

Arthritic Pain Among Latinos: Results From a Community-Based Survey

CHAD CHERIEL,¹ NATHALIE HUGUET,¹ SHALINI GUPTA,² HEATHER McCLURE,³
RICHARD F. LEMAN,⁴ AND DUYEN L. NGO⁴

Objective. To examine factors associated with pain among Latinos with arthritis, identify common coping strategies and potentially effective interventions, and determine whether pain levels affect the level of interest in potentially useful programs.

Methods. Using a convenience sampling approach and a combination of face-to-face and telephone surveys, 588 Latino adults in Oregon with arthritis were interviewed. The intensity of pain during a typical day was assessed using a scale ranging from 0 (no pain) to 10 (worst pain). A score of ≥ 7 was defined as severe pain.

Results. More than 60% of Latinos reported severe pain. Results from an ordinary least square regression indicated that among Latinos with arthritis, women, those with lower levels of education, and those reporting poor or fair self-rated health and functional limitations had higher levels of pain, after controlling for confounders. Those with severe pain were more likely than those with lower levels of pain to use over the counter medicine and home remedies to manage their arthritis. In addition, Latinos with greater pain were more likely to be interested in arthritis management programs.

Conclusion. These findings have important implications for public health policy. The strong interest of Latinos in various arthritis and joint pain management programs could prove to be an important avenue for supporting a population with high levels of arthritic pain and lack of health insurance. These pain management programs are all the more appealing, given the availability of a number of evidence-based, low-cost interventions.

INTRODUCTION

The burden of arthritis as a cause of disability in the US is underappreciated, and utilization of effective management interventions remains low in spite of the proven benefits associated with such interventions (1–3). Despite an estimated cost of \$10.3 billion per year in lost productivity due to arthritis pain (4), according to Healthy People 2010 (5), existing educational programs on arthritis reach less than 1% of the target population. This low level of utilization results from many factors, including public health policy priorities, socioeconomic determinants, cultural and language barriers, personal attitudes and behaviors, and prevailing myths about the disease. Regardless of the

reasons, the potential benefits to the individual and society of increasing levels of utilization are immense in terms of improved quality of life, productivity gains, and savings in health care costs.

With regard to the specific problem of arthritis among Latinos in the US, knowledge about the frequency and characteristics of arthritis and other chronic diseases is lacking (6,7). Although several studies have shown that Latino patients may cope with arthritic symptoms differently from non-Latinos (8–10), specific coping strategies among Latinos to address pain associated with arthritis have not been well described.

Examining the epidemiology of pain and understanding salient coping mechanisms employed by Latinos could lead to the formulation of effective community intervention programs to improve the quality of life among Latinos living with arthritic pain. Therefore, the objective of this study was to examine the factors associated with pain among Latinos with arthritis, identify common coping strategies and appealing interventions, and determine whether pain level affects program participation interest.

PARTICIPANTS AND METHODS

Participants. Using a convenience sampling approach, we interviewed 588 Latinos in a 4-county region of Oregon

Supported by a grant from the Northwest Health Foundation.

¹Chad Cheriell, PhD, Nathalie Huguét, PhD: Portland State University, Portland, Oregon; ²Shalini Gupta, MD, MPH: University at Buffalo, Buffalo, New York; ³Heather McClure, PhD: Oregon Social Learning Center, Eugene; ⁴Richard F. Leman, MD, Duyen L. Ngo, PhD: Oregon Department of Human Services, Portland.

Address correspondence to Nathalie Huguét, PhD, Center for Public Health Studies, PO Box 751, Portland State University, Portland, OR 97207-0751. E-mail: huguetn@pdx.edu.

Submitted for publication February 3, 2009; accepted in revised form June 18, 2009.

within a community-based participatory research (CBPR) collaborative. CBPR is a collaborative research process that values the involvement of the population being studied and engages the community members in all phases of the project and followup actions. For the Latino community, responding to questionnaires from outside agents is a vexing problem, given cultural and language barriers and the heavy intermingling of undocumented residents. The CBPR process enabled us to build relationships and trust in the community through an elaborate, year-long outreach and education process. Convenience sampling was deemed essential for assuring an adequate representation of the Latino population in the area. Participants were recruited at sites where Latinos congregate, such as housing organizations, grocery stores, churches, work places, health fairs, or cultural events. All of the interviews were conducted in Spanish. Data were collected using face-to-face and telephone interviews.

Latinos were screened for chronic joint symptoms and arthritis, and if such symptoms were present, they were subsequently interviewed. We used questions from the Behavioral Risk Factor Surveillance System (11) to assess chronic joint pain. The participants were labeled as having self-reported arthritis if they reported pain and stiffness in joints for more than 3 months. In addition, participants were screened for professional diagnosis by asking them whether a health care professional had ever told them that they had arthritis.

Measures. *Pain intensity.* The intensity of pain during a typical day was assessed using a scale ranging from 0 (no pain) to 10 (worst pain). Pain was used as a continuous variable and as a categorical variable. Following the Centers for Disease Control and Prevention usage (12), pain was dichotomized into severe pain (≥ 7) versus less than severe pain (< 7).

Socioeconomic characteristics. Socioeconomic characteristics consisted of sex, age, marital status (married versus not married), educational attainment (none/primary versus secondary/college), and employment status (employed versus not in the work force). In addition, employed respondents were asked if they had to take time off from work or had changed tasks or jobs due to their arthritis or chronic joint pain.

Health-related measures. Health-related measures included self-rated health, physical activity (including motivation and barriers), functional limitations, and chronic conditions (including diabetes mellitus, hypertension, heart disease, obesity, cancer, and acquired immunodeficiency syndrome). To measure physical activity, respondents were asked, "What do you do on a regular basis that involves physical activity?" Response options consisted of walking for exercise, gardening or yard work, bicycling, dancing, soccer/basketball/volleyball, etc., exercise classes, other, or none. Those who reported at least 1 activity were considered active; those reporting no activity were considered inactive. To assess functional limitations, respondents were asked to what extent arthritis or joint pain limited their daily life. The response options included "could do everything," "most things," "some things," or

"could hardly do anything" (11). Functional limitations were dichotomized into being able to do all or most activities versus being able to do some or none.

Health coverage. Participants were asked whether they were currently covered by some type of health insurance.

Coping and arthritis management strategies. A set of questions was used to investigate who the respondents had consulted for arthritis management (health care professionals, alternative care therapists, clergy/deacon or priest, family/friend or neighbor, or a parish nurse), the kinds of things respondents did to handle their arthritis (engaging in activities that distracted them from pain, drawing on religious or spiritual beliefs, attending arthritis classes, trying to lose weight, etc.), and the types of treatments they had adopted to help ease arthritis and joint pain (over the counter medications, vitamins or nutritional supplements, prescription medicine, traditional or home remedies, topical oil or ointments, and/or cold/hot pack).

Program participation interest. Respondents were asked to identify activities they would be interested in pursuing to help ease their arthritis and the potential impediments they faced. These activities consisted of exercise classes (walking, swimming, dancing, bicycling, Tai Chi, yoga, etc.), arthritis management classes, interventions offering information about the effect of diet on arthritis and joint pain, and programs providing information on weight management.

Statistical analyses. Independent *t*-test, Pearson's chi-square test, and simple logistic regression were used to test bivariate differences in pain levels by demographic and health-related characteristics, pain management strategies, and program participation interest. Ordinary least square regression was also used to assess the factors associated with pain among Latinos with arthritis. A separate model was conducted with the type of interview (face-to-face and telephone) as a covariate in order to assess the potential biases associated with using multiple modalities for interviewing. The findings showed that the type of interview was not related to pain intensity (data not shown); therefore, this variable was excluded from the final model.

RESULTS

Of 588 respondents to the survey, 298 (51%) participated through face-to-face interviews and 290 (49%) were interviewed by telephone. A total of 578 participants (98.3%) reported Spanish as their primary language, whereas 10 (1.7%) reported English, 90% had lived in Oregon for at least 1 year, and 66% were women. Respondents ranged in age from 19 to 88 years. On average, Latinos with arthritis reported high levels of pain (mean pain score 6.97). More than 60% reported severe pain.

Being female, having fewer years of formal education, having functional limitations related to arthritis, and reporting poorer health status were independently associated with higher pain, after controlling for all of the other covariates (Table 1). There was no relationship between pain level and physical activity. Approximately 79% of the participants reported some type of physical activity,

Table 1. Proportion of Latinos with arthritis reporting severe pain

	Descriptive*	b (SE)	β
Sex			
Men	6.5 \pm 2.0	Reference	
Women	7.2 \pm 1.8†	0.57 (0.16)†	0.137
Age (range 19–88 years)	0.16†	0.01 (0.01)	0.041
Marital status			
Married	6.8 \pm 1.9‡	Reference	
Not married	7.3 \pm 1.8	0.24 (0.16)	0.055
Education attainment			
Less than or equal to primary	7.2 \pm 1.9†	0.39 (0.15)‡	0.099
Greater than or equal to secondary	6.6 \pm 1.9	Reference	
Employment status			
Employed	6.8 \pm 1.9	0.02 (0.16)	0.004
Not in the work force	7.2 \pm 1.9‡	Reference	
Physical activity			
Active	7.0 \pm 2.0	–0.13 (0.17)	–0.028
Inactive	6.9 \pm 1.8	Reference	
Self-rated health§	–0.28†	–0.33 (0.10)†	–0.136
Number of chronic conditions (range 0–5)	0.29†	0.13 (0.08)	0.066
Functional limitation			
Able to do most or everything	5.8 \pm 1.9	Reference	
Unable to do most or some	7.8 \pm 1.5†	1.72 (0.16)†	0.439
Health coverage			
Insured	6.9 \pm 2.0	0.001 (0.16)	0.0003
Not insured	7.0 \pm 1.9	Reference	

* Values are the mean \pm SD of pain for dichotomous variables or the Pearson's correlation coefficient between continuous variables and pain. $R^2 = 32.9\%$; $F[10,499] = 24.5$, $P < 0.001$.
† $P < 0.001$.
‡ $P < 0.05$.
§ Range 1 (poor) to 5 (excellent).

the primary one being walking. Those with severe pain were more likely than those with a lower pain level to report the following as motivations to exercise: staying active as they age (50% versus 29%; $P < 0.001$), following doctors' advice (15% versus 8%; $P < 0.05$), and keeping their weight down (33% versus 17%; $P < 0.001$). Those with severe pain were also more likely to report the following as reasons for not exercising: poor health (58% versus 33%; $P < 0.001$), absence of facilities to walk or exercise (22% versus 9%; $P < 0.001$), cost (33% versus 16%; $P < 0.001$) or transportation problems (25% versus 11%; $P < 0.001$), and weather (33% versus 16%; $P < 0.001$).

Also, employment status was not associated with pain. However, among employed participants, those with severe pain were more likely than those without severe pain to report never taking time off (51% versus 26%; $P < 0.001$), wanting to take time off (60% versus 38%; $P < 0.001$), and having to change jobs (38% versus 15%; $P < 0.001$) or tasks (36% versus 16%; $P < 0.001$) due to their arthritis. It should be noted that 40% of those who never took time off wanted to take time off.

The next set of analyses examined coping strategies used by Latinos and their interest in programs that have been shown to have a favorable impact on the quality of life of people with arthritis. Those with severe pain were more likely to use over the counter medicine and remedies to manage their arthritis than those with lower levels of pain (Table 2). Latinos who reported severe pain were more

likely to cope with their arthritis by drawing on religion, changing diet, and trying to lose weight. Those with severe arthritic pain were more likely than those with less pain to have visited a health care professional, alternative care provider, parish nurse, or clergy/deacon or priest as part of their pain management strategy (Table 2). To adjust for the influence of differing levels of health care access on the choice of pain coping mechanism, we controlled for whether or not people had been formally diagnosed with arthritis by a health care provider using logistic regression (data not shown). Not surprisingly, the differences in health care–related coping mechanisms (prescription medication and health care visits) were not significant after controlling for clinical diagnosis. Similarly, because health insurance could influence the choice of coping mechanism, separate analyses were conducted, adjusting for health insurance status (data not shown). The pattern of findings was not altered. These results suggest that Latinos with severe pain use all available options to alleviate their pain.

Finally, Latinos with severe pain were significantly more likely to be interested in arthritis management programs (Figure 1). Most participants reported interest in classes regardless of the level of pain. However, more than 50% of those with severe pain reported being interested in information on diet, weight management, and walking compared with less than 50% of those with lower pain levels.

Table 2. Frequency of use of different arthritis management strategies by pain severity

	<7, %	≥7 (severe), %
Type of treatments used		
Over the counter medicine	44.8	70.9*
Vitamins and supplements	23.5	32.5†
Prescription drugs	22.2	33.0‡
Traditional and home remedies	35.7	49.3*
Topical oils, rubs, and ointments	49.1	61.5‡
Cold/hot packs	18.3	35.0*
Type of activities		
Leave the house (e.g., go to movies, shopping)	18.4	17.9
Draw on religion	14.9	40.5*
Try to lose weight	14.9	24.3‡
Change diet	12.7	22.8‡
Attend arthritis management classes	1.8	2.0
Keep busy with projects	43.4	35.0†
Be around people	16.7	20.5
Do something enjoyable (e.g., watch television, listen to music)	36.8	32.9
Do nothing	14.0	19.4
Type of persons seen		
Alternative medicine provider	10.1	19.8‡
Health center/doctor/clinic	46.1	55.5†
Clergy/deacon/priest	2.2	10.6*
Family/friends/neighbor	58.8	63.8
Parish nurse	3.5	9.2‡

* $P < 0.001$.
 † $P < 0.05$.
 ‡ $P < 0.01$.

DISCUSSION

In this study, more than half of Latinos with arthritis experienced severe pain. The level of pain was greater among women, those with lower levels of formal education, and those reporting poorer health. Most studies examining pain among Latinos have focused on ethnic differences in levels of pain. These studies present conflicting results. Some have suggested that Latinos have a higher prevalence of pain than non-Latino whites (12,13), whereas others observed no ethnic differences in levels of pain (14). For example, Edwards et al found no differences

among whites, Latinos, and African Americans with regard to pain level and pain-related disability (14). Several studies have found ethnic/racial differences in pain coping strategies (15–18). However, most of these studies focused on differences between African Americans and whites (16–18). Limited research suggests that Latinos are less likely to visit a health care professional and more likely to rely on prayer than non-Latino whites (14,15,19). Furthermore, there is some evidence that certain health care-related practices such as physician visits, therapy and exercise, formal weight control programs, prescription drugs, and surgery, tailored for the general population, may not be realistic options for a large segment of the Latino population (20).

A large proportion (67%) of our sample reported having no health insurance. This is in contrast to state and national surveys that peg the rate of noninsurance for Latinos at less than 40% (21). Lack of health insurance along with language barriers and other cultural issues might explain the low rate of health care professional–diagnosed arthritis among the Latino population. Given the high prevalence of noninsurance among this population, a majority of those with severe pain rely on over the counter medicine, traditional remedies, and topical oils or ointments, and much less on prescription drugs. This finding suggests that Latinos with arthritis, particularly those who are uninsured, may not receive appropriate health care for their condition.

Our results also show that Latinos with higher levels of pain show greater reliance on religious coping. This finding is consistent with previous research showing the importance of religious belief in managing pain among Latinos (14,15,22).

The high percentage of Latinos with severe arthritis pain who reported making an effort to exercise is noteworthy, as is the high level of interest in arthritis self-management programs. Although health care providers often play an important role in pain management and chronic care, interventions offered within health care facilities may not reach a large segment of Latinos living with pain and seeking appropriate remedies. The availability of evidence-based arthritis self-management programs in the community setting that are accessible and culturally responsive to Latinos has great potential to mitigate pain and improve mobility among Latinos with arthritis.

We also found that among employed Latinos, 2 of 5 workers who wanted time off did not take time off. In addition, the high rates of Latinos changing work tasks due to their arthritis points to the need for accommodations at the work place. A body of research has shown the importance of taking time off, changing job tasks, and improving conditions as an effective coping strategy for health-related problems (e.g., pain) (23–26). Interventions directed toward the improvement of employment conditions (e.g., job enrichment, task rotation, or introduction of work-rest time) (27) may be beneficial for some Latino workers. However, it is recognized that many Latino workers are migrant workers or have low-wage jobs with strenuous conditions that are unlikely to improve or change. Therefore, interventions outside of the work place are also essential.

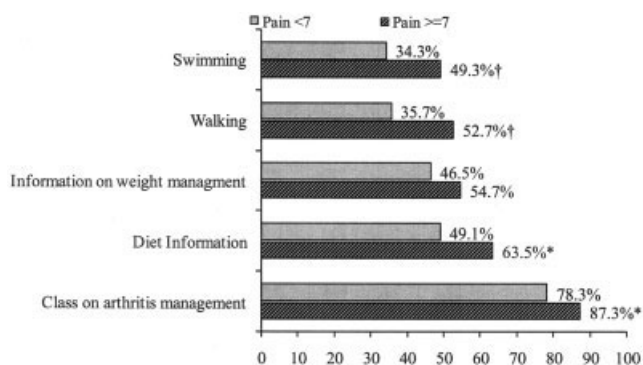


Figure 1. Interest in self-management programs among Latinos with arthritis. * = $P < 0.01$; † = $P < 0.001$.

Healthy People 2010 has emphasized the importance of increased physical activity among people with arthritis to help reduce the condition's disabling effects (5). Self-management programs such as the Arthritis Self-Help Course and its Spanish-language counterpart, *Curso de Manejo Personal de la Artritis*, have been shown to reduce pain, improve function, delay disability, and reduce utilization of health resources (1). Other exercise-based self-management programs have also demonstrated benefits (28). These and other chronic disease-focused self-management programs such as the Chronic Disease Self-Management Program, or *Tomando Control de su Salud*, pioneered by Lorig and colleagues (2,3,29,30), are not widely available to the general population and less so to Latinos. This study suggests that Latinos with arthritis are highly motivated and are interested in learning the best practices for managing arthritis, but are also keenly aware of the impediments (lack of time, poor health, costs, weather, and transportation) that prevent them from engaging in routine physical activities.

The current study has several limitations. First, the findings may not be generalizable to the US Latino population. Our sample was specific to several Oregon Latino communities; therefore, the findings may not be directly applicable to those living outside of these communities. Second, fewer than half of the participants had been formally diagnosed with arthritis by a health care provider. The remaining participants were identified as having arthritis if they reported pain and stiffness in joints for more than 3 months (self-reported). This selection process may have resulted in misclassification. Despite these limitations, results from this study add to our knowledge of the characteristics associated with arthritis pain among Latinos and the various mechanisms they use to cope with pain on a daily basis.

In summary, this study suggests that lack of access to health care is a formidable barrier to utilization of effective arthritis self-management programs by Latinos because many of these programs are offered through health care facilities. Furthermore, Latinos with arthritis demonstrated a strong interest in learning about self-management measures that would help them better cope with their pain and chronic conditions.

AUTHOR CONTRIBUTIONS

All authors were involved in drafting the article or revising it critically for important intellectual content, and all authors approved the final version to be published. Dr. Hugueta had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study conception and design. Cheriell, Hugueta, Leman.

Acquisition of data. Cheriell.

Analysis and interpretation of data. Cheriell, Hugueta, Gupta, McClure, Leman, Ngo.

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