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Gender Disparities in Depression in Elderly Puerto Ricans

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ABSTRACT: Past research has shown considerable differences in depression levels in elderly Hispanics. Specifically, past studies have found high levels of depressive symptoms among elderly Hispanic women, particularly those with a Puerto Rican cultural background. However, few studies have analyzed gender as a predictor of depression among elderly Puerto Ricans in Puerto Rico. Utilizing data from the Puerto Rican Elderly Health Conditions survey, this study found elderly Puerto Rican women to have higher levels of depression relative to men and gender differences in the factors associated with depression. This study aims to close the knowledge gap regarding gender disparities in depression in elderly Puerto Ricans residing on the island. Future research should aim to study these gender disparities after the devastating effects of Hurricane Maria.

KEYWORDS: Puerto Rico; elderly; Hispanic Health; depression

INTRODUCTION

Studies of health outcomes of Puerto Ricans show that, compared to other Hispanics in the U.S. Puerto Ricans have the highest rate of lifetime psychiatric disorders (Alegria, 2007). Other reports on mental health indicate that 7.3% of adult Puerto Ricans in the island may have serious mental health illnesses (BSRI, 2016). When looking at physical health, data from previous National Health Interview Surveys in the United States found the Puerto Rican population had the worst overall health of all Hispanic subgroups and reported poorer health when compared to non-Hispanic whites (Lucas, 2016). When the focus is on gender, evidence from past studies have reported that females all over the world have higher depression rates than men regardless of age (Girgus, 2017), and as of 2010 women had a 1.7-fold higher prevalence of depression (Albert, 2015) This disparity could be caused by unequal status and power, physical or sexual abuse, pregnancy, puberty, postpartum depression, premenstrual problems, work overload, menopause and perimenopause, and hormonal changes (Mayo Clinic, 2019). On the island of Puerto Rico, similar trends have been noted. This study focuses on the gender disparities in depression among elderly Puerto Ricans living in the island. The goal is to highlight the socioeconomic, education, and health risk factors of elderly Puerto Ricans. This work is of critical importance due to the high rates of mental health issues in Puerto Ricans and the constantly increasing elderly population in the island in the wake of a massive exodus of the young working class; more than 530,000 persons left the island between 2010 and 2018 (US Census Bureau, 2010-2018).

METHODS

Data from the first wave of the cross-sectional survey Puerto Rican Elderly: Health Conditions (PREHCO) were analyzed utilizing the analytical software Statistical Package for the Social Sciences (SPSS). The sample data from the PREHCO contained the results of questionnaires sent out to over 3,600 elderly Puerto Ricans living in the island of Puerto Rico from 2002 to 2003. The questionnaires were administered via face-to-face interviews that asked questions about medical conditions, health status, and demographic background, and that included physical and mental evaluations (Palloni, 2002). Our analytical sample size was 3631. For mental health evaluations, depression levels were assessed via the Geriatric Depression Scale (GDS) Short Form, which asked respondents how they felt over the past week on 15 questions, including items such as life satisfaction, happiness, helplessness, and hopelessness, among others. Response options were Yes or No and scores ranged from 0 to 15. Other variables utilized in the study included age, which had scores that ranged from 60 to 107; schooling, which was measured using response options from 0 to 16, starting from no schooling to postgraduate studies; gender, which asked if the respondent was either male or female; and difficulty of paying for daily necessities, which was asked as a 'yes' or 'no' question. Medical questions were also asked with yes or no answers about diabetes, hypertension, myocardial infarction, coronary heart failure, and stroke. A response of No was assigned a 0, while a Yes was assigned a 1. Men were assigned a value of 0 while women were assigned a value of 1. Variables were recoded in order to efficiently run and compare different data points. The results of the unstandardized regressions were used to test the association between the predictors and the outcome variable. These results would then be identified as potential risk factors for depression in elders living in Puerto Rico.

RESULTS

To assess depression differences in the relationship between the proposed risk factors and gender, linear regression analyses were run for elderly men and women separately. The data obtained show that elderly women in Puerto Rico have higher levels of depression at 31% versus men at 22%. However, the mean GDS score of both genders appear to be below those levels, indicating mild levels of depression at 3.33. The descriptive statistics demonstrate that the mean grade achieved at school was almost eighth grade; at least half of the elderly population had difficulty paying for daily necessities, and half reported having hypertension. Table 2 shows that for women, higher levels of educational attainment are associated with lower levels of depression. However, saying Yes to having difficulty paying for daily necessities and having experienced a myocardial infarction or experienced a stroke are associated with higher levels of depression. Table 3 shows similar results for men, although experiencing a stroke did not appear to have a significant effect. Based on the results, the biggest difference between men and women is their initial score on the GDS.

Table 1. Descriptive Statistics

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation	Mean (Males)	Std. Deviation (Males)	Mean (Females)	Std. Deviation (Females)
Geriatric Depression Scale Score	3705	0	15	3.33	3.412	2.80	3.064	3.68	3.584
Age	4291	60	107	72.47	9.015	72.47	9.125	72.47	8.942
Schooling	4245	0	17	7.92	4.995	8.06	4.879	7.83	5.071
Gender	4291	0	1	.60	.491	1.00	.000	1.00	.000
Difficulty Paying for Daily Necessities	3701	0	1	.50	.500	.56	.497	.47	.499
Diabetes	4279	0	1	.72	.449	.73	.444	.71	.452
Hypertension	4278	0	1	.42	.493	.48	.500	.38	.485
Myocardial Infarction	4268	0	1	.88	.319	.87	.341	.90	.303
Coronary Heart Failure	4259	0	1	.81	.391	.81	.391	.81	.392
Stroke	4279	0	1	.93	.255	.93	.263	.93	.249
Valid N (list wise)	3631*								

*Based on qualifying questionnaires.

Table 2. Coefficients of Elderly Female Population

Coefficients		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
Women Linear Regression	(Constant)	2.716	.717		3.789	.000
	Schooling.	-.066	.015	-.093	-4.342	.000
	Age.	.004	.009	.010	.474	.636
	Difficulty Paying Daily Necessities.	1.376	.152	.193	9.079	.000
	Diabetes.	.263	.168	.033	1.565	.118
	Hypertension.	.188	.157	.026	1.198	.231
	Myocardial Infarction.	.350	.274	.029	1.278	.202
	Congestive Heart Failure.	.857	.205	.093	4.171	.000
	Stroke.	1.046	.347	.064	3.014	.003
a. Dependent Variable: Geriatric Depression Scale Score.						

Table 3. Coefficients of Elderly Male Population

Coefficients		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
Men Linear Regression	(Constant)	2.180	.753		2.894	.004
	Schooling.	-.053	.017	-.085	-3.206	.001
	Age.	.003	.010	.009	.331	.741
	Difficulty Paying Daily Necessities.	.878	.159	.144	5.541	.000
	Diabetes.	.265	.176	.039	1.501	.133
	Hypertension.	.189	.161	.031	1.175	.240
	Myocardial Infarction.	.256	.256	.028	.999	.318
	Congestive Heart Failure.	1.061	.221	.135	4.796	.000
	Stroke.	.559	.355	.041	1.575	.116
a. Dependent Variable: Geriatric Depression Scale Score.						

DISCUSSION

As our results show, elderly females scored higher than men in the Geriatric Depression Scale. This trend has been seen globally, but various scientific publications differ on the reasons behind such phenomenon. Some have pointed out biological explanations based on sex as to why females reportedly have higher depression levels than men (Albert, 2015). Other studies suggest that there is more to it than biological differences, as social implications around aging may also play a role in the depression rates of women (Bebbington, 2003). To better understand such results, the data here show how score changes on the Geriatric Depression Scale might be estimated based on the presence or lack of the several studied independent variables. The linear regression that analyzed only elderly women shows how higher education levels correlates with lower depression levels later in life. It could be possible that higher education levels correlates with higher paying careers, more access to healthcare services, and maybe even lower stress. These factors may, in turn, positively influence physical and mental health and in some cases serve as a protective factor.

Having difficulty paying for daily necessities, suffering from congestive heart failure, or experiencing a stroke negatively affected the levels of depression. The unstandardized beta coefficients show that those three variables could have the potential to increase the GDS scores of elderly Puerto Rican women from a normal range to over a score of 5, indicating symptoms of mild depression. The additional variables, especially age, did not seem to play a significant role in how depression levels might be affected. In men, similar results were noted, except in cases of experiencing a stroke, affect depression rates later in life.

It is important to reiterate how socioeconomic status may positively or negatively affect depression levels in the elderly Puerto Rican population, something that could most likely be translated to other populations. The variable of not being able to pay for daily necessities has the potential to increase the GDS score by 1.376 in elderly women and 0.878 in men, thus surpassing the normal range to one where symptoms of mild depression can start to occur. With my results, I was able to show that some factors have the ability to influence depression levels in elderly Puerto Ricans, especially females, but the deeper question remains of why females suffer the effects more severely than men on the island of Puerto Rico.

CONCLUSION

Utilizing data from the PREHCO, I analyzed gender differences in depression scores while simultaneously considering several variables as risk factors. My data shows differences in depression levels, as women have higher scores than men, and some variables seem to increase those scores in both genders. Even more potential risk factors for depression in elders living in Puerto Rico should be further analyzed to determine possible action plans to lessen their negative effects. To continue examining this issue, it would be beneficial to conduct another island-wide survey similar to the previous PREHCO, but aiming towards a deeper understanding of current depression rates in Puerto Rican elders and now, even more, after the devastating effects of Hurricane Maria, which destroyed the island recently. It is also important to target the potential weaknesses of the obtained data from the PREHCO, as it was from surveys of computer-assisted personal interviews, face-to-face interviews and cognitive assessment tests in which participants could give unreliable answers. This work is of importance as the elderly population in Puerto Rico has been steadily increasing in the last couple of years, and in 2017, it was estimated that 23.9% of the population was 60 years of age or older, the second highest in the Caribbean, only behind the US Virgin Islands (Office of the Procurator of People of Advanced Age, 2017).

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