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Sex Differences in Home Care Performance: A Population-Based Study

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A B S T R A C T

Background: Home care services play an integral role in promoting independence, reducing hospital admission and readmission rates, and preventing or delaying nursing home admission among older adults. Despite important sex differences in functional status and use of services by recipients of home care, differences in home care performance measures by sex have not been examined.
Objective: To assess sex differences in the quality of publicly funded home care services in Ontario, Canada.
Methods: Validated, publicly reported home care quality indicators derived from the Resident Assessment Instrument for Home Care using the 2009 and 2010 Home Care Reporting System database were assessed for 119,795 Ontario home care clients aged 65 years and older. Unadjusted and risk-adjusted sex differences in performance were examined provincially and by health region.
Results: In unadjusted analyses, there were sex differences in health outcomes on all indicators examined (decline or failure to improve in activities of daily living, cognitive decline, depressive symptoms, and pain control). After risk adjustment, differences were minimal. For example, in unadjusted analyses, 23.1% of women and 18.7% of men reported poorly controlled pain. After risk adjustment, 21.2% of women and 21.6% of men reported poorly controlled pain, with a difference of −0.4% (95% CI, −0.4% to −0.3%). Across health regions risk adjustment eliminated sex differences. There was 1.3-fold to 2.6-fold variation in performance on indicators across health regions.
Conclusions: After risk adjustment, no important sex differences in home care quality indicators were identified. Sizable regional variations observed indicate potential to improve home care outcomes for both women and men. Sex differences in unadjusted analyses demonstrate the value of examining both unadjusted and adjusted outcomes and suggest sex-specific strategies will likely be needed to improve home care quality.

Formal (i.e., publicly provided) home care services play an integral role in helping older adults preserve independence, remain in the community and delay or avoid institutionalization (Eloranta, Routasalo, & Arve, 2008; Pearson et al., 2006; Swenson, 1998; Tomita, Yoshimura, & Ikegami, 2010). The importance of publicly provided home care's role in reducing

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Conflicts of Interest: none.

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hospital readmissions has been widely recognized by policy makers (Health Quality Ontario, 2013a; McCarthy, Johnson, & Audet, 2013). Home care provides a range of services including nursing, personal support to assist with activities of daily living (ADLs) and instrumental ADLs, and rehabilitative therapy. This sector is challenged to meet the complex needs of an aging population. Home care can provide and connect older adults with interventions that slow the progression of functional and cognitive decline or provide adequate pain control (Gitlin, Winter et al., 2006; Gitlin, Hauck, Winter, Dennis, & Schulz, 2006; Gitlin et al., 2009; Rochon et al., 2011).

Older women make up the majority of users of home care services and have higher rates of disability and multimorbidity than men of the same age (Arber & Ginn, 1993; McDonough & Walters, 2001; Plouffe, 2003; Statistics Canada, 2014; Walters, 2004). The typical long-term home care recipient is female, greater than 75 years old, and living alone (Bruce et al., 2002; Dalby et al., 2008; Gitlin, Winter et al., 2006; Landi et al., 2001; Rochon et al., 2011). There are sex differences in the prevalence of common chronic conditions. For example, women have a higher prevalence of hypertension and arthritis compared with men, who have a higher prevalence of cardiovascular disease, stroke, and diabetes (Rochon et al., 2011). Older women are less likely to be living with a caregiver, more likely to have adult children as caregivers than a spouse, and more likely to be caregivers themselves of an aging spouse (Gruneir, Forrester, Camacho, Gill, & Bronskill, 2013). These sex and gender differences influence the need for and outcomes of home care services.

Gender differences in quality of care and access to health care services have been well-documented across many conditions and health care settings. For example, women with diabetes or history of cardiovascular disease are less likely to have adequate cholesterol control than men (Bird et al., 2007; Chou, Scholle et al., 2007; Chou, Wong et al., 2007). It has also been found that older women are less likely to have adequate hypertension control compared with men (Gijsbers van Wijk, van Vliet, & Kolk, 1996; Hendrix, Lackland, & Egan, 2003; Kosiak, Sangl, & Correa-de-Araujo, 2006). Lastly, despite much attention to this problem, gender disparities in hospital care for acute myocardial infarction have persisted (Johnston et al., 2013; Rathore et al., 2005; Vaccarino, Parsons, Every, Barron, & Krumholz, 1999).

Owing to sex differences in disease prevalence and multimorbidity, health and functional status, availability of caregivers, and financial and social circumstances, improving the quality of home care services will require addressing the specific needs of women and men. To our knowledge, no prior studies have assessed sex and gender differences in home care quality. Publicly reported home care quality indicators in both the United States and Canada are not stratified by sex. Thus, it is unknown whether there are disparities in home care performance associated with sex, and the extent to which home care services meet the specific needs of both older women and men. We therefore examined sex differences in the quality and outcomes of home care services using previously validated and publicly reported home care quality indicators. We assessed decline or failure to improve in ADL functioning, decline in cognitive functioning, depressive symptoms, and pain control. We also sought to determine whether there was regional variation in performance on these indicators associated with sex.

Methods

Setting

This retrospective cohort study used the Home Care Reporting System (HCRS) database from Ontario, Canada. Ontario is Canada's largest province with more than 13 million residents, nearly 2 million of whom are over the age of 65. The province is divided into 14 health planning regions or Local Health Integration Network (LHIN). Publicly funded home care is delivered by home care agencies that are funded and coordinated by regional Community Care Access Centres (CCACs), which are aligned with the LHIN boundaries. There are 14 CCACs in Ontario (Community Care Access Centre, 2014). Publicly funded home care services can be provided on either a short-stay or long-stay basis (service of >60 days), depending on the recipient's goals of care.

Data

This study uses data from the HCRS collected between April 2009 and March 2010. This database is composed of information collected using the Resident Assessment Instrument for Home Care (RAI-HC; Health Quality Ontario, 2013b). The RAI-HC, a clinical assessment tool with good validity and reliability (Hirdes et al., 1999; Hirdes et al., 2008; Landi et al., 2000) and is used for care planning, funding, and quality measurement purposes. The RAI-HC includes items on physical functioning, cognitive performance, and clinical diagnoses that are used to calculate outcome measurements (such as those for mood and physical functioning) (Health Quality Ontario, 2013b). The RAI-HC was adopted for mandatory collection by Ontario CCACs in 2004 (Hirdes et al., 1999) and is administered by care coordinators at the initial assessment and at subsequent 6-month intervals (Health Quality Ontario, 2013b).

Population

The study's population consists of 119,795 Ontario women and men 65 years and older, who were receiving long-stay home care services and assessed by CCAC care coordinators during the study period. Long-stay home care service use was defined as receipt of home care for 60 days or more.

Quality Indicators

The quality indictors used in this study were derived from the RAI-HC which is used in Canada, the United States (including by the Department of Veterans Affairs), and internationally (Hawes, Fries, James, & Guihan, 2007). These indicators developed and validated through a rigorous process by an international group of investigators from Canada, United States, and Japan (Hirdes et al., 2002; Poss et al., 2008; Shaughnessy, Crisler, & Schlenker, 1998), provide a valid and reliable means to evaluate home care with respect to effectiveness (keeping people healthy at home), safety (keeping people safe at home), population health (keeping population healthy at home) and accessibility (access to care and services) (Hirdes et al., 2004).

The quality indicators examined in this study were 1) decline or failure to improve in ADL functioning, 2) decline in cognitive functioning, 3) depressive symptoms, and 4) inadequate pain