

GYNECOLOGY

Functional disability among older women with fecal incontinence

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OBJECTIVE: The prevalence of functional disability for basic activities of daily living (ADLs) in older women with fecal incontinence (FI) is not well characterized. Our objective was to determine the prevalence of functional disability among community-dwelling older women with FI.

STUDY DESIGN: We conducted a secondary database analysis of the 2005-2006 National Social Life, Health and Aging Project, a cross-sectional study of community-dwelling older adults that had been conducted by single in-home interviews. FI was defined as an affirmative answer to the question, "Have you lost control of your bowels (stool incontinence or anal incontinence)?" with a frequency of "at least monthly." We then examined functional status. Women were asked about 7 basic ADLs. Statistical analyses with percentage estimates and 95% confidence intervals (CIs) were performed.

RESULTS: We included 1412 women in our analysis. FI, at least monthly, was reported by 5.5% of community-dwelling older women ($n = 77$); 63.2% (95% CI, 50.1–76.4) of the women with FI reported difficulty or dependence with ≥ 1 ADLs, and 31.2% (95% CI,

18.9–43.6) of the women specifically reported difficulty or dependence with using the toilet. After adjustment for age category, race/ethnicity, education level, women with FI had 2.6 increased odds (95% CI, 1.26–5.35) of difficulty or dependence compared with women with no FI. Other significant risk factors for increased functional difficulty/dependence included obesity (body mass index, ≥ 30 kg/m²) and depressive symptoms.

CONCLUSION: Consistent with other large epidemiologic studies, we found monthly FI was reported by 5.5% of older women ($n/N = 77/1412$). More than 60% of community-dwelling older women with FI report functional difficulty or dependence with ≥ 1 ADL and specifically; more than 30% of women with FI report difficulty or dependence using/reaching the toilet. Because of the high prevalence of functional disability in older women with FI, we propose that initial evaluation and treatment of FI may be improved by considering functional status.

Key words: activity of daily living, fecal incontinence, functional disability

Cite this article as: Erekson EA, Ciarleglio MM, Hanissian PD, et al. Functional disability among older women with fecal incontinence. *Am J Obstet Gynecol* 2015;212:327.e1-7.

Fecal incontinence (FI) is an embarrassing condition that impacts multiple aspects of older women's lives. FI is defined as the uncontrolled passage of fecal material greater than once per month that recurs for ≥ 3 months by ROME III criteria.¹ Moderate-to-severe FI is reported by 2.8-15.3% of women ≥ 65 years in the United States.^{2,3} FI is associated with increased depressive

symptoms, poor self-rated health, and social isolation.⁴ The prevalence of FI increases with increasing age.³ Other risk factors for FI in women include smoking, increasing body mass index, and diseases that increase diarrhea and rectal urgency, such as inflammatory bowel disease and irritable bowel syndrome.^{1-3,5-7}

In the gastroenterology literature, causes of FI can be divided into organic

and functional.¹ Organic causes for FI include disruptions in the muscles or nerves of the anal sphincter complex from obstetric trauma and abnormal innervations of the brain (eg, stroke or dementia) and spinal cord or peripheral neuropathies.^{2,3} Many gastrointestinal disorders are termed *functional* or *idiopathic* when exact organic causes of these disorders are not known and

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Received Aug. 15, 2014; revised Sept. 19, 2014; accepted Oct. 9, 2014.

Supported in part by a grant from the American Urogynecologic Society Foundation. E.A.E. was supported through a career development grant from the Claude D. Pepper Older Americans Independence Center, Yale University School of Medicine (#P30AG021342 NIH/NIA). The National Social Life, Health and Aging Project was conducted by a grant from the National Institute on Aging (NIA #R01 AG021487).

The authors report no conflict of interest.

Presented at the 34th Annual Scientific Meeting of the American Urogynecologic Society, Las Vegas, NV, Oct. 17-19, 2013.

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0002-9378/\$36.00 • © 2015 Elsevier Inc. All rights reserved. • <http://dx.doi.org/10.1016/j.ajog.2014.10.015>

refer to disorders of stool consistency and rectal urgency.^{1-3,8}

Functional limitations refer to physical and/or cognitive difficulties and also increase with increasing age. Functional dependence is the inability to perform an activity of daily living (ADL), which includes dressing, bathing, eating, toileting, and getting in and out of bed without assistance.⁹ Functional dependence has been demonstrated to lead to increased risk of adverse outcomes of aging, which includes inpatient hospitalization, admission to a skilled nursing facility, and increased mortality rates in older adults.¹⁰ Adults can also be independent but report difficulty in performing ADLs. Difficulty in performing ADLs independently is an intermediate step in the functional disability spectrum but has been demonstrated to be predictive of poor health outcomes.¹¹ In addition to functional disabilities, compromised mobility (which is measured by walking speed, use of assistive devices, and number of falls) has also been shown to have strong and consistent associations with adverse outcomes of aging.^{10,12,13}

Incontinence, both urinary and FI, has also been associated with adverse outcomes of aging and attributed to play a critical role in the decision for admission to a skilled nursing facility.¹⁴⁻¹⁶ Additionally, self-reported decreased physical activity and poor mobility are associated with FI in epidemiologic studies in adults,^{2,3,17} which suggests another aspect of functional causes of FI, in addition to disorders of stool consistency and rectal urgency, are the functional limitations that prevent a person from reaching or using the toilet. The prevalence of functional disability for basic ADL in older women with FI is not well-characterized. Our objective was to determine the prevalence of functional disability and to characterize the type of disability among community-dwelling older women with FI, with the use of a nationally representative sample.

METHODS

We conducted a secondary database analysis of the National Social Life, Health and Aging Project (NSHAP), a

cross-sectional cohort of community-dwelling men and women in the United States between the ages of 57-85 years who were surveyed in 2005-2006.¹⁸ The NSHAP was conducted to examine social networks, overall health, and sexual practices of older adults.¹⁹ Adults were targeted for possible participation in the NSHAP study from a previous population-based study, the Health and Retirement Study.²⁰ The overall weighted survey response rate of the NSHAP was 75.5%. Data were collected from an in-home interview that was conducted in English or Spanish by trained research personal who used computer-assisted personal interview methods.²¹ The 2005-2006 NSHAP dataset is maintained at the Interuniversity Consortium for Political and Social Research at the University of Michigan, and we formally requested use of this data for this secondary database analysis. Written exemption for this study was obtained from the Yale University Institutional Review Board because this work involved research of an existing dataset from a public source.

For this analysis, we chose to focus specifically on women because the risk factors and causes of FI are different between sexes. Women were excluded if they had missing data for questions on incontinence ($n = 98$). All women were asked, "How frequently...have you lost control of your bowels (stool incontinence or anal incontinence)?" Women could respond "daily," "a few times per week," "a few times per month," "a few times per year," and "none." Women were categorized as having FI if they answered with frequency consistent with monthly symptoms that included "every day," "a few times a week," or "a few times per month." Women were categorized as having no FI if they answered "a few times per year" or "none." We chose monthly loss of control of bowels to represent FI consistent with ROME III criteria and accepted definitions of FI in epidemiologic studies.¹

We then categorized functional status. Women were asked about 7 basic ADLs that included walking across a room, walking 1 block, dressing, bathing, eating, toileting, and getting in and out of

bed.²² Women's functional status for each ADL was categorized into 1 of 3 categories: independent, independent with difficulty (if they reported difficulty with performing an ADL but did not require assistance), and dependent (if they reported inability to perform an ADL without assistance).¹¹ The composite functional status measure combined the responses of all 7 ADLs as a single variable. Consistent with the categorization proposed by Gill et al,¹¹ women were placed into 1 of 3 categories for composite functional status: independent, functional difficulty, and functional dependence. Women who could not perform ≥ 1 ADL without assistance were categorized as dependent. Women who reported difficulty in the performance of ≥ 1 ADLs, without reporting dependence on others to perform any ADL, were categorized as independent with difficulty. Women were categorized as independent if they reported no difficulty or dependence in the performance of any of the 7 ADLs.

We also analyzed compromised mobility using multiple measurements. We first examined the results of a timed "Get up and Go" test that was conducted by direct observation in the participant's home at the time of the single NSHAP in-person interview. The timed "Get up and Go" test includes the total time it takes a woman to rise from a seated position without using armrest, walk 3 meters, turn around, return 3 meters, and sit-down and is the preferred measurement of mobility advocated by the American Geriatric Society.²³ We defined compromised mobility as a total "Get up and Go" test time of >12 seconds. Additionally, we examined other measurements of mobility that included whether a woman was observed to walk unsteadily during the timed test and whether she was observed to use a cane or other assistive walking device. Finally, we examined self-reported measurements of mobility that included the frequency of physical activity in the last month and the number of falls in the last year.

Demographics that included age category (57-64 years, 65-74 years, and

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