Appreciating the Predicament of Housebound Older Adults with Arthritis: Portrait of a Population*

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RÉSUMÉ

Cette recherche dresse un portrait socio-démographique, physique, psychosocial et comportemental des personnes âgées arthritiques confinées à la maison et compare les personnes âgées vivant avec l'arthrite rhumatoïde à celles vivant avec l'ostéoarthrite. Les données furent obtenues auprès de 125 personnes confinées à la maison et ayant un diagnostique d'osteoarthrite (65 %) ou d'arthrite rhumatoïde (35 %). Une pondération a été utilisée. En majorité, cette population se compose de femmes, vivant seules et âgées en moyenne de 77 ans ($SD = 10,50$). Les symptômes d'engourdissements, de fatigue et de douleurs se chiffrent de modérés à graves et plusieurs personnes (51,4%) ont des symptômes de dépression. Les personnes ont signalé de faibles taux de comportement de santé telque l'exercice. Globalement, les personnes atteintes d'osteoarthrite démontrent une santé physique moins bonne (rapportent plus de douleurs et de limitations) et psychologique (moins d'optimiste, insatisfait par leur vie sociale, plus faible efficacité personnelle) que les personnes vivant avec l'arthrite rhumatoïde. Des programmes à domicile d'autogestion de la douleur devraient être mis sur pied en fonction de ces caractéristiques.

ABSTRACT

This paper draws a socio-demographic, physical, psychosocial, and behavioural profile of housebound older adults with arthritis and compares older adults with rheumatoid arthritis to those with osteoarthritis. Data from 125 housebound older adults with osteoarthritis (65%) or rheumatoid arthritis (35%) were compared to published samples and to population data using appropriate weighting. Respondents were mainly women, living alone, mean age 77 years ($SD = 10.50$). Symptoms of stiffness, fatigue, and pain intensity were moderate to severe, and a substantial proportion (51.4%) reported depression. Participants reported low levels of health behaviours such as exercise. Overall, older adults with rheumatoid arthritis were significantly younger, reported less pain and limitations, were more optimistic and satisfied with their social life, and had a higher self-efficacy than older adults with osteoarthritis. Home-based pain self-management programs should be constructed considering the unique profiles and needs of this population.

Introduction

Arthritis and chronic pain have become a major public health problem (Aronoff, 2000; Fabrega, 1999; Gallager, 1998) resulting in significant economic, social, and human costs (Badley & Ibanez, 1994). In 1999, 37.5 per cent of Canadian older adults were diagnosed with arthritis. This percentage is expected to double by the year 2020 as a result of population aging (Health Canada, 2000). Unfortunately, little is known about the biopsychosocial and behavioural characteristics of a growing segment of this aging population, namely housebound older adults with arthritis. This lack of knowledge limits the ability of program developers to create well-tailored interventions. The purpose of this paper is therefore to provide a data-based description of housebound older adults with arthritis. This information will allow program developers to identify some of the specific challenges and needs of this group in order to formulate guidelines and develop customized interventions to promote their health.

The Importance of Intervening with Arthritic Populations

Although there is no cure for arthritis, research has shown that the adoption and maintenance of particular health behaviours (e.g., exercise and relaxation) in combination with an appropriate use of the medications (Arthritis Society, 1999) can help manage pain and arthritis (Aronoff, 2000; Helme & Gibson, 1998; Lorig, Lubeck, Kraines, Seleznick, & Holman, 1985; Nazaroff, 1999; Taal, Rasker, Seydel, & Weigman, 1993). Arthritis self-management programs offered to older adults in community settings (Barlow, Turner, & Wright, 2000; Lorig & Holman, 1989) have shown promising results in improving physical and psychological health (Fries & Ramey, 1997; Goeppinger & Lorig, 1997; Leveille et al., 1998) and instigating the adoption and maintenance of health behaviours (Barlow, Turner, & Wright, 1998; Goeppinger & Lorig, 1997; Lorig et al., 1999).

While there is no doubt that such community programs offer useful resources, few of them are accessible to housebound arthritic people. This group, by definition, are unable to leave their homes because of their physical or mental disabilities (Wehry, 1995). Home-based programs are currently being developed and evaluated in an effort to better meet the needs of these housebound older adults (Bell, Lineker, Wilkins, Goldsmith, & Badley, 1998; Laforest, Gignac, Bajah, & Griskan, 2000).

However, one barrier to the creation of well-tailored programs is the absence of information about housebound older adults with arthritis, including their socio-economic status, health status, health behaviours, and perceived psychological barriers to change. Understanding the characteristics of this population is helpful in improving the development and the delivery of interventions and in identifying individuals who are the most in need of the intervention. Moreover, it may allow for the identification of particular characteristics as potential facilitators of behaviour change or issues in the development of an intervention that could pose unique challenges.

Characteristics of Older Adults with Arthritis

Some research focuses on older adults in Canada living with arthritis, but few studies deal specifically with housebound older adults with arthritis. Moreover, to our knowledge, there are no studies that include a review comparing older adults with rheumatoid arthritis (RA) to those with osteoarthritis (OA). A study carried out in the United Kingdom illustrates differences between OA and RA in certain areas of an individual's life. Those with OA reported experiencing more severe handicaps in social relationships, socio-economic status, emotional well-being, and body image than did those with RA (Carr, 1999). However, it seems useful to highlight the findings of investigations dealing broadly with four Canadian older adults, arthritic or not, housebound or not because they were used as beacons in the present study (Badley, 1995; Badley, Rasooly, & Webster, 1994; Bell et al., 1998; Gignac, Cott, & Badley, 1998; Pasternak et al., 1998).

Globally, the data of Badley et al. showed that between 71 and 86 per cent of OA adults are women and 25.5 to 58.2 per cent are living alone (Badley, 1995; Badley et al., 1994; Gignac et al., 1998). Their mean age was 68.3 years old (Gignac et al., 1998) and was divided evenly among the three age groups (55–64, 65–74, 75 and older) (Badley, 1995; Badley et al., 1994). More than a fifth (21.88%) had a total household income of less than $20,000, and 22.3 percent had an income of over $60,000. OA adults had had arthritis for approximately 12 years. On a 5-point VAS scale, their level of fatigue was 2.59, their stiffness 2.70, and their pain intensity 2.81 (Gignac et al., 1998). Finally, between 19.7 and 45.9 per cent had less than a Grade 9 education (23.5 to 40% had more than a high school diploma) (Badley, 1995; Badley et al., 1994; Gignac et al., 1998).

In comparison, those with RA (Bell et al., 1998; $n = 150$) had a mean age of 56 years and a mean duration of arthritis of 7.5 years. Sixty per cent were female, morning stiffness lasted 163 minutes, pain intensity was 61.9 on a 100-point VAS scale, and the total self-efficacy score (measured by the self-efficacy scale) was 49.2.

Finally, in a study on older adults who were housebound for reasons other than arthritis (Pasternak et al., 1998) ($n = 241$), the sample were mainly female (83%) and their mean age was 78.8 years. They had completed an average of 10.3 years of education, and 45 per cent of them lived alone. When measured on the Hamilton scale, 21.1 per cent suffered from depression.

These studies provide data on individual characteristics that can be divided into three categories: socio-demographic (e.g., age, duration of arthritis, education), psychosocial (e.g., self-efficacy, depression), and physical (e.g., pain intensity, limitation, stiffness). In addition to the variables reported in previous studies, we decided to add a few others that seem to be quite useful in accurately describing a population. Variables such as functional limitations (Raina, Dukeshire, Lindsay, & Chambers, 1998), co-morbidities (Wilkins & Park, 1996), number of arthritis medications (Kouyanou, Pither, & Wessely, 1997), level of optimism (Scheier & Carver, 1985), personality (Affleck, Tennen, Higgins, & Urrows, 1992), and anger (Burns, Johnson, Devine, Mohoney, & Pawl, 1998), as well as satisfaction with social life (Lauver & Johnson, 1997; Patrick, Morgan, & Charrlton, 1986) were added in our analyses.

Moreover, a fourth set of features, namely behavioural characteristics, could be added to the list, considering its importance and prominence in describing older adults with arthritis. Behavioural characteristics, defined as individual actions that enhance or maintain the physical or psychosocial condition of a person, can range from physical exercise to the ability to develop a social network. These behaviours proved to be an integral part of life for older adults with arthritis and were often the main targets of arthritis self-management programs (Anderson, Keefe, Bradley, & McDaniel, 1988; Schechtman & Ory, 2001). These four categories of individual characteristics are studied in this paper. Therefore, given the dearth of information on the characteristics of housebound populations with arthritis, this article aims to meet the following two objectives: (a) to draw a socio-demographic, physical, psychological, social, and behavioural profile of housebound older adults with arthritis, and (b) to compare older adults living with rheumatoid arthritis to adults living with osteoarthritis.

Methods

Context

The data for this study came from a larger research project evaluating the impact of a home-based self-management program aimed at housebound older adults with arthritis, called I'm Taking Charge of My Arthritis! (Laforest et al., 2000). The procedure for the larger research project, as well as for this project, was approved by the CLSC René-Cassin Ethics Review Board. Only the baseline data are used in the present investigation. Study participants were drawn from Montreal Local Community Health Centres (CLSCs). These CLSCs were part of the Quebec health and social services network that provides front-line health and services.

Study Participants

The 125 participants in the study were recruited over a 12-month period throughout 15 of the 29 Montreal CLSCs. Case managers of the CLSCs examined their clients' medical files for eligibility and called potential participants to discuss their possible involvement in the study. Eligibility criteria were: (a) living at home, (b) housebound (e.g., not leaving home on one's own more than twice a month), (c) aged 50 years and over (d) self-reported moderate to severe arthritis pain during the past week, (e) suffering from osteoarthritis (OA) or rheumatoid arthritis (RA), (f) able to communicate in English or French, and (g) self-reported difficulties in performing daily activities. We excluded individuals who (a) had received a polymyalgia diagnosis, (b) had a recent health problem needing rehabilitation, (c) were experiencing cognitive impairment problems, or (d) had completed a similar program. Following the initial contact, a research co-ordinator contacted eligible individuals who had told their case managers they would be willing to participate. All participants signed a consent form.

Data Collection and Measurement Instruments

Descriptive information was collected during a 2-hour interview conducted by a trained interviewer using a structured questionnaire. In order to alleviate the interview burden, a pause was offered when half the questionnaire was completed. Moreover, sheets with enlarged characters and scales were used to aid people with visual impairments.

Socio-Demographic Characteristics

Case managers provided age and gender. Socio-economic status was determined by using a question from the 1998 Quebec Health and Social Survey Data (Daveluy et al., 2001): "Compared to people your age, how do you perceive your financial situation?" This question was shown to be a reliable measure of the actual income of older adults and is more frequently answered by this population than are questions about average family income (Daveluy, 2001). Religious affiliation, years since the arthritis diagnosis, and educational levels were collected through open-ended questions.

Physical Characteristics

Type of arthritis and co-morbidities were provided by case managers, who are relevant informants, considering that they are their main care providers. These pieces of information were confirmed by the patient during the interview. Pain intensity and fatigue levels were evaluated through a 100-mm long Visual Analogue Scale, a widely used tool in arthritis studies (Duruoz et al., 1996; Lorig, Mazonson, & Holman, 1993; Mullen, Laville, Biddle, & Lorig, 1987) that has favourable psychometric qualities (test re-test correlation: 0.74 at one week and 0.85 at two weeks; Lindroth, Bauman, Brooks, & Priestley, 1995). This scale is also used widely in older adults populations (Purdie & McCrindle, 2002). Functional limitations and stiffness were measured with the WOMAC (Western Ontario and McMaster Universities Osteoarthritis Index), a valid and reliable tool for assessing the elderly (Barr et al., 1994; Bellamy et al., 1988; Davies, Watson, & Bellamy, 1999), with Cronbach alphas ranging from 0.70 to 0.88.

Psychological Characteristics

Self-efficacy was measured by the Arthritis Self-Efficacy Scale (Cronbach alpha: 0.83; (Lorig, Chasteain, Ung, Shoor, & Holman, 1989), a valid tool for elderly people (Purdie & McCrindle, 2002; Searle, Mahon, Iso-Ahola, & Sdrolias, 1995). Depression was evaluated by the CES-D (Cronbach alpha: 0.89; Blalock, DeVellis, Brown, & Wallston, 1989), a scale widely used with elderly persons (Berkman et al., 1986; Devins et al., 1988), and the conscientiousness and neuroticism subscales of the NEO Five-Factor Inventory (Cronbach alphas: 0.86 and 0.72; Costa & McCrae, 1999), which are also well-known, valid, and reliable scales for the elderly (Caruso, 2000; Wade, Dougherty, Hart, & Cook, 1992). The two scales were chosen because of their possible links to pain and coping processes (Lauver & Johnson, 1997; Wade et al., 1992). The three other scales of the NEO Five-Factor Inventory were interesting but were removed in order to simplify and reduce an already extensive battery of questionnaires. Optimism was evaluated by a Likert-type scale (Scheier & Carver, 1985; Scheier & Carver, 1987) used in several studies with older adults. It has a Cronbach alpha of 0.85 (Gignac et al., 1998). The Pearlin Mastery Scale, developed by Pearlin and Shooler (1978), was used in the 1994 Canadian National Population Health Survey (Cronbach alpha: 0.70). The Helplessness Scale, a short version of the Arthritis Helplessness Scale (Cronbach alpha: 0.52; Stein, Wallston, & Nicassio, 1988), has validity for chronic pain populations (Lindroth, Strömbeck, Brossner, Gullberg, & Wollheim, 1994; Zylstra, 1993). Anger was measured with the expression and control sub-scales from the State-Trait Anger Expression Inventory, having Cronbach alphas of 0.55 and 0.73 respectively (Spielberger et al., 1985). This scale is sometimes used for older adult, chronic pain populations (Burns et al., 1998; Kerns, Rosenberg, & Jocob, 1994; Okifuji, Turk, & Curran, 1999).

Social Characteristics

Satisfaction with social life was measured by a single item from the Quebec Health and Social Survey Data (Government of Quebec, 1998). Responses on a 5-point Likert scale ranged from *very satisfied* to *not satisfied at all*. *Living alone* (or not) was determined by a direct question.

Current Health Behaviours and Medications

Four health behaviours were studied: exercise, relaxation and leisure, everyday adjustment activities, and use and availability of social networks. Exercise consisted of three different types of activities (walking, stretching, and strengthening), relaxation and leisure in 12 different activities (e.g., reading), and everyday adjustment activities in 13 different activities (e.g., balancing work and rest). The mean *weekly frequency* of exercise and relaxation/leisure behaviours was estimated using a home-based questionnaire. The *proportion of activities* performed for exercise, relaxation and leisure behaviours, and everyday adjustment activities was also calculated. This was computed by dividing the *number of different types of activities reported as having been performed* by the *total different types of activities listed in the questionnaire*. Cronbach's alphas for the three scales were: 0.77 for exercise, 0.66 for relaxation, 0.53 for leisure, and 0.89 for everyday adjustment activities. Finally, the use and availability of social networks was evaluated by a modified version of the Older Americans Resources and Services, which shows good psychometric qualities for elderly populations (sensitivity: 0.76

and specificity: 0.71; Allard, Allaire, Leclerc, & Langlois, 1992). The total score from this scale varied between 0 and 10. Medication use was determined by asking a direct, open-ended question.

Weighting of Data

The rationale underlying our weighting procedure is as follows: initial descriptive analyses indicated that the sample of participants in this study was not representative of the older adult population with arthritis. Therefore, because our interest was to make inferences about a population of housebound older adults with arthritis, we weighted the statistical analyses in order to draw an accurate portrait of this population (Neter, Kutner, Nachtsheim, & Wasserman, 1996). Our weighting scheme was established in two steps.

First, we examined whether populations living in areas served by participating CLSCs differed from populations living in the areas of non-participating CLSCs. Aggregate data from the 2001 Statistics Canada census were used to compare populations across the 29 Montreal CLSC territories, using variables such as average age, proportion of persons living below the low-income cut-offs, proportion of older adults, gender, and proportion of immigrants. No statistically significant differences were observed between the populations of participating and non-participating CLSC territories.

Second, using individual census data from areas where we sampled participants, we explored whether or not our sample of older arthritic adults differed from that of the population of older adults living in Montreal on educational levels, average socio-economic status, and religious affiliation. These variables were chosen because they might influence how individuals cope with the disease (Williams 2002; Callahan 1996). Age and gender, viewed as potentially important variables, were not included because it is already known that arthritic patients are typically older and more likely to be women (Kaplan, Alcaraz et al. 1997; Peek and Coward 1999). Therefore, as differences on age and gender cannot be attributable to sampling alone, weighting was not appropriate in this case. The analyses showed that our sample included a significantly higher proportion of persons reporting Judaism as a religious affiliation ($\chi^2 = 84.46$, $p > 0.001$), and it did not include older adults who were Muslims, Hindus, Sikhs, or members of other religions (representing 2% of the older adult population served by Montreal CLSCs). There were no statistically significant differences between our sample and the Montreal older adult population on educational levels and socio-economic status.

Therefore, weighting was done exclusively on religious affiliation.

In light of these differences, we weighted all the analyses using specific ratios. In Montreal, 74.6 per cent of older adults are Roman Catholic, whereas they represented only 58.4 per cent of our sample. Therefore a weight of 1.28 was attributed to all Roman Catholic participants. The same logic was used for determining weights for the five other religious groups: Jewish (8.5/28.8; weight: 0.30), Protestant (9/6.4; weight: 1.40), Buddhist (1/0.8; weight: 1.26), Eastern Orthodox (4.25/2.4; weight: 1.77), and none (3.8/3.2; weight: 1.18). Given these findings and our weighting scheme, the results obtained can be generalized to up to 98 per cent of housebound older adults with arthritis receiving services from a local health and social services centre. The results are weighted estimates calculated from this sample of 125 participants.

Statistical Analyses

SPSS (version 10) was used for all statistical analyses. *T*-tests and χ^2 analyses were performed in order to describe our housebound older adult sample and to make the comparisons between subgroups with RA and OA. Moreover, effect sizes were calculated on mean results. Effect sizes of less than 0.30 were considered as small, those between 0.30 and 0.60 as moderate, and those over 0.60 as big.

Results

Tables 1 to 4 present descriptive information on the socio-demographic, physical, psychological, and social characteristics and on the current health behaviours for our total housebound population, as well as the comparisons of OA versus RA participants. As noted previously, all tables present the weighted results.

The average age of the housebound arthritic older adult was 77 years ($SD = 10.5$). It was composed mainly of women (91.2%) and of persons living alone (74%). Just under half (48%) had completed high school. The majority reported being economically self-sufficient (88%). Mean age for the medical diagnosis of their arthritis was 55 years, and 65 per cent had OA (the remainder had RA). *T*-tests show that persons with OA were significantly older than those with RA. The considerable effect size of 0.66 confirms this result.

The results relating to physical health show that housebound older adults experienced high levels of pain, fatigue, and activity limitations. Early morning stiffness lasted over an hour. Among the medical

Table 1: Weighted estimates of socio-demographic characteristics of housebound older adults with RA and OA

Characteristics	RA[a] M (SD) or % (n = 44)		OA[a] M (SD) or % (n = 81)		Total[a] M (SD) or % (n = 125)		RA vs OA[a] $p \leq$	Effect Size
Age (years)	72.51	(12.64)	79.39	(8.24)	76.96	(10.50)	0.002	0.66
Duration of arthritis (years)	24.88	(15.84)	20.72	(15.92)	22.17	(15.95)	ns	ns
Education (years)	9.60	(4.13)	8.57	(4.26)	8.94	(4.22)	ns	ns
Education (%)								
Less than 9 years	47.7		54.4		52.0		ns	
9 to 13 years	34.1		31.6		32.5			—
14 to 20 years	18.2		13.9		15.5			
Women (%)	91.1		91.3		91.2		ns	—
Perception of socioeconomic status (%)								
Poor/very poor	11.1		11.5		11.3		ns	
Wealthy	62.2		73.1		69.1			—
Very wealthy	26.7		15.4		19.6			
Living alone (%)	74.0		71.1		73.0		ns	—

[a]Weighted population estimate derived from our sample. χ^2 or t-test was used for comparison.

Table 2: Weighted estimates of physical characteristics of housebound older adults with RA and OA

Characteristics	RA[a] M (SD) or % (n = 44)		OA[a] M (SD) or % (n = 81)		Total[a] M (SD) or % (n = 125)		RA vs OA[a] $p \leq$	Effect Size
Pain intensity (0–100)	58.56	(23.62)	67.47	(23.14)	64.32	(23.61)	0.045	0.38
Fatigue (0–100)	63.52	(30.94)	70.76	(24.96)	68.20	(27.32)	ns	ns
Limitations (0–100)	3.14	(1.32)	3.61	(1.39)	3.45	(1.38)	0.070	0.34
Stiffness (0–100)	3.08	(0.92)	3.35	(.93)	3.25	(0.93)	ns	ns
Stiffness duration (min)	73.84	(73.83)	55.38	(94.21)	62.40	(87.14)	ns	ns
Co-morbidity (%)								
Depression	22.7		9.9		14.4		0.050	
Hypertension	15.9		19.8		18.4		ns	—
Cardiac problem	29.5		45.7		40.0		ns	

[a]Weighted population estimate derived from our sample. χ^2 or t-test was used for comparison.

problems recorded by the case managers, cardiac problems (40%) were the most frequent. We observed that OA older adults had a significantly higher intensity of pain than RA older adults ($p = 0.045$ and effect size of 0.38). Even if not significant at 0.05, it seems that RA older adults had greater activity limitations ($p = 0.070$). Moreover, presence of depression as reported by the case manager seems to be more prevalent among RA than OA. However, such results are not confirmed by the CES-D scale in the questionnaire.

The descriptive results for psychosocial characteristics indicated that over half the housebound older adults reported some depression (50.4%, based on scores over 16 on the CES-D), with nearly one-fifth reporting

Table 3: Weighted estimates of psychological and social characteristics of housebound older adults with RA and OA

Characteristics	RA[a] M (SD) or % (n = 44)		OA[a] M (SD) or % (n = 81)		Total[a] M (SD) or % (n = 125)		RA vs OA[a] p≤	Effect Size
Optimism (1–5)[6]	3.59	(0.71)	3.32	(0.80)	3.42	(0.78)	0.060	0.35
Mastery (1–5)[6]	3.00	(0.60)	2.86	(0.72)	2.91	(0.68)	ns	ns
Helplessness (1–5)[7]	2.75	(0.53)	2.68	(0.70)	2.70	(0.64)	ns	ns
Depression (0–4)[7]	14.80	(10.60)	19.88	(12.00)	18.00	(11.60)	0.026	0.44
Depression level (%)								
None (15 and less)	55.6		46.1		49.6		ns	
Mild (16–22)	20.0		17.1		18.2		ns	–
Moderate (23–29)	13.3		17.1		15.7		ns	
Severe (30 and over)	11.1		19.7		16.5		ns	
Personality (0–60)								
Conscientiousness	40.69	(10.50)	38.20	(9.18)	39.19	(9.75)	ns	ns
Neuroticism	24.80	(6.31)	26.53	(5.86)	25.84	(6.00)	ns	ns
								ns
Anger (0–30)								
Expression in	11.93	(4.67)	13.88	(4.22)	13.72	(4.38)	ns	
Control out	16.44	(3.80)	15.98	(4.28)	16.16	(4.09)	ns	ns
								ns
Self-efficacy (10–100)[1]								
Total	59.72	(13.57)	54.77	(17.27)	56.57	(13.70)	0.056	
Mastering arthritis	67.19	(17.53)	59.50	(18.42)	62.41	(18.40)	0.028	0.36
Controlling pain effect	53.50	(18.98)	45.88	(20.86)	48.68	(20.44)	0.040	0.42
Performing daily activities	56.48	(18.46)	55.63	(17.18)	55.93	(17.59)	ns	0.37
								ns
Social life (1–4)[2]	2.14	(0.81)	2.45	(0.87)	2.35	(0.86)	0.050	0.36

[a]Weighted population estimates derived from our sample. χ^2 or t-test was used for comparison.
[1]Higher scores reflect a better situation.
[2]Higher scores reflect a worse situation.

severe depression (based on scores over 30 on the CES-D). The total self-efficacy level was around the midpoint on the 100-point scale, but self-efficacy for *mastering arthritis* was somewhat higher. With regard to personality, housebound older adults with arthritis reported high levels of conscientiousness. Overall, when less conservative in our criterion for significance, analyses showed that housebound OA older adults were less optimistic ($p = 0.060$) and reported lower levels of self-efficacy, both globally ($p = 0.056$) and on two of the three sub-scales (*mastering arthritis*; $p = 0.028$, effect size 0.42) and *controlling pain effects* ($p = 0.040$, effect size 0.37) in comparison to RA older adults. They expressed a

higher satisfaction with their social lives ($p = 0.050$, effect size 0.36). The likelihood of being severely depressed was significantly higher in OA participants ($p = 0.026$, effect size 0.44), and a trend was observed when analysed according to category.

On average, housebound older adults exercised twice a week and engaged in relaxation and leisure activities once a week. More than 64 per cent of everyday adjustment activities were performed and 44 per cent of exercise activities, whereas only 19 per cent of relaxation and leisure activities were performed. Use and availability of social networks were at moderate levels ($M = 6.30$, $SD = 1.91$).

Table 4: Weighted estimates of behavioural characteristics and medication use of housebound older adults with RA and OA

Characteristics	RA[a] M (SD) or % (n = 44)		OA[a] M (SD) or % (n = 81)		Total[a] M (SD) or % (n = 125)		RA vs OA[a] p≤	Effect Size
Mean weekly frequency of								
Exercise	2.42	(2.28)	2.26	(2.24)	2.31	(2.25)	ns	
Relaxation/leisure	1.02	(0.70)	0.97	(0.77)	0.99	(0.75)	ns	ns
								ns
Proportion of activities								
Exercise (out of 3)	47	(31)	43	(33)	44	(32)	ns	
Relaxation/ leisure (out of 12)	20	(14)	19	(14)	19	(14)	ns	ns
Everyday adjustment (out of 13)	68	(20)	62	(21)	64	(21)	ns	ns
								ns
Use and availability of social networks (0–10)	6.20	(1.91)	6.35	(1.93)	6.30	(1.91)	ns	ns
Number of arthritis medications	3.08	(1.89)	2.23	(1.67)	2.53	(1.79)	0.014	0.48

[a]Weighted population estimate derived from our sample. χ^2 or *t*-test was used for comparison.

They reported taking an average of 2.5 ($SD = 1.8$) separate medications for arthritis. Among housebound older adults, those with RA took more medication than those with OA. Housebound older adults with RA reported higher medication consumption than other older adults with RA ($p = 0.014$, effect size 0.48).

Discussion

The purpose of this study was to draw a socio-demographic, physical, psychological, social, and behavioural profile of housebound older adults with arthritis, and to compare the RA and OA older adults. By better understanding the characteristics of housebound older adults with arthritis, we have gleaned important information about the profile and the needs of housebound older adults with arthritis, as well as characteristics that could be viewed as targets to facilitate behaviour change or as challenging issues when developing an intervention.

Describing the Profile of Housebound Older Adults

In general, the descriptive information collected in this study draws a portrait of housebound older adults with arthritis as a vulnerable population: They are female (91.2%), relatively older (aged 77 years), have had arthritis for over 20 years, live alone (74%), and have less than 9 years of education (52%). Almost 20 per cent consider themselves as very wealthy. Their

apparent poor physical health increases this picture of frailty. They reported moderate to severely high symptoms of stiffness, fatigue, and pain intensity. Moreover, half of them reported depressive symptoms, with 20 per cent reporting severe depression, thereby further enhancing this image of vulnerability. Finally, their limited involvement in health behaviours (e.g., leisure, relaxation, and exercise) performed in the previous week and their levels of use and availability of their social networks suggest that there is room for improvement for these behaviours.

Overall, older adults with RA are different from those with OA. First, they are younger and in better physical health, having reported less pain intensity and fewer functional limitations. In addition, their psychosocial health seems to be better, with higher levels of optimism and self-efficacy (general and on two sub-scales), a lower level of depression, and greater satisfaction with their social life. However, they reported taking more arthritis medication. Those differences emerged whether they were calculated through *t*-tests or with effect size indices.

Characteristics Seen as Facilitators of Behaviour Change or as Challenging Issues in Program Development

All this information reinforces the position that housebound older adults with arthritis are vulnerable and require significant support. Moreover, several

results pertaining to their characteristics need to be addressed when considering that they could be seen as facilitators of behaviour change or as challenging issues in program development.

The first issue that requires further consideration relates to the differences found between the OA and RA populations. These differences call into question the practice of developing and offering omnibus programs for both groups. The findings indicate that housebound OA older populations are older, live with a worse physical condition as evidenced by their higher levels of pain intensity and fatigue, and their greater activity limitations. Moreover, they reported lower levels of self-efficacy and optimism. One question is whether or not this situation exists because health professionals consider RA to be a more serious condition and therefore are more likely to treat it. In other words, RA may be better managed than OA. It may also be because the OA that affects older adults is more likely to be viewed as a "normal" aspect of aging and therefore ignored by health professionals and individuals with the condition (Gignac, Cott, & Badley, 2002). Further studies are needed on this topic. Moreover, differences observed between housebound OA and RA populations may pose some challenges. We believe that a "one-size-fits-all" program could be adequate if it were flexible enough to incorporate complementary content and themes to meet the unique needs of specific arthritis populations. A program developer should aim at personalizing the intervention to the target population within a structured program.

The second issue requiring further consideration pertains to the high self-reported levels of depression, particularly among the osteoarthritic older adults. One in every two housebound older adults with arthritis reported a significant amount of depression. Depression was also higher in this housebound arthritis population in comparison to what has been reported among other housebound populations (Livingston & McNamara, 1992), suggesting not only that social isolation (a possible consequence of being confined at home) may lead to depression but also that being arthritic and in pain may contribute to this state. This statement is supported in part by a study showing that 46 per cent of pain-prone patients (i.e., continuous pain from an obscure origin) reported feeling depressed every day (Blumer & Heilbronn, 1982). The importance of addressing depression has been highlighted by other studies examining adherence to interventions (Phillips, 2000). This finding indicates that experiencing depression requires direct attention or treatment as an integrated part of an arthritis self-management program. This is an innovative intervention, when considering that

previous interventions have been designed mostly around the signs and symptoms of the disease (e.g., pain, stiffness, and activity limitations).

As a third issue, it seems that housebound older adults with arthritis live alone in greater proportions than other older adult groups, such as those who are housebound with no arthritis (Pasternak et al., 1998) or those living with arthritis but who are not housebound (Badley, 1995; Badley et al., 1994; Bell et al., 1998; Gignac et al., 1998; Pasternak et al., 1998). Close and sustained support from social networks (peers and friends) may enhance people's motivation, their willingness to try new behaviours, and their perseverance (Kelly, Zyzanski, & Alemagno, 1991). Breaking social isolation may also require specific interventions, either through self-management programs or outside activities such as having friendly volunteers call or visit. These data highlight the importance of addressing the social isolation that may result from living alone and that may be further related to participants' greater vulnerability to depression.

Fourth, data on the personality characteristics of the housebound older adults with arthritis indicated moderate to high levels of conscientiousness, which can be viewed as a facilitator of behaviour change (Vézina, Cappeliez & Landreville, 1994). This finding highlights one fundamental feature of this population that might be put to good use in the context of an intervention: Housebound older adults with arthritis are organized, hard working, and goal-oriented (i.e., conscientious). An intervention to promote behaviour change that is structured and well planned should thus be appealing to this group.

Finally, participants reported exercising approximately twice a week. On average, they performed 1.5 different activities among the 3 types studied (reinforcement, stretching, and walking). Such findings are encouraging, since previous experience can act as a facilitator of behaviour change (Bandura, 1977). However, if arthritic older adults could increase their exercise frequency to a daily routine, while maintaining a moderate intensity, it would likely have a more favourable impact on health (Health Canada, 2000). On a less positive note, low levels of commitment to relaxation and leisure activities can be considered as a barrier to behaviour change and need to be targeted in a behaviour change intervention. Most persons reported engaging in few relaxation and leisure activities. These findings support those reported by others (Horgas, Wilms, & Baltes, 1998). In contrast, everyday adjustment activities were more frequently reported (e.g., managing time, establishing a list of priorities, etc.). These results are

partly due to the fact that a variety of home care practitioners visit this population at home, and part of their mandate is to help people adapt their environment and attitudes to meet their needs. One implication of these findings taken together is that self-management programs should aim at increasing the frequency of each health behaviour and the variety of behaviours performed (Horgas et al., 1998; Zimmer, Hickey, & Searle, 1997). Older adults may receive a greater benefit by performing a range of health behaviours, because if some behaviours have to be given up or limited, other behaviours will continue to be of assistance.

This study has several limitations. First, the generalizability of the findings may be restricted. More specifically, the profile drawn is only of housebound older adults with arthritis who receive services from a local health and social services centre. Those not receiving home services were not represented in our sample. Moreover, there was probably some selection bias, because the participants were people who voluntarily participated in a study evaluating a program. Therefore, our study population may be somewhat healthier, since they were willing to participate. Furthermore, some religious groups, representing around 2 per cent of the population, were not included in the initial sample, making generalization of the data impossible for them. Moreover, some differences were not statistically significant between the two groups, even if they appeared as such (e.g., education and wealth). The restricted number of participants might have led to those non-significant results. Moreover, regarding medication consumption, we did not differentiate between analgesics and other arthritis-related medications. Patients living with RA are more likely to be taking other non-analgesic drugs for control of symptoms. Finally, the use of the VAS as the scale measuring pain and fatigue levels can be questioned. Even if new evidence suggests that the psychometrics proprieties of the VAS may be compromised in the elderly (Lachman et al., 1998), others maintain that VAS scales provide valid measures of pain intensity (Clark, Lavielle, & Martinez, 2003). Nevertheless, these data should be very useful to those working with housebound arthritic populations.

In conclusion, this study underscores the complexity of the needs of housebound older adults with arthritis. The findings suggest that we need to rethink the way we design interventions and programs for a housebound population, by taking into account the role of depression and various other variables in order to promote behaviour change. In other words, we must learn to incorporate an appreciation of the predicament of housebound older adults with arthritis.

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