Poster digest

Introduction

The 2016 POGP Annual Conference in Liverpool attracted a fantastic array of posters. We are delighted to publish seven of these here, including one co-authored by Christopher Parkes-Bowen, Sundeep Watkins and Reena Patel, which won the POGP Research Prize (see p. 96–97). We have printed short abstracts and thumbnail versions of each poster. The full-sized versions can be viewed on the POGP microsite (http://pogp.csp.org.uk/). Look out for more posters and articles based on Conference submissions in the Autumn edition, including one by Natasha Chesler, the winner of the POGP poster competition. Congratulations to all who presented posters at conference.

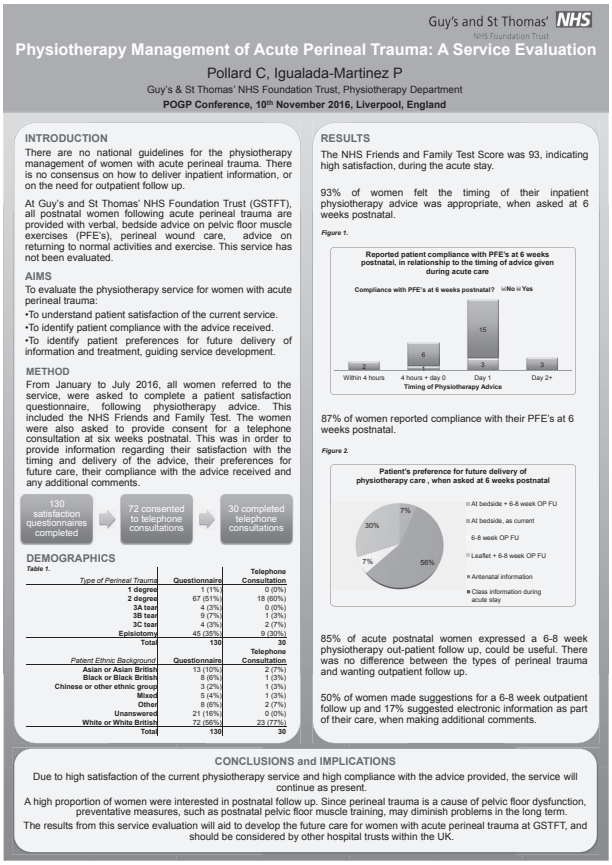
Shirley Bustard
Clinical Editor

Physiotherapy management of acute perineal trauma: a service evaluation

There are no national guidelines for the physiotherapeutic management of women with perineal trauma. Furthermore, there is no consensus on how best to deliver interventions in either the acute phase of the condition or during follow-up management. Differences in management approaches exist across the UK National Health Service (NHS).

At Guy's and St Thomas' NHS Foundation Trust, London, UK, all women with acute perineal trauma are provided with verbal information on pelvic floor muscle (PFM) exercises (PFMEs), perineal wound care, bowel emptying, bladder techniques and return to exercise. All women with third- and fourth-degree tears are followed up 12 weeks postpartum in a multidisciplinary team clinic. There is no routine follow-up for women with second-degree tears or episiotomies. This service has not been evaluated.

The aim was to evaluate the physiotherapy service for women with acute perineal trauma (Fig. 1). The objectives were to: (1) rate patient satisfaction with the current service; (2) identify patient compliance with the advice received; and (3) identify patient preferences for future delivery of information in both the acute phase of perineal trauma and during outpatient management.


Guy's and St Thomas' NHS
NHS Foundation Trust

Physiotherapy Management of Acute Perineal Trauma: A Service Evaluation

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POGP Conference, 10th November 2016, Liverpool, England

INTRODUCTION

There are no national guidelines for the physiotherapy management of women with acute perineal trauma. There is no consensus on how to deliver inpatient information, or on the need for outpatient follow up.

At Guy's and St Thomas' NHS Foundation Trust (GSTFT), all postnatal women following acute perineal trauma are provided with verbal, bedside advice on pelvic floor muscle exercises (PFE's), perineal wound care, advice on returning to normal activities and exercise. This service has not been evaluated.

AIMS

To evaluate the physiotherapy service for women with acute perineal trauma:

- To understand patient satisfaction of the current service.
- To identify patient compliance with the advice received.
- To identify patient preferences for future delivery of information and treatment, guiding service development.

METHOD

From January to July 2016, all women referred to the service, were asked to complete a patient satisfaction questionnaire, following physiotherapy advice. This included the NHS Friends and Family Test. The women were also asked to provide consent for a telephone consultation at six weeks postnatal. This was in order to provide information regarding their satisfaction with the timing and delivery of the advice, their preferences for future care, their compliance with the advice received and any additional comments.

130 satisfaction questionnaires completed → 72 consented to telephone consultations → 30 completed telephone consultations

DEMOGRAPHICS

Table 1.

Type of Perineal Trauma	Questionnaire	Telephone Consultation
1 degree	1 (1%)	0 (0%)
2 degree	67 (51%)	18 (60%)
3A tear	4 (3%)	0 (0%)
3B tear	9 (7%)	1 (3%)
3C tear	4 (3%)	2 (7%)
Episiotomy	45 (35%)	9 (30%)
Total	130	30
Patient Ethnic Background	Questionnaire	Telephone Consultation
Asian or Asian British	13 (10%)	2 (7%)
Black or Black British	8 (6%)	1 (3%)
Chinese or other ethnic group	3 (2%)	1 (3%)
Mixed	5 (4%)	1 (3%)
Other	8 (6%)	2 (7%)
Unanswered	21 (16%)	0 (0%)
White or White British	72 (56%)	23 (77%)
Total	130	30

RESULTS

The NHS Friends and Family Test Score was 93, indicating high satisfaction, during the acute stay.

93% of women felt the timing of their inpatient physiotherapy advice was appropriate, when asked at 6 weeks postnatal.

Figure 1.

87% of women reported compliance with their PFE's at 6 weeks postnatal.

Figure 2.

85% of acute postnatal women expressed a 6-8 week physiotherapy out-patient follow up, could be useful. There was no difference between the types of perineal trauma and wanting outpatient follow up.

50% of women made suggestions for a 6-8 week outpatient follow up and 17% suggested electronic information as part of their care, when making additional comments.

CONCLUSIONS and IMPLICATIONS

Due to high satisfaction of the current physiotherapy service and high compliance with the advice provided, the service will continue as present.

A high proportion of women were interested in postnatal follow up. Since perineal trauma is a cause of pelvic floor dysfunction, preventative measures, such as postnatal pelvic floor muscle training, may diminish problems in the long term.

The results from this service evaluation will aid to develop the future care for women with acute perineal trauma at GSTFT, and should be considered by other hospital trusts within the UK.

Figure 1. "Physiotherapy management of acute perineal trauma: a service evaluation" poster.

From January to July 2016, all women referred to the service were asked to complete a satisfaction questionnaire following physiotherapy. They were then asked to give their consent to a telephone consultation to gather retrospective information 6 weeks postpartum. One hundred and thirty patients completed satisfaction questionnaires, 72 consented to a telephone consultation, and 30 were successfully contacted.

An NHS Friends and Family Test score of 93 demonstrated a high level of satisfaction with the acute service, and 93% said that the timing of the physiotherapy advice was appropriate. Eighty-seven per cent of the women reported that they were continuing to perform regular PFMEs 6 weeks postpartum. No relationship was found between when the patients were seen postpartum and their compliance. During the acute phase, 85% of women suggested that outpatient physiotherapy follow-up would be useful; however, this figure fell to 44% when they were asked again

6 weeks postpartum. At 6 weeks postpartum, 56% would prefer to continue the acute service only. Some women suggested providing electronic information.

This evaluation may be limited by bias, which could have resulted from directly asking women about their compliance. It is possible that those who were engaged or satisfied with the physiotherapy advice were more willing to participate.

The authors have concluded that, because of the high levels of patient satisfaction and compliance, the physiotherapy service will continue as it is at present. As a part of future service development, the physiotherapy team will explore outpatient follow-up after perineal trauma. Since perineal trauma is a cause of pelvic floor dysfunction, they believe that PFME may reduce problems in the long term. This is important in the economically driven NHS. To the authors' knowledge, this is the first UK service evaluation of physiotherapy management of acute perineal trauma. Therefore, they hope that it can provide a benchmark for other NHS trusts' service development for this group of women.

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Clinical predictors for ongoing pregnancy-related pelvic girdle pain/low back pain postpartum

Pregnancy-related low back pain (PLBP) and pregnancy-related pelvic girdle pain (PPGP) are frequently experienced by expectant women. These conditions may have a significant impact on quality of life and activities of daily living. Lumbopelvic pain persists in one in five women postpartum. Since the evidence for the efficacy of treatment approaches is limited, identifying factors that affect patient outcomes will assist clinicians to target their treatments effectively. The aim of this systematic review (Fig. 2) was to investigate the predictors of persistent PLBP/PPGP for women whose pain started during pregnancy.

A literature search of five relevant medical databases was performed. The reference lists of the articles assessed for inclusion were also searched. One of the present authors (G.B.) identified the articles that were to be included in the review by using specific inclusion and exclusion

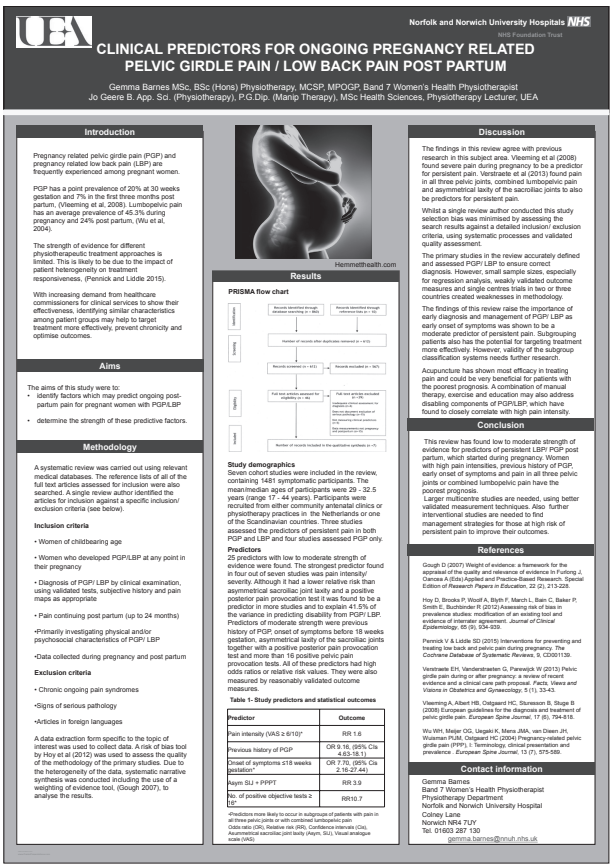

Figure 2. "Clinical predictors for ongoing pregnancy-related pelvic girdle pain/low back pain postpartum" poster.

criteria. The same author extracted the data to be analysed with a standardized form. A risk-of-bias tool was employed to assess the quality of the methodology of the primary studies. Because of the heterogeneity of the data from these studies, systematic narrative synthesis was conducted, including the use of a weighting-of-evidence tool to analyse the results.

Seven cohort studies involving 1481 symptomatic participants were included in the present review. Three assessed the predictors for persistent pain in both PLBP and PPGP, and four assessed only PPGP. A wide range of variables were investigated across the seven studies, and 25 predictors of low to moderate evidential strength were found. The most common predictor in four out of seven studies was high pain intensity/ severity [relative risk (RR) = 1.6 if visual analogue scale score ≥ 6, $P < 0.05$ on multivariate logistic regression and there is a high correlation with disability (0.708)]. Other predictors of moderate strength were: previous PPGP [odds ratio (OR) = 9.16 after logistic regression analysis]; onset of symptoms early in pregnancy (logistic regression analysis OR = 7.70); asymmetrical sacroiliac joint laxity; a positive posterior pelvic

pain provocation test (RR = 3.9); and more than 16 positive pelvic pain provocation tests (RR = 10.7). The subgroups of patients with pelvic girdle syndrome and combined lumbopelvic pain appeared to have the poorest prognosis. Predictors of weak strength were older age, weight, LBP prior to first pregnancy, muscle dysfunction and gait disturbances.

The present review found low to moderate evidential strength for predictors of persistent postpartum PLBP/PPGP if this started during pregnancy. Women with high pain intensities, previous PPGP and early onset of symptoms, and those who were classified as having pelvic girdle syndrome or combined lumbopelvic pain have the poorest prognosis. Larger multicentre studies using better-validated measurement techniques are required. Further interventional studies are needed to identify management strategies that will improve the outcomes of women who are have a high risk of persistent pain.

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Patient satisfaction survey of an innovative physiotherapy-led obstetric anal sphincter injury group

Obstetric anal sphincter injuries (OASIS) are recognized as serious complications of vaginal delivery. These can lead to long-term problems, such as faecal urgency with or without faecal incontinence, dyspareunia, and psychological issues (Fornell *et al.* 2005). The Royal College of Obstetricians and Gynaecologists' updated guideline on the management of OASIS recommends that: "[w]omen who have undergone obstetric anal sphincter repair should be reviewed at a convenient time (usually 6–12 weeks postpartum)", and that they "should be advised that physiotherapy following repair of OASIS could be beneficial" (RCOG 2015, p. 4).

In 2012, there was no dedicated perineal trauma clinic in Royal Hampshire County Hospital, Winchester, UK, and patients were only referred for physiotherapy if they were considered to be symptomatic.

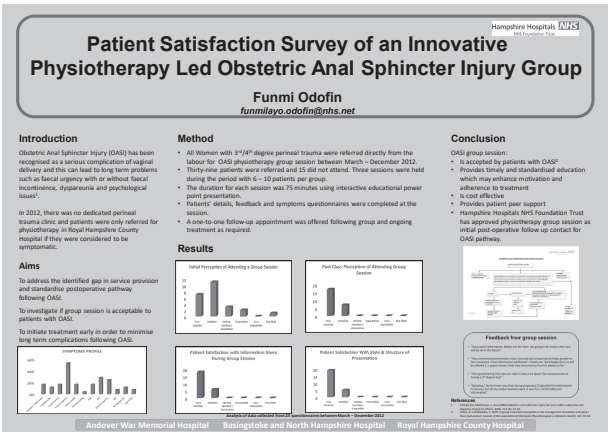

Figure 3. "Patient satisfaction survey of an innovative physiotherapy-led obstetric anal sphincter injury group" poster.

The aims of the present study (Fig. 3) were to:

- address the gap in service provision that had been identified;
- standardize the postoperative physiotherapy pathway following OASIS; and
- initiate treatment early in order to minimize any long-term complications following OASIS.

The participants were women with a third- or fourth-degree perineal tear. Following OASIS, they were referred directly from the labour ward by midwives. Between six and 15 patients attended a group session held every 2 months. This took the form of an interactive educational session involving a PowerPoint presentation. One-to-one follow-up for PFM assessment and ongoing treatment was conducted as required. Data were collected from 24 patients between March and December 2012. Patients details, feedback and completed symptom questionnaires were collected at each session.

The group session has been found to be effective and accepted by patients with OASIS (Aston & Moulder 2007). It provides timely and standardized education that may enhance motivation and adherence to treatment, and is beneficial and cost-effective. The group session also offers patients peer support.

Following the appointment of a new consultant to manage the perineal trauma clinic, Hampshire Hospitals NHS Foundation Trust (HHFT) approved the group session as an initial post-operative follow-up contact for the OASIS

pathway in May 2016. Group sessions will be introduced in a sister hospital within HHFT in September 2016. Specialist pelvic floor physiotherapy services should embrace OASIS group sessions.

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References

Aston B. & Moulder S. (2007) Is group treatment acceptable in the management of women with pelvic floor dysfunction? *Journal of the Association of Chartered Physiotherapists in Women's Health* **101** (Autumn), 37–43.

Fornell E. U., Matthiesen L., Sjödahl R. & Berg G. (2005) Obstetric anal sphincter injury ten years after: subjective and objective long term effects. *BJOG: An International Journal of Obstetrics and Gynaecology* **112** (3), 312–316.

Royal College of Obstetricians and Gynaecologists (RCOG) (2015) *The Management of Third- and Fourth-Degree Perineal Tears*. [WWW document.] URL https://www.rcog.org.uk/globalassets/documents/guidelines/gtg-29.pdf

Does Elvie compare with real-time transperineal ultrasound measurement of urethral movement direction?

Optimal voluntary PFM contraction (VPFMC) has lift and squeeze components. However, in current physiotherapy practice, there are no validated tools that provide simultaneous biofeedback for both lift and squeeze. The present study (Fig. 4) compared the Elvie (Chiaro Technology Ltd, London, UK), a vaginal biofeedback device containing a triaxial accelerometer and a force-sensitive resistor, with real-time transperineal ultrasound (TPUS) with respect to measurement of the direction of urethral movement.

Fifteen asymptomatic adult females were recruited through volunteer sampling. Within a private physiotherapy practice, PFM strength was assessed digitally using the Modified Oxford Scale (MOS). Five maximal VPFMC and five Valsalva manoeuvre images were captured on TPUS, and the angles of proximal urethral inclination (PUI) and internal urethral meatus (IUM) position were

Figure 4. "Does Elvie compare with real-time transperineal ultrasound measurement of urethral movement direction?" poster.

measured while using the Elvie simultaneously. The Elvie stores pitch angle and force (N) measurements electronically. The primary outcomes, i.e. pitch and PUI, were compared for percentage agreement, level of agreement (Cohen's kappa, κ) and correlation (Spearman's rho, ρ) ($P < 0.01$). Secondary outcomes, i.e. pitch, PUI, N, IUM and MOS, were also assessed for correlation, as were subgroups of 75 VPFMC and 75 Valsalva manoeuvre images.

Pitch and PUI demonstrated strong agreement (95.33%, $\kappa = 0.92$) and significant correlation ($\rho = -0.653$, $P < 0.01$) for 150 actions, and also correlated for 75 VPFMC images ($\rho = 0.384$, $P < 0.01$). The agreement between pitch and PUI was 96% for 75 VPFMC images, and 94.67% for 75 Valsalva images. Internal urethral meatus and PUI significantly correlated ($\rho = 0.669$, $P < 0.01$), as did IUM and pitch ($\rho = -0.673$, $P < 0.01$), for 150 actions. Pitch demonstrated correlation with MOS ($\rho = 0.422$, $P < 0.01$) and N ($\rho = 0.318$, $P < 0.01$) for 75 VPFMC images, and with N for 75 Valsalva images ($\rho = -0.534$, $P < 0.01$). Proximal urethral inclination was associated with IUM ($\rho = 0.504$, $P < 0.01$) for 75 Valsalva images.

In conclusion, the Elvie exhibited agreement and significant correlation with TPUS, a previously validated and reliable method of assessing urethral movement direction.

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The effectiveness of static stretching versus "hold–relax" proprioceptive neuromuscular facilitation on piriformis muscle length

Stretching techniques are routinely used to improve soft-tissue flexibility and range of motion (ROM), and decrease pain and dysfunction. While static stretching (SS) and proprioceptive neuromuscular facilitation (PNF) are commonly employed in clinical practice, the effectiveness of these techniques has not been established for the deep hip external rotator muscles, such as the piriformis.

During pregnancy, the gluteal muscle group is elongated and strained (Lee *et al.* 2004), which can lead to tension in the deep hip rotator muscles. Piriformis syndrome is frequently underdiagnosed in the obstetric population (Sivrioglu *et al.* 2013). Physiotherapy treatment of piriformis syndrome has typically comprised of stretching and soft-tissue techniques, but application can be difficult because of the functional restrictions experienced by antenatal patients.

Twenty-four asymptomatic undergraduate physiotherapy students were recruited as a convenience sample for the present study (Fig. 5). A single-blind, independent group design was used, and participants were randomly allocated to one of the two intervention groups (i.e. static stretching or "hold–relax" PNF). Baseline and post-intervention data were collected by a blinded assessor using a goniometer to measure hip internal rotation. Statistical analysis was carried out using dependent and independent Student's *t*-tests with the significance level set at $P = 0.05$.

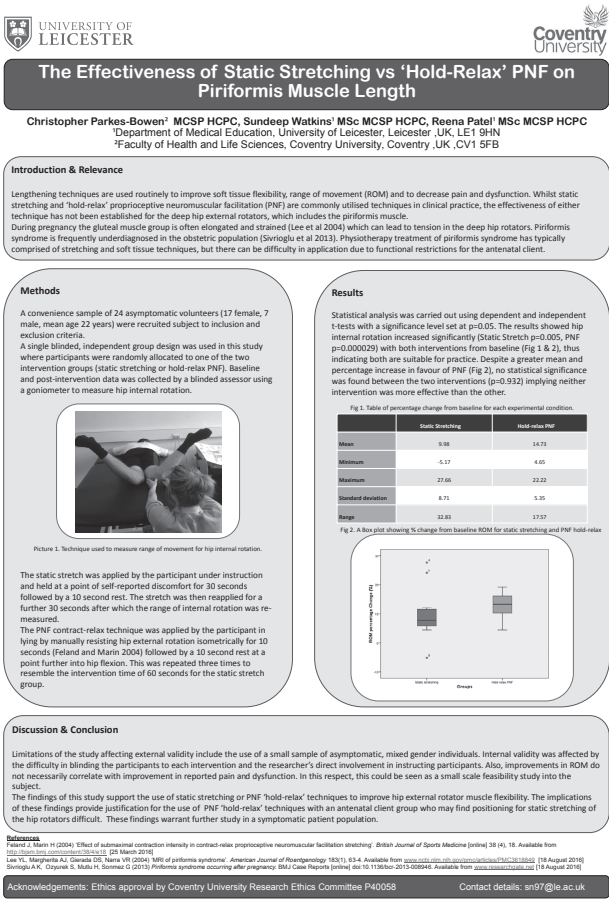

Figure 5. "The effectiveness of static stretching versus 'hold–relax' proprioceptive neuromuscular facilitation on piriformis muscle length" poster.

The results showed that hip internal rotation ROM increased significantly (SS: $P = 0.005$; PNF: $P = 0.000029$) with both interventions from baseline, thus indicating that both are suitable for practice. Despite a greater mean and percentage increase in favour of PNF, no statistical significance was found between the two interventions ($P = 0.932$), which implies that neither was more effective than the other.

The results of this study support both static stretching and PNF as interventions to improve hip external rotator muscle flexibility. The findings warrant further study in a symptomatic patient population. The use of PNF "hold–relax" techniques is justified within an antenatal client group who may find positioning for static stretches of the hip rotator muscles difficult.

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References

Lee E. Y., Margherita A. J., Gierada D. S. & Narra V. R. (2004) MRI of piriformis syndrome. *American Journal of Roentgenology* **183** (1), 63–64.

Sivrioglu A. K., Ozyurek S., Mutlu H. & Sonmez G. (2013) Piriformis syndrome occurring after pregnancy. *BMJ Case Reports* **2013:** bcr2013008946. DOI: 10.1136/bcr-2013-008946.

Does physiotherapy have a role in the management of continence problems for men living with and beyond prostate cancer?

Carcinoma of the prostate is one of the most common cancers in men. A common side effect of treatment is urinary incontinence. A local audit demonstrated that only 33% of men believed that they were supported to make lifestyle changes to maximize their health and well-being. In Northern Ireland, physiotherapy is commissioned for obstetric and gynaecology services, and therefore, men are rarely seen for pelvic health problems, which represents a basic health inequality.

Standard care prior to the pilot scheme involved attendance at the nurse-led pre-operative clinic, where verbal advice on PFMEs was given. Post-operatively, patients attended consultant reviews, and were referred to the community continence nursing team for pads. There was no intervention for radiotherapy patients with bladder/bowel problems.

Therefore, the present authors' proposal was to evaluate the outcome of specialist continence physiotherapy intervention for men with prostate cancer and continence issues (Fig. 6). This was funded for 18 months by Prostate Cancer UK.

Patients were divided into three groups:

(1) those seen both pre- and post-surgery;
(2) those seen < 3 months post-surgery; and
(3) those seen > 3 months post-surgery or after other cancer treatments.

Figure 6. "Does physiotherapy have a role in the management of continence problems for men living with and beyond prostate cancer?" poster.

Both qualitative and quantitative outcome measures were used. All men showed improvements following physiotherapy. Patients who were seen pre-operatively had less incontinence than those who were not. The reduction in leaking in group 3 can only be attributed to the physiotherapy intervention since these men had not undergone recent surgery.

This successful project resulted in positive outcomes for both the men and healthcare professionals involved. These range from enhancing the men's experience to improvements in their continence and quality of life. These positive outcomes have been achieved through a specialized service that is more efficient and specialized than standard care.

Macmillan Cancer Support has agreed to a year's further funding while the present authors try to secure a permanent physiotherapy post.

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Measures of pelvic floor strength by age and parity using the Elvie device

The Elvie is a commercially available PFM training (PFMT) device that connects wirelessly to a smartphone app. It contains a force sensor and an accelerometer, which simultaneously measure force and motion. The present authors investigated the impact of age and childbirth on PFM strength in a group of first-time Elvie users (Fig. 7). The goal was to assess the device for use in research and outcomes measurement.

Anonymized data from the Elvie commercial database were employed (1182 participants). Age and parity were self-reported. We categorized users into 10-year age intervals (i.e. 30–39, 40–49 and 50–59 years), and as nulli-, primi- or multiparous. Orientation was determined from accelerometer tilt data. Forces associated with relaxed and contracted PFM states were determined.

The authors assessed the statistical significance of the differences between force samples by *post hoc* testing using Student's *t*-tests, applying Bonferroni correction for multiplicity.

The results showed significantly higher relaxed and contracted forces for standing users compared to those in supine. Significant decreases in contracted force were found with increasing parity in the 30–40-year-old age group. There was a significant increase in contracted force for primiparous women between the 30–40- and 40–50-year-old age groups.

These results suggest that the Elvie has the potential to provide a wealth of information on PFM strength for measuring the benefits of PFMT.

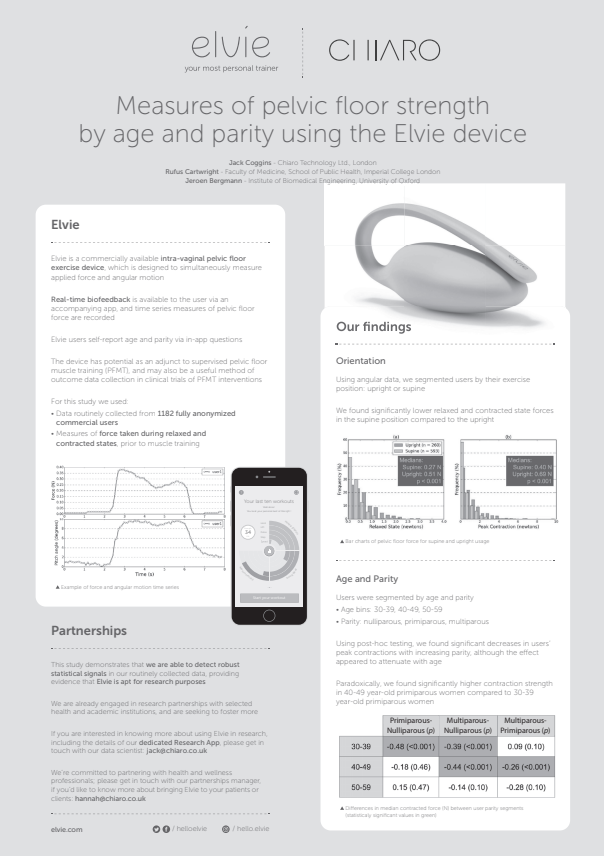

Figure 7. "Measures of pelvic floor strength by age and parity using the Elvie device" poster.

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