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Urinary Incontinence and Psychological Distress in Community-Dwelling Older African Americans and Whites

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Abstract

OBJECTIVES—To compare the association between urinary incontinence (UI) and psychological distress in older African Americans and whites.

DESIGN—A population-based longitudinal survey.

SETTING—Continuing participants in a study of community-dwelling adults who were initially living in East Baltimore in 1981.

PARTICIPANTS—African Americans and whites aged 50 and older at follow-up interviews performed between 1993 and 1996 for whom complete data were available ($n = 747$).

MEASUREMENTS—Participants were classified as incontinent if any uncontrolled urine loss within the 12 months before the interview was reported. Psychological distress was assessed using the General Health Questionnaire (GHQ).

RESULTS—African Americans with UI were more likely to experience psychological distress as measured using the GHQ than were African Americans without UI (unadjusted odds ratio = 4.22, 95% confidence interval = 1.72–10.39). In multivariate models that controlled for age, sex, education, functional status, cognitive status, and chronic medical conditions, this association remained statistically significant. The association between UI and psychological distress did not achieve statistical significance in whites.

CONCLUSION—The effect of UI on emotional well-being may be greater for African Americans than for whites.

Keywords

urinary incontinence; race; psychological distress; depression

Urinary incontinence (UI) is a common condition in older adults. Although sampling and methodological differences account for variability in estimates from surveys,¹ the prevalence of UI in community-dwelling older adults has been reported to be about 10% for men and 20% for women.^{2,3} African-American women appear to be less likely to experience UI than white women.^{4,5} In a large study of an ethnically diverse sample of women, the prevalence of UI was lowest in African American women,⁶ but older African-American women may also have

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different presenting symptoms of UI, different disorders causing the UI, and different personal characteristics associated with UI.^{5,7}

Despite the lower prevalence of UI in certain ethnic groups, there may be ethnic differences in the effect of UI on daily life. Overall, the evidence for the negative emotional consequences of UI has been conflicting. Some studies have suggested an association between UI and symptoms of depression as well as anxiety.^{8–15} Other studies found no association between UI and depression¹⁶ or that UI was only weakly related to psychological well-being.^{17,18} One study found incontinent respondents who were younger, male, less educated, lower in social desirability, in poorer health, or losing greater quantities of urine were slightly more likely to report psychological distress. Psychological distress associated with UI was not more likely in ethnic minorities, but fewer than 10% of individuals with UI in that sample were African American.¹⁸ However, a study with an ethnically diverse sample found that Hispanic and African-American women experienced a greater level of effect on daily life with increasing severity of UI than white women.¹⁹ Another study on a convenience sample of college-educated African-American women who reported UI found that 20% said that UI bothered them a great deal, and 8.5% reported behavioral modifications such as avoiding exercise or decreasing fluid intake.²⁰ Furthermore, the strength of any association between UI and depression may depend on the instrument used to measure depression.²¹

The aim of this paper was to compare ethnic differences in the association between UI and psychological distress in older African Americans and whites. The hypothesis was that, although there appears to be a decreased prevalence of UI in African Americans, UI may have a greater effect on the lives of African Americans. This investigation differed from previous investigations in the association between UI and psychological distress because of the specific focus on ethnicity. This sample consisted of community-dwelling adults, thus increasing generalizability. In addition, this investigation used a standard measure of psychological distress and adjusted the measures of association for potentially influential characteristics.

METHODS

The Epidemiologic Catchment Area Program

The Epidemiologic Catchment Area (ECA) program estimated the incidence and prevalence of psychiatric disorders for more than 20,000 persons in population samples from five cities in the United States. The original sample from Baltimore, Maryland, included 3,481 individuals selected by probability sampling methods from three catchment areas in East Baltimore. In addition, all persons in a house-hold aged 65 and older were interviewed to oversample the elderly at the Baltimore site. ECA data were collected in highly structured interviews conducted in a private place, usually the respondent's home. All interviewers were lay professionals who received specific training in all assessments. For the follow-up study in Baltimore, an attempt to retrace and re-interview the entire cohort was made from 1993 to 1996. The details of the follow-up study and the tracing process have been described previously.²² The participants gave permission for future follow-up at the baseline interview, and the committee on human research of the Johns Hopkins University School of Hygiene and Public Health reviewed and approved the protocol. For this investigation, African Americans and whites who were aged 50 and older during the 1993–1996 interviews were selected.

Sociodemographic Characteristics

Age, sex, education level, and ethnicity were self-reported. Information on ethnicity was obtained by asking, "Would you please look at this card and give me the letter of the group that best describes your racial background?" The respondent then selected from a list: American

Indian, Alaskan Native, Asian, Pacific Islander, Black—Not Hispanic, Hispanic, White—Not Hispanic.

Urinary Incontinence

Information on UI was obtained using self-report. Participants were asked, “Have you ever had any difficulty in controlling your water, that is, losing your urine or having trouble getting to the bathroom on time?” If any uncontrolled urine loss was reported within the 12 months before the interview, persons were classified as having UI. Persons were classified as continent if they denied uncontrolled urine loss within the 12 months before the interview.

Psychological Status

In the follow-up interviews between 1993 and 1996, the General Health Questionnaire (GHQ) was used to measure psychological distress.²³ The scoring for the GHQ was performed using the conventional method, which uses a score of 4 or more to indicate psychological distress. The conventional method has been used in previous studies from the ECA (e.g.,¹⁴). Compared with a standardized psychiatric examination in the Baltimore ECA, the GHQ was about 80% specific and 75% sensitive for depression.²⁴

Medical Conditions

Participants were asked questions about their physical health. Individuals were asked if they had ever had diabetes mellitus, heart trouble, arthritis, stroke, or cancer. If an individual answered positively to any of these questions, that individual was considered to have a medical comorbidity.

Other Covariates

Self-care activities used to assess activities of daily living (ADLs) were getting to bed by oneself, dressing and undressing, taking a bath or shower, using the toilet, and using a knife or fork to cut up food. Complex activities used to assess instrumental activities of daily living (IADLs) were preparing meals, cleaning house, using the telephone, keeping track of money and bills, and being able to get together with friends. An inability to perform at least one activity without help consistent with previous ECA reports constituted ADL or IADL impairment.¹⁴ Cognitive status was assessed using the Mini-Mental State Examination (MMSE).²⁵ MMSE scores were analyzed as a continuous variable.

Study Sample

For the follow-up study in Baltimore, the original cohort of 3,481 persons was traced. Of these, 848 had died, 415 were not located, and 298 refused to participate in the follow-up study. In all, 1,920 were contacted and reinterviewed during 1993–1996 (73% of the survivors of the original cohort). In the case of respondents who were too ill or impaired to interview, an informant was enlisted to provide current information on functional and cognitive status. For respondents who required an informant interview, and for a limited number of respondents who completed only a short version of the interview instrument, information on UI was not available. This study sample included 822 persons aged 50 and older who had complete information on UI. Thirty-four people were excluded who did not identify themselves as “Black—Not Hispanic” or “White—Not Hispanic.” In addition, 41 people were excluded because participants did not know whether they had been incontinent in the previous year, leaving a sample size of 747 for this analysis.

Analytic Strategy

Data analysis was performed using Stata 7.0 for Windows (Stata Corp., College Station, TX). The analytic plan proceeded in two phases. The first phase consisted of calculating descriptive statistics for the African-American and white participants and the appropriate means and frequencies for each variable. Comparisons between groups of participants were made using chi-square or *t* tests as appropriate for categorical data or differences in means. The second phase consisted of performing multivariate analyses using the 1994 interview data. All multivariate models were adjusted for age, sex, education level, ADL impairment, IADL impairment, MMSE, and chronic health conditions by including them in the final models. The measure of association was the odds ratio. Goodness of fit was assessed for all multivariate models using the Hosmer-Lemeshow test.²⁶

RESULTS

Baseline Characteristics

The mean age of the study sample was 67.2, and 64% of the participants were women. One hundred forty-eight (19.8%) reported having UI during the year preceding the interview. Of 747 participants, 540 (72.3%) identified themselves as white and 207 (27.7%) identified themselves as African American. Sociodemographic characteristics, functional status, cognitive status, presence of chronic medical conditions, continence status, and psychological status of African Americans and whites were compared (Table 1). There was no difference in the proportion of persons with significant psychological distress between African Americans and whites ($P = .60$). African Americans were more likely to be younger ($P < .001$) and female ($P = .007$) and have less than a high school education ($P = .001$). There was no difference with respect to ethnicity in ADLs and IADLs ($P = .12$ and $P = .74$, respectively). African Americans in this sample were more likely to have lower scores on the MMSE ($P < .001$) and less likely to report the presence of cancer ($P = .002$). Twenty-two percent of whites reported UI, compared with 13% of African Americans ($P = .004$).

UI and Psychological Distress

The association between UI and psychological distress was evaluated using multiple logistic regression. The results for these analyses are presented in Table 2. A goodness-of-fit diagnostic and plots of the deviance residuals versus fitted values predicted by the model showed that no single observation influenced the coefficient estimates appreciably. Whites with UI were no more likely to have psychological distress as measured using the GHQ than were those without UI. African Americans with UI were more likely to have psychological distress as measured using the GHQ than were those without UI. These findings remained significant in African Americans after adjusting for age, sex, education level, ADL impairment, IADL impairment, MMSE, and chronic health conditions.

DISCUSSION

In this large community sample, African Americans with UI were found to have higher rates of psychological distress than those without UI. This association persisted even after controlling for potentially influential variables. The association between UI and psychological distress is consistent with those found in other studies that have shown an association between UI and depressive symptoms,^{8–14} but an association between UI and psychological distress was not found in whites. The present study therefore suggests that the association between UI and psychological distress may differ depending on ethnicity.

The results must first be considered in the context of some potential study limitations. First, this study did not have prospective data, so this investigation was unable to fully delineate

temporal relationships between psychological distress and UI. Second, there was only a limited measure of UI. Until recently, there was no generally accepted questionnaire for the assessment of UI.^{27,28} Third, there was no information on the type of UI (urge, stress, mixed, overflow, or functional), and therefore it was not possible to make any conclusions concerning different types of UI. Other studies have found differences in types of UI between African Americans and whites.^{5,7,29} Fourth, African Americans and whites who participated in the Baltimore follow-up of the ECA Program may not be representative of African Americans and whites in the general population. Survivorship bias according to unmeasured health variables may have resulted in African Americans in the sample being healthier relative to the African Americans in the population than were whites in the sample relative to the whites in the population. Fifth, there are no data in this study on body mass, which is a risk factor for severity of UI,¹⁹ and therefore this investigation was unable to adjust for body mass as a potentially influential variable. Sixth, the ethnicity of the interviewer could have affected the tendency to report certain symptoms in unknown ways. It is possible that African Americans were reluctant to report certain symptoms to a white interviewer or that white participants were reluctant to report certain symptoms to an African American interviewer. Finally, there is the potential for selection bias and for all the sources of error associated with retrospective interview data that have been described previously.³⁰

Nonetheless, despite limitations, the results deserve attention because this paper attempted to further characterize the relationship between UI and psychological distress, with a focus on ethnicity. This information is important because it could alert healthcare providers to the importance of UI in African Americans. It has been pointed out that, although UI has important medical and social implications and affects all levels of society, the data on racial and ethnic trends are sparse.²⁹

The aim of this study was to understand whether the association between UI and psychological distress differs in any significant way between African Americans and whites. In this sample, African Americans with UI were found to have higher rates of psychological distress than African Americans without UI. The data are consistent with a study²⁰ that found a large and significant effect of UI in a group of middle-class, highly educated African-American women. The data are also consistent with another study¹⁹ that found greater levels of distress in African-American women with increasing severity of UI than in white women, although why African Americans and whites would differ in the association between UI and psychological distress is unclear. The association between UI and psychological distress does not appear to be straightforward.

One explanation for the findings of this study is that the epidemiology and pathophysiology of UI differs between various ethnic groups. In large studies on the prevalence of UI, African-American women consistently report a lower prevalence.^{4,6} Studies that have examined potential ethnic differences by comparing clinical and urodynamic indices between African-American and white women have found lower rates of genuine stress incontinence but higher rates of detrusor instability in African-American women.^{5,7,29} A group of investigators suggested that there might be a difference in the susceptibility to develop UI between different ethnic groups, although the reason for this difference has yet to be identified.⁵ Any differences in prevalence or pathophysiology of UI based on ethnicity might influence the association between UI and psychological distress in African Americans and whites.

Another explanation for the findings of this study might relate to barriers to evaluation and treatment of UI. A real or perceived lack of access to medical care or lack of awareness of available treatment of UI in African Americans could result in an increased association between UI and psychological distress. It is also conceivable that there might be lower rates of screening of UI on the part of healthcare providers in patients of specific ethnic groups. If African

Americans are evaluated and treated less consistently for UI than whites, this might help explain ethnic differences in the association between UI and psychological distress.

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Table 1

Sociodemographic Variables, Functional Status, Physical Disorders, Continence Status, and General Health Questionnaire (GHQ) Status of Persons Aged 50 and Older by Ethnicity

Parameter	White (n = 540)	African American (n = 207)	P-value
Sociodemographic variables			
Age, mean $\pm$ SD	68.2 $\pm$ 11.0	64.5 $\pm$ 10.0	<.001
Women, n (%)	329 (60.9)	148 (71.5)	.007
Education less than high school, n (%)	293 (54.3)	139 (67.2)	.001
Functional status			
ADL status impaired, n (%)	10 (1.9)	8 (3.9)	.11
Instrumental ADL status impaired, n (%)	38 (7.0)	16 (7.7)	.74
Mini-Mental State Examination score, mean $\pm$ SD	27.6 $\pm$ 2.6	25.6 $\pm$ 3.6	<.001
Chronic health conditions, n (%)			
Diabetes mellitus	77 (14.3)	35 (16.9)	.36
Heart trouble	148 (27.4)	55 (26.6)	.82
Arthritis	276 (51.1)	117 (56.5)	.19
Stroke	44 (8.2)	15 (7.3)	.68
Cancer	78 (14.4)	13 (6.3)	.002
Urinary incontinence status, n (%)			
Not incontinent	419 (77.6)	180 (87.0)	.004
Incontinent	121 (22.4)	27 (13.0)	.004
Psychological status, n (%)			
Psychological distress	92 (17.0)	32 (15.5)	.60

Note: Data gathered from the Baltimore, Maryland Epidemiologic Catchment Area Program Follow-up, 1994.

P-values given for comparison of groups with chi-square or *t*-tests as appropriate.

SD = standard deviation; ADL = activity of daily living.

Table 2

Association Between Urinary Incontinence and Psychological Distress According to Ethnicity in Persons Aged 50 and Older (N = 747)

Ethnicity	Crude	Adjusted*
	Odds Ratio (95% Confidence Interval)	
White (n = 540)	1.28 (0.76–2.14)	1.07 (0.62–1.84)
African American (n = 207)	4.22 (1.72–10.39)	5.60 (1.88–16.67)

Note: Data gathered from the Baltimore, Maryland Epidemiologic Catchment Area Program Follow-up, 1994.

* Adjusted for age, sex, education level, activities of daily living impairment, instrumental activities of daily living impairment, Mini-Mental State Examination score, and chronic health conditions.