

Letters

RESEARCH LETTER

Geriatric Condition Burden in Cardiovascular Clinics



Given aging is the most significant risk factor for cardiovascular diseases (CVDs), the prevalence and incidence of CVD among the older population are rapidly increasing.¹ Older adults with CVD also often have other medical conditions taking multiple medications, resulting in high complexity in care planning. Therefore, CVD clinicians may be more likely to encounter older adults with more geriatric syndromes requiring complex treatment plans than other specialty clinicians. However, studies confirming such trends are still lacking.

Therefore, to answer the question how do median age, number of comorbidities, and number of medications differ across specialty clinics, we conducted a cross-sectional study of patients ≥ 18 years old using the National Ambulatory Medical Care Survey (NAMCS) data between 2003 and 2016.² Our main hypothesis was that the median age, number of chronic conditions, and number of medications would be higher in patients seen in CVD clinics than in those seen in other specialty clinics. The NAMCS is a national survey data from a sample of visits to office-based physicians across the nation, and patients' visit information, including demographics, medications, and chronic conditions are collected. The NAMCS provides the information of the physician's specialty (general/family practice, internal medicine, pediatrics, general surgery, obstetrics and gynecology, orthopedic surgery, CVDs, dermatology, urology, psychiatry, neurology, ophthalmology, and otolaryngology). Other specialties, including oncology, allergy, and pulmonology, were available only in 2012.

First, we obtained the median age across the specialties with the IQR. Then we assessed the burden of 2 geriatric conditions; multimorbidity and polypharmacy, across the specialties. For multimorbidity, we calculated the median number of chronic conditions (up to 14, data available from 2005) with IQR. For polypharmacy burden, we obtained the median

number of medications prescribed or continued (up to 30) with IQR. We obtained the median with IQR since the distribution of the age, number of chronic conditions, and number of medications were not normally distributed. We performed the Kruskal-Wallis test equivalent for survey data to compare the data distribution of age, number of chronic conditions, and the number of medications among the specialty groups. Statistical analyses were conducted using Stata 14.2 and SAS 9.4 with appropriate survey weight. We received an exemption from the institutional review board of the University of Texas Health Science Center.

A total of 394,109 patient visits (weighted count = 10,726,289,511) were included in the analysis. The highest median age of patients was observed in the CVD specialty visits, 68.03 years (IQR: 57.30-77.22 years) (Table 1). The greatest median number of chronic conditions was observed for the CVD specialty visits (1.87, IQR: 0.80-2.99). The highest median number of prescribed and continued medications was observed for CVD visits (4.69, IQR: 1.45-7.28). The outcomes' distributions across the specialties were significantly different ($P < 0.001$).

We found that patients seen by CVD specialists were older and had higher chronic conditions and medication burdens compared with patients seen in other specialty clinics. Considering the high prevalence of CVDs among older Americans, the results was somewhat expected. However, what is surprising is that the patients that CVD clinicians see are older and more likely to have geriatric syndromes than those seen by internal medicine, general or family practice clinicians. Because our nation is facing a marked shortage in the geriatric workforce,³ it will become increasingly important for specialists who see a high proportion of older patients to gain competencies in provision of geriatric care. Our data indicate that CVD clinicians may be most impacted by this evolving paradigm in care for the growing population of older adults in the United States and support the need to integrate geriatrics precepts into CVD and other subspecialty training programs.

The main clinical implication of our findings is that CVD specialists need to consider the impact of competing geriatric syndromes in caring for their

TABLE 1 The Median Age, Number of Chronic Conditions, and Number of Medications Across Specialties

Specialty	Age, y	Number of Chronic Conditions	Number of Medications
General/family practice	52.09 (38.57-65.31)	0.76 (0-1.97)	1.83 (0.44-4.50)
Internal medicine	58.56 (45.44-71.22)	1.23 (0.19-2.48)	2.28 (0.50-5.28)
Pediatrics	40.06 (21.78-57.83)	0.24 (0-1.34)	1.31 (0.20-3.26)
General surgery	54.84 (42.99-66.97)	0.36 (0-1.49)	0 (0-1.65)
Obstetrics and gynecology	33.01 (26.48-44.39)	0 (0-0.08)	0.25 (0-1.23)
Orthopedic surgery	55.91 (44.20-67.35)	0.48 (0-1.39)	0.12 (0-1.59)
Cardiovascular diseases	68.03 (57.30-77.22)	1.87 (0.8-2.99)	4.69 (1.45-7.28)
Dermatology	58.26 (43.36-70.97)	0 (0-0.79)	0.56 (0-1.85)
Urology	64.83 (52.77-74.53)	0.40 (0-1.44)	0.64 (0-2.78)
Psychiatry	46.34 (34.12-56.67)	0.53 (0.06-0.99)	1.49 (0.43-2.74)
Neurology	54.72 (41.84-68.71)	0.35 (0-1.44)	1.45 (0.08-4.11)
Ophthalmology	67.70 (56.24-76.80)	0.36 (0-1.40)	0.59 (0-2.50)
Otolaryngology	54.96 (41.42-68.15)	0 (0-0.93)	0.53 (0-2.19)
Other specialties	57.15 (44.55-69.63)	0.67 (0-1.86)	1.41 (0-4.65)

Values are median (IQR).

older patients and seek geriatrics consultation for assistance in navigating complex issues. Several key principles and care models for providing optimal geriatric cardiology care have been recently proposed⁴ including recognizing and considering the potential impact of multi-complexity; evaluating and integrating cognition, physical function, and social and environmental factors into decision-making; and eliciting patient priorities and health goals to closely align them with the care plan. Furthermore, along with the changes in clinical practice, we emphasize that more studies are needed to determine effective ways of integrating geriatrics principles into care delivered by CVD providers with the goal of promoting a patient-centered positive outcomes.

The current study has several limitations. First, the survey did not delineate several specialties in internal medicine, such as endocrinology, nephrology, and geriatrics. It also did not collect information on relevant age-related conditions, such as functional decline or frailty, or on age-associated CVDs, such as heart failure with preserved ejection fraction. Additionally, this study is based on a survey data with inherent limitations of selection bias or recall bias. Despite the limitations, our study highlights the

presence of relatively high burdens of geriatric conditions among patients seen by CVD specialists using nationally representative data, and calls for future work to transform the clinical practice for high-quality care for older adults.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).

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