

The Changing Landscape of Continuing Care in Alberta: Staff and Resident Characteristics in Supportive Living and Long-Term Care

Paysage changeant des soins continuels en Alberta : caractéristiques du personnel et des résidents en logements supervisés et dans les services de soins prolongés



SUSAN E. SLAUGHTER, PHD
*Associate Professor, Faculty of Nursing
University of Alberta
Edmonton, AB*

CARLA ICKERT, MA
*Research Manager, Faculty of Nursing
University of Alberta
Edmonton, AB*

C. ALLYSON JONES, PHD
*Professor, Faculty of Rehabilitation Medicine
University of Alberta
Edmonton, AB*

CAROLE A. ESTABROOKS, PHD
*Professor, Faculty of Nursing
University of Alberta
Edmonton, AB*

MISHA ELIASZIW, PHD
*Associate Professor, Department of Public Health
and Community Medicine
Tufts University
Boston, MA*

ADRIAN S. WAGG, MD
*Professor, Department of Medicine
University of Alberta
Edmonton, AB*

Abstract

With provincial policy changing institutional care provision for older adults who are unable to safely remain at home, supportive living represents a new middle-ground to provide care for older adults. We compared characteristics of supportive living staff and residents to those in long-term care (LTC), using facility and staff surveys, as well as administrative Resident Assessment Instrument (RAI) data, to describe differences and similarities between

facility types. Data analysis included *t*-tests, chi-square tests, ridit analyses and odds ratios. Participants from 15 supportive living facilities were compared to participants from eight LTC homes. Supportive living healthcare aides were younger, worked fewer years and were more likely to work full time than LTC healthcare aides. LTC residents were more likely than supportive living residents to have: cognitive impairment, medical instability, and activities of daily living dependence. This knowledge, which situates supportive living in the new care continuum, is useful for policy makers and administrators deciding on interventions and clinical guidelines for care groups.

Résumé

Avec les politiques provinciales qui transforment la prestation de soins institutionnels pour les aînés incapables de demeurer à la maison, les logements supervisés (LS) représentent un nouveau moyen pour la prestation de soins aux aînés. Nous avons comparé les caractéristiques du personnel et des résidents dans les LS avec ceux des services de soins prolongés (SSP), et ce, au moyen de sondages auprès des établissements et du personnel, de même qu'en utilisant les données du Instrument d'évaluation des résidents, pour décrire les différences et les similarités entre les deux types d'établissements. L'analyse des données comprenait des tests T, des test du Chi carré, la méthode « ridit » et des rapports des cotes. Les participants de 15 établissements de LS ont été comparés aux participants de 8 établissements de SSP. Les préposés aux soins dans les LS étaient plus jeunes, travaillaient depuis moins d'années et étaient plus enclins à occuper un poste à temps plein que les préposés aux soins des SSP. Les résidents en SSP étaient plus susceptibles que ceux en LS de présenter les états suivants : trouble cognitif, instabilité médicale et dépendance pour les activités quotidiennes. Ces connaissances, qui placent les LS dans le nouveau continuum des soins, sont utiles pour les responsables des politiques et les administrateurs qui prennent des décisions au sujet des interventions et des directives cliniques pour les groupes de soins.

Background

Supportive living facilities in Canada began to expand in the late 1990s as a bridge in the continuum of care between home living and provincially regulated long-term care (LTC) facilities (Alberta Health and Wellness 2008; Canadian Centre for Elder Law 2008; Golant 2001; Stevenson and Grabowski 2010). Supportive living facilities, in contrast to LTC facilities, have been promoted as providing a more home-like environment offering room and board, in addition to 24-hour oversight and assistance with activities of daily living (ADLs) (Zimmerman et al. 2003). This type of facility targets the more functional independent client than LTC. These supportive living facilities have wide variation in the structure and services provided to a heterogeneous group of residents (Golant 2004; Park et al. 2006). Likewise, the nurse staffing mix in supportive living is diverse, with the availability of services

related to the presence or absence of licensed nurses (Beeber et al. 2014). In Canada, supportive living facilities are privately owned by either for-profit or not-for-profit groups and receive varying levels of funding from provincial governments, resulting in a wide range of care and services. A subset of supportive living spaces are considered designated spaces wholly funded by the provincial government. Other non-designated spaces, such as lodges or retirement communities, operate with little to no regulation or external funding.

In Alberta, the Broda Report was the health policy impetus for expanding accommodation types and more accessible home care services to meet the diverse needs of older adults (Alberta Health and Wellness 1999). Designated supportive living is seen as a cost-saving option for the provision of basic healthcare services for older adults without complex or unstable medical conditions (Alberta Health and Wellness 2000). Both designated supportive living and LTC residents pay an accommodation fee, regulated by the government, to cover room and board expenses, while health service costs are paid by the provincial government. Specialized healthcare services and allied health professionals are not available on-site in supportive living settings, minimizing healthcare costs; however, services are provided by home care. Facility-based case managers, who are regulated health professionals, develop resident care plans and monitor the care provided in these settings. Conversely, residents in provincially regulated LTC facilities require the 24-hour presence of a registered nurse and are understood to have multiple chronic or unstable medical conditions requiring specialized care (Alberta Health and Wellness 2010). These trends, focusing on increasing individual choice and a range of service delivery options, are mirrored in the US and worldwide (Hudson 2014).

Although the provincial government has clearly defined criteria for the allocation of residents to publicly funded designated supportive living facilities and LTC facilities (Alberta Health and Wellness 2010), evidence supporting the differences between these groups is sparse (Grimshaw et al. 2012). Understanding the similarities and differences of facility, staff and resident characteristics of supportive living and LTC settings helps to situate them within the relatively new continuum of care. This description of the two settings clarifies how they align with provincial health policy. It also becomes possible to appropriately target implementation strategies and policy by accounting for varied staff and facility characteristics (Grimshaw et al. 2012). The purpose of this study was to describe and compare the characteristics of the healthcare staff and residents in designated supportive living facilities and LTC facilities in Alberta.

Methods

For this observational study, data were obtained from two sources: (1) the Sustaining Transfers through Affordable Research Translation (START) study, and (2) concurrently gathered administrative data from Alberta Health Services. START was a cluster randomized controlled trial that examined the effect of knowledge translation interventions on health provider behaviour change in supportive living facilities and LTC facilities in Alberta, Canada (Slaughter et al. 2013).

Participants and recruitment

A purposive sample of 15 supportive living facilities and eight LTC facilities in the Edmonton health region of Alberta participated in the study. Given the evidence suggesting that nurse staffing and care outcomes in LTC facilities are associated with profit status (Harrington et al. 2012; McGrail et al. 2007; McGregor et al. 2010), purposive sampling ensured that 50% of the LTC facilities and 50% of the supportive living facilities were for-profit while the other half were not-for-profit. Facilities were included if the site administrator agreed to participate in the trial and the facility had a minimum of 15 supportive living or LTC beds. Convenience sampling was used to recruit healthcare aides and residents. Healthcare aides were eligible to participate if they had worked three months or more in that setting and worked a minimum of six shifts per month. In supportive living, only data from residents assessed by an Alberta Health Services case manager, who met the provincial criteria for enhanced assisted living, were included (Alberta Health Services 2010). These residents were unable to be maintained safely at home and had physical care needs that could not be met at home (Alberta Health Services 2010).

Data sources and data collection

Data were collected using surveys and secondary data. Research assistants collected data directly from sites and staff over a two-year period between March 2014 and March 2016 using facility surveys and healthcare aide demographic questionnaires. Routinely collected administrative data, Resident Assessment Instrument-Home Care (RAI-HC) for supportive living, and Resident Assessment Instrument-Minimum Data Set 2.0 (RAI-MDS 2.0) for LTC were obtained from the provincial custodian: Data Integration, Measurement and Reporting (DIMR), Alberta Health Services.

STAFF-LEVEL DATA

Facility leaders (nurse managers or site administrators) completed a facility profile form that included information regarding staffing ratios for healthcare aides, Licensed Practical Nurses and registered nurses. Healthcare aides self-selected to complete a demographic questionnaire that included: age group, sex, first language, level of education completed (high school, healthcare aide certificate, other diploma or degree) and employment history (usual shift worked, years worked as a healthcare aide, years worked on the unit, typical hours worked in a two-week period).

RESIDENT-LEVEL DATA

Anonymized RAI-MDS 2.0 (LTC) or RAI-HC (supportive living) data for each participating site was obtained for the calendar year that the site commenced the START trial (either 2013 or 2014). RAI data were available for the cohorts living in each of these facilities at the time the START study was conducted. That is, the data from one annual assessment were included for every resident who resided at the facility during that calendar year (either 2013 or 2014). Data derived from the RAI-MDS 2.0 and RAI-HC were

gathered for this study and included: the Depression Rating Scale, a three-level depression scale ranging from no mood symptoms to minor or major depressive disorder (Burrows et al. 2000); Cognitive Performance Scale, a seven-level scale ranging from intact to very severe impairment (Hartmaier et al. 1995; Morris et al. 1994); Changes in Health, End-Stage Disease, Signs, and Symptoms scale (CHESS), a six-level scale ranging from no health instability to very high health instability (Hirdes et al. 2003); and the ADLs long-form scale, a 28-level scale ranging from total independence to total dependence in ADLs (Morris et al. 1999).

Analysis

Differences were assessed using *t*-tests for continuous data and chi-square tests for categorical data. Ridit analyses (Donaldson 1998) were used to compare the facilities in regards to the ordinal RAI scales. The summary measure outputted from a ridit analysis is a mean ridit. In comparing two groups, a mean ridit estimates the probability that a randomly selected individual from one group will have a higher score than a randomly selected individual from the other group. Dividing two corresponding mean ridits yields the odds of a higher score in one group relative to the other group. Results from the RAI scales were also summarized in terms of odds ratios (ORs) with corresponding 95% confidence intervals (CIs). To calculate the ORs, we dichotomized the depression rating scale using 0 (no depressive symptoms) versus 1–14 (any depressive symptoms), the cognitive performance scale using 0–3 (intact to moderate impairment) versus 4–6 (moderate/severe to very severe impairment), changes in health, end-stage disease, signs, and symptoms scale using 0–1 (minimal instability) versus 2–5 (low to very high instability), and ADLs long-form scale using 0–14 versus 15–28. All bivariate analyses were carried out using SPSS v22 and SAS 9.3.

Ethics approval was received from the Health Research Ethics Board at the University of Alberta (Pro00034781). Healthcare aides provided informed written consent to participate in the study. RAI data were anonymized prior to receipt and did not require ethics board review or written consent.

Results

Staff level data

The median (interquartile range) number of beds in the facilities was 145 (87) in supportive living and 155 (34) in LTC homes. A total of 249 healthcare aides were recruited from supportive living facilities and 276 from LTC facilities. The healthcare aides from supportive living were significantly younger than those in LTC facilities (42.1 years, standard deviation [SD] = 10.9, versus 46.3 years, SD = 10.0, $p < 0.001$) and fewer held a healthcare aide certificate ($n = 203$, 81.5%, versus $n = 244$, 88.4%, $p = 0.027$). Significantly more healthcare aides in supportive living worked full time hours ($n = 174$, 69.9%) compared with those in LTC facilities ($n = 71$, 25.7%) ($p < 0.001$). Healthcare aides in supportive living had been working for approximately four fewer years both as a care aide and on their particular unit, in comparison to those in

LTC facilities. There was no difference in the number of healthcare aides who spoke English as a first language ($n = 82, 32.9\%$, versus $n = 81, 29.3\%$, $p = 0.375$) or in number who completed high school ($n = 243, 97.6\%$, versus $n = 265, 96.0\%$, $p = 0.308$). The staffing ratios were comparable between LTC facilities and supportive living facilities for the healthcare aides and Licensed Practical Nurses on both day and evening shifts (Table 1). The only difference in staffing between the two types of facility was the additional presence of a registered nurse in every LTC facility. There were no registered nurses in participating supportive living facilities.

Resident level data

The RAI data included 1,337 residents across the 15 participating supportive living facilities and 5,029 residents across the eight participating LTC facilities (Table 2). The ridit analysis indicates there is a 59.1% chance that a randomly selected resident from a LTC facility is in a higher category of depression than a randomly selected resident from a supportive living facility. In other words, the odds are approximately 3 to 2 (0.591/0.409) that residents in LTC facilities had more depressive symptoms than those in supportive living facilities. Specifically, the odds of having at least some depressive symptoms was significantly twice as high among residents in LTC facilities compared to supportive living facilities (OR = 2.1; 95% CI:[1.9, 2.4]). The odds of cognitive impairment among residents was also significantly greater in LTC facilities compared to supportive living (667 to 333), and the odds of having moderate/severe cognitive impairment or worse was more than five times as high in LTC (OR = 5.2; 95% CI:[4.3, 6.4]). Similarly, the odds of health instability in LTC was also significantly greater than supportive living (663 to 374), with the odds of residents having at least a low level of instability almost three times as high in LTC facilities compared to supportive living facilities (OR = 2.8; 95% CI:[2.3, 3.4]). Most striking was the significantly higher prevalence of ADL-dependent residents in LTC facilities, with the odds of scoring 15 or higher on the ADLs scale being 52 times higher in comparison to supportive living facilities (OR = 52.3; 95% CI:[42.7, 63.9]).

Recent Alberta RAI data from the Canadian Institute of Health Information (CIHI 2016) suggest that our sample of LTC residents is representative of the Alberta population of LTC residents. According to CIHI, 14.0% of Albertan LTC residents are totally dependent in their ADLs; 16% of residents in our sample were in the most dependent category for ADLs. The CIHI data shows that 33.8% have severe cognitive impairment, while in our sample it was 32%. In the CIHI data, 64% have some health instability, compared with 60.6% in our sample. Finally, the percentage of residents with a possible depressive disorder was 37.3% in the CIHI data and 33.4% in our sample.

The representativeness of our sample of supportive living residents was verified with Alberta Health Services. Although Alberta supportive living RAI data are not available to the general public, an analyst with the Alberta Health Services data unit compared the supportive living RAI data extracted for our study with the provincial data and confirmed its representativeness (Deborah Katz, Personal Communication, March 3, 2017).

TABLE 1. Staff characteristics

Facility staffing ratios (residents : staff)	Supportive living facilities (n = 15)	Long-term care facilities (n = 8)
Registered nurses		
Day shift	N/A	77 : 1
Evening shift		108 : 1
Licensed practical nurses		
Day shift	29 : 1	31 : 1
Evening shift	37 : 1	34 : 1
HCAs		
Day shift	8 : 1	7 : 1
Evening shift	9 : 1	8 : 1

HCA characteristics	Supportive living HCAs (n = 249)	Long-term care HCAs (n = 276)	p-value
Age in years, grouped mean (SD)	42.1 (10.9)	46.3 (10.0)	<0.001
Age category, n (%)			
20–29 years	37 (14.9)	12 (4.3)	<0.001
30–39 years	63 (25.3)	59 (21.4)	
40–49 years	86 (34.5)	101 (36.6)	
50–59 years	53 (21.3)	78 (28.3)	
>60 years	10 (4.0)	26 (9.5)	
Female, n (%)	222 (89.2)	263 (95.3)	0.008
Completed high school, n (%)	243 (97.6)	265 (96.0)	0.308
Completed HCA certificate, n (%)	203 (81.5)	244 (88.4)	0.027
English as first language, n (%)	82 (32.9)	81 (29.3)	0.375
Full-time employee, n (%)	174 (69.9)	71 (25.7)	<0.001
Years worked as HCA, mean (SD)	7.2 (6.2)	11.6 (8.1)	<0.001
Years worked on unit, mean (SD)	3.4 (3.5)	7.1 (10.5)	<0.001
Hours worked in two weeks, mean (SD)	70.3 (15.8)	62.8 (20.2)	<0.001

HCA = healthcare aide; N/A = not applicable; SD = standard deviation.

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TABLE 2. Resident characteristics

Scale	Supportive living (n = 1,337)	Long-term care (n = 5,029*)	p-value
Depression rating scale*, n (%)			
No depressive symptoms (0)	699 (52.3)	1,719 (34.2)	<0.001
Some depressive symptoms (1–2)	316 (23.6)	1,622 (32.3)	
Possible depressive disorder (3–14)	322 (24.1)	1,678 (33.4)	
<i>Mean (SE) Redit</i>	0.409 (0.008)	0.591 (0.008)	
Cognitive performance scale, n (%)			
Intact (0)	179 (13.4)	389 (7.7)	<0.001
Borderline intact (1)	196 (14.7)	626 (12.4)	
Mild impairment (2)	476 (35.6)	711 (14.1)	
Moderate impairment (3)	376 (28.1)	1,696 (33.7)	
Moderate/severe impairment (4)	47 (3.5)	466 (9.3)	
Severe impairment (5)	53 (4.0)	660 (13.1)	
Very severe impairment (6)	10 (0.7)	481 (9.6)	
<i>Mean (SE) Redit</i>	0.333 (0.007)	0.667 (0.007)	
Changes in health, end-stage, disease, signs, and symptoms scale, n (%)			
No instability (0)	952 (71.2)	1,982 (39.4)	<0.001
Minimal instability (1)	245 (18.3)	1,799 (35.8)	
Low instability (2)	98 (7.3)	860 (17.1)	
Moderate instability (3)	27 (2.0)	275 (5.5)	
High instability (4)	15 (1.1)	91 (1.8)	
Very high instability (5)	0 (0)	22 (0.4)	
<i>Mean (SE) Redit</i>	0.337 (0.004)	0.663 (0.007)	
Activities of daily living long-form scale, n (%)			
0–4 (most independent)	786 (58.8)	127 (2.5)	<0.001
5–9	292 (21.8)	225 (4.5)	
10–14	138 (10.3)	459 (9.1)	
15–19	86 (6.4)	1757 (34.9)	
20–24	23 (1.7)	1654 (32.9)	
25–28 (most dependent)	12 (0.9)	807 (16.0)	
<i>Mean (SE) Redit</i>	0.071 (0.004)	0.929 (0.004)	

SE = standard error. *10 long-term care cases missing from depression rating scale (n = 5,019).

Discussion

Differences in staff and resident characteristics were identified between purposively sampled supportive living and LTC settings in Alberta. Although the staffing mix was similar across facility type for healthcare aides and Licensed Practice Nurses, healthcare aides in supportive living facilities were younger, more likely to work full time and had worked fewer years compared to healthcare aides in LTC facilities. Meanwhile, compared with residents in supportive living facilities, residents in LTC facilities were more cognitively impaired, more dependent in ADLs and had more medical instability. These resident characteristics align with the provincial government admission criteria for the different levels of care (Alberta Health Services 2010). More residents in LTC had medical instability compared with supportive living residents; although every LTC facility had a registered nurse on-site 24/7 to support the additional complex care needs of LTC residents, this registered nurse is unlikely to be providing direct care to residents and is most likely working as a manager, mentor, or administrator. The higher levels of cognitive impairment and ADLs dependency of LTC residents, compared with supportive living residents, was not accommodated by increased numbers of healthcare aides and licensed practical nurses. Given the higher levels of direct care requirements associated with higher cognitive and physical disability, an LTC staffing mix that includes more healthcare aides and Licensed Practical Nurses may be warranted. A systematic review of longitudinal studies in LTC facilities found limited evidence to support the association between nurse staffing and quality of care outcomes (Backhaus et al. 2014); likewise, in the Canadian context, there is some limited evidence to suggest that more nursing hours in LTC facilities are associated with improved care outcomes for residents (McGrail et al. 2007; McGregor et al. 2010). Future research is needed to determine if staffing mix is aligned with resident characteristics and needs in both supportive living and LTC to ensure care requirements are met. The large discrepancy between full-time staff in supportive living (69.9%) and LTC (25.7%) in this study further calls into question the impact of continuity of care in these settings. Although this study cannot speak to the impact of these organizational features on quality of care in this sample, evidence suggests that staffing continuity is important for ensuring optimal care and health outcomes (Castle and Engberg 2005).

There were also similarities between the supportive living and LTC groups. A large number of the healthcare aide workforce in both groups was between the ages of 30 and 50, most were female, almost all had completed high school and English was a first language for less than one-third in both settings. Among residents, in general, the distribution of resident severity was shifted further to the severe extreme in LTC compared to supportive living; however, much of the lower severity categories had important overlap. For example, 28.1% of supportive living residents and 33.7% of LTC residents had moderate cognitive impairment. Although more residents in supportive living (71.2%) were medically stable than in LTC, nearly 40% were medically stable in LTC homes. Overlapping resident characteristics suggests that many of the care activities in both types of homes will be similar. Given these similarities, supportive living, a relatively new and under-researched area in Canada, may benefit from some of the research and experiences from LTC.

The relatively young and less experienced workforce in supportive living, compared to LTC, has implications for facility administrators and policy makers. Research has found that years of experience is associated with clinical expertise and with improved health outcomes among nurses (Heinz 2004). In supportive living, where there is a high proportion of residents with mild or moderate cognitive impairment, younger and less experienced healthcare aides may have fewer skills or abilities to manage the complex needs of these residents. In LTC facilities, where there is a high proportion of residents with dependence in ADLs, an older workforce is vulnerable to declining health and increased physical and mental strain from the demands of care work (Jeffs et al. 2014). Retirement resulting in a loss of institutional memory can have a negative impact on healthcare settings (Hart 2007). Retirements may also lead to staff shortages, creating further challenges in LTC facilities (Hussein and Manthorpe 2005). LTC administrators should be cognizant of the aging workforce and implement strategies to ease the burden of these transitions.

Although a profile of Canadian LTC residents has been published (Estabrooks et al. 2013), few Canadian studies have compared the residents of LTC facilities with those living in other accommodations (Poss et al. 2017; Strain et al. 2011). In Ontario, a cross-sectional study of administrative databases compared residents in LTC facilities with residents receiving home care services in private homes and retirement homes during 2014 (Poss et al. 2017). That study reported higher levels of cognitive impairment, higher levels of depression, and greater dependence in ADLs in LTC residents compared to those in private homes or retirement homes (Poss et al. 2017). Similar findings for cognitive impairment and ADLs were found when comparing LTC residents to home care clients across four Canadian provinces and one Canadian territory (Hirdes et al. 2011). Varying types of alternative accommodation across provinces make interprovincial comparisons challenging; however, comparing the findings of the current study to those of the Alberta Continuing Care Epidemiological Studies (ACCES) study may help to understand how services may have evolved in Alberta over time (Strain et al. 2011). Comparisons across care settings and provinces are only possible when comparable data are gathered systematically. We recommend the adoption of national reporting standards in supportive living homes, as is the practice in LTC homes, to enable future comparisons between supportive living and LTC. Future longitudinal research is indicated comparing supportive living and LTC structures and processes, which will deepen our understanding of the quality of care received across service settings.

In Alberta, the one-year ACCES cohort study examined the health and social needs of clients, the mix of services provided, and health outcomes in LTC and supportive living facilities between 2006 and 2009 (Strain et al. 2011). For the 59 participating supportive living facilities in the ACCES study, the staffing mix of healthcare aides and Licensed Practical Nurses was similar to that for the 59 participating LTC facilities; however, there were more on-site registered nurses in LTC facilities (98% of homes) compared with supportive living facilities (7% of homes). This staffing mix was comparable to that in our study. In contrast, characteristics of the supportive living resident participants

in the ACCES study differed from those in our study. Of the 1,089 supportive living residents in the ACCES study, 42% were independent in ADLs; while 59% of supportive living residents in our study were in the most independent group for ADLs. Of the 1,000 LTC residents in the ACCES study, 5% were independent in ADLs; which is comparable to those in our study (3%). More supportive living residents in the ACCES study had intact cognition than those in our study (32% in the ACCES study compared with 13% in our study). The cognitive abilities of LTC residents was relatively consistent across categories between the ACCES study and this study. More supportive living residents in the ACCES study had health instability based on the RAI CHES assessment (54% in the ACCES study compared with 29% in our study). These discrepancies in the CHES scores were not apparent for LTC residents, with an almost identical proportion of 60% of residents with health instability. Although the findings of these two Alberta studies suggest an evolution in the characteristics of supportive living residents from 2006 to 2014, characteristics of LTC residents appear relatively stable. Future research is indicated to assess changes in resident characteristics and staffing mix over time in both supportive living facilities and LTC to ensure optimal use of resources.

This study has limitations that warrant discussion. Although only one urban area was sampled, and convenience sampling was used to recruit residents and care staff to the study, we were able to confirm that our sample of participating residents was representative of the population of residents in supportive living and LTC facilities in Alberta. We do not know if our convenience sample of staff is representative of supportive living sites; however, the demographic characteristics of LTC healthcare aides align with similar data from a larger study (Estabrooks et al. 2015). Staffing ratio data provided by managers/administrators did not distinguish between paid hours and worked hours. The actual resident to staff ratios, based on worked hours, may be higher than our data indicate. This study provides updated information on the differences between supportive living facilities and LTC facilities in Alberta, which is particularly timely given the expansion of supportive living in the 21st-century care environment.

Conclusion

As populations age and longevity increases, the importance of supporting older people in their communities is needed not only to accommodate individual preferences and service needs but also to contain healthcare costs. The emergence of the new supportive living care environments in Alberta is aligned with the Alberta government's vision, first articulated in the Broda Report of 1999, to develop "responsive services and settings" to achieve quality living for an aging population. This study has highlighted significant differences in the characteristics of supportive living and LTC settings in Alberta. These differences align with the intended policy direction of the provincial government; however, we do not know if residents' needs are being met in these environments. Further investigation is required to deepen our understanding of evolving supportive living environments.

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Correspondence may be directed to: Susan E. Slaughter, PhD, Associate Professor, Faculty of Nursing, Edmonton Clinic Health Academy, 11405 87 Avenue, University of Alberta, Edmonton, Alberta T6G 1C9; tel.: 780-492-7321; fax: 780-492-2551; e-mail: susan.slaughter@ualberta.ca.

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