

Living arrangements and loneliness of South Asian immigrant seniors in Edmonton, Canada

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ABSTRACT

This paper examines the relationships between self-reported loneliness and living arrangements. A structured questionnaire with some open-ended questions was administered face-to-face in English, Hindi or Punjabi to a sample of 161 elderly South Asian immigrants 60 or more years of age living in Edmonton, Alberta, Canada in 2003. The majority of respondents said that they never felt lonely. More than one in three (37.3%) respondents indicated that they felt lonely occasionally, frequently or all of the time. Those living alone were significantly more likely to report feeling lonely at least occasionally than were those living with others, especially those living with their spouse in an extended family. The fact that South Asian immigrant seniors typically lived with others, often in an extended family with or without their spouse, and rarely lived alone protected them to some extent from loneliness. However, our findings showed that among those living with others, it was the amount of waking time spent alone at home and the quality of family relationships rather than living arrangement *per se* that significantly predicted self-reported loneliness. Nevertheless, living in a larger household was associated with spending less time alone. We discuss plausible influences of culture on expectations regarding family and social relationships and on the meaning of being alone, as well as practical implications for addressing loneliness in a multi-cultural society.

KEY WORDS—loneliness, living arrangement, time alone, family relationships, Canada, South Asian immigrant seniors.

Introduction

Loneliness is a prevalent, common social phenomenon (Cacioppo and Patrick 2008). Studies of loneliness across age groups (*e.g.* Victor and Yang 2012) have shown that generally seniors aged 65 or older, together with young people under 25 years of age, report the highest levels of loneliness. According to a meta-analysis (Pinquart and Sörensen 2001), between

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5 and 15 per cent of seniors feel lonely frequently and an additional 20–40 per cent of seniors report feeling lonely occasionally. The effects of loneliness on the health and quality of life of older people are a growing social concern (Hawkey *et al.* 2010; Rokach 2012). Loneliness is associated with depression, poor sleep, systolic hypertension, heart disease, cognitive decline (Luanaigh and Lawlor 2008) and even mortality (Tivis *et al.* 2011).

As in many societies today, the Canadian population is ageing. In 2006, seniors aged 65 and over comprised 13.7 per cent of the Canadian population (Statistics Canada 2007a) and 29.8 per cent of these seniors were immigrants (Statistics Canada 2008a). Sixty per cent of immigrant seniors in Canada had come from Europe before 1980 when they were relatively young (Statistics Canada 2008b); however, 60 per cent of the seniors who immigrated to Canada when they were elderly were from Asia (estimate based on Statistics Canada 2008a).

According to Statistics Canada (2008c), the 2006 census showed that South Asians (of all ages) had become the largest visible minority group in Canada, surpassing the Chinese. While there are a number of studies examining the health and psychological wellbeing of Chinese seniors in Canada (*e.g.* Bagley 1993; Chow 2010; Lai 2004), studies addressing the physical and mental health of South Asian seniors in Canada have only been conducted in the last decade (*e.g.* Grewal, Bottorff and Hilton 2005; Lai and Surood 2008). None of these studies focused specifically on loneliness.

While loneliness has been studied for elderly East Asian immigrants including, for example, elderly Korean immigrants in the United States of America (USA) (Kim 1999) and Chinese migrant seniors in Australia (Ip, Lui and Chui 2007), studies of loneliness in elderly South Asian immigrants are particularly rare (*e.g.* Victor, Burholt and Martin 2012, study conducted in Great Britain). Only one study touching on isolation and loneliness of elderly South Asian immigrants in Canada was located (Choudhry 2001).

Loneliness has been associated with living alone (*e.g.* de Jong Gierveld and Havens 2004), being alone and social isolation, although the relationships between these concepts are complex (Victor *et al.* 2000). Living arrangements, family relationships and social organisations form the various layers of social structure by which social connection can be formed. Living arrangements can strongly influence the needs and opportunities for social interaction (Knipscheer *et al.* 1995). Our paper focuses on the relationship between loneliness and various living arrangements among South Asian immigrant seniors in Canada.

Living alone is a common living arrangement among older people in North America. In 2001, of the seniors aged 65 and over in Canada living in private households, 29 per cent lived alone while 5 per cent lived in extended families (Statistics Canada 2003a). In contrast, immigrant seniors

were less likely to live alone than the native born, and were more likely to live in extended families (Statistics Canada 2007b). The traditional South Asian cultural value of filial piety emphasises that children have a responsibility for taking care of their elders, which often means co-residing in an extended family (Choudhry 2001; Sudha *et al.* 2006). Not only do immigrant seniors who are single or widowed co-reside with their adult children in an extended family, it is common among seniors who are married to co-reside with their adult children and grandchildren in an extended family. While studies of loneliness and living arrangements have typically focused on living alone *versus* not living alone (*e.g.* Theeke 2009; Yeh and Lo 2004), it is important to understand how living arrangements, and various factors within an extended family arrangement in particular, are associated with loneliness among South Asian immigrant seniors in Canada.

Background

In this section, we review briefly research literature on the distinction between the related concepts of social isolation and loneliness. We then review previous studies that have examined living arrangements, family relationships, English-language proficiency and ease of transportation as predictors of loneliness.

Social isolation and loneliness

Social isolation is an objective construct that refers to the extent to which a person is embedded in networks of social relationships. In contrast, loneliness is that subjective state of affect that results from social isolation and feelings of being disconnected from intimate others and from social others more generally (de Jong Gierveld and Havens 2004; Perlman 2004). Loneliness is experienced when there is a relational deficit, that is, the lack of relationships of the desired quantity and/or quality (Weiss 1973). Social isolation tends to foster the experience of loneliness in older age (Victor, Scambler and Bond 2009). However, socially isolated individuals are not necessarily lonely, and lonely individuals are not necessarily socially isolated (de Jong Gierveld and Havens 2004).

Living arrangements as predictor of loneliness

Living alone. Previous studies have shown that living alone is associated with loneliness among older adults in the USA (Greenfield and Russell 2011; Theeke 2009), across a number of European countries (Sundstrom *et al.* 2009) and elsewhere (Yeh and Lo 2004), and especially

among men (Greenfield and Russell 2011). For example, in Russell's (2009) study, seniors living alone reported higher levels of loneliness than those living with their spouse, and also perceived lower social support from family members than those living with a spouse or with others.

According to Larson, Csikiszentmihalyi and Graef (1982, as cited in Pinqart and Sorensen 2001: 246), adults over 65 years of age spent 48 per cent of their waking time alone. Loneliness is associated with the amount of leisure time spent alone (Russell 2009; Victor and Yang 2012). Living alone means it takes time, initiative and perseverance to contact and to maintain contact with people within one's social network (Ajrouch, Akiyama and Antonucci 2007, as cited in Fokkema, de Jong Gierveld and Dykstra 2012: 203).

In two ethnographical studies of the elderly, eating alone was identified with the experience of loneliness, and sharing a meal as an enjoyable social and affective activity (Bofill 2004; Moss *et al.* 2007). Older people who were lonely identified having a meal or drink with others as an important way to alleviate loneliness (Pettigrew and Roberts 2008).

Living with others. Most research examining the relationship between living arrangements and loneliness has compared levels of loneliness among older adults who live alone with older adults living in any other type of living arrangements (*e.g.* Dean *et al.* 1992; Theeke 2009; Yeh and Lo 2004), or living alone compared with living with spouse and living with others (de Jong Gierveld and van Tilburg 1999; Russell 2009). In a US study using data from the National Social Life, Health, and Aging Project, Greenfield and Russell (2011) showed that living alone was not the only living arrangement associated with raised levels of loneliness among older adults. Compared with adults living only with a spouse or partner, single adults living alone, single adults living only with children, and single adults living with other relatives or friends experienced greater loneliness. Those living with a partner and children, or with a partner and other relative or friends reported similar levels of loneliness as those living only with a partner. The authors suggested that it was not living alone *per se*, but living without an intimate partner (either alone, or with others) that was the salient risk factor for loneliness in later life. In another study, Russell (2009) found that those not living with their spouse (*i.e.* living alone or with others, including adult children, friends or extended family) tended to spend more leisure time alone than those who were living with their spouse. Nevertheless, in a study of loneliness in Great Britain, Victor and Yang (2012: 97) reported that loneliness among seniors decreased with larger household size (alone, couples, families with children and large families), suggesting that living with other family members helps to alleviate loneliness.

Living in an extended family. Numerous studies have shown that older immigrants from Asian backgrounds rarely live alone and are more likely to live with extended families than non-immigrants (*e.g.* Basavarajappa 1998; Gee 2000; Glick and Van Hook 2002; Gurak and Kritz 2010; Phua, Kaufman and Park 2001). In 2002, just 8 per cent of South Asian seniors in Canada lived alone, 66 per cent lived with their spouse (including in an extended family) and 25 per cent with other family members (Tran, Kaddatz and Allard 2005). Furthermore, recently arrived immigrant seniors are less likely to live alone than immigrant seniors who have lived in Canada for longer periods of time (Statistics Canada 2007c).

The family, both inter- and intra-generational, play a significant role in integrating older people in society (Knipscheer *et al.* 1995). In Canada, the 2002 Ethnic Diversity Survey showed that 93 per cent of South Asian respondents reported a strong sense of belonging to their family (Tran, Kaddatz and Allard 2005). Co-residence with the extended family can facilitate adult children taking care of their ageing parents. Family members can offer emotional support, instrumental support (*e.g.* transportation) and advice (Grewal, Bottorff and Hilton 2005). One may reasonably argue that the more family members living in the same dwelling, the less likely the senior would spend time alone at home, and the more likely the senior would have social interactions or meals together with family members. Some research studies on minorities and immigrants have indeed shown co-residence with family to be an important factor contributing to wellbeing, for example, among Chinese Canadian widows (Gee 2000).

A few studies, however, have shown living in an extended family does not necessarily protect immigrant seniors from feelings of social isolation and loneliness. In Ip, Lui and Chui's (2007) study of Chinese elderly in Brisbane, Australia, focus group participants who were living with their adult children commented that they often did not feel included and content but rather felt a sense of social isolation, confinement and loneliness, which was particularly acute among women. The women complained that their adult children were too busy to spend much time with them. Similarly, in a study of 28 transnational elders in California in the USA, seniors expressed dissatisfaction, boredom, isolation and loneliness; in particular, they reported that being left alone was associated with feeling lonely (Treas and Mazumdar 2002).

Family relationships

For older adults, the perceived quality rather than quantity of social relationships is an important predictor of loneliness (Pinquart and Sörensen

2001; Victor and Yang 2012). Although being married has consistently been associated with less loneliness (e.g. Theeke 2009), the degree of loneliness varied with the quality of marriage and, among the unmarried, the degree of loneliness varied with the quality of the family relationship (Shiovitz-Ezra and Leitsch 2010).

It can be argued that when living in an extended family, the quality of family relationship is likely to be an important predictor of loneliness. Many older Chinese migrants in Ip, Lui and Chui's (2007) study perceived a 'generation gap', in that their traditional cultural values conflicted with their adult children's westernised values. Indeed, a higher level of identification with traditional Asian cultural values for seniors was associated with a higher probability of being depressed (Lai 2004; Lai and Suood 2008). In a study of extended family dynamics within extended families in which Chinese home-care workers serving Chinese elders in a large Canadian city were interviewed, Tam and Neysmith (2006) concluded that immigrant elders who were dependent on their adult children and whose expectations were guided by traditional Chinese values were at risk for isolation, disrespect, abuse, loneliness and depression. In an interview study of 10 older South Asian immigrant women in Canada, Choudhry (2001) identified four challenges they faced: isolation and loneliness, family conflict, economic dependence and adjustment issues.

English-language proficiency

Limited English-language proficiency can be an important barrier to attending social activities outside the home and building relationships with the larger community (Ip, Lui and Chui 2007; Treas and Mazumdar 2002). Compared with English-speaking elders, those with limited English-language proficiency relied more on family and organisations within the ethnic community to remain socially connected (Diwan 2008). Even within the extended family, the language barrier can limit communication and interaction, thus adding to isolation or creating distance between immigrant elders and their grandchildren (Choudhry 2001; Treas and Mazumdar 2002).

Ease of transportation

North American seniors are dependent on cars for both essential and social activities (Dahan-Oliel *et al.* 2010; Turcotte 2012). Access to automobiles declines with age, and there is a large gender gap (Turcotte 2012). Research has reported that seniors tend to consider alternative means of transportation unsatisfactory (Glasgow and Blakely 2000; Sanders

et al. 2005). Giving up driving can lead to depression, reduced out-of-home activity, social isolation and dependence on others (Dahan-Oliel *et al.* 2010). Like seniors in the general population, transportation barriers are likely to lead to social isolation among older immigrants, especially those who live in the suburbs (Ip, Lui and Chui 2007; Treas and Mazumdar 2002).

The objective of this paper was to examine the relationships between self-reported loneliness and living arrangements among South Asian immigrant seniors 60 or more years of age living in Edmonton, Alberta, Canada. Even though Statistics Canada defines seniors as persons aged 65 and over, previous studies involving elderly persons of Asian background have used a lower age cut-off: at age 50 (*e.g.* Diwan 2008), age 55 (*e.g.* Basavarajappa 1998; Lai and Surood 2008) and age 60 (*e.g.* Ip, Lui and Chui 2007; Kim 1999; Sudha *et al.* 2006.). Lai and Surood (2010) pointed out that on the Indian sub-continent, persons 60 years and older are considered as seniors. In particular, we examined predictors of loneliness among those seniors who lived with others, including living in an extended family with or without their spouse. This study is an integral part of a larger project examining integration, adaptation, identity and security in elderly South Asian immigrants.

Method

This study was conducted in Edmonton, Alberta, Canada, a city with about one million residents, in 2003. Potential respondents were 60 years of age or older, born in South Asia, and either a permanent resident or a citizen of Canada. Respondents were recruited through a local ethnic association and an immigrant settlement agency. Although the respondents constitute a convenience sample, our sample characteristics in terms of demographic variables (*e.g.* sex, age, marital status, highest level of education) and immigration variables (*e.g.* country of birth) are similar to the 2001 census estimates for the Edmonton South Asian senior population (Statistics Canada 2003b).

A face-to-face, structured interview with some open-ended questions was conducted in the senior's language of choice (English, Hindi or Punjabi) at the senior's home or other place of their choice. A typical interview lasted about two hours. Female interviewers were selected from the South Asian community, and one male interviewer was hired to interview more traditional male Sikh respondents who preferred a male interviewer. In total, 161 interviews were conducted (99 in English, 31 in Hindi and 31 in Punjabi).

The questionnaire, which was originally designed in English, was translated into Hindi and Punjabi and then translated back into English to identify any problems in translation, as recommended in the literature (Brislin 1986). An English-language pretest was conducted and the questionnaire was then fine-tuned and finalised. The Hindi and Punjabi translations of the questionnaire were also pre-tested. The final questionnaire incorporated feedback from community representatives on earlier drafts of the questionnaire and from pre-tests of each language version. The questions used in this paper were part of a larger questionnaire that sought to obtain information about South Asian immigrant seniors' experiences living in Canada. Approval to conduct this study was obtained from the ethics review boards within the authors' affiliated institutions.

Sample characteristics

The 161 respondents in our sample comprised 81 women and 80 men. Most of our respondents were born in India (82%) and the remainder were born in other South Asian countries including Pakistan (14%), Sri Lanka (3%) and Bangladesh (1%). Punjabi was the predominant mother tongue (61%). Most were either Sikh (52%) or Hindu (33%). The age of the interviewees ranged from 60 to 92 (mean = 68.5 years). Most were married and living with their spouse (64%) and 29 per cent were widowed. Over half (56%) had an education level of secondary school or lower. Average rating of English-language proficiency (to understand, speak, read and write) was 2.82 on a four-point scale, where 1 indicated 'not at all' and 4 indicated 'very well'.

Our respondents had been in Canada for 16.3 years on average (range 1–43 years). The average age at immigration was 52.3 years old (range 24–77 years). Most (84%) were sponsored as immigrants, with 67% immigrating to Canada to be with their families.

Dependent variable

Loneliness. One direct question, 'How often do you feel lonely?', was used to assess loneliness. The possible response categories were: 'never', 'occasionally', 'frequently' and 'all of the time'. According to Victor, Scambler and Bond (2009), the advantages of the direct, single-item, self-report question as used in this present study include the following: it is an unambiguous question with common-sense appeal; it is useful for comparative purposes given that the direct single-item question has been used in a number of studies of older adults conducted in various time periods and in a number of different countries (*e.g.* recently in Fokkema, de Jong Gierveld and Dykstra 2012; Theeke 2009; Victor and Yang 2012); and a single question reduces

the burden on the respondent. A disadvantage of the single-item question is the possibility of a social desirability response given that respondents are required to admit to loneliness and may be reluctant to do so (although social desirability response may also be an issue with multiple-item scales). As Fokkema, de Jong Gierveld and Dykstra (2012) pointed out, several studies (*e.g.* Russell, Peplau and Ferguson 1978) have shown a significant relationship between scores on a single loneliness item and multi-item scales.

Independent variables

Living arrangements. Previous research has categorised living arrangements of elderly people in private dwellings in several ways: living alone or with spouse only, or not living alone (Thomas and Wister 1984); living in multi-generation extended family households or not (Basavarajappa 1998; Gee 2000); living with or not living with other family members (Boyd 1991); living independently (*i.e.* living alone or living with their spouse/partner only) or living with children or other relatives (Cameron 2000). Because it is common among South Asian seniors who are either married or widowed to live with their adult children and grandchildren in an extended family, in our study, living arrangement was measured in five categories (*i.e.* living alone, living with spouse only, living with adult children only, living with spouse in an extended three-generation family and living without spouse in an extended three-generation family). This categorisation allows us to compare loneliness across a wider range of living arrangements than in previous studies which typically focus either on living with an intimate other or not, or living alone or with others, but not both.

In addition, several measures related to living arrangement were obtained. First, respondents were asked how many other household members were living with the respondent. Respondents were asked, 'How many persons live in this house/apartment, beside yourself?' Second, waking time spent alone at home was measured in hours. Respondents were asked, 'In a typical 24-hour day, about how many hours are you alone in this house/apartment?' Third, if the respondent did not live alone, the respondent was asked, 'How often do you eat with members of this household?' The response categories included 'more than once a day', 'once a day' or 'less than once a day'. Fourth, to assess whether respondents can leave home when they want to and go to places easily, respondents were asked whether they have a valid Alberta driver's licence. Although driving is not the only way to get out of the home, seniors consider having to rely on others or on public transportation relatively unsatisfactory (Sanders *et al.* 2005). Lastly, to assess if communication and social interaction with grandchildren may be challenging,

respondents were asked to assess their ability to listen to, speak, read and write English on a four-point scale ranging from 1 'not at all' to 4 'very well'. The mean of these four responses constituted the English-language proficiency score.

Family relationship. Respondents were asked the following questions, 'How often does someone in your family: Take your places you want to go? Ask for your opinion (advice/guidance)? Respect your decisions (let you have your way)? Share your values? Make it easy for you to eat the food you like? Make it easy for you to practise your customs and traditions? Help you to be healthy (not be overworked, get enough sleep)? Take care of you when you are sick? Give you gifts or money? The response categories were 1 'never', 2 'once in a while/occasionally', 3 'often' and 4 'all the time'. Cronbach's alpha for this nine-item scale was 0.87. The mean of these nine items constituted the scale score, with a higher score indicating a better quality family relationship than a lower score. The items for this scale were chosen to reflect South Asian cultural values regarding family relationships, including respect for elders' wisdom and experience, respect for cultural tradition and caring (Choudhry 2001; Sudha *et al.* 2006).

Results

The data were analysed with the SPSS20 for Windows program. Respondents who never felt lonely were compared with respondents who felt lonely occasionally, frequently or all of the time using the Chi-squared test for categorical variables and *t*-tests for continuous variables. Logistic regression analyses were then performed to test how well the independent variables predicted loneliness. We first report the descriptive statistics for the variables and the bivariate relationships between loneliness and the independent variables.

Loneliness

In response to the question 'How often do you feel lonely?', the majority of respondents said 'never' (N=101, 63%). The remainder said 'occasionally' (N=43, 27%), 'frequently' (N=15, 9%) or 'all of the time' (N=2, 1%). Because of the ordinal and skewed nature of the responses, the responses for 'occasionally', 'frequently' and 'all of the time' were combined to become the 'at least occasionally' category. For the following analysis, loneliness was dichotomised as 'never lonely' (63%) and 'at least occasionally' (37%). **Table 1** shows the cross-tabulations between loneliness and the independent variables.

TABLE 1. *Bivariate associations between loneliness and independent variables*

Independent variables	Loneliness (%)		χ^2/t	Total (%)
	Never lonely	Lonely at least occasionally		
Married ¹ :				
Yes	66.7	33.3	2.05	67.9
No	54.9	45.1		32.1
Living with spouse:				
Yes	69.9	30.1	6.19*	64.8
No	50.0	50.0		35.2
Living arrangement:				
Alone	12.5	87.5	16.87**	5.0
Spouse only	61.8	38.2		21.4
With adult children	55.6	44.4		17.0
Extended family with spouse	81.2	18.8		30.2
Extended family no spouse	57.1	42.9		26.4
Meals with household members ² :				
More than once a day	69.0	31.0	3.90	74.8
Once a day	59.4	40.6		21.2
Less than once a day	33.3	66.7		4.0
Have driver's licence:				
Yes	66.1	33.9	0.37	35.2
No	61.2	38.8		64.8
English proficiency ³ :				
Mean	2.67	3.08	2.31*	2.82
SD	1.14	1.01		1.11
Number of people living in dwelling besides you:				
Mean	3.61	2.76	2.60*	3.30
SD	1.97	2.01		2.02
Waking hours alone at home ² :				
Mean	1.44	5.18	7.63***	2.83
SD	2.10	3.91		3.42
Family relationship score:				
Mean	3.62	3.28	3.80***	3.49
SD	0.38	0.70		0.54

Notes: SD: standard deviation. N=159, excluding two respondents who lived with non-relatives; N=100 for 'never lonely' and N=59 for 'lonely at least occasionally'. 1. Including six respondents whose spouse was living elsewhere. 2. Including only those who did not live alone (N=151). 3. Four-point scale ranging from 1='not at all' to 4='very well'.

Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Living arrangements

Of our 161 respondents, only 5 per cent lived alone, whereas 21 per cent lived with their spouse only, 17 per cent lived with their adult children, 30 per cent were living with their spouse in an extended family and

26 per cent lived in an extended family without their spouse. Only two respondents lived with non-relatives; their data were excluded from further analyses.

Bivariate analysis ($N=159$) shows that loneliness is associated with living arrangement (living alone, living with spouse only, living with adult children, living with spouse in an extended family and living without spouse in an extended family), $p<0.01$. Those who lived with their spouse in an extended family were most likely to never feel lonely, and those who lived alone were most likely to feel lonely at least occasionally (see [Table 1](#)).

Living alone

Not surprisingly, those who lived alone, although they typically have extended family members living relatively close by, spent significantly more waking hours alone at home than those who did not live alone, mean = 10.14 versus 2.47, $p<0.001$. Those who lived alone also had a significantly lower family relationship score, suggesting a poorer relationship with family than those who did not live alone, mean = 2.36 versus 3.53, $p<0.001$.

Living with spouse or not

Loneliness was significantly associated with living with spouse or not living with spouse, $p<0.05$, but not significantly associated with being married or not married, $p>0.05$. It should be noted that six of our respondents were married but their spouse was living elsewhere. Seventy per cent of those who were living with their spouse never felt lonely, compared with 50 per cent of those who were unmarried or not living with their spouse (see [Table 1](#)).

Living with others

Household size. Those respondents who did not live alone ($N=151$) were living with, on average, 3.47 other household members (range 1–11). Those who lived with adult children, with spouse in an extended family and without spouse in an extended family were living with an average of 2.15, 5.23 and 4.31 other family members, respectively. Those who never felt lonely and those who felt lonely at least occasionally did not differ significantly in the number of other household members, mean = 3.65 versus 3.13, $p>0.05$.

Time spent alone at home. Those who did not live alone spent on average 2.47 hours alone at home (range 0–12 hours), compared with an average of 10.14 hours spent alone by those living alone. Those who lived with their spouse only, with adult children, with spouse in an extended family and

without spouse in an extended family spent on average 2.74, 3.86, 1.17 and 2.88 waking hours alone at home, respectively. *Post-hoc* comparisons (least significant difference test) showed that living with spouse in an extended family differed significantly at $p < 0.05$ in time spent alone at home in comparison with the other three living arrangements. Note that those who felt lonely at least occasionally spent significantly more waking hours alone at home than those who never felt lonely, mean = 4.50 versus 1.40, $p < 0.001$. Among those who did not spend any time alone at home, the great majority (84.4%) never felt lonely. The percentage of respondents who never felt lonely dropped significantly at the four-hour point to 33 per cent. Almost one-third (29.2%) of these respondents who did not live alone reported spending four or more hours alone at home, 17.4 per cent reported spending six or more waking hours alone at home in a typical day, and the longest was 12 hours (who was living with spouse only!).

Not surprisingly, the number of other household members correlated significantly with time spent alone, $r(144) = -0.19$, $p < 0.05$. The more people living with the respondent, the fewer hours the respondent spent time alone at home.

Meals with family members. Almost all (96% of the 151 respondents) who did not live alone reported that they shared at least one meal each day with household members (75% more than once a day, 21% once a day) and 4 per cent less than once a day. Those who never felt lonely and those who felt lonely at least occasionally did not differ significantly in frequency of meals with family members.

Family relationship. Among those respondents who did not live alone, the mean score on the family relationship scale was 3.53 ($N = 142$). Those who felt lonely at least occasionally scored significantly lower than those who never felt lonely, mean = 3.37 versus 3.62, $p < 0.01$, indicating a lower quality family relationship in comparison to those who never felt lonely.

Have driver's licence. Among those who did not live alone, 34.4 per cent had a valid Alberta driver's licence. Loneliness was not significantly associated with having a valid driver's licence or not.

English-language proficiency. The mean English-language proficiency score for those respondents who did not live alone was 2.79. There was no significant difference in English-language proficiency between those who never felt lonely and those who felt lonely at least occasionally (mean = 2.65 versus 3.08).

Testing models of predictors of loneliness for persons living with others

Using binary logistic analyses, we tested two models of loneliness among those living with others. In a binary logistic analysis, how well a model fits the data is indicated by its -2 log likelihood value; the smaller the value, the better the model fits the data. The model Chi-squared test shows whether the variables that are added to the model significantly impact the dependent variable (DeMaris 2003; George and Mallery 2005).

Loneliness was measured as a dichotomous variable (either never felt lonely or felt lonely at least occasionally). In Model 1, living with others (spouse only, with adult children, with spouse in an extended family or without spouse in an extended family) was entered as the predictor variable. The results show that the model fit the data well, $p < 0.05$. Specifically, among the various types of living with others arrangements, only living with spouse in an extended family significantly predicted less loneliness ($p < 0.05$). That is, the odds of feeling lonely at least occasionally among those seniors living with their spouse in an extended family were less than (*i.e.* 0.31 times) the odds of feel lonely at least occasionally among seniors living with spouse only. Living with adult children or living in an extended family without spouse were no different from living with spouse only when it comes to loneliness (*see* Table 2).

In Model 2, waking hours alone at home, number of household members besides the respondent, family relationship, having a driver's licence and English-language proficiency were added to the model. The overall model was significant, $p < 0.001$. As the -2 log likelihood value was smaller in Model 2 than in Model 1, Model 2 had a better fit with the data. Note that living with others was no longer a significant predictor in Model 2. Instead, waking time alone at home strongly and significantly predicted loneliness ($p < 0.000$), suggesting that simply living with others but spending a lot of time alone at home does not alleviate loneliness. An odds ratio of 1.45 indicated that each additional hour spent alone at home increased the odds of reporting being lonely at least occasionally by a factor of 1.45. Family relationship was also a significant predictor ($p = 0.05$). Each increase of one scale score on the family relationship measure decreased the odds of self-reporting being lonely at least occasionally by a factor of 0.36.

Discussion

Our study is an addition to the scant research on the experience of loneliness among South Asian immigrant seniors in Canada. More importantly, we have identified two significant predictors of loneliness when living with

TABLE 2. Results of logistic regression analyses: predictors of loneliness when living with family

Predictors of loneliness ¹	Model 1			Model 2		
	B	SE	OR	B	SE	OR
Living with others ² (o=spouse only):						
With adult children	0.41	0.57	1.50	0.55	0.84	1.73
With spouse in extended family	-1.17	0.56	0.31*	0.73	1.47	2.07
Without spouse in extended family	0.24	0.50	1.26	1.31	1.25	3.70
Number of people in dwelling besides respondent				-0.25	0.30	0.78
Time spent alone at home (in hours)				0.37	0.09	1.45***
Eating with household members (less than once a day=0):						
More than once a day				-1.44	1.04	0.24
Once a day				-1.30	1.13	0.27
Family relationship ³ (range=1-4)				-1.04	0.53	0.36*
Have driver's licence (No=0)						
Yes				-0.52	0.61	0.60
English proficiency ³ (range=1-4)				0.44	0.27	1.55
Constant	-0.49	0.38	0.61	2.33	2.26	10.31
- 2 Log likelihood		162.32			122.56	
Model Chi-square		10.89*			39.76***	
df (N)		3 (151)			7 (151)	

Notes: SE: standard error. OR: odds ratio. df: degrees of freedom. 1. Loneliness (1='at least occasionally', 0='never'). 2. N for living with spouse only, with adult children, with spouse in extended family and without spouse in extended family are 29, 23, 44 and 39, respectively. 3. A higher score indicates better family relationship than a lower score does. Significance levels: * $p \leq 0.05$, ** $p < 0.01$, *** $p < 0.001$ (significance is determined by the Wald statistic).

others, including living in an extended family (with or without their spouse), a topic that has rarely been examined quantitatively.

The majority of our respondents said that they never felt lonely. Just over a third said that they felt lonely at times (including 27% occasionally, 9% frequently and 1% all of the time). Our findings suggest that loneliness among older South Asians in Edmonton, Canada in 2003 is comparable in prevalence with seniors of various nationalities in studies conducted from 1948 to 2007 in a variety of countries (Victor, Scambler and Bond 2009: 133, 136). By contrast, Victor, Burholt and Martin (2012) in an exploratory

study reported that immigrant elders in Great Britain who were from Pakistan and Bangladesh experienced loneliness at a very much higher level than in the general population, although immigrant elders from India were comparable to the norms for Britain. Victor *et al.* admitted that problems with sampling and methodology may have influenced the results. We suggest that the different socio-cultural contexts between Britain and Canada may also have some influence on these seniors' experiences of loneliness.

As expected, few (only 5%) of our respondents lived alone. In comparison, Tran, Kaddatz and Allard (2005) reported that 8 per cent of South Asian seniors and 29 per cent of all seniors in Canada lived alone. Most of the widowed persons in our study lived with family members, in contrast to the Canadian norm where most widowed persons live alone (Bess 1999).

Consistent with previous research findings (*e.g.* de Jong Gierveld and Havens 2004; Greenfield and Russell 2011), our study showed that living alone was associated with feeling lonely. Our findings suggest that the norm of extended family living in traditional South Asian societies and the continuation of this norm among South Asian immigrants in Canada, although with various modifications (Choudhry 2001), ameliorate some of the risks of loneliness that come with being an ageing immigrant. Overall, those who lived with others tended to have lower levels of loneliness than those living alone. Having the company of family members helps to reduce the level of loneliness. Among those who lived with others, living with spouse in an extended family (which coincidentally is associated with the least time spent alone at home) reduced the chance of feeling lonely, compared with those living with their spouse only, living with adult children or living without their spouse in an extended family. Contrary to findings in studies of older adults in the US general population (Greenfield and Russell 2011), there was no difference in levels of loneliness between participants living with spouse only, and those living with other family members if not currently married. This could be explained by the strong family rather than couples' orientation of the South Asian tradition. In another more traditional family-oriented culture, older Italian people living without a partner but with children had relatively lower mean loneliness feelings, as opposed to a higher mean loneliness in the more individualised orientation of the Dutch (de Jong Gierveld and van Tilburg 1999).

Our analysis showed that among those living with others, living arrangement no longer predicted self-reported loneliness when time spent alone at home, family relationship and other variables were added. Instead, time spent alone at home emerged as a highly significant predictor of loneliness, suggesting that it is time alone rather than living arrangement *per se* that predicts loneliness. This finding is consistent with the findings of

previous studies (*e.g.* Russell 2009; Victor and Yang 2012). Even though South Asian immigrant seniors live together with family members they may nevertheless spend many hours a day alone at home, feeling lonely as a result. Nevertheless, seniors living in larger households tend to spend less time alone, and loneliness was less likely felt when seniors spent less time alone.

Furthermore, we found the quality of family relationship to be a significant predictor of loneliness among those living with others. Those seniors who feel cared for and respected by their family feel significantly less lonely than those who do not feel cared for and respected by their family. Our finding is consistent with previous research that showed loneliness to be associated with the quality of marriage, family and social relationships (*e.g.* Pinquart and Sörensen 2001; Shiovitz-Ezra and Leitsch 2010; Victor and Yang 2012). Interestingly, while living alone is associated with a poor family relationship, it is unclear what the causal direction is. Do seniors who do not get along with their family choose to live alone, or is living alone seen as culturally unacceptable leading to the seniors' assessments of poorer family relationships, or both?

Our findings that both time spent alone at home and quality of family relationship are significant predictors of self-reported loneliness support the findings of previous, small-scale qualitative studies of older migrants (*e.g.* Ip, Lui and Chui 2007; Treas and Mazumdar 2002). Some South Asian seniors who have immigrated to Canada find themselves alone and feeling lonely in their adult child's home, without the status and social support they would have enjoyed in their home country. The adult children who work outside the home may have little time for their elders. The older grandchildren go to school and may have little in common with their traditional grandparents. Expectations of filial piety that define the traditional obligations of adult children to their elders may not be met. Instead, there may be conflict between the traditional values and expectations of the seniors and their increasingly westernised adult children and grandchildren. The social structure of the individualistic host society may not have provided the necessary opportunities for these seniors to receive the social support that they were used to in the collectivistic society from which they came (Johnson and Mullins 1987).

Culture may shape the experience of loneliness, including its prevalence, intensity and antecedents (Jylha and Jokela 1990; Perlman 2004; Rokach and Bauer 2004; Rokach and Neto 2005; Tam and Neysmith 2006; van Tilburg, Havens and de Jong Gierveld 2004). Loneliness is higher in collectivistic cultures where people accept greater responsibility for interpersonal failures than in individualistic cultures (Andersson 1998). As an example, Rokach and Sharma (1996) reported deeper feelings of

interpersonal isolation and social inadequacy among immigrants from South Asia than either North American-born or immigrants from the Caribbean Islands. Other cross-national surveys in Europe also show older adults in family-oriented cultures reporting greater loneliness than those in individualistic cultures (Fokkema, de Jong Gierveld and Dykstra 2012; Sundstrom *et al.* 2009). Cultural factors may affect either desired or achieved levels, or types of social contact, which affect loneliness (Perlman 2004). Johnson and Mullins (1987) proposed that people in collectivistic societies have a lower loneliness threshold, defined as the minimal level of social contact needed for a person to not feel lonely, than people in individualistic societies. Being alone may carry different meanings in different cultures. In an individualistic culture such as Canada, where individuals are expected to be self-sufficient and independent, solitude or being alone may be positively evaluated as freedom to pursue personal goals or activities, whereas in collectivistic cultures being alone may be perceived as a sign of social inadequacy.

There are some limitations to this study. Like many other studies about immigrant seniors, our sample is modest in size and is by and large a convenience sample, even though our sample is similar to the census data on several key socio-demographic and immigration variables. Also, in any study of a relatively closed community, using interviewers from within the community being studied has advantages and disadvantages (Treas and Mazumdar 2002). Selecting South Asian interviewers provided entry to the community, facilitated the selection and recruitment of participants, brought necessary language skills in English, Hindi and Punjabi, and provided cultural insights that facilitated the interviews and the interpretation of the interview data. However, seniors may have been unwilling to respond openly to some questions asked of younger members of their community who were known to them. Even though our data were collected in 2003, we have no reason to believe living arrangements of South Asian immigrant seniors have changed in the past 10 years. No detailed analysis of the most recent 2011 census is available yet to suggest otherwise.

Conclusion

In conclusion, as in previous research, living alone is associated with self-reported loneliness, but elderly South Asian immigrants rarely lived alone. Living with others, including in an extended family, offers South Asian immigrant elders a degree of protection from loneliness. However, living with others does not necessary reduce loneliness when some of these seniors are alone at home for long periods of time and feel a lack of caring and

respect from family members. The reduced ability of family members to perform the traditional norms of filial piety may stem from the demands put on them to make their way in the Canadian context, as both adult children and children-in-law work outside the home and the grandchildren go to school and develop their own interests. Further, a generation gap in values may develop as children and grandchildren adapt to a more individualistic value system of social and family relationships and move away from collectivistic values and practices. Not only do the younger generations tend to adopt western values and practices, they also tend to become fluent in the English language. This gap in values, practices and language skills can leave seniors feeling isolated and lonely, not only in Canadian society, but also in their extended families.

There are no easy solutions to addressing loneliness experienced by South Asian immigrant seniors in a multi-cultural society such as Canada. Loneliness has been associated with individual factors such as social skills and health, social-structural factors such as living arrangements and sense of community, and cultural-societal factors such as societal norms and cultural values (de Jong Gierveld, van Tilburg and Dykstra 2006; Johnson and Mullins 1987). Effective interventions may need to address a combination of these factors. Lonely seniors need to reach out to find and create social connections either by going out of the home, or inviting others in, or both. Empowering seniors so that they have the resources and capabilities to venture out of the home and to reach out to others requires that they have the opportunity to develop English-language skills, receive adequate incomes and have access to transportation. Participation in their larger ethno-cultural communities may not require English-language skills; however, using transportation and going to the bank for funds, for example, do require English-language skills and language training can thereby facilitate participation in the wider community. While our data did not show a direct relationship between language skills and loneliness or between having a driver's licence and loneliness, these two variables can help seniors reduce the time they spend alone each day and increase the quantity and quality of their social interactions, compensating for deficiencies experienced within the extended family. Furthermore, technologies may help seniors develop on-line relationships and maintain existing relationships, but require that seniors have access to these technologies and become comfortable using them. Providing television channels and other media in the senior's own language can also mitigate feelings of loneliness.

Government and community agencies can play a significant role in providing drop-in programmes and friendly visitors programmes, removing obstacles to social contact such as providing transportation and meeting places, and facilitating self-help and support groups for seniors living with

their family members (*see* Andersson 1998). Culturally, immigrant seniors may need to change their expectations regarding the amount and type of social and family contact and to enhance their coping skills with aloneness as they settle in a new society. Living in an extended family in Canada can be a very different experience from living in a traditional extended family in South Asia. Immigrant families should recognise that their elderly family members can experience isolation and loneliness in Canada and find ways to help their seniors make and maintain social connections both within and outside the family.

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