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Work Experience and Gender Differences in Chronic Disease Risk in Older Mexicans

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Keywords

Employment; Occupation; Diabetes Mellitus; Hypertension; Arthritis; Women

INTRODUCTION

Differences in type of occupation may create disparities in health between sexes in Mexico, since, type of labor force activity is associated with physical and mental health risks in other countries [1–5]. This study makes use of the Mexican Health and Aging Survey (MHAS) to examine the relationship between labor force participation and gender differences in health the prevalence of arthritis, diabetes, and hypertension.

METHODS

Data

The Mexican Health and Aging Survey (MHAS) is a nationally representative panel survey of subjects and their spouses in Mexico in 2001 (N=15,186). For this analysis, cases were limited to sampled subjects and spouses where not included. Individual level sample weights created by the principal investigators of the data sets was used for the statistical analysis in order to adjust for sampling design and to represent the Mexican population 50 years of age and older [6].

Variable Measurement

The outcome variable for this project was self-reported physician-diagnosed arthritis, diabetes, and hypertension. We used three measures for our employment variables. First, years in the labor force was measured as a continuous variable. Second, the type of work that subjects reported doing for most of their lives was classified into seven categories based on general description of job classification. Finally, we accounted for pension eligibility as an indicator of whether subjects worked in the formal labor market. We adjusted for whether subjects migrated to the United States in their lifetime, years of education (continuous), age (continuous), and urban/rural residence.

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Analysis

Descriptive statistics were generated to illustrate variations in employment participation and patterns in chronic disease by gender. Binomial logistic regression models were then estimated to predict the odds of having arthritis, diabetes, or hypertension by sex. A total of three models were run. The first model adjusted for demographic characteristics. In the second model, employment history was included, and in the final model interactions between gender and type of work, years worked, and pension eligibility were assessed.

RESULTS

Table 1 shows that older Mexican women were less likely to have previously migrated to the United States (3.5 versus 15.1 percent), worked fewer years (16.0 versus 41.4 years), and more likely to have never worked at all (30 percent). Because of these trends, it is not surprising to see that only 15.2 percent of older Mexican women are pension eligible compared to 45.7 percent of men.

Table 1 presents logistic regression results for the prevalence of arthritis, diabetes, hypertension, and obesity. In the first model for each condition, older Mexican women are at significantly greater odds of the chronic condition than men. When including the employment history variables in model 2, with the exception of diabetes, the odds ratios for female increases for all conditions. For example, for arthritis, when including work history, the odds ratio for female increases by 31.2 percent (model 1 OR = 1.726; model 2 OR = 2.038). Also, when including work history to model 2 for hypertension the odds increases by 11.3 percent (model 1 OR = 2.487; model 2 OR = 2.600). However, for diabetes, the odds ratio is reduced by 10.9 percent (model 1 OR = 1.554; model 2 OR = 1.445). These results, therefore, suggest that in the same type of working conditions, women are at greater risk for these chronic conditions than men.

To examine this relationship further, interactions between female and type of work, years worked and pension eligible are included in model 3. Significant interaction effects are observed for arthritis and hypertension. Individual equations were estimated to determine the effect of occupation type for men and women to have arthritis or hypertension. Estimates were obtained by adding the regression coefficient for sex (β_1 sex) with the coefficient for the given occupation (β_2 occupational class) with the interaction term (β_3 sex*occupational class) [7]. The product was then exponentiated to determine the effect for each sex and these odds ratios are presented in the bottom of the table. These estimates show that women who worked in the services or product provider industry have odds of 13.8 of having arthritis, whereas men have odds of 2.5 relative to men who worked in physical labor occupations. However, for older Mexican women and men the odds ratio for having arthritis is the same (O.R. =1.7) for those working in the client's home compared to men who worked in physical labor occupations. Finally, women who worked in the sales or vending professions have odds of 4.3 to self-reported hypertension, but, men are at a reduced risk of having hypertension (O.R. = .88) in relation to men who worked in physical labor occupations.

DISCUSSION

This study confirms findings from other studies that determined that Mexican women are more susceptible to chronic conditions than men [8]. Although type of labor force participation differs quite a bit between older Mexican men and women, findings from this study suggest that within the same occupational classification, women suffer from the damaging effects on health to a greater extent than men. Interaction effects show that women who provided services or products are particularly susceptible to arthritis compared to men. Moreover, women who work in sales were at a significantly greater risk of hypertension than men. Thus, although

women in Mexico may have worked in the same occupation, they may have different responsibilities that have a greater lasting effect on health than for men.

The major limitation of this study is that since the analysis was based on cross-sectional data, we were only able to obtain a snap-shot of health in the later years of life. It may be that the effect of labor force participation on health fluctuates over the life course, and, based on this data, we would have no way of measuring those changes. Conversely, since the participants are 50 years old and over, we are able to determine the cumulative effects of labor force activity that would not be observable if subjects were younger. Despite the shortcomings, these findings demonstrate the need for public awareness campaigns targeted towards women to prevent chronic disease.

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Table 1
Odds of reporting arthritis, diabetes, or hypertension in older Mexican women compared to men. (n = 7,792)

	Frequency Distributions		Arthritis		Diabetes		Hypertension	
	Female	Male	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Arthritis (%)	1,119 (25.9)	535 (15.4)						
Diabetes (%)	757 (17.2)	443 (12.8)						
Hypertension (%)	1,958 (45.3)	963 (27.8)						
Gender								
Women			1.7***	2.0***	1.4*	2.4 [†]	2.5***	2.6***
Men			1.0	1.0	1.0	1.0	1.0	1.0
Age (s.e.)	62.4 (.14)	61.5 (.16)	1.0***	1.0***	1.0	1.0	1.0**	1.0*
Years of Education (s.e.)	4.1 (.07)	5.2 (.10)	.96*	.98	1.0	.98	1.0	1.0
Married (%)								
Yes	1,705 (39.5)	2,380 (68.6)	1.0	1.1	.98	.96	1.0	1.0
No	2,617 (60.6)	1,090 (31.4)	1.0	1.0	1.0	1.0	1.0	1.0
Migration to the US (%)								
Former Migrant	151 (3.5)	523 (15.1)	1.4*	1.4*	1.1	1.0	1.3 [†]	1.3
Never Migrated	4,171 (96.5)	2,947 (84.9)		1.0	1.0	1.0	1.0	1.0
Type of Work (%)								
Sales/Vending	436 (10.1)	305 (8.8)	1.1	1.1	2.1***	1.8 [†]	1.4 [†]	2.6***
Professional	708 (16.4)	674 (19.4)	1.0	1.0	1.7*	2.1*	1.2	1.7 [†]
Services/	285 (6.6)	488 (14.1)	1.3	1.3	1.9**	2.3**	1.4*	1.2
Product Provider								
In Client's Home	820 (19.0)	418 (12.1)	1.1	1.1	1.2	.88	1.2	1.2
Other	326 (7.5)	124 (3.6)	.86	.86	2.0*	.76	1.5**	1.4
Did Not Work	1,293 (29.9)	23 (.66)	.68 [†]	.68 [†]	1.8**	1.6	1.3	1.4
Physical Labor	454 (10.5)	1,438 (41.4)	1.0	1.0	1.0	1.0	1.0	1.0
Years Worked (s.e.)	16.0 (.27)	41.4 (.22)	1.0	1.0	1.0	1.0	1.0	1.0
Receives Pension (yes=1) (%)								
Yes	658 (15.2)	1,587 (45.7)	.65**	.65**	1.3	1.6*	1.1	1.3
No	3,664 (84.8)	1,883 (54.3)	1.0	1.0	1.0	1.0	1.0	1.0
Significant Interaction Effects								
Type of Work (Physical Labor)								
Females								
Sales/vending								4.3
Services/Product								
In Client's Home								
Males								
Sales/vending								.88
Services/Product								
In Client's Home								

[†] ≤ .10

* ≤ .05

100' ≤

10' ≤
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