

The Racial Distribution of Female Pelvic Floor Disorders in an Equal Access Health Care System

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Purpose: We examined ethnic differences in female pelvic disorders in an equal access health care system.

Materials and Methods: An electronic medical record review was performed for patients with pelvic floor disorders at a military female pelvic medicine and reconstructive surgery division for a 1-year period. Primary diagnosis codes and patient reported race were reviewed.

Results: Mean \pm SD cohort age was 55 ± 16.3 years. A total of 720 patients were identified, of whom 68.8% were white and 18.6% were black. Pelvic organ prolapse was the primary diagnosis in 34.2% of the women, while 19.7% had stress urinary incontinence and 10.8% had urge urinary incontinence. There was no difference in the prevalence of prolapse between black and white women. However, of patients with incontinence there was a statistically significant difference with urge incontinence in more black women (51.2%) and stress incontinence in more white women (66.2%) (chi-square $p < 0.05$).

Conclusions: There is a similar ethnic distribution of pelvic organ prolapse in an equal access health care system. Of women with incontinence there was a higher prevalence of urge urinary incontinence in black women and a higher prevalence of stress urinary incontinence in white women.

Key Words: urinary incontinence, prolapse, epidemiology, continental population groups, female

PELVIC floor disorders such as UI and POP are common in women. It is estimated that an American woman is at 11% risk for undergoing at least 1 surgical procedure for these conditions during her lifetime.¹ Many more women are estimated to have these conditions and yet do not seek surgical care.² Several studies have been done to investigate racial differences in the distribution of pelvic floor disorders in women.³⁻¹⁰

Studies which have investigated urinary incontinence prevalence by

race differ somewhat in their results.^{3,9,10} In a population based study in Michigan Fenner et al found that white women report more SUI and black women report more UUI.³ Thom et al found that of members enrolled in the Kaiser Permanente Medical Care Program of Northern California Hispanic women have the highest prevalence of weekly incontinence compared to Asian, black and white nonHispanic women.⁹ They also found a higher prevalence of weekly SUI in Hispanic and white

Abbreviations and Acronyms

AHLTA = Armed Forces Longitudinal Technology Application

BMI = body mass index

CHCS 1 = Composite Health Care System

OAB = overactive bladder

POP = pelvic organ prolapse

SUI = stress urinary incontinence

UI = urinary incontinence

UUI = urgency UI

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Study was approved under exempt status by the Walter Reed Army Medical Center institutional review board.

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women compared to Asian or black women. In addition, they noted no difference in the prevalence of UUI by race after adjusting for other factors. In a study based on a sample selected for racial diversity in Boston Tennstedt et al observed that white women reported more SUI and UUI, and black women reported more mixed UI.¹⁰ Groups that have looked primarily at urodynamic data have noted an increase in urodynamic stress incontinence in white women compared to black women and an increase in nonneurogenic detrusor overactivity in black women compared to white women.^{4,6} In 1 study in which symptoms at presentation and ultimate diagnosis were compared white women had more stress incontinence symptoms than Hispanic women.⁷ However, after a diagnostic evaluation there was no statistically significant difference in incontinence diagnoses between the 2 groups.

There is also variation in the reported ethnic distribution of POP. Studies have demonstrated that the prevalence of POP is highest in Hispanic women and lowest in black nonHispanic women.^{5,7} Race and socioeconomic status have been shown to be risk factors for POP.¹¹

The prevalence of surgical therapy for pelvic floor disorders shows even larger differences when examined by race. A study of data from the National Hospital Discharge Survey from 1979 to 1997 demonstrated that 81% of the women undergoing surgery for POP were white and 3% were black.¹² A more recent study from the 2003 National Hospital Discharge Survey showed that 68% of surgical procedures for POP were performed in white women, whereas only 4% were performed in black women.¹³ The rate of surgery for POP was 5.6/10,000 black women and 14.8/10,000 white women. Another study of data from the National Survey of Ambulatory Surgery from 1994 to 1996 demonstrated a similar racial disparity with regard to outpatient UI procedures with 76% being performed in white women and 0.3% being performed in black women.¹⁴ A more recent study from the 2003 National Hospital Discharge Survey showed that the rate of SUI surgery in white women was 3 times that in black women.¹⁵

It is currently unclear what impact genetics, socioeconomic status or disparities in access to health care may have on these discrepancies. To better examine the possible effects of access to health care we investigated the racial distribution of patients presenting for specialty care in female pelvic medicine and reconstructive surgery at a tertiary care military treatment facility. All active duty members and their families are eligible for medical care at no cost to them. Retirees and their families are also eligible for medical care with an annual fee but no additional cost for medical care used. In the current

study we evaluated the racial distribution of women referred for these disorders without the confounding effects of access to health care.

MATERIALS AND METHODS

We retrospectively reviewed the charts of patients referred to the female pelvic medicine and reconstructive surgery division at our institution from January 1, 2004 to December 31, 2004. This study was approved under exempt status by the Walter Reed Army Medical Center institutional review board. Demographic data, BMI, gravidity, parity, and primary, secondary and tertiary ICD-9 diagnosis codes entered into CHCS 1 were abstracted from the AHLTA database.

The CHCS 1 database contains demographic information on individuals eligible for military health care. It also contains basic information on military outpatient and inpatient visits, such as date of referral, visit or hospitalization, date of discharge, type of visit, ICD-9 diagnosis codes, and laboratory, radiology and pharmacy ordering and results. The AHLTA database is a worldwide electronic medical record system for the United States military health system that interacts with CHCS 1. It contains demographic data similar to that in CHCS 1. In addition, it contains outpatient military health care notes by primary care and specialty health care providers worldwide. Access to these programs is protected by military information technology. Access to clinical note writing is limited to providers. An attending physician electronically verified co-signature is required for all house staff notes, including fellow notes in subspecialties such as female pelvic medicine and reconstructive surgery. Access for research approved by institutional review boards may be obtained through search programs in the CHCS I database and the clinical information is abstracted from AHLTA much in the same way that a paper chart would be reviewed. Race and ethnicity are reported with the terminology used in these military health care databases.

BMI was abstracted from AHLTA clinical notes, examined as a continuous variable and also grouped as underweight—less than 18.5, normal weight—18.5 to less than 24.9, overweight—25 to less than 29.9, class 1 obesity—30 to less than 34.9, class 2 obesity—35 to less than 39.9 and class 3 obesity—greater than 40 kg/m², as reported previously.¹⁶ Age was examined as a continuous variable. In addition, age categories of less than 40, 40 to less than 50, 50 to less than 59 and 60 years or greater were examined in an exploratory manner. Gravidity and parity were abstracted from AHLTA notes and examined as continuous variable. All demographic variables were examined by 1-way ANOVA. When there was a difference on 1-way ANOVA, Tukey and Bonferroni corrected pair-wise comparisons were also performed. In addition, pairwise comparisons for the black and white groups were performed by the t test.

With regard to incontinence the ICD-9 codes available in these databases were 625.6 (female stress incontinence) and 788.31 (UI). Codes 788.63 (urgency of urine) and 596.51 (hypertonicity of bladder) were abstracted as OAB-dry because ICD-9 codes do not reflect International Continence Society guidelines. Prolapse was examined as to

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