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Health Status, Activity Limitations, and Disability in Work and Housework Among Latinos and Non-Latinos With Arthritis: An Analysis of National Data

ANA F. ABRAÍDO-LANZA, PhD, KELLEEE WHITE, MPH, ADRIA N. ARMBRISTER, MA, and BRUCE G. LINK, PhD

Columbia University, Mailman School of Public Health, New York, New York

Abstract

Objective—To document disparities in health status, activity limitations, and disability in work and housework between Latinos and non-Latino whites with arthritis. We examined whether sociodemographic factors (age, income, and education) account for the disparities between the ethnic groups, and whether comorbid conditions, disease duration, health care utilization, and functional abilities predict health status, activity limitations, and work and housework disability after controlling for sociodemographic variables.

Methods—We analyzed data from the Condition file of the 1994 National Health Interview Survey on Disability, Phase I.

Results—The risk of worse health, activity limitations, and work and housework disability was >2 times greater among Latinos compared with non-Latino whites. In the regression models accounting for potential confounders, Latino ethnicity remained significantly associated with poorer health status, but not activity limitations or disability in work or housekeeping. Of the socioeconomic status variables, education had a significant protective effect on work disability and health status. Comorbid conditions and health care utilization increased the likelihood of worse health, activity limitations, and work disability. Limitations in physical function were associated with poorer health and disability in work and homemaking.

Conclusion—Social status differences between Latinos and non-Latinos may account for disparities in activity limitations and disability in work and housework. Education may provide various health benefits, including access to a range of occupations that do not require physical demands. The findings help to address the great gap in knowledge concerning factors related to the health and disability status of Latinos with arthritis.

Keywords

Latinos; Hispanics; Limitations; Work disability; Housework disability

INTRODUCTION

Latinos are now the largest ethnic minority group in the US, comprising 12.5% of the population (1). Arthritis poses significant health risks to Latinos, ranking second as the leading cause of activity limitations in this population (2). There are, however, few studies and limited national data on arthritis among Latinos in the US (3). The available data

indicate that the prevalence rate of arthritis is lower among Latinos than non-Latino whites (2,4,5). However, among individuals who report that arthritis causes limitations in their usual activities (e.g., working, keeping house), Latinos are more likely than non-Latino whites (22.2% versus 17.5%) to experience limitations (2).

These patterns, lower arthritis prevalence yet higher rates of activity limitations due to arthritis among Latinos compared with non-Latino whites, raise pressing public health concerns. Latinos as a group are poorer, and have lower levels of education, income, and occupational status than do non-Latino whites (6). Lower social class contributes to greater mortality and morbidity of many diseases, including osteoarthritis (7) and rheumatoid arthritis (8,9). Moreover, disadvantaged social class is a risk factor for various illnesses (7,10), placing Latinos with arthritis at greater risk of experiencing comorbid chronic health conditions and disability (11–13). Latinos' lower socioeconomic status levels could also limit access to health care (3), which could worsen symptoms and lead to more rapid disease progression. Low socioeconomic status is also associated with disability (5,14,15), and there is some evidence that, relative to non-Latino whites, older Latinos with arthritis have greater functional limitations (5) and disabilities in activities of daily living (12).

Therefore, disadvantaged socioeconomic status might help explain the higher rates of arthritis-attributable activity limitations among Latinos relative to non-Latino whites. Interestingly, Latinos have better overall health than their social class profiles would predict (16,17). To date, however, no studies have examined whether socioeconomic status or other factors such as comorbidities, utilization of health care, or functional status account for disparities in overall health and activity limitations between Latinos and non-Latino whites with arthritis. The main purpose of this study was to address this gap in the literature.

To further explore disparities observed among populations with arthritis-attributable limitations (2), we examined whether Latinos differ from their non-Latino white counterparts in health status, overall activity limitations, and disability in paid work and housework. We were specifically interested in studying housework given the greater prevalence of arthritis among women than men (18), the prominence of the homemaker role in women's lives (19,20), and the relative neglect of this social role in arthritis research, possibly resulting in an underestimate of disability rates among women (20,21). We examined whether ethnic differences in health status, activity limitations, and disability are attenuated when controlling for sociodemographic and disease-related factors, utilization of health care, and functional abilities. The general questions guiding this study were as follows: Among individuals with arthritis-attributable limitations, to what extent do Latinos differ from non-Latino whites in self-reported health status, activity limitations overall, and work and housework disability? Are there differences between Latinos and non-Latino whites in disease-related variables (comorbid conditions and length of time with arthritis), utilization of health care, and functional abilities (limitations in activities of daily living and physical function)? Does ethnicity predict health status, activity limitations, and disability in work and housework when controlling for potential confounders (sociodemographic factors) and other explanatory variables (disease-related factors, utilization of health care, and functional abilities)? To our knowledge, this is the first study to examine these issues among a national, representative sample of Latinos and non-Latino whites in the United States.

MATERIALS AND METHODS

We used data from the Condition file of the 1994 National Health Interview Survey (NHIS) on disability (22). Conducted by the National Center for Health Statistics (NCHS), the NHIS is an ongoing household survey of a representative sample of the noninstitutionalized US population. In 1994 the NHIS included specific questions on chronic health conditions,

including arthritis and disability, as part of a special survey on disability. Although the 1994 NHIS was conducted in English, bilingual NHIS interviewers were utilized by the NCHS. Field assignments of bilingual interviewers were based on areas with predominantly Spanish-speaking persons, which were very well known. To ensure standardization, interviewers were provided with a Spanish translation of core questions in the NHIS interview. In cases where respondents spoke only Spanish and the interviewer was not bilingual, other family members or neighbors were used as interpreters. (Although there is an item in the NHIS questionnaire to indicate the language in which the interview was conducted, this variable unfortunately is not included in the 1994 NHIS public use data set. Therefore, it is not possible to determine the number of interviews conducted in Spanish, or those with bilingual interviewers or with family members/neighbors as interpreters.)

Sample

The full sample in the 1994 NHIS consisted of 107,469 persons. Of these, 10,783 (10.03%) were Latinos and 88,178 (82.05%) were non-Latino whites. The 1994 NHIS contained numerous questions concerning health problems, impairments, limitations, and disabilities, as well as the conditions causing these health problems. Data on persons who identified a condition causing some form of limitation were recorded in the 1994 NHIS Condition file, which contained detailed information on type of condition and disability. Each condition was assigned a code from the International Classification of Diseases, Ninth Revision (ICD-9). Our analyses were limited to 3,137 individuals ages 18 years who reported arthritis as a cause of any limitation or impairment. Our focus was similar to other NHIS reports that have examined arthritis-attributable limitations (2,23), except that our study included a broader range of potential limitations (e.g., activities of daily living). Prior reports focused only on major activity limitations.

The definition of arthritis according to the NHIS included various forms of arthritis and other rheumatic conditions. In our sample, respondents had ICD-9 diagnostic codes of rheumatoid arthritis, juvenile rheumatoid arthritis, other forms of inflammatory arthritis, osteoarthritis, ankylosing spondylitis and other forms of spondylosis, and rheumatism. The sample consisted of 224 (7.1%) Latinos and 2,913 (92.9%) non-Latino whites. In the NHIS, work limitations questions were asked of all working-age adults (age 18 – 69 years), thus the sample for the analyses of work disability comprised 1,734 respondents, of whom 149 (8.6%) were Latinos and 1,585 (91.4%) were non-Latinos. Analyses of housework disability included a total of 1,158 women, including 85 (7.1%) Latinas and 1,073 (92.9%) non-Latinas, who indicated that their major activity was housekeeping.

Measures

Sociodemographic characteristics—Latino ethnicity was based on respondents' self-reported Hispanic national origin or ancestry (Mexican American or Chicano, Puerto Rican, Cuban, Central or South American, or other Latino), coded either 1 for Latino or 0 for non-Latino white. Age was assessed in years. Sex was coded as 1 for male or 2 for female. Socioeconomic status (SES) was measured as household income and education. Family income ranged from 0 (<\$1,000) to 26 (≥\$50,000). Highest level of education completed had a possible range of 0 (no education or kindergarten only) to 6 (graduate/professional school). Employment status in the NHIS refers to the 2-week period prior to the interview and was coded as employed, unemployed (including layoff status), or not in the labor force. Type of occupation for employed and unemployed persons was measured as 4 broad classes representing occupations with increasing physical demands: managerial, executive, and professional specialty occupations; technical, sales, and administrative support; service occupations; and operators, fabricators, and laborers.

Disease-related variables—Duration of illness was measured by respondents' reports of the length of time since the onset of arthritis, coded as 1 (<1 year), 2 (1–5 years), and 3 (>5 years). Number of chronic conditions was assessed with a variable in the NHIS file that indicated the total count reported by each respondent. Chronic conditions were defined by the NHIS as any impairment or departure from normal health with onset >3 months from the date of the interview, and included various chronic impairments (e.g., glaucoma); disorders of the digestive, genitourinary, nervous, endocrine, circulatory, or respiratory systems (e.g., ulcers, diseases of the prostate, multiple sclerosis, diabetes, hypertension, heart disease, asthma); and other chronic conditions.

Utilization of health care—Respondents were asked whether they ever saw a doctor for their arthritis and the length of time since their last visit. Because the latter variable was coded in uneven intervals in the NHIS and the vast majority of the sample (93.6%) had seen a physician for their arthritis, we created a dichotomized variable to assess whether the last arthritis-related physician visit occurred <6 months ago (1 = yes, 0 = no). Individuals who reported that they never had an arthritis-related physician visit (4 [1.9%] Latinos and 165 [5.9%] non-Latino whites) were coded 0 on this variable.

For descriptive purposes, we also examined general utilization of health care. In the NHIS, respondents were asked to indicate when they last saw a physician for any reason (<1 year ago, 1 to <5 years ago, 5 years ago) and the total number of doctor visits over the past 12 months.

Functional abilities—We used standard indices of functional abilities among individuals with arthritis: difficulty with activities of daily living (ADL), instrumental activities of daily living (IADL), and functional limitations. Items were selected on the basis of their similarity to those found in validated arthritis functional disability measures (e.g., the Health Assessment Questionnaire [24]). ADL was assessed with 6 items (bathing or showering, dressing, eating, getting in and out of bed or chairs, using the toilet, and getting around inside the home), IADL included 6 items (preparing meals for oneself, shopping for personal items, using the telephone, doing heavy work around the house [e.g., scrubbing floors], doing light work around the house [e.g., doing dishes, straightening up, light cleaning], and managing money), and functional limitations contained 8 items (lifting, walking up steps, walking, standing, bending, reaching, using fingers, and holding a pen/pencil). For this study, response formats for these variables were coded as 0 (no difficulty), 1 (some difficulty), 2 (a lot of difficulty), and 3 (unable to do). The ADL, IADL, and functional limitations scales, each calculated as the mean across items with higher scores indicating greater disability, demonstrated high internal consistency reliabilities (Cronbach's $\alpha = 0.89$, 0.79, and 0.83, respectively).

Health status, activity limitations, and disability in work and housekeeping

Health status—A 1-item index was used to assess health status (“How would you rate your health?”) on a 5-point scale ranging from 1 (excellent) to 5 (poor). This commonly-used index is a valid measure of general health status that predicts mortality (25,26). A dichotomous health status variable was created using the standard method of combining the fair and poor categories (coded 1) and the excellent, very good, and good categories (coded 0).

Activity limitations, and disability in work and housekeeping—The NHIS asked all respondents ages 18 years about their primary activity over the past 12 months (“working at a job or business,” “keeping house,” “going to school,” or “something else”). Respondents were then asked whether any impairment or health problem currently prevents

them from engaging in this activity or limits the type or amount of work associated with the activity, and if they responded no to both, they were asked whether the condition limits in any way any other activities. Based on these responses, the NHIS provides in the public use file an activity limitation variable, which is coded as follows: unable to perform major activity, limited in type or amount of major activity, limited in other activities, or not limited. The NCHS uses this variable in current estimates reports of health in the United States to define overall activity limitation. Therefore, we used this variable to measure any activity limitation, which we coded 1 (i.e., “limited”) if respondents indicated that they were either “unable to perform major activity,” “limited in kind or amount of major activity,” or “limited in other activities,” or 0 if they responded that they were “not limited.”

To generate accurate work disability estimates, all individuals of working age (18 – 69 years) in the NHIS, regardless of their primary activity over the past year, were asked whether any health problem or condition prevents them from working in a job or a business, or limits the type or amount of work that they can perform. The NHIS recodes these answers into a work disability variable provided in the public use file. Following previous research (27), in this study, work disability was operationalized as “unable to work” by creating a dichotomous work disability variable that was coded 1 (work disabled) if respondents indicated they were “unable to work,” or 0 (not work disabled) if respondents reported that they were either “limited in amount or kind of work” or “not limited.”

Housework disability was assessed in the NHIS only among individuals who reported keeping house as their major activity. Our analyses focused only on women. Following a procedure similar to the work disability variable, we coded housework disability as 1 (housework disabled) if women reported that they were “unable to do housework,” or 0 (not housework disabled) if respondents indicated that they were “limited in amount or kind of housework” or “not limited.”

Statistical analyses

The NHIS is based on a complex multistage sampling procedure to represent the noninstitutionalized US population. The sampling design involves both clustering and stratification, and oversampling of some targeted subpopulations (particularly minority groups). Sampling weights are provided in each NHIS to account for the sampling design. To account for the NHIS survey design, analyses were adjusted for clustering, stratification, and oversampling using the complex samples module of SPSS version 12.0 (SPSS, Chicago, IL).

Chi-square tests were used to assess whether differences in categorical variables varied by ethnicity (Latino versus non-Latino white). To examine whether continuous measures differed by ethnicity, *t*-tests were used.

Initial analyses of crude odds ratios (ORs; with 95% confidence intervals [95% CIs]) were conducted to determine if the likelihood of poor health status, activity limitations, and disabilities in work and housework differed between Latinos and non-Latino whites. Multiple variable logistic regression analyses were then used to examine whether ethnic differences attenuated when controlling for potential confounders and explanatory variables. Separate models were estimated for health status, activity limitation, and disability outcomes. In the first step of each of these models, Latino ethnicity and sociodemographic characteristics of age, sex, and SES (education and income) were entered. The analyses of housework disability included women only; therefore, sex was not used as a covariate in those models. In the second step of each regression model, other potential explanatory variables were entered into the equations: disease-related variables (duration of arthritis and

number of chronic conditions), utilization of arthritis-related health care, and functional abilities (limitations in ADL, IADL, and physical function).

RESULTS

Sample characteristics

Information on the sociodemographic characteristics of the sample, stratified by ethnicity, is presented in Table 1. Reflecting the different prevalence rates of arthritis between the sexes, and the older average age of individuals with arthritis relative to the general population, the samples of non-Latino whites and Latinos were predominantly female (70.6% and 75.4%, respectively), and the mean age was mid-60s. Although Latinos on average were slightly younger than non-Latino whites, the difference did not reach statistical significance ($t[3,135] = -1.79, P = 0.08$). Relative to non-Latino whites, Latinos had a disadvantaged social class profile. Educational attainment ($t[3,103] = -11.11, P < 0.001$) and income ($t[2,646] = -3.43, P < 0.001$) were lower among Latinos compared with non-Latino whites. In addition, employment status differed by ethnic group ($\chi^2[2] = 10.31, P = 0.007; n = 3,137$). Relative to whites, Latinos were less likely to be currently employed and more likely to be unemployed or not in the labor force. There were proportionally more non-Latino whites than Latinos in professional and other high-status occupations (managerial, executive, professional; technical, sales, and administrative).

The major activity reported by respondents did not vary by ethnicity ($\chi^2[3] = 6.65, P = 0.13; n = 3,089$). A large proportion of both Latinos (40.0%) and non-Latino whites (35.8%) reported their major activity as keeping house. Responses concerning housekeeping were also examined by sex. The majority (approximately half) of the non-Latino white (53.1%, $n = 1,073$) and the Latina women (51.2%, $n = 85$) indicated that their major activity was housekeeping.

Disease-related factors, utilization of medical care, and functional abilities

As shown in Table 2, Latinos did not differ from whites in the length of time they reported having had arthritis ($P = 0.35$) or in the average number of comorbid conditions ($t[3,135] = 0.95, P = 0.34$). There were no differences between Latinos and non-Latino whites in the likelihood of having seen a doctor for arthritis within the past 6 months (OR 1.32, 95% CI 0.95–1.84). When health care utilization was assessed as physician visits for any reason, Latinos did not differ from non-Latino whites in the interval since the last visit to a physician ($\chi^2[3] = 5.75, P = 0.17; n = 3,113$) or in mean number of physician visits over the past 12 months ($t[3,096] = 0.58, P = 0.56$). There were no differences between Latinos and non-Latino whites in functional ability measures (ADL: $t[2,747] = -0.10, P = 0.93$; IADL: $t[2,569] = 0.49, P = 0.62$) or functional limitations ($t[2,927] = 1.67, P = 0.10$).

Self-reported health, activity limitation, work disability, housekeeping disability

Crude ORs for health status, activity limitations, and disability in work and housekeeping in relation to ethnicity are shown in Table 3. Ethnic disparities were observed on all of these measures. Latinos compared with non-Latino whites had >2 times greater risk of experiencing limitations, disability, and worse health. Furthermore, Figure 1 illustrates that ethnic disparities in health were observed across all categories of health status.

The next set of analyses examined whether ethnicity is associated with health status, activity limitations, and disability in work and housework after controlling for sociodemographic variables, disease-related variables, utilization of arthritis-related health care, and limitations in functional ability. Table 4 shows that in model 1 predicting health status, lower education and income, and Latino ethnicity were associated with a greater likelihood of worse health.

In model 2, when including the effects of disease-related variables, use of health care, and ADL and functional limitations, lower education and Latino ethnicity remained significantly associated with increased odds of poorer health; female sex was also associated with decreased likelihood of worse health. Greater number of comorbid conditions, physician visit for arthritis, and functional limitations also increased the likelihood of worse health.

For activity limitations, results in model 1 indicated that of the sociodemographic variables, female sex decreased the odds of reporting any activity limitation. Adjusting for sociodemographic variables, Latino ethnicity was not associated with activity limitations. In model 2, female sex remained significantly associated with lower likelihood of limitations; number of chronic conditions, physician visit within the past 6 months, and disability in IADL were associated with greater likelihood of activity limitations.

For work disability, in model 1, the effect of Latino ethnicity was attenuated when adjusting for sociodemographic variables. Greater education and income decreased the odds of work disability, although the latter OR approached 1.00. In model 2, higher education and income remained significantly associated with decreased likelihood of work disability. In addition, greater number of comorbid conditions, arthritis-related physician visit, and greater disabilities in IADL and functional limitations were associated with increased odds of work disability.

The last column of Table 4 shows results for women who indicated that their major activity was housekeeping. In model 1, only age was associated with less risk of housekeeping disability, but the effect was minimal (OR 0.95) and remained so in model 2. Greater functional limitations was associated with ~2.5 times greater risk of disability. No other variables were associated with housework disability in these models.

DISCUSSION

Healthy People 2010 outlined chronic disease as a major priority area, and set as one of its goals increased dedication to research aimed at understanding the health of underserved and minority populations (28). Our findings indicated that Latinos reported worse health compared with non-Latino whites. Consistent with prior reports (2), Latinos were also more likely than non-Latinos to have activity limitations. In addition, Latinos had higher rates of disability in work and housekeeping than whites.

In the regression models accounting for potential confounders and explanatory variables, Latino ethnicity remained significantly associated with poorer health status, but not activity limitations or disability in work or house-keeping. When assessing their health status, individuals may take into account a broad range of factors (25). One line of research indicates that social factors, specifically exposure to unfair and disrespectful interpersonal interactions stemming from racial/ethnic biases, explain disparities in self-reported health status among African Americans (29). There are no such studies among Latinos with chronic illnesses. These issues warrant further investigation.

Latinos did not report significantly more chronic comorbid conditions than did whites, nor did Latinos differ from whites in utilization of health care. These results suggest that lack of access to health care does not account for worse health or activity limitations among Latinos relative to non-Latino whites. In the regression models, having a physician visit within the past 6 months was associated with increased likelihood of worse health, activity limitations, and work disability. These observations most likely reflect the need for frequent medical care among individuals with poorer health and greater limitations. However, limited data were available in the 1994 NHIS Condition file to measure health care utilization. For example, features of the clinical care (e.g., practice specialty) or other quality of care

indicators could not be assessed. A recent Institute of Medicine report concluded that “even at equivalent levels of access to care, racial and ethnic minorities experience a lower quality of health services” (30). Future studies should investigate whether disadvantaged health and disability status among Latinos relative to whites is a consequence of inequities in the type or quality of health care. For example, the rate of severe joint pain is higher among Latinos than non-Latino whites (4). Latinos, however, are less likely than whites to receive joint replacements (31), a surgical procedure that effectively restores functional abilities for individuals with severe disease, and the difference persists even when adjusting for access to health care and other potential confounders (32).

The vast majority of both Latinos and non-Latinos were not employed, but the risk of work disability was 2 times greater among Latinos than non-Latinos. In the general population, Latinos are overrepresented in occupations that require physical demands, which might help explain why more Latinos than whites were unable to work. Non-professional occupations and physical demands on the job are risk factors for work disability (15,33–35). Moreover, the lower levels of education among Latinos than whites results in a restricted range of possible occupations. That is, Latinos may not have the job skills that would allow them to take less physically demanding, white-collar occupations that often require advanced degrees in higher education. It is notable that education played a significant role in predicting work disability (as well as health status) in our study. Low educational level is a major predictor of work disability (15,36) and is associated with a rapid course towards work disability (37). Furthermore, a lower income and standard of living result from work loss, putting individuals at further risk of disability. More research is needed to understand the factors and contexts that place Latinos at greater risk for disability and limit paid work opportunities.

Because studies of arthritis populations tend to examine disability in paid work, disability levels among women may be underestimated (21). Our analyses revealed high rates of disability, especially among Latinas: ~1 of every 3 Latinas was housework disabled. In the regression model, however, the only major predictor of housework disability was functional limitations. Arthritis has a significant impact on the homemaker role (20). The psychological costs of housework disability may be particularly devastating, especially among women who place high value on homemaking (19,38,39). More research is needed on the effect of housework disability on women’s overall health and well-being.

Some limitations of the NHIS warrant discussion. First, NHIS data are based on self reports of symptoms and medical conditions. The NHIS uses this information to implement a stringent coding strategy in order to assign ICD-9 codes to identify types of arthritis. Nonetheless, issues related to self-report data must be acknowledged. Whereas data based on direct physical examination provide a better estimate of subclinical cases, self-report data provide more accurate estimates of disease among individuals with symptoms (13). Data based on direct physical examinations, however, are difficult to obtain for large, representative samples of the US population. Second, the NHIS was conducted in English. Nevertheless, several steps are taken to ensure that language will not create a barrier against participating in the NHIS, including the use of interpreters, bilingual interviewers, and a Spanish translation guide. It is notable that the 1994 NHIS Disability Phase I had a response rate of 92.5%. At the present time, there are very few national data sets on Latinos with arthritis, and even less are conducted in Spanish. Third, the NHIS is a cross-sectional study; therefore, the findings of this study identify factors that are associated with (but not necessarily causes of) health status, activity limitations, and disability in work and housekeeping. Fourth, our study was based on populations with some form of arthritis-attributable limitations. Thus, our findings may not hold in the larger population of individuals with arthritis who report no limitations whatsoever (unfortunately, it was not

possible to study this broader population with the data available in the 1994 NHIS public use file). Finally, despite the large size of the full sample ($n = 3,137$), the analyses on work ($n = 1,734$) and housework disability ($n = 1,158$) were based on smaller samples of working-age adults and those whose primary activity was homemaking, respectively.

The NHIS is advantageous for several reasons. First, prior studies using data from other NHIS phases have provided important information on arthritis prevalence and disability (2,13,27,36,40). The present study's focus on Latinos contributes to this literature. Second, the NHIS provides key data on Latinos, who have been understudied in arthritis research. Third, the NHIS provides detailed data concerning disability and various types of arthritis. The 1994 NHIS, in particular, contains numerous questions on ADL, IADL, and functional limitations. Fourth, the NHIS contains a large, representative sample of the noninstitutionalized US population. The significance of the ability to generalize research findings based on this data set should not be understated. Finally, to our knowledge, this is the first study to examine health status, activity limitations, and disability in work and housework among a nationally representative sample of adult Latinos and non-Latino whites with arthritis. For all these reasons, the advantages of the NHIS data set far outweigh its limitations.

The findings from this study help to answer basic, unanswered questions concerning differences in health and disability between Latinos and non-Latino whites with arthritis. The results contribute to both theory and applied research. The finding that ethnicity is not associated with activity limitations or disability in paid work or housework independent of sociodemographic factors contributes to theory concerning the fundamental cause of disease (10), i.e., the importance of considering the effects of social disadvantages on disability and well-being. Importantly, results of studies such as ours can be used ultimately to inform programs and policies to prevent and reduce disability, and to promote well-being for historically underserved populations. These policies must address conditions that perpetuate social and economic inequality (10). Furthermore, prior arthritis research has not recognized the importance of studying disability in homemaking, a major social role occupied by women (21,41). Our findings bring to light the exigency of education reform and the promotion of greater recognition of the economic contribution of unpaid domestic work to the economy (41). Although women place a high premium on homemaking (19,21), housework, the major activity of our predominantly female sample, is excluded from national income accounts and from eligibility criteria for disability income support programs (21,41). In addition, further study into the effects of house work and family care on women who have retired from the paid work force is recommended. In summary, the findings from our study help to point the way to promising new directions for theory, research, and policy on the health of Latinos in the United States.

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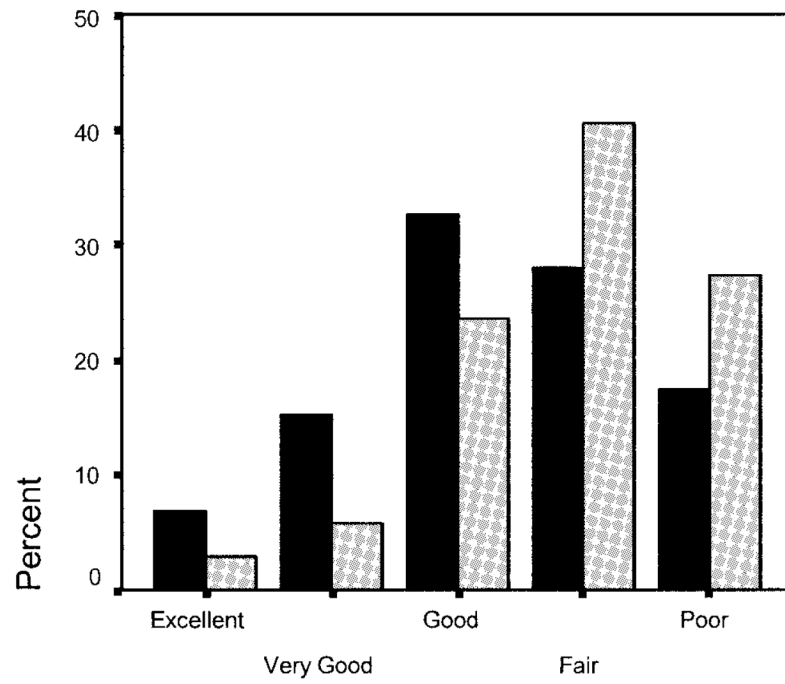


Figure 1. Self-reported health status. Self-reported health status is associated with ethnicity ($\chi^2[3] = 44.74$, $P < 0.001$; $N = 3,121$). Black bar = non-Latino white; gray bar = Latino.

Table 1

Sociodemographic characteristics of study sample *

Characteristic	Latino	Non-Latino
Total	224 (7.1)	2,913 (92.9)
Women	169 (75.4)	2,057 (70.6)
Men	55 (24.6)	856 (29.4)
Latino group		
Mexican	108 (45.0)	–
Puerto Rican	50 (23.9)	–
Cuban	17 (10.6)	–
Central or South American or other Latino	49 (20.5)	–
Age, mean \pm SE years	63.66 \pm 1.20	65.81 \pm 0.26
Education [†]		
None or kindergarten only	13 (5.5)	10 (0.4)
Elementary school	104 (47.3)	572 (19.2)
Some high school	39 (16.9)	473 (16.1)
High school graduate	37 (17.5)	1,066 (36.6)
Some college	8 (3.6)	431 (15.0)
College graduate	9 (3.6)	179 (6.0)
Postcollege	5 (2.2)	159 (5.8)
Income (median)	\$15,000–\$16,000	\$20,000–\$25,000
Major activity		
Keeping house	91 (40.0)	1,116 (35.8)
Working	33 (14.2)	592 (21.2)
Going to school	3 (1.0)	18 (0.6)
Something else	94 (44.7)	1,142 (39.7)
Employment status		
Currently employed	32 (13.7)	620 (21.9)
Unemployed	6 (2.7)	33 (1.3)
Not in labor force	186 (83.7)	2,260 (76.8)
Type of occupation		
Managerial, executive, professional	9 (4.2)	189 (6.5)
Technical, sales, and administrative	7 (3.0)	192 (7.1)
Service	17 (6.6)	188 (6.6)
Operators, fabricators, and laborers	5 (2.5)	70 (2.5)
Not in labor force	186 (83.7)	2,260 (76.8)

* Values are the number (percentage) unless otherwise indicated.

Percentages are weighted. The differences between Latinos and non-Latino whites in education, income, and employment status are significant at $P = 0.01$. The sample numbers of respondents who reported “working” as their major activity do not equal sample numbers of “employed” because the primary activity variable refers to the past year, whereas employment status is defined as the 2-week period prior to the interview. Data source: National Center for Health Statistics, National Health Interview Survey, 1994 (22).

[†] Median education level was elementary school for Latinos, high school graduate for non-Latinos.

Table 2

Disease-related variables, utilization of medical care, and limitations in functional abilities by ethnicity*

Variable	Latino (n = 224)	Non-Latino (n = 2,913)
Disease-related variables		
Length of illness		
<1 year	11 (4.4)	202 (7.0)
1–5 years	63 (26.9)	629 (22.1)
>5 years	150 (68.8)	2,082 (70.9)
Number of chronic conditions, mean ± SE	3.53 ± 0.22	3.32 ± 0.05
Medical care utilization		
Last doctor visit for arthritis <6 months ago		
Yes	146 (65.1)	1,655 (58.6)
No	75 (34.9)	1,167 (41.4)
Last doctor visit (for any reason)		
<1 year	214 (97.0)	2,711 (93.9)
1 to <5 years	6 (2.6)	159 (5.4)
5 years	1 (0.4)	22 (0.7)
Number of doctor visits (for any reason) in past 12 months, mean ± SE	12.36 ± 2.21	11.07 ± 0.70
Functional abilities, mean ± SE		
Activities of daily living	0.13 ± 0.01	0.12 ± 0.04
Instrumental activities of daily living	0.30 ± 0.01	0.34 ± 0.07
Functional limitations	0.56 ± 0.01	0.64 ± 0.05

* Values are the number (percentage) unless otherwise indicated.

Percentages are weighted. Latinos do not differ significantly from non-Latino whites in any of the variables shown. Data source: National Center for Health Statistics, National Health Interview Survey, 1994 (22).

Table 3

Health status, activity limitations, work disability, and housework disability by ethnicity*

	Latino	Non-Latino	Crude OR (95% CI)
Health status			
Fair or poor health	149 (68.0)	1,321 (45.5)	2.55 (1.89–3.44)
Activity limitation			
Unable to perform major activity, limited in type or amount of major activity, or limited in other activities	201 (90.4)	2,367 (80.9)	2.23 (1.40–3.55)
Work disability			
Unable to work	91 (60.3)	645 (40.1)	2.28 (1.53–3.83)
Housework disability			
Unable to do housework	25 (32.0)	176 (16.6)	2.36 (1.52–3.67)

* Values are the number (percentage).

Due to missing data, health status analyses were based on 222 Latinos and 2,899 non-Latino whites. There were no missing data for activity limitation (224 Latinos and 2,913 non-Latino whites). The analysis of work disability was based on 1,734 individuals of working age (18 – 69 years), 149 (8.6%) Latinos and 1,585 (91.4%) non-Latinos. The sample for analysis of housework disability comprised 1,158 women, 85 (7.1%) Latinas and 1,073 (92.9%) non-Latinas, who indicated that keeping house was their major activity. Data source: National Center for Health Statistics, National Health Interview Survey, 1994 (22). OR = odds ratio; 95% CI = 95% confidence interval.

Table 4

Adjusted ORs and 95% CIs for health status, activity limitation, work disability, and housework disability including age, socioeconomic status, and ethnicity (model 1), and effects of disease-related variables, use of health care, and limitations in functional ability (model 2)*

	Health status adjusted OR (95% CI)	Any activity limitation adjusted OR (95% CI)	Work disability adjusted OR (95% CI)	Housework disability adjusted OR (95% CI)
Model 1				
Age	0.99 (0.98–1.00)	0.99 (0.98–1.00)	1.01 (1.00–1.02)	0.95 (0.93–0.96)
Sex	0.88 (0.72–1.08)	0.68 (0.53–0.88)	0.79 (0.60–1.05)	–
Education	0.72 (0.66–0.78)	0.94 (0.86–1.03)	0.70 (0.62–0.79)	0.88 (0.73–1.07)
Family income	0.96 (0.95–0.98)	0.98 (0.96–1.00)	0.93 (0.91–0.95)	0.99 (0.96–1.02)
Latino ethnicity	1.95 (1.31–2.91)	1.53 (0.89–2.63)	1.31 (0.82–2.10)	1.06 (0.50–2.25)
Model 2				
Age	0.98 (0.97–0.99)	0.98 (0.97–0.99)	1.00 (0.99–1.02)	0.94 (0.92–0.96)
Sex	0.72 (0.57–0.91)	0.62 (0.47–0.82)	0.64 (0.46–0.87)	–
Education	0.72 (0.66–0.79)	0.99 (0.90–1.10)	0.69 (0.61–0.79)	0.89 (0.72–1.10)
Family income	0.98 (0.97–1.00)	0.99 (0.97–1.02)	0.95 (0.93–0.97)	1.00 (0.97–1.04)
Latino ethnicity	2.24 (1.45–3.47)	1.69 (0.94–3.03)	1.57 (0.95–2.62)	1.48 (0.67–3.25)
Duration of illness	1.08 (0.90–1.29)	1.18 (0.97–1.43)	1.16 (0.90–1.49)	1.41 (0.93–2.16)
Number of comorbid conditions	1.35 (1.27–1.43)	1.72 (1.56–1.89)	1.22 (1.13–1.33)	1.08 (0.96–1.21)
Physician visit for arthritis <6 months ago	1.77 (1.42–2.20)	1.66 (1.29–2.14)	2.14 (1.56–2.91)	1.60 (0.98–2.60)
Limitations in ADL	0.72 (0.46–1.12)	2.13 (0.49–9.20)	0.88 (0.33–2.30)	1.87 (0.78–4.45)
Limitations in IADL	0.90 (0.65–1.25)	4.66 (2.35–9.26)	2.86 (1.54–5.26)	1.24 (0.62–2.51)
Functional limitations	4.13 (3.12–5.46)	1.01 (0.69–1.49)	2.76 (1.90–4.00)	2.60 (1.59–4.24)

* ORs for each variable are adjusted for all other variables in the model.

ORs for continuous independent variables (age; education; income; duration of illness; number of comorbid conditions; and ADL, IADL, and functional limitations) denote change in the odds of the dependent variable per unit change in the independent variable. Only women are included in the analyses of housework disability. Due to missing data, total samples for analyses are as follows: 1,969 for health status; 1,977 for activity limitation; 1,147 for work disability; and 724 for housework disability. OR = odds ratio; 95% CI = 95% confidence interval; ADL = activities of daily living; IADL = instrumental activities of daily living.