ELSEVIER

Physiotherapy 96 (2010) 337–343

Physiotherapy

Pelvic floor muscle strength and body self-perception among Brazilian pregnant women

Cinara Sacomori *, Fernando Luiz Cardoso, Cristiane Vanderlinde

Universidade do Estado de Santa Catarina, Florianópolis, Cep: 88080-350, Santa Catarina, Brazil

Abstract

Objectives To examine the relationship between pelvic floor muscle strength and body self-perception variables in pregnant women; and, more specifically, to determine the influence of the number of pregnancies (primigravidas vs multigravidas) on the strength of contraction of the pelvic floor muscles and on the body self-perception of pregnant women.
Design Comparative cross-sectional research.
Setting Public health centres from Florianópolis, Brazil.
Participants Thirty-five pregnant women (18 primigravidas, 17 multigravidas) with a mean age of 25.5 (standard deviation 5.7) years.
Main outcome measures Pelvic floor strength measured through manual palpation, and body self-perception using the Questionnaire of Corporeality and Human Sexuality.
Results Pelvic floor muscle strength was positively correlated with schooling [rho (ρ) = 0.496] and body self-perception variables: finding the body beautiful (ρ = 0.476), finding the body sexy (ρ = 0.520), feeling that others find them sexy (ρ = 0.364), finding the body proportional (ρ = 0.412), touching the body generally (ρ = 0.554) and recognising the smell of the body (ρ = 0.454). Primigravidas found their bodies more beautiful and were more satisfied with their bodies. On a scale of 0 to 6, multigravid participants expressed a greater wish than primigravid participants to be thinner (median difference 2, 95% confidence interval 0–3, P = 0.03). Pelvic floor strength did not differ between groups.
Conclusions The results suggest a relationship between pelvic floor muscle strength and body self-perception. Professionals involved in women's health may have a role in helping their patients to understand their bodies.

Keywords: Pregnancy; Pelvic floor muscles; Body self-perception

Introduction

It is generally recognised that perceptions of the female body are defined and constrained by cultural values and images from the media. At the same time, female bodies and perceptions of them change continuously, although never as abruptly as during pregnancy. Along with a protruding abdomen come other body transformations that are contrary to the social standards of female beauty (i.e. slim and curvier bodies) [1,2] and may affect the woman's identity, resulting in dissatisfaction with her body.

During pregnancy, significant physical, mental and social changes occur in women, resulting in a state of broad transformation over a short period of time. Some of these physical transformations could be modified or treated by physiotherapy modalities, such as stretching, manual therapies or specific instructions regarding postures assumed for daily activities [3]. When such physical transformations are not well managed or understood, a feeling of discontentment with body image can be triggered.

Among the modifications occurring during pregnancy, those in the urinary tract and pelvic floor muscles (PFM) may be more intense. PFM strength can be assessed by the recruitment of muscle fibres in a single maximal voluntary contraction, and this can be affected by pregnancy and delivery [4–7]. It has been suggested that vaginal delivery has a more noticeable negative effect on PFM strength compared with caesarean delivery [6].

* Correspondence: Rua Benevenuta Bartlet James, 69, Centro, Florianópolis, Cep: 88015-630, Santa Catarina, Brazil. Tel.: +55 48 37338868; fax: +55 48 33218607.
E-mail address: csacomori@yahoo.com.br (C. Sacomori).

0031-9406/$ – see front matter © 2010 Chartered Society of Physiotherapy. Published by Elsevier Ltd. All rights reserved.
doi:10.1016/j.physio.2010.02.003

Haddow *et al*. [8] suggested that PFM exercises prevent stress incontinence by reducing the trauma associated with parturition, and also accelerating post-partum recovery. Two randomised trials examined the effects of exercise on PFM damage in the post-partum period [9,10], and both found that women who undertook antenatal exercises were able to perform a more effective pelvic muscle contraction post partum. However, none of the studies investigated the outcome in relation to body self-perception. Furthermore, Talasz *et al*. [11] demonstrated that multiparous women have weaker PFM than primiparous women.

Two studies have evaluated pregnant women's knowledge about PFM and PFM exercises [12,13], and other studies have evaluated corporal perception or body image [14–16]. However, no studies were found to provide any evidence for a relationship between body self-perception and PFM strength or knowledge of PFM. The authors believe that women capable of localising and contracting their PFM would have better self-knowledge and better corporal perception.

Due to a perceived lack of knowledge surrounding questions that relate to PFM changes and psychological changes during pregnancy, the objective of this study was to examine the relationship between PFM strength and body self-perception in pregnant women; and, more specifically, to determine the influence of the number of pregnancies (primigravidas vs multigravidas) on the strength of contraction of the PFM and on body self-perception.

Sex roles in Brazil

The structure of sexual life in Brazil has traditionally been conceived in terms of 'activity' and 'passivity' distinctions between male and female, masculinity and femininity. In daily life, however, such conceptions have been constructed in an almost entirely informal fashion [17]. Brazilians describe their sexual relations in terms of '*comer*' (to eat) and '*dar*' (to give) as metaphors for two forms of sexual practice. 'To eat' describes the male act of penetration during sexual intercourse, and 'to give' describes the female act of being penetrated by a male. The former clearly implies a form of symbolic domination, as played out through sexual practice, while the latter implies some form of submission or subjugation [17–20].

Attitudes are changing in Brazil in terms of the traditional gender roles with the increasing professional middle class. According to Abdo [21], in Brazil, 77% of women reported good sexual performance and sexual satisfaction with affection and sentiments; the same was found for 62% of men. More than 60% of men and almost 80% of women agreed that there has to be affection for good sexual performance and satisfaction; 40% of women reported sexual satisfaction with commitment in the relationship, while this was only true for 29% of men. More men have sex on first dates and practice masturbation, while women attach more value to physical affection and non-genital intimacy [22].

Method

Participants

This study involved 35 pregnant women, at various stages of gestation, receiving medical attention at three health centres in Florianópolis. This was a convenience sample where all the subjects signed a consent form approved by the local ethics committee. The subjects who presented complications over the course of their pregnancy, such as risk of pre-term labour, infections of the urinary tract, high-risk pregnancies, amputees, serious eating disorders or pathologies that could interfere with the assessment, and those that practised PFM exercises previously were excluded from the study.

Materials

Three instruments were used in this study: semi-structured interview for socio-economic, gynaecological and obstetric information; semi-structured Questionnaire of Human Corporeality; and manual PFM test.

The semi-structured Questionnaire of Human Corporeality (under validation process) was proposed by the Sexuality, Gender and Corporeality Research Group at the Universidade do Estado de Santa Catarina. The questions refer to body self-perception and the relationship of the subject with their own body. In total, the questionnaire includes 22 questions, and these were answered on a graduated intensity scale from 0 to 6 (0 = not at all, 1 and 2 = very little, 3 and 4 = average, 5 and 6 = very much). This instrument was applied in the form of a private interview. All procedures were explained to the participants.

PFM strength was measured through bidigital vaginal palpation; the subjects assumed a supine position with the lower limbs flexed, and the examiner inserted two fingers into the vagina and instructed the subject to perform a maximal voluntary contraction of the PFM. Before measuring PFM strength, the subjects were taught how to perform an effective PFM contraction throughout manual palpation. The examiner was well trained and the whole procedure was performed with lubricant gel and sterile gloves. Only lateral contraction was evaluated, with fingers positioned at 4 o'clock and 8 o'clock; PFM strength was graded on the Oxford scale modified by Laycock and Jerwood [23] which grades contractions from 0 to 5:

- 0, absence of muscular response from the perivaginal muscles.
- 1, sign of an unsustained contraction.
- 2, presence of a weak but sustained contraction.
- 3, moderate contraction; felt as an increase in intravaginal pressure with palpable upward and forward movement.
- 4, satisfactory contraction; squeezing the examiner's fingers with elevation of the vaginal wall in the direction of the pubic symphysis.