

Correlates of Pelvic Floor Disorders in Women Fifty years and Over Attending Out-patient Gynaecology and Urology Clinics at a Tertiary Hospital in Kingston and St Andrew, Jamaica

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ABSTRACT

Objective: To identify correlates of pelvic floor disorders in a clinic-based sample of women fifty years and older.

Method: Two hundred and sixty-three randomly selected gynaecology and urology clinic attendees fifty years and older provided information on health, reproductive history, sociodemographics and pelvic floor disorders. Associations between having at least one pelvic floor disorder and the other variables were explored using bivariate and multivariate analyses.

Results: Approximately, 52% of women had at least one pelvic floor disorder and each additional vaginal delivery increased these odds by 14%, controlling for important health and sociodemographic variables.

Conclusion: Pelvic floor disorders can negatively affect quality of life in older age. Given the increased likelihood of their occurrence with each vaginal delivery, reproductive and post-reproductive health services should prioritise female pelvic medicine, pelvic floor strengthening and physical therapy to improve women's genitourinary health.

Keywords: Ageing, genitourinary health, pelvic floor disorder, symptomatic pelvic organ prolapse

Correlatos de los Trastornos del Suelo Pélvico en Mujeres de Cincuenta años o más que Asisten a las Clínicas Externas de Ginecología y Urología en un Hospital Terciario in Kingston y Saint Andrew, Jamaica

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RESUMEN

Objetivo: Identificar los correlatos de los trastornos del suelo pélvico en una muestra clínica de mujeres de 50 años o más.

Método: Doscientos sesenta y seis mujeres de cincuenta años o más, que asisten a la clínica de ginecología y urología, fueron seleccionadas aleatoriamente. Dichas pacientes proporcionaron información sobre salud, historial reproductivo, y trastornos sociodemográficos del suelo pélvico. Las asociaciones entre tener al menos un trastorno del suelo pélvico y las otras variables se exploraron mediante análisis bivariantes y multivariantes.

Resultados: Aproximadamente 52% de las mujeres tenían al menos un trastorno del suelo pélvico, y cada parto vaginal adicional aumentó estas probabilidades en un 14%, controlando las variables sanitarias y sociodemográficas importantes.

Conclusión: Los trastornos del suelo pélvico pueden afectar negativamente la calidad de vida en la edad avanzada. Dada la mayor probabilidad de que ocurran con cada parto vaginal, los servicios de salud reproductiva y pos reproductiva deben priorizar la medicina pélvica femenina, el fortalecimiento del suelo pélvico y la terapia física para mejorar la salud genitourinaria de las mujeres.

Palabras clave: Envejecimiento, salud genitourinaria, trastorno del suelo pélvico, prolapso sintomático de órganos pélvicos

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INTRODUCTION

Pelvic floor disorders (PFDs) are morbidities of the female genitourinary system which occur when support to the pelvic floor is weakened/damaged. These include urinary incontinence (UI), faecal incontinence (FI) and pelvic organ prolapse. Urinary and faecal incontinence refer to involuntary loss of urine and stool, respectively due to loss of bladder (UI) and bowel (FI) control. With pelvic organ prolapse, the bladder, rectum, intestines, or uterus can drop (prolapse) and, in some cases, protrude into the vaginal wall or through the opening of the vagina (1). Normal elimination through the bladder and intestines may also be affected.

Older age, higher parity, vaginal deliveries, obesity and previous hysterectomy are risk factors for pelvic floor disorders (2–4). In one nationally-representative study in the United States of America, researchers found that 23.7% of women had at least one PFD, with UI being the most prevalent (15.7%). Having at least one PFD was significantly associated with older age: 9.7% of women aged 20–39 years and increasing with age to 49.7% of those ≥ 80 years; body mass index: 15.1% of underweight/normal *versus* 26.3% of overweight and 30.4% of obese women; and parity: 12.8% of nulliparous women and increasing with number of deliveries to reach 32.4% of women with three or more deliveries (5). Cardiovascular diseases and arthritis have also been associated with increased PFD risk (6, 7).

Pelvic floor disorders can negatively impact women's health, sense of well-being and quality of life due to the bothersome symptoms. Many limit social involvement because of the inconvenience, discomfort and/or potential for embarrassment from their condition (8, 9). They may also curtail engagement in sexual intercourse because of pain and discomfort (10, 11). These actions limit women's capacity for active ageing (AA) by minimizing their opportunities to engage in activities they

value (12). To the authors' knowledge, no previous study has examined prevalence and correlates of PFDs among middle-aged and older clinic attendees in a Jamaican clinic setting. Confirming the risk factors and quantifying their level of influence in this population will help inform risk reduction strategies.

METHOD

Participants

Two hundred and seventy-two women \geq fifty years were interviewed when they attended out-patient Gynaecology and Urology Clinics at one tertiary hospital in Kingston and St Andrew for scheduled appointments. Prospects were randomly selected from the clinic list on data collection days. Refusals were replaced by other randomly selected persons. Informed consent was obtained from each participant and questionnaires administered by trained data collectors. Data were collected over several months with data collectors attending all scheduled clinics. To prevent duplication, a master list was maintained with names and dates of birth of persons who had participated. This list was checked daily against the clinic register. The study was approved by The University of the West Indies, Faculty of Medical Sciences, Mona, Ethics Committee.

Variables and measurements

Data on sociodemography, health, reproductive history and PFDs were analysed for 263 women. Symptomatic pelvic organ prolapse (POP) was assessed by the question: *Have you ever experienced bulging or something falling out, that you can see or feel in the vaginal area (Yes/No)?*(5,13). Urinary leakage was assessed by the question: *Do you experience urinary leakage (Does urine leak out before you can get to a bathroom) [Yes/No]?*(14). Sociodemography (age, educational

attainment), health (hypertension, diabetes, high cholesterol, stroke, muscle/joint pain, depression screen, cognitive impairment screen, self-rated health) and reproductive history (number of pregnancies, number of vaginal deliveries, age at first child, age at last child, menstrual status, hysterectomy) were determined by self-report. Variables were selected based on identification in the literature as PFD risk factors.

Data analysis

Item response rates varied but remained high for most questions. Having at least one PFD was the main outcome. Associations with sociodemographic, health, and reproductive history were explored using Chi-square and Mann-Whitney tests. Logistic regression identified independent predictors and quantified associations. Model entry criterion was a p -value < 0.1 . Final significant associations were confirmed by p -values < 0.05 .

RESULTS

More than half (51.7%) of the women had at least one PFD; UI at 37.6% and symptomatic POP at 25.1%. Table 1 shows the proportion of women with and without at least one PFD, stratified by sociodemographic characteristics and menstrual status. The proportions of women with at least one PFD showed no significant variation across age groups ($\chi^2 = 6.446$, $p = 0.092$). However, for education, a significantly larger proportion with primary education or lower (61.4%) had at least one PFD compared to 45.3% with secondary education or higher. ($\chi^2 = 6.230$, $p = 0.013$).

Women still having regular menstrual periods were significantly less likely to have a PFD than peri-menopausal or post-menopausal women (26.3% versus 54.2%, $\chi^2 = 5.483$, $p = 0.019$). Women who had a previous hysterectomy did not differ from those who did not, regarding the presence of PFDs ($\chi^2 = 0.006$, $p = 0.916$).

Number of pregnancies and number of vaginal deliveries were associated with having at least one PFD. Significantly higher mean ranks (interpreted as significantly more pregnancies) were observed among women with at least one PFD than those who had none ($U = 6021$, $p < 0.001$). Similarly, significantly more vaginal deliveries were reported by women with at least one PFD ($U = 6197$, $p = 0.001$) than their counterparts. Neither age at first child ($U = 7002$, $p = 0.756$) nor age at last child ($U = 4966$, $p = 0.236$) was associated with having at least one PFD.

Table 1: Pelvic floor disorders by sociodemographic variables and menstrual status

Selected variables	≥ 1 pelvic floor disorder, % (n)		
	Yes	No	<i>p</i> -value
Age years (n = 262)			
50–59	45.1 (65)	54.9 (79)	0.092
60–69	54.2 (32)	45.8 (27)	
70–79	64.3 (27)	35.7 (15)	
80 and over	64.7 (11)	35.3 (6)	
Education level (n = 251)*			
≤ Primary	61.4 (62)	38.6 (39)	0.013
≥ Secondary	45.3 (68)	54.7 (82)	
Menstrual status (n = 257)*			
Regular menses	26.3 (5)	73.7 (14)	0.019
Peri/ postmenopause	54.2 (129)	45.8 (109)	
Hysterectomy (n = 263)			
No	51.8 (114)	48.2 (106)	0.937
Yes	51.2 (22)	48.8 (21)	

*Having at least one pelvic floor disorder varied significantly between categories of the selected variable.

Table 2 shows the proportion of women with or without at least one PFD according to health status. Having at least one PFD was significantly more common among women with hypertension and muscle/joint pain than those without the conditions. For hypertension, 55.6% of women with the condition had at least one PFD compared to 41.7% of persons without hypertension ($\chi^2 = 3.995$, $p = 0.046$). Similarly, 58.8% of women with muscle/joint pain had at least one PFD compared to 43.4% of those without muscle/joint pain ($\chi^2 = 5.681$, $p = 0.017$). Diabetes, stroke, high cholesterol, depression, cognitive impairment and self-rated health were not found to be associated with PFDs. Controlling for age, education, hypertension, muscle/joint pain, and menstrual status.

Independent associations

Statistically significant variables were entered into a logistic regression model. Median number of pregnancies and median number of vaginal deliveries were strongly correlated ($r_s = 0.896$, $p < 0.001$). The model with the latter was a better fit and hence was selected. The findings are presented in Table 3. Only number of vaginal deliveries remained significant after adjustment; each additional vaginal delivery was associated with a 14% increase in odds of having at least one PFD, controlling for age, education, hypertension, muscle/joint pain and menstrual status.

DISCUSSION

This paper presented estimates of PFD and associations with selected variables in a clinic-based population. Urinary incontinence was more commonly reported

than symptomatic POP. Although it is believed that loss of some uterovaginal support occurs in nearly all adult women (15), it is often asymptomatic and detected only upon clinical examination (16). Symptomatic POP, which was assessed in this study, is less common and was only reported in 25% of the women. Compared to community samples, however, clinic-based samples would be expected to report more frequent occurrences of symptomatic POP, hence it is not surprising that the estimate obtained here is more than four times higher than that reported by Rortveit and colleagues [6%] (11) who studied a racially diverse United States-based community sample.

Similarly for UI, it would be reasonable to expect more UI in the clinic setting than is found in the community, despite some level of unwillingness to report and seek help for the condition (6, 17). A previous study in Jamaica (6) reported prevalence of urinary incontinence (any type) at 12.7% among community dwelling women 60 years and older; considerably lower than this present clinic estimate.

Table 2: Pelvic floor disorders by health variables

Selected variables	≥ 1 pelvic floor disorder, % (n)		
	Yes	No	p-value
Hypertension (n = 250)*			
Yes	55.6 (99)	44.4 (79)	0.046
No	41.7 (30)	58.3 (42)	
Diabetes (n = 239)			
Yes	56.9 (41)	43.1 (31)	0.266
No	49.1 (82)	50.9 (85)	
High cholesterol (n = 242)			
Yes	50.7 (35)	49.3 (34)	0.951
No	50.3 (87)	49.7 (86)	
Stroke (n = 228)			
Yes	52.9 (9)	47.1 (8)	0.860
No	50.7 (107)	49.3 (104)	
Muscle/joint pain (n = 242)*			
Yes	58.8 (80)	41.2 (56)	0.017
No	43.4 (46)	56.6 (60)	
Depression screen (n = 199)			
Moderate to severe	55.6 (10)	44.4 (8)	0.544
Mild or none	48.1 (87)	51.9 (94)	
CI screen (n = 152)			
Some impairment	68.2 (15)	31.8 (7)	0.167
No impairment	52.3 (68)	47.7 (62)	
Self-rated health (n = 262)			
Bad/very bad	66.7 (14)	33.3 (7)	0.191
Fair	54.1 (60)	45.9 (51)	
Good/very good	46.9 (61)	53.1 (69)	

*Having at least one pelvic floor disorder varied significantly between categories of the selected variable.

Several potential associations between PFDs and sociodemographic, health and reproductive history variables were explored. In the final adjusted model, only the number of vaginal deliveries remained significantly associated. Previous studies have also reported increased risk of PFDs with vaginal deliveries (11, 18). Compared to women who had Caesarean deliveries without labour, those who had vaginal deliveries had increased odds for stress urinary incontinence and prolapse to/ or beyond the hymen five to ten years after childbirth (19). In a study of women over 40 years seeking outpatient gynaecologic care, a single vaginal delivery was associated with a 10-fold increase in the odds of pelvic organ prolapse. Small but statistically significant incremental descent was observed with each additional birth, confirming the impact of additional vaginal deliveries on PFDs (20).

In addressing strategies to reduce PFDs in the population, detailed investigations concerning the modifiable risk factors are necessary. Ensuing discussions and recommendations must also be balanced with the country's current status of reproductive health indicators. It is probable that without further intervention, Jamaica could see a decrease in PFDs in the future given the declining fertility rate. Notwithstanding, on an individual level, it is important to explore prevention strategies. Education

Table 3: Sociodemographic, health and reproductive history characteristics explaining the presence of at least one pelvic floor disorder

Variable	Adjusted Odds Ratio	95% CI [^]	p-value
Age (years)			
50–59	Reference		
60–69	1.31	0.63, 2.72	0.471
70–79	1.82	0.75, 4.41	0.186
80 and over	1.55	0.47, 5.08	0.47
Education			
≤ Primary	Reference		
≥ Secondary	0.93	0.48, 1.79	0.827
Hypertension			
No	Reference		
Yes	1.25	0.67, 2.33	0.485
Muscle/joint pain			
No	Reference		
Yes	1.59	0.89, 2.86	0.119
Menstrual status			
Regular menses	Reference		
Peri- or post-menopausal	2.69	0.69, 10.57	0.155
Number of vaginal deliveries*	1.14	1.01, 1.28	0.033

Pseudo R squared = 0.132. Hosmer-Lemeshow goodness-of fit $\chi^2 = 10.43$, $p = 0.236$. aOR -adjusted odds ratio. [^]Confidence Interval. *Statistically significant variables

and prevention messages should target women at risk for high parity including young primigravidae and groups with low rates of contraceptive use.

Discussions around opting for Caesarean section as an alternative to vaginal delivery have been controversial (21, 22). However, with increased odds of PFDs with each additional vaginal delivery, all multiparous women who have had vaginal deliveries need to be concerned. More acceptable mitigation strategies can include expansion of post-partum care practices to add routine referral for post-delivery pelvic floor physical therapy. This may reduce the risk of PFDs in later life (23). Such programmes exist in France (10 sessions - la rééducation périnéale) and are Government-sponsored and routinely prescribed immediately after delivery (24). Implementation in our setting would require physiotherapists to have specialized training in pelvic floor rehabilitation.

Given the potential impact on AA (older women with PFD may withdraw and stay at home), current health promotion efforts should address PFDs and encourage women to report occurrences to their primary care provider as early interventions may reduce impact.

CONCLUSION

The odds of having at least one PFD increased with each additional vaginal delivery. Pelvic floor disorders can negatively impact health and well-being and the capacity for AA. In the spirit of a life course approach to ageing and health, women of child-bearing age should be advised of these risks and all reasonable efforts at risk reduction should be explored.

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AUTHORS' NOTES

Eldemire-Shearer and Willie-Tyndale designed the study. Data analysis and drafting of the manuscript were done by Willie-Tyndale. Both authors approved the final version. The authors declare that they have no conflicts of interest.

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