, these results may be reproducible in a primary care setting where there is such expertise available. Primary care services remain fragmented and vary considerably in quality [12]. Many women can only access specialist pelvic floor physiotherapy in secondary care.

The ideal PFMT regimen is uncertain and the regimen used in this protocol was pragmatic and developed from the available evidence. Supervised PFMT has been shown to give better results than unsupervised exercises [13, 14]. The degree and type of supervision needed are uncertain. Regimens can range from weekly classes to regular telephone contact. The trial coordinating group and patient representatives decided on monthly direct contact. Weekly contact seemed excessive and difficult to achieve for most patients. Direct contact seems to be preferable to telephone contact. PFMT combined with other modalities is not more effective than PFMT alone [15, 16]. The trial regimen conformed to National Institute for Health and Clinical Excellence (NICE) guidance. A regimen of eight contractions three times per day was utilised.

The concept of increasing motivation has been explored in many areas of medicine. Educational psychology indicates that motivational regulation may be an essential part of any teaching curriculum such as, in the teaching of medical students [17]. It is currently substantially undervalued, but studies in different areas of medicine have shown it to be associated with improved outcomes.

It has been used in the implementation of chronic care for COPD where self-motivation was shown to improve COPD care workflows, thus reducing emergency admissions and inpatient hospital stays [18]. Motivational interviewing has also shown promising results in improving patient compliance in hypertensive patients requiring medication [19]. Psychological and behavioural studies have shown that there is convincing evidence that self-motivation helps men to recover from prostate cancer [20].

There is an increasing perception that self-motivation is important in the treatment of patients with chronic diseases. Health coaching is a newly emerging approach of establishing partnerships between health care professionals and patients in order to help increase self-management strategies and help not only with encouraging patients to actively participate in their own treatment, but also to help prevent relapses of chronic illnesses [21]. The individual patient goals and specific needs should be negotiated and identified prior to embarking on any of these programmes [22].

Patients’ attitudes and individual personality may also have a role to play. It has also been established that it is important to identify a patient’s personality traits prior to embarking on any self-motivation program as some patients are much more likely to participate successfully than others [23]. Studies have shown that measuring personality factors in chronically ill individuals helps to target self-management interventions at those most likely to respond [24].

In conclusion, the ITMQ can be used to help predict which women will benefit from PFMT. The use of the “desire for treatment” domain by itself may provide a rapid assessment of the likelihood of improvement with PFMT, but this remains to be confirmed. Whilst one of the challenges for clinicians may be to find the ideal PFMT regimen, the major challenge is to find methods of motivating patients. Perhaps clinicians should focus on methods of enhancing patients’ self-motivation, thus ensuring better compliance and better results. Patients with lower motivation may best be treated with other forms of therapy.

### Table 2: Mean values for the five domains of the Incontinence treatment motivation questionnaire (ITMQ)

<table>
<thead>
<tr>
<th>Domain of ITMQ</th>
<th>Mean (range 0–5)</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive attitudes to treatment</td>
<td>3.51 (0–5)</td>
<td>0.97</td>
</tr>
<tr>
<td>Excuses for not doing PFMT</td>
<td>2.84 (0–5)</td>
<td>0.76</td>
</tr>
<tr>
<td>Living with incontinence</td>
<td>3.36 (0–5)</td>
<td>1.21</td>
</tr>
<tr>
<td>Desire for treatment</td>
<td>3.35 (0–5)</td>
<td>1.01</td>
</tr>
<tr>
<td>Incontinence severity affecting PFMT</td>
<td>3.18 (0–5)</td>
<td>0.69</td>
</tr>
</tbody>
</table>

*PFMT* pelvic floor muscle training

### Table 3: Spearman’s correlation coefficient of the ITMQ and PGI-I scores

<table>
<thead>
<tr>
<th>Domain of ITMQ</th>
<th>Spearman’s correlation coefficient</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive attitudes to treatment</td>
<td>−0.427</td>
<td>0.003</td>
</tr>
<tr>
<td>Excuses for not doing PFMT</td>
<td>0.079</td>
<td>0.597</td>
</tr>
<tr>
<td>Living with incontinence</td>
<td>0.440</td>
<td>0.002</td>
</tr>
<tr>
<td>Desire for treatment</td>
<td>−0.440</td>
<td>0.002</td>
</tr>
<tr>
<td>Incontinence severity affecting PFMT</td>
<td>0.018</td>
<td>0.906</td>
</tr>
</tbody>
</table>
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Conflicts of interest The authors report no conflicts of interest concerning this study.

Ethical approval Kent Research Ethics Committee UK. REC no. 10/H1101/65

References


