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Fecal incontinence decreases sexual quality of life, but does not prevent sexual activity in women Running head: Anal incontinence and sexual function

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Abstract

Background—The impact of anal incontinence on women’s sexual function is poorly understood.

Objective—To investigate the relationship between anal incontinence and sexual activity and functioning in women.

Design—Cross-sectional study.

Settings—Community-based integrated healthcare delivery system.

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Patients—2,269 ethnically-diverse women aged 40 to 80 years.

Main Outcome Measures—Self-administered questionnaires assessed accidental leakage of gas (flatal incontinence) and fluid/mucus/stool (fecal incontinence) in the past 3 months. Additional questionnaires assessed sexual activity, desire and satisfaction, as well as specific sexual problems (difficulty with arousal, lubrication, orgasm, or pain). Multivariable logistic regression models compared sexual function in women with 1) isolated flatal incontinence, 2) fecal incontinence (with or without flatal incontinence), and 3) no fecal/flatal incontinence, controlling for potential confounders.

Results—Twenty-four percent of women reported fecal incontinence and 43% reported isolated flatal incontinence in the prior 3 months. The majority were sexually active (62% of women without fecal/flatal incontinence, 66% with isolated flatal incontinence, and 60% with fecal incontinence; $p=0.06$). Compared to women without fecal/flatal incontinence, women with fecal incontinence were more likely to report low sexual desire (OR:1.41 [CI:1.10–1.82]), low sexual satisfaction (OR:1.56 [CI:1.14–2.12]), and limitation of sexual activity by physical health (OR: 1.65 [CI:1.19–2.28]) after adjustment for confounders. Among sexually active women, women with fecal incontinence were more likely than women without fecal/flatal incontinence to report difficulties with lubrication (OR:2.66 [CI:1.76–4.00]), pain (OR:2.44 [CI:1.52–3.91]), and orgasm (OR:1.68 [CI:1.12–2.51]). Women with isolated flatal incontinence reported similar sexual functioning to women without fecal/flatal incontinence.

Limitations—Cross-sectional design prevented evaluation of causality.

Conclusions—While most women with anal incontinence are sexually active, those with fecal incontinence are at high risk for several aspects of sexual dysfunction. This indicates that sexual function is important to women with anal incontinence and should be prioritized during therapeutic management.

Introduction

Anal incontinence (AI) affects up to a quarter of middle aged and older women in the community and can have a profound impact of women's activities, functioning and quality of life.^{1,2} One important but understudied aspect of women's quality of life that is likely to be affected by AI is sexual function. Not only can symptoms related to AI interfere with women's ability to engage in sexual activity, but they also have the potential to worsen underlying sexual problems and decrease women's satisfaction with their overall sexual quality of life.

To date, there has been limited previous research on the relationship of AI on female sexual function, with existing studies focusing on tertiary referral patients³ including obstetric patients with anal injury⁴ and patients who have undergone sphincterotomy for treatment of AI.^{5–7} Further, measures of sexual dysfunction have tended to be unidimensional^{3,4} and studies have not consistently controlled for co-morbid conditions such as other pelvic floor disorders.^{3,6,8–10} Consequently, the true prevalence of sexual dysfunction in women with AI is unknown and it is unclear whether sexual problems in women with AI are specifically attributable to their incontinence or merely a reflection of other co-morbid health problems. As a result, clinicians caring for women with AI lack the necessary data to counsel their patients effectively about the impact of AI symptoms on sexual activity and the potential benefit of treatments on sexual functioning.

In this study, we examined sexual activity, desire, satisfaction, and problems in an ethnically-diverse, population-based cohort of 2,269 middle-aged and older women with and without AI. Our aims were to investigate the relationship between anal incontinence

symptoms and sexual functioning in women in order to enhance the assessment and management priorities of clinicians providing care to women with AI.

Materials and Methods

Subjects

This cross-sectional study was conducted within the Reproductive Risks of Incontinence Study at Kaiser (RRISK), a prospective cohort study of risk factors for urinary tract dysfunction in middle-aged and older women.¹¹ The study population for this analysis was derived from participants who were evaluated at the second RRISK contact, which took place between January 2003 and January 2008. Briefly, women were originally recruited from Kaiser Permanente Northern California (KPNC), an integrated health care delivery system serving approximately 25% to 30% of the northern California population. To be eligible for this cohort, women had to be between the ages of 40 and 80 years, to have been enrolled in Kaiser since age 24, and to have had at least half their childbirths at a Kaiser facility, but were not required to have any symptoms or history of genitourinary or pelvic floor dysfunction.¹¹ Women of non-white race/ethnicity were recruited to achieve a target race/ethnicity composition of 20% African-American, 20% Latina, 20% Asian, and 40% non-Latina white. Approximately 20% of participants were also recruited from the KPNC Diabetes Registry, to enrich the study sample of women with this condition.

Data Collection

Demographic characteristics, medical and gynecological history, medication use, and health-related habits were assessed in all participants using self-administered questionnaires as well as in-person interviews conducted either at a KPNC clinic or in participants' homes. Race/ethnicity was assessed by asking women to self-report as Caucasian, African American, Asian/Pacific Islander, Latina, or Native American/Other. Overall health status was assessed through a standard single-item self-report measure in which participants rated their overall health as "excellent," "very good," "good," "fair," or "poor".^{11,12,13} History of physician-diagnosed depression was assessed by asking participants if a doctor or health care provider had ever told them that they had depression. Symptomatic pelvic organ prolapse was assessed by asking, "Have your pelvic organs (uterus, bladder, or rectum) been dropping out of your vagina causing a feeling of bulging, pressure, or protrusion or a sensation like your "insides are coming out"?"¹⁴ Urinary incontinence was assessed by asking, "During the past 3 months, how often have you typically leaked urine each week, even a small amount?" Height and weight were measured by trained personnel at study visits for calculation of body mass index (BMI).

Anal incontinence symptoms were assessed using items derived from the Fecal Incontinence Severity Index (FISI),¹⁵ a validated self-administered instrument which directs patients to record the frequency of accidental leakage with gas, mucus, liquid, and/or solid stool. For this study of community-dwelling women, FISI items were adapted to assess accidental leakage within the prior 3 months rather than just 1 month. *A priori*, participants were categorized into one of three groups based upon self-reported anal continence status: 1) no accidental leakage from anus (no fecal/flatal incontinence [no FI/FL]), 2) leakage of gas only (isolated flatal incontinence only [isolated FL]), or 3) accidental leakage of mucus, liquid or solid stool with or without leakage of gas (fecal incontinence [FI] with or without flatal incontinence). Among participants reporting some FI in the past 3 months, frequency of FI was further characterized as either less than monthly, monthly but not weekly, or at least weekly.

Sexual activity and function were assessed using structured-item measures derived from the validated Female Sexual Function Index¹⁶ and previously administered in other large women's health studies.^{17,18} To ensure confidentiality, participants completed questions in private and submitted them to study personnel in sealed envelopes at their study visit. Women were first asked to indicate whether they had had any sexual activity (defined inclusively as "any activity that is arousing to you, including masturbation") in the past 3 months, and, if so, to indicate the frequency of that activity. Additional items assessed participants' level of sexual desire or interest and overall sexual satisfaction. To assess women's perception of the effect of their physical health on sexual function, all participants were additionally asked, "How much has your physical health limited your sexual activity?" with response options ranging from "not at all" to "extremely." Women who reported any sexual activity in the past 3 months were also asked about the presence and severity of specific sexual problems including difficulty with arousal, lubrication, achieving orgasm, and pain/discomfort during vaginal intercourse.

Women who reported FI symptoms in the past 3 months were asked to complete the Fecal Incontinence Quality of Life Scale (FIQL),¹⁹ a validated questionnaire that includes Likert-scale items designed to assess the impact of FI on sexual function. Specifically, participants were asked how much they agreed with each of the following statements: 1) "Due to accidental bowel leakage, I have sex less often than I would like to," and 2) "Due to accidental bowel leakage, I am afraid to have sex," with possible responses ranging from "strongly agree" to "strongly disagree."

Statistical Analysis

Demographic and clinical characteristics of participants with no FI/FL, isolated FL, and FI were compared using chi-square tests for categorical variables and analysis of variance for continuous variables. Among these groups, descriptive statistics were used to examine the distribution of (1) less than monthly sexual activity, (2) less than moderate sexual desire, (3) less than moderate sexual satisfaction, and (4) moderate or greater limitation of sexual activity due to physical health. Also examined were specific sexual problems including (1) low or very low arousal, (2) at least moderate difficulty with lubrication, (3) at least moderate difficulty with orgasm, or (4) at least moderate pain with vaginal intercourse.

Next, multivariable logistic regression models were used to compare sexual function outcomes between: 1) women with isolated FL versus no FI/FL, and 2) women with FI versus no FL/FI. Age, race/ethnicity, self-reported general health, BMI, menopausal history (including hysterectomy, oophorectomy, and estrogen use), symptomatic pelvic disorders (organ prolapse and weekly urinary incontinence), and depression history (including selective serotonin reuptake inhibitor (SSRI) use) were included *a priori* in all models, as factors with the potential to confound the relationship between AI and sexual function.

In order to examine the impact of frequency/severity of FI on sexual function, additional logistic regression models were used to examine differences in sexual function by FI frequency among women reporting some FI in the previous 3 months. Multivariable logistic regression models compared sexual function outcomes among women with monthly and weekly FI versus less than monthly FI as the reference group, controlling for all of the same potential confounders described above. All analyses were performed using SAS statistical software Version 9.2 (SAS Institute, NC). All participants provided informed consent, and all study procedures were approved the institutional review boards of both the University of California San Francisco and the Kaiser Foundation Research Institute.

Results

Among the 2,269 women, the mean (\pm SD) age was 55 ± 9.2 years, 44% of the participants were white, 995 (44%) reported isolated FL, and 545 (24%) reported FI with or without FL (Table 1). Age, race/ethnicity, self-reported general health, BMI, menopausal status, hysterectomy, depression, SSRI use, symptomatic pelvic organ prolapse, and weekly urinary incontinence differed significantly among women by FI and FL status.

Overall, 63% of all women reported some sexual activity within the previous 3 months. Participation in sexual activity did not differ significantly among women with FI (61%), isolated FL (66%), and no FI/FL (62%) (p for heterogeneity = 0.06). Self-reported frequency of sexual activity, sexual desire and sexual satisfaction, however, did differ by FI and FL status, with women with FI more frequently reporting lower sexual desire and lower sexual satisfaction compared to women with isolated FL and women with no FI/FL (Table 2). Also, 24% women with FI described their physical health as limiting their sexual activity, compared to 15% of women with FL and 12% of women with no FI/FL. Among women who were sexually active in the prior 3 months, those with FI were more likely to report specific sexual problems including difficulties with arousal, lubrication, and orgasm, and pain with intercourse compared to women with isolated FL or no FI/FL (Table 2).

In multivariate analyses, women with FI had 41% greater odds of reporting low sexual desire, 56% greater odds of reporting low sexual satisfaction, and 65% greater odds of reporting limitation of sexual activity due to physical health, compared to women with no FI/FL (Table 3). However, women with FI were no less likely to report monthly sexually active than women with no FI/FL, after adjustment for potential confounders. No significant differences in sexual function were identified between women with isolated FL compared to women with no FI/FL (Table 3).

In multivariable analyses including sexually active women only, those with FI had an over two-fold increased odds of reporting problems with lubrication and pain with intercourse, and a 68% increased odds of reporting difficulty achieving orgasm, compared to those without FI/FL (Table 3). No significant differences in sexual arousal were detected among sexually active women with FI compared to no FI/FL, however. Women with isolated FL were more likely than women without FI/FL to report problems with lubrication, but did not differ with respect to their risk of other sexual problems (Table 3).

Of the 545 women that reported some FI in the past 3 months, 20% described FI episodes that occurred at least weekly, 22% described episodes that occurred monthly but not weekly, and 58% described episodes that occurred less than monthly. Women with weekly FI tended to report lower overall sexual satisfaction and greater limitation of sexual activity due to physical health, compared with women with monthly or less than monthly FI (Table 4). Greater frequency of FI was also associated with greater likelihood of feeling that bowel leakage resulted in having sex less frequently; however, greater frequency of FI was not associated with less-than-monthly sexual activity or being afraid of having sex (Table 4). Also, the prevalence of sexual problems such as difficulty with arousal, lubrication, orgasm, and pain did not differ significantly by FI frequency.

In multivariable analyses, women with weekly FI had an over two-fold increased odds of reporting that their physical health limited their sexual activity, and an over 80% increased odds of reporting low sexual satisfaction, compared to women with less than monthly FI (Table 5). Also, women with weekly FI were more than twice as likely to identify accidental bowel leakage as a cause of reduced sexual activity, compared to women with less than monthly FI (Table 5). Women with monthly (but less than weekly) FI were also more likely than women with less than monthly FI to report that physical health limited their sexual

activity in multivariable analyses, but did not differ significantly with respect to other sexual function outcomes (Table 5). No significant differences in frequency of sexual activity, level of sexual desire, and identification of FI as a reason for fearing sex were observed by FI frequency in multivariable analyses.

Discussion

In this cohort of community-dwelling, middle-aged and older women, anal incontinence did not prevent women from participating in sexual activity. In fact, the prevalence of monthly sexual activity was similar in women with FI, isolated FL, and no FI/FL, even after adjusting for demographic and clinical factors, including self-rated general health and other pelvic floor disorders. At the same time, our results indicate that women with FI are at considerable risk for experiencing decreased sexual quality of life. Women with FI were substantially more likely to report low sexual desire and low sexual satisfaction, as well as to identify physical health as a hindrance to sexual activity, independent of other demographic and clinical factors. Also, sexually active women with FI reported higher rates of difficulties with lubrication, achieving orgasm, and pain during intercourse.

Taken as a whole, these findings indicate that while sexual activity plays an important role in the everyday lives of women with AI, those with FI are at especially high risk for several forms of sexual dysfunction. Our study suggests that clinicians caring for women with FI should prioritize assessment of sexual problems that may be related to FI, and that clinical trials of new therapeutic interventions for FI should specifically evaluate impact on women's sexual function.

Our study is the first to evaluate the impact of anal incontinence symptoms on sexual function in community-dwelling women. Previous studies have commented on this relationship in patients recruited from specialty centers³ or in women after sphincteroplasty.^{5,6,8,9} Consistent with our findings suggesting that the majority of women with FI engage in sexual activity, a case control study (n=52) that evaluated sexual outcomes in women one year after sphincteroplasty identified 25 participants (17 cases and 8 controls) with some accidental bowel leakage and found that 73% of this group was sexually active.⁵ Additionally a study of 621 men and women recruited from specialty centers treating FI reported that 70% disagreed that FI had serious repercussions on their sexual life³. This study did not further define repercussion, however, and it is unclear whether it referred to level of sexual activity or the presence of sexual problems.

Among women with some FI, our study identified subtle differences in sexual function based upon the frequency of FI. Compared to women with less than monthly FI, women with weekly FI tended to report lower sexual satisfaction and greater limitation of sexual activity due to both physical health as well as accidental bowel leakage. These findings provide evidence that women with weekly or more frequent FI are at particular risk for lower sexual quality of life, including reduced participation in sex. This is in contrast to a retrospective study performed in women 5 years after sphincteroplasty, which failed to demonstrate a relationship between FI severity and sexual dysfunction. However, that study included only 41 participants with liquid or solid stool incontinence and 8 participants with flatal incontinence and thus may not have been large enough to demonstrate such associations.⁶

This study benefits from a large and ethnically-diverse sample of women who completed detailed measures of both sexual function and AI. There are, however, limitations to this research. First, this was a cross-sectional, observational study, and we were unable to examine longitudinal change in anal incontinence and sexual function over time, or provide

definitive evidence of causal relationships. However, it is unlikely that reverse causation exists where sexual dysfunction causes anal incontinence. Second, although our measures for both AI and sexual function have been used successfully in other health outcome studies, they were adapted to address a 3-month time period for the purposes of this research, and were not re-subjected to detailed psychometric testing. Research using other, validated measures of AI as well as other sensitive sexual function instruments may help confirm these findings.

In summary, in this large cross sectional study of ethnically-diverse, community-dwelling women, we found similar rates of sexual activity among those with and without symptoms of AI, including those with FI. However, women with FI symptoms in particular were at much higher risk for inferior sexual quality of life, both in terms of overall sexual satisfaction as well as with specific sexual problems. These results suggest that clinicians should specifically assess sexual function in women presenting with FI and allow patients to prioritize preservation and improvement of sexual function when weighting their therapeutic or management strategies.

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Appendix 1

Questions used to assess sexual activity, desire, satisfaction, and sexual problems

Concept	Question	Response options	Threshold for poor or worse function
Sexual activity, desire, & satisfaction (assessed in all women)			
Frequency of sexual activity	During the past 3 months, have you had any sexual activity, that is any activity that is arousing to you, including masturbation? Typically, how frequently did you have sexual activity	Less than monthly, monthly, weekly, daily	Less than monthly
Sexual desire or interest	During the past 3 months, how would you rate your level of sexual desire or interest?	Very high, high, moderate, low, very low, none	Low, very low or none
Overall sexual satisfaction	During the past 3 months, on average, how would you rate your overall level of sexual satisfaction?	Very satisfied, moderately satisfied, about equally satisfied and dissatisfied, moderately dissatisfied, very dissatisfied	Moderately dissatisfied or very dissatisfied
Physical health limits sexual activity	During the past 3 months, how much has your physical health limited your sexual activity, that is any activity that is arousing to you, including masturbation?	Not at all, slightly, moderately, quite a bit, extremely	Moderately, quite a bit or extremely
Specific sexual problems (assessed in sexually active women)			
Difficulty with arousal	During the past 3 months, how would you rate your level of arousal (turn on)	Very high, high, moderate, low, very low or none	Low, very low or none

Concept	Question	Response options	Threshold for poor or worse function
	during sexual activity or intercourse?		
Difficulty with lubrication	During the past 3 months, how difficult was it to become lubricated (wet) during sexual activity or intercourse?	Not difficult, slightly difficult, difficult, very difficult, extremely difficult or impossible	Difficult, very difficult, extremely difficult or impossible
Difficulty with orgasm	During the past 3 months, when you had sexual stimulation or intercourse, how difficult was it for you to reach orgasm (climax)?	Not difficult, slightly difficult, difficult, very difficult, extremely difficult or impossible	Difficult, very difficult, extremely difficult or impossible
Pain/discomfort during vaginal intercourse	During the past 3 months, how would you rate your level of discomfort or pain during or following vaginal penetration?	Very low or none at all, low, moderate, high, very high, I did not attempt intercourse or vaginal penetration	Moderate, high or very high

Table 1

Demographic and clinical characteristics of all participants by anal incontinence symptom status

Characteristic	Fecal incontinence (n=545)	Flatal incontinence only (n=995)	No fecal or flatal incontinence (n=729)	P †
Age in years, mean ± SD	56.0 ± 9.2	55.0 ± 9.1	54.3 ± 9.4	0.006
Race/ethnicity [‡] , n (%)				<0.001
Caucasian	294 (53.9)	438 (44.0)	274 (37.6)	
African American	79 (14.5)	194 (19.5)	170 (23.3)	
Asian/Pacific Islander	70 (12.8)	193 (19.4)	138 (18.9)	
Latina	97 (17.8)	162 (16.3)	142 (19.5)	
Native American/Other	5 (0.9)	8 (0.8)	5 (0.7)	
General health and medication history, n (%)				
General health status				<0.001
Poor or fair	71 (13.1)	83 (8.3)	57 (7.8)	
Good	267 (49.1)	422 (42.4)	303 (41.6)	
Very good or excellent	206 (37.9)	490 (49.2)	369 (50.6)	
Body mass index in kg/m ² , mean ± SD	30.7 ± 8.1	28.8 ± 7.0	29.4 ± 7.3	<0.001
Self-reported depression diagnosis	145 (26.6)	176 (17.7)	93 (10.8)	<0.001
Current estrogen use	77 (14.4)	136 (13.9)	94 (13.1)	0.79
Current selective serotonin reuptake inhibitor use	80 (14.7)	85 (8.5)	41 (5.6)	<0.001
Gynecological history, n (%)				
Postmenopausal [‡]	431 (79.1)	727 (73.1)	492 (67.5)	<0.001
Prior hysterectomy	146 (26.8)	238 (23.9)	149 (20.4)	0.03
Prior bilateral oophorectomy	32 (4.4)	54 (5.4)	29 (5.3)	0.60
Symptomatic pelvic organ prolapse	29 (5.3)	31 (3.1)	13 (1.8)	0.002
Weekly urinary incontinence	231 (42.6)	252 (25.4)	126 (17.4)	<0.001

Data are listed as number (percentage) or mean ± standard deviation.

Data were missing for 1 participant for general health status, 1 for depression, 39 for current estrogen use, and 5 for menopausal status.

[‡]Postmenopausal was defined as no natural menses in at least 1 year.

P for heterogeneity derived from chi-square or ANOVA tests, as appropriate.

Table 2a

Sexual activity, desire and satisfaction among all women, by anal incontinence symptom status

Sexual function characteristic, n (%)	Fecal incontinence (n=545)	Flatal incontinence (n=995)	No fecal or flatal incontinence (n=729)	P †
Less than monthly sexual activity	296 (55.4)	475 (48.5)	349 (49.1)	0.03
Low sexual desire	348 (64.6)	503 (51.0)	360 (49.9)	<0.001
Low sexual satisfaction	145 (30.8)	165 (18.8)	106 (17.0)	<0.001
Physical health limits sexual activity	127 (23.8)	149 (15.2)	87 (12.3)	<0.001

Table 2b

Specific sexual problems among sexually active women, by anal incontinence symptom status

Sexual function characteristic, n (%)	Fecal incontinence (n=323)	Flatal incontinence (n=652)	flatal incontinence (n=442)	p [‡]
Low sexual arousal	68 (21.4)	94 (14.6)	57 (13.1)	0.003
Difficulty with lubrication	96 (30.3)	124 (19.4)	49 (11.3)	<0.001
Difficulty with orgasm	77 (24.3)	119 (18.5)	57 (13.1)	<0.001
Pain/discomfort with intercourse	61 (23.3)	79 (13.9)	39 (9.9)	<0.001

Data are listed as number (percentage). Data were missing for 45 participants for sexual activity within last 3 months, 22 for sexual desire, 297 for sexual satisfaction, 47 for whether physical health limits sexual activity, 17 for sexual arousal, 25 for difficulty with lubrication, 21 for difficulty with orgasm, and 193 for pain with intercourse.

[‡]P for heterogeneity derived from chi-square or ANOVA tests, as appropriate.

Table 3a

Multivariate association between anal incontinence status and sexual function among all women

Sexual function characteristic	Fecal incontinence versus no fecal/flatal incontinence (n=545)		Isolated flatal incontinence versus no flatal/fecal incontinence (n=995)	
	AOR* (95% CI)	P	AOR* (95% CI)	P
Less than monthly sexual activity	1.04 (0.81 – 1.35)	0.74	0.92 (0.74 – 1.14)	0.44
Low sexual desire	1.41 (1.10 – 1.82)	0.007	0.97 (0.79 – 1.19)	0.78
Low sexual satisfaction	1.56 (1.14 – 2.12)	0.005	1.03 (0.78 – 1.36)	0.84
Physical health limits sexual activity	1.65 (1.19 – 2.28)	0.003	1.13 (0.84 – 1.52)	0.42

Table 3b

Multivariate association between continent status and specific sexual problems among sexually active women

Sexual function characteristic	AOR* (95% CI)	P	AOR* (95% CI)	P
Low sexual arousal	1.48 (0.98 – 2.24)	0.06	1.05 (0.73 – 1.52)	0.78
Difficulty with lubrication	2.66 (1.76 – 4.00)	<0.001	1.61 (1.11 – 2.34)	0.01
Difficulty achieving orgasm	1.68 (1.12 – 2.51)	0.01	1.37 (0.96 – 1.95)	0.08
Pain/discomfort with intercourse	2.44 (1.52 – 3.91)	<0.001	1.33 (0.87 – 2.04)	0.18

Results are from separate logistic regression models for each sexual function outcome.

* The logistic regression model adjusted for age, race/ethnicity, self-reported general health, BMI, menopausal history, symptomatic pelvic disorders and depression history.

Table 4a

Sexual activity, sexual function, and the perceived impact of fecal incontinence on sexual experience among women with fecal incontinence, by incontinence frequency

Sexual function characteristic, n (%)	At least weekly (n=109)	Monthly but not weekly (n=119)	Less than Monthly (n=317)	P [¥]
Less than monthly sexual activity	66 (61.7)	56 (47.5)	74 (56.3)	0.09
Low sexual desire	79 (73.8)	76 (65.0)	193 (61.3)	0.06
Low sexual satisfaction	45 (47.9)	26 (26.0)	74 (26.7)	<0.001
Physical health limits sexual activity	37 (34.9)	33 (28.0)	57 (18.4)	<0.001
Less sex due to bowel leakage	26 (25.5)	16 (14.0)	27 (8.9)	<0.001
Fear of sex due to bowel leakage	14 (13.6)	10 (8.7)	25 (8.2)	0.26

Table 4b

Specific sexual problems among sexually active women with fecal incontinence, by incontinence frequency

Sexual function characteristic, n (%)	At least weekly (n=52)	Monthly but not weekly (n=76)	Less than monthly (n=195)	p [¥]
Low sexual arousal	15 (29.4)	14 (18.4)	39 (20.4)	0.29
Difficulty with lubrication	19 (38.0)	22 (28.9)	55 (28.8)	0.43
Difficulty achieving orgasm	16 (31.4)	18 (24.0)	43 (22.5)	0.42
Pain/discomfort with intercourse	14 (35.0)	15 (23.4)	32 (20.3)	0.14

Data are listed as number (percentage).

Data were missing for 13 participants for sexual activity within last 3 months, 6 for sexual desire, 74 for sexual satisfaction, 74 for whether physical health limits sexual activity, 5 for sexual arousal, 6 for difficulty with lubrication, 6 for difficulty with orgasm, and 61 for pain with intercourse.

[¥]P for heterogeneity derived from chi-square or ANOVA tests, as appropriate.

Table 5

Multivariate association between frequency of fecal incontinence and sexual function

	Monthly versus less than monthly (N=119)		At least weekly versus less than monthly (N=109)	
Sexual function characteristic	AOR* (95% CI)	P	AOR* (95% CI)	P
Less than monthly sexual activity	0.62 (0.39 – 0.996)	0.05	0.83 (0.50 – 1.38)	0.48
Low sexual desire	1.16 (0.71 – 1.90)	0.55	1.30 (0.76 – 2.24)	0.34
Low sexual satisfaction	0.90 (0.51 – 1.59)	0.73	1.86 (1.08 – 3.20)	0.03
Physical health limits sexual activity	1.88 (1.10 – 3.24)	0.02	2.14 (1.23 – 3.73)	0.007
Less sex due to bowel leakage	1.49 (0.73 – 3.01)	0.27	2.77 (1.43 – 5.37)	0.003
Fear of sex due to bowel leakage	0.84 (0.36 – 1.96)	0.69	1.38 (0.65 – 2.95)	0.40

Results are from separate logistic regression models for each sexual function outcome.

* The logistic regression model adjusted for age, race/ethnicity, self-reported general health, BMI, menopausal history, symptomatic pelvic disorders and depression history.