

CHARACTERIZATION OF PELVIC FLOOR SYMPTOMS IN WOMEN OF NORTHEASTERN LIBERIA

Hypothesis / aims of study

There is little robust data characterizing the prevalence and impact of pelvic floor disorders in women of West Africa. Fewer than ten previous studies have been published regarding pelvic organ prolapse in African nations. While there are numerous studies relating to urinary incontinence (UI) as a result of vesico-vaginal fistula (VVF) related to obstructed childbirth, there are few studies on prevalence rates and impact on quality of life (QoL) among community dwelling women with UI, pelvic organ prolapse (POP), or fecal incontinence (FI) in African nations [1, 2]. Additionally, no studies related to POP, UI or FI are specific to Liberia, a country of nearly three and a half million people. The purpose of this study was to determine the prevalence and quality of life impact of urinary incontinence, fecal incontinence, as well as pelvic organ prolapse in women living in Northeastern Liberia.

Study design, materials and methods

A simple questionnaire addressing symptoms of UI, FI and POP as well as impact on quality of life was administered to community-dwelling women in Ganta, Liberia, Africa during 2, two week surgical service trips in May, 2008 and January, 2009. The purpose of the questionnaire was to assess the prevalence of urinary incontinence (UI), fecal incontinence (FI) and pelvic organ prolapse (POP), as well as their potential impact on quality of life (QoL).

Teams of individuals consisting of experienced physicians, nurses, and nursing students were sent out into villages surrounding the community of Ganta, Liberia to administer questionnaires. Centralized training was performed to educate the local investigators regarding the content of the questionnaires, including lectures describing the conditions in an interactive environment prior to collecting data. Patient demographics such as age, height, weight, number of previous live births or stillbirths, as well as the number of prior Cesarean deliveries (CD) were collected. They were also asked if they had ever seen a doctor and were asked to rate their overall health, subjectively, on a scale of 1-15. In addition, the participant's medical history (mainly consisting of diabetes, hypertension or malaria), surgical history (hysterectomy, Cesarean, or prolapse repairs) and social history (alcohol and tobacco use) was obtained. Prevalence and QoL characteristics were obtained with a series of questions: "Do you usually have a bulge or something falling out that you can see or feel in your vaginal area?"; "If yes, how much does it bother you?"; "How often do you experience urinary leakage?"; "How much urine do you lose each time?"; "How much does urine leakage affect your daily life?"; "How does it affect your relationship with your partner?"; "How often in the past month have you experienced any amount of accidental bowel leakage that consisted of solid stool?, liquid stool?, gas?". QoL questions were also obtained for fecal incontinence.

In addition to reviewing prevalence of pelvic floor symptoms and QoL responses, data was analyzed to determine if a relationship existed between prior hysterectomy, prior Cesarean delivery, number of vaginal births, and body mass index (BMI) on the prevalence of UI, FI, and POP. Each characteristic was tested individually, with Fisher's exact test for hysterectomy and Cesarean history, and logistic regression for vaginal births and BMI. The Bonferroni correction was used to adjust an overall 0.05 level of significance for multiple comparisons. The relationships between the three outcomes were also examined with Fisher's exact test. Data was analyzed utilizing SAS 9.2 (Cary, NC).

Results

A total of 424 patients were surveyed. In 217 (51%) of subjects, heights and weights were obtained allowing BMI calculation. The characteristics of the participants are described in Table 1.

Table 1. Characteristics of Population

Variable	N	Mean	StDev	Min	LowerQuartile	Median	UpperQuartile	Max
AGE	413	36.5	15.5	14	25	32	45	80
HEALTH	400	11.9	3.1	0	10	13	14	15
LIVEBIRTHS	365	4.4	3.4	0	1	4	7	15
STILLBORN	180	1.9	2.2	0	0	1	3	9
BMI	217	22.9	5.9	10.1	19.4	21.7	26.0	37.7

Of the total respondents, 10.12% reported a history of hypertension, 2.52% reported a history of diabetes, and 62.87% reported infection with malaria. Hysterectomy was reported in 3.90% of the population while 14.15% reported a previous Cesarean. Less than 1% reported tobacco use, but 43.88% reported regular alcohol intake. Of the 424 questionnaire respondents, seven subjects (1.7%) reported urinary incontinence with less than half of these (N=3) reporting daily leakage. QoL responses revealed that of the 7 individuals suffering from UI, >85% (N=6) reported a major impact on their QoL. In fact, 5 of these individuals reported an impact so severe that it affected their ability to do their daily work, even inside the home. In addition 71.4% of individuals suffering from UI reported that incontinent episodes were affecting their relationship with their partner. A total of 4 individuals (<1%) reported flatal incontinence, with one of these individuals also reporting both incontinence of solid and liquid stool. QoL responses revealed that of the 4 individuals reporting flatal incontinence, half reported no affect on their daily lives. When subjects were asked if they had a bulge or something falling out that they could see or feel in the vaginal area, a total of 14 respondents (3.3%) reported some symptom of pelvic organ prolapse. Responses for this question were not further characterized to label the degree or type of prolapse. QoL responses revealed that 43% (N=6) of these 14 respondents quoted moderate to severe QoL impact with regard to their pelvic organ prolapse. In addition, potential factors influencing the prevalence of UI, FI and POP were analyzed. These included previous hysterectomy, number of vaginal deliveries, presence or absence of previous CD, BMI as well as concomitant complaints (FI, POP). Logistic regression determined that neither BMI nor the number of prior births had a significant association

with UI, FI, or POP. Analysis using Fisher's exact test revealed that neither previous hysterectomy nor previous CD influenced the prevalence of our outcomes. However, the odds of an individual suffering from urinary incontinence are higher in those who also suffer from fecal incontinence, $p=0.0016$, but this result should be interpreted cautiously because of the low prevalence of these outcomes.

Interpretation of results

The prevalence rates for UI, FI and POP in this parous population in Liberia are quite low. Of those subjects with symptoms, 85% of those with UI reported major QoL issues, while only 50% of those with FI and 43% of those with POP reported QoL impact. Factors such as previous hysterectomy, previous CD, number of prior vaginal deliveries, and BMI do not appear to affect the risk of developing pelvic floor symptoms in this population. However, because of the low prevalence of UI, FI, and POP in the population, this study is underpowered to detect these relationships if they truly exist. A larger study is recommended to further explore these effects.

Concluding message

Urinary and fecal incontinence are prevalent conditions in the United States and have been well characterized by well-designed, large, population-based studies [3]. The prevalence and impact on quality of life of urinary and fecal incontinence as well as pelvic organ prolapse are not well described in the developing world, specifically Northeast Liberia. It may be that questionnaires used to characterize these conditions in the United States may not accurately reflect the condition in Liberia. Our findings suggest that the prevalence of these symptoms may be low in this parous, black population.

References

1. Okonkwo JE, Obiechina NJ, Obionu CN. Incidence of pelvic organ prolapse in Nigerian women. J Natl Med Assoc. 2003 Feb;95(2):132-6
2. Okonkwo JE, Obionu CN, Okonkwo CV Obiechina NJ. Anal incontinence among Igbo (Nigerian) women. Int J Clin Pract. 2002 Apr;56(3):178-80
3. Nygaard I; Barber MD; Burgio KL; Kenton K; Meikle S; Schaffer J; Spino C; Whitehead WE; Wu J; Brody DJ; for the Pelvic Floor Disorders Network. Prevalence of Symptomatic Pelvic Floor Disorders in US Women. JAMA, September 17, 2008; 300: 1311 - 1316

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<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes