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## Protective and risk factors associated with comorbid mental health disorders and psychological distress among Latinx subgroups

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### ABSTRACT

Psychological distress, often coupled with comorbid mental illnesses, affects Latinxs at higher rates and severity than other ethnic groups. This study examined differences in the association between comorbid mental illnesses and psychological distress between Latinx subgroups. Using a sample of 28,630 adults from the National Health Interview Survey, this study used hierarchical multiple regression models to test for differences in psychological distress among various Latinx subgroups and interactions effects between Latinx subgroups and psychological distress. The presence of multiple mental health disorders and comorbid mental health disorders were associated with greater rates of psychological distress. The relationship between mental health disorders and psychological distress varied by Latinx subgroup. An interaction test yielded a significant interaction between being Puerto Rican and having no mental health disorders. Puerto Ricans with no mental health disorders report higher rates of psychological distress when compared to other Latinx subgroups. The implications of the study findings for mental health services for Latinx groups and for future research are discussed.

### KEYWORDS

Latinx mental health; psychological distress; comorbidity; National Health Interview Survey

## Introduction

Psychological distress is an emotional disturbance that affects social functioning and other aspects of day-to-day activities (Wheaton, 2007). When distress is severe enough, individuals become at risk of experiencing a serious psychological disorder or impaired functioning (Barragán et al., 2015; Bratter & Eschbach, 2005; Kessler & Barker et al., 2003). Given the increased risk of mental health morbidity associated with high psychological distress (Hendricks et al., 2015; McKelvey et al., 1998; Kessler & Barker et al., 2003), research has focused on identifying sociocultural and intergroup dynamics risk factors for psychological distress.

Often coupled with comorbid mental illnesses, psychological distress affects Latinxs at higher rates and severity than other ethnic groups. According to the Centers for Disease

Control and Prevention (CDC, 2015), 4.9% of Latinxs report serious psychological distress, compared with 2.8% for Euro-Americans and 3.3% for African Americans. Immigration factors such as nativity status (Molina & Alcántara, 2013) and acculturation (J. M. Torres & Wallace, 2013; L. Torres et al., 2012) have been shown to affect levels of psychological distress among Latinxs. However, Zhang et al. (2012) illustrated that among Latinxs, sociodemographic factors (e.g., employment, gender, education) and discrimination have a stronger association with psychological distress than English proficiency, a commonly used proxy variable for acculturation. Although sociodemographic factors affect distress among Latinxs, the literature has yet to identify both the magnitude and types of relationships within specific Latinx groups.

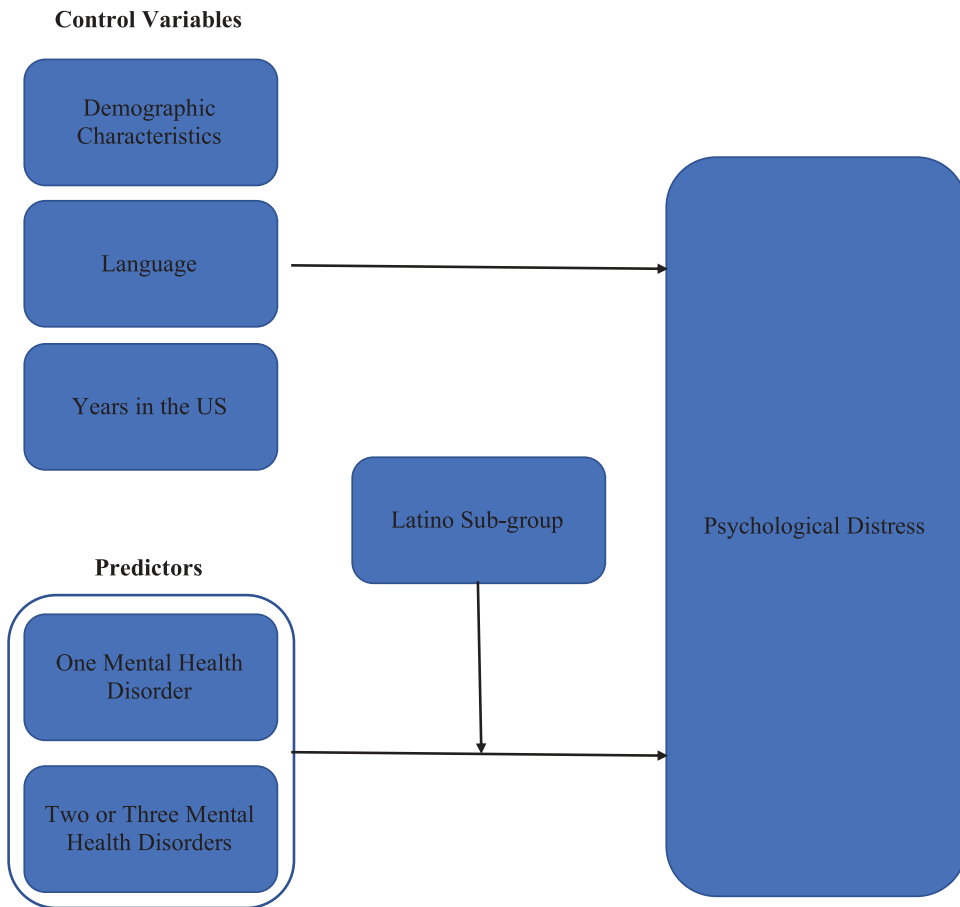
## **Background**

Although there is a shared identity and common language, Latinx subgroups (e.g., Mexican, Mexican American, Central and South American, Puerto Rican, and Cuban and Cuban American), vary in key ways that influence their experiences with mental illness and their mental health needs (Alegría et al., 2004; Alegría et al., 2010; Mirowsky & Ross, 1980). In a study using data from the National Health Interview Survey (NHIS) comparing rates of psychological distress by ethnic/racial groups, Bratter and Eschbach (2005) found between group heterogeneity in psychological distress among various Latinx subgroups. Puerto Ricans had the highest levels of psychological distress compared to Euro-Americans, whereas Cubans had rates comparable to those of Euro-Americans. Mexicans reported lower distress compared to Euro-Americans.

Mirowsky and Ross (1980) contextualized Latinx heterogeneity and psychological distress using the ethnic-culture perspective, stating that psychological well-being varies based on cultural practices and values that distinguish various ethnic groups. These sociocultural factors thus affect the nature of health problems between subgroups, both shaping the manifestation and severity of mental health problems and how those problems are best mitigated. Since Mirowsky and Ross (1980), other studies (e.g., Alegría et al., 2004; Alegría et al., 2010; Bratter & Eschbach, 2005) have since supported the ethnic-culture perspective to varying degrees.

Research has shown that the relationship between protective and risk factors can differ among Latinx groups in relation to psychological distress. For example, Rivera et al.'s (2008) assessment of the buffering effects of family cohesion (i.e., emotional bonding among family members; Olson et al., 1983) on psychological distress illustrated the complex nature of relationships among family members across Latinx subgroups. When observing Latinxs as a whole, family cohesion was associated with lower psychological distress. However, among Cubans, increased family cohesion was associated with increased psychological distress, whereas among Puerto Ricans and Mexicans, family cohesion had no impact on psychological distress.

Rivera et al. (2008) demonstrated that certain factors commonly thought of as buffering distress may actually increase risk for certain Latinxs. What is unclear, however, is whether these complex relationships extend beyond social dynamics assessed by Rivera et al. (2008), creating an incomplete picture of risk and protective factors among Latinxs.



**Figure 1.** Conceptual model.

Given the heterogeneity that exists among Latinx subgroups, it is imperative to understand differences in psychological distress between these groups and the risk and protective factors associated with it. This study aimed to examine the differences in the association between comorbid mental illnesses and psychological distress and protective and risk factors associated with psychological distress between Latinx subgroups (See [Figure 1](#)).

## **Methods**

### **Data source**

The present study uses data drawn from the National Center for Health Statistics' National Health Interview Survey (NHIS) in 2012. The NHIS is a cross-sectional household interview survey of the civilian, noninstitutionalized population in all states. It captures information about the household composition of respondents, socio-demographic characteristics, and information on health status indicators, using a multistage sample design to produce nationally representative estimates on health. Data are collected through a personal household interview carried out by trained interviewers employed by the U.S.

Census Bureau. The NHIS uses oversampling, stratification, and cluster techniques to adequately sample various ethnic groups, including Asian, African American/Black, and Latinx respondents. For further information on the sampling methods used in the NHIS please refer to the CDC (CDC, 2016). All data has been approved by the Research Ethics Review Board for public access and analyses.

### **Participants**

The overall study sample was 28,630, with 4,921 Latinxs available for inclusion in the analysis. The mean age of participants was 45.82 years ( $SE = 0.15$ ), with a slightly uneven gender distribution (48.8% male). Mexicans (38.2%) accounted for the largest proportion of Latinxs, followed by Mexican Americans (23.0%), Central or South Americans (15.7%), Puerto Ricans (10.0%), other Latinxs (8.0%), and Cubans and Cuban Americans (henceforth referred to as Cubans) (5.1%). Due to small subgroup numbers, a separate “other Latinx” category was created that included Dominicans, other Latin Americans, mixed-origin Hispanics, and other Spanish-origin individuals. Data for Mexicans and Mexican Americans were not aggregated, as large samples of each group were sampled and separately identified.

### **Measures**

#### **Psychological distress**

The dependent variable, psychological distress was measured using Kessler’s K6 scale (Kessler & Andrews et al., 2002). Kessler’s K6 scale psychological distress during the previous 30 days. The scale measures helplessness, hopelessness, nervousness, restlessness, sadness, and worthlessness. Each item is scored on a range from 0 (*none of the time*) to 4 (*all of the time*). Several studies (Drapeau et al., 2010; Green et al., 2010; Kessler & Andrews et al., 2002) confirmed a single-factor structure of the scale, but a study by Arnaud et al. (2010) provided evidence of a two-factor structure, in which restlessness and nervousness share a common latent structure.

The K6 was designed to increase consistency and accuracy in measuring distress, ensuring reliability across various demographic factors, such as gender and age, and no cultural bias (Drapeau et al., 2010; Drapeau et al., 2012; Green et al., 2010; Kessler & Andrews et al., 2002). Moreover, other studies have validated the Spanish version of the K6, with a satisfactory internal consistency ( $\alpha = .87$ ; Kim et al., 2011; National Comorbidity Survey, 2015).

#### **Demographic characteristics**

Demographic factors included age, gender, and marital status. Measures of socioeconomic factors included level of education, employment, and income. Education responses included never graduated high school, high school graduate or GED, some college or associate’s degree, college graduate, and postgraduate. Respondents were asked about their employment status and considered unemployed if they were looking for work. Household income was measured on a continuous scale. Proxy measures for acculturation measures included language used during the NHIS interview (English or other) and the number of years that the participant had lived in the United States.

### **Mental health disorders**

Lifetime mental illness was measured in terms of phobia, depression, and other mental health disorders. Respondents were asked, “Ever been told you had phobia or fears?”; “Ever been told you had depression?”; and “Ever been told you had other mental health disorders?” Responses were then categorized as no mental disorders, one mental disorder, and two or three mental disorders.

### **Statistical analysis**

**Descriptive and bivariate statistics.** Descriptive and bivariate statistics were calculated to examine the rates of lifetime comorbid mental illnesses and level of psychological distress (See Table 1). Means & standard deviations were obtained for age, income and psychological distress for each subgroup and for the entire sample. To determine if significant differences can be found between subgroups in their age, income and psychological distress, ANOVAs were completed. Categorical variables—gender, marital status, education, employment, language, years in the US, and the number of mental health disorders—were analyzed using cross-tabulations, followed by chi-square analyses to determine if significant differences can be found between Latinx subgroups. Given that NHIS utilized various complex sampling strategies and weights, standard methods of descriptive analyses must account for these unique sampling errors. Therefore, descriptive analyses utilized the *Survey* procedure with *weight* statements in SAS 9.4, which provides a more accurate generalization of the findings to the population (SAS Support, n.d.).

**Multiple regression analysis.** A four-step hierarchical multiple regression analysis was used to test the central study questions. In preparation for multiple regression analysis, all categorical variables were dummy coded (0, 1 with 1 = presence of the characteristic) as is recommended when conducting multiple regression analysis with categorical variables (Cohen et al., 2003). The reference group for each dummy coding scheme is presented in Table 2.

The independent variables of age and income were the only two continuous independent variables in the regression model. The continuous variables were assessed for normality, linearity, and homoscedasticity of residuals prior to analysis as is recommended when conducting regression analysis (Tabachnick et al., 2007). Age and income met the necessary assumptions for inclusion in a regression model (e.g., normally distributed, linear relationship with the dependent variable, and homoscedastic residuals). As is common in hierarchical regression, the independent variables are entered into the regression model based on some logical or conceptual consideration. One strategy includes entering variables based on the level of interest in each set of variable where the variables of lesser interest are entered first and the set of variables of greater interest are entered last in order to assess how much the variables contribute over and above the previous set of variables (Cohen et al., 2003; Tabachnick et al., 2007). This strategy allows for the evaluation of the unique contribution that the variables of greater interest make to the prediction of the dependent variable while holding the variables of lesser interest constant (Tabachnick et al., 2007). In line with this approach, the first step in the analysis included only demographic characteristics (not including Latinx subgroup). Step 2 of the analysis included mental health variables followed by Step 3 which included the Latinx subgroup. In order to test if an interaction exists between the number of mental health disorders and Latinx subgroups, an interaction term was entered in Step 4. The interaction effect was



Table 1. Sample characteristics.

	Total (n = 28,630)	Non-Latinx (n = 23,709)	Mexican (n = 1,880)	Mexican Am. (n = 1,130)	Central/S. Am (n = 774)	Puerto Rican (n = 491)	Other Latinx (n = 394)	Cuban/Cub. Am. (n = 252)
Age (in years) <sup>a</sup> **	45.82 (0.15)	46.82 (0.16)	39.52 (0.43)	38.38 (0.56)	40.61 (0.67)	42.61 (0.91)	40.85 (0.97)	48.20 (1.22)
Income (in dollars) <sup>a</sup> **	66169 (586.26)	69219 (656.73)	41010 (1209.18)	57016 (1736.33)	53232 (3025.72)	51121 (3070.37)	51046 (3094.68)	52394 (4392.32)
Male <sup>a</sup> **	48.84 (0.40)	48.48 (0.45)	54.87 (1.36)	50.95 (1.92)	47.50 (2.33)	45.12 (2.76)	49.16 (3.34)	44.16 (4.36)
Unmarried <sup>a</sup> **	39.15 (0.41)	39.18 (0.46)	30.46 (1.67)	45.17 (1.81)	38.70 (1.88)	49.21 (2.86)	48.40 (3.15)	42.12 (3.91)
Education <sup>a</sup> **								
Less than High School	13.72 (0.30)	10.4 (0.27)	52.20 (1.62)	19.93 (1.31)	30.42 (2.6)	23.50 (2.35)	25.78 (2.83)	12.19 (2.31)
High School	25.41 (0.37)	25.14 (0.41)	23.74 (1.34)	31.52 (1.71)	22.40 (1.85)	35.12 (2.95)	23.44 (2.74)	33.35 (2.88)
Some college or assoc.	31.82 (0.42)	32.75 (0.47)	18.4 (1.11)	37.74 (2.0)	26.20 (2.2)	26.96 (2.46)	32.50 (3.30)	31.2 (3.87)
College grad or higher	29.5 (0.44)	32.7 (0.48)	6.1 (0.72)	10.81 (1.5)	20.98 (1.86)	14.42 (2.66)	18.28 (2.66)	23.44 (3.43)
Unemployed <sup>a</sup> **	37.29 (0.42)	37.66 (0.46)	31.20 (1.28)	34.64 (1.80)	30.27 (1.79)	49.27 (2.77)	42.76 (3.5)	48.61 (4.36)
Language <sup>a</sup> **								
Spanish	3.22 (0.18)	0.6 (0.3)	38.27 (2.12)	4.43 (0.91)	27.0 (2.67)	10.28 (1.97)	21.21 (3.71)	33.53 (4.2)
English	95.7 (0.23)	99.44 (0.7)	46.33 (1.99)	92.8 (1.30)	62.11 (3.8)	84.80 (2.18)	72.53 (3.64)	59.48 (4.90)
Other	1.71 (0.12)	0.50 (0.6)	15.40 (1.58)	3.50 (0.98)	10.89 (1.74)	4.91 (0.91)	6.26 (1.14)	6.99 (3.52)
Years in the U.S. <sup>a</sup> **								
< 5 years	1.52 (0.9)	1.10 (0.9)	4.2 (0.66)	0.20 (0.20)	7.23 (1.23)	2.71 (0.80)	5.29 (1.44)	10.21 (2.11)
5–9 years	2.5 (0.12)	1.9 (0.9)	11.58 (1.11)	1.29 (0.65)	11.3 (1.53)	2.34 (0.73)	3.73 (0.98)	10.40 (2.32)
10–14 years	2.77 (0.12)	1.32 (0.10)	16.84 (1.10)	1.80 (0.54)	19.31 (2.1)	4.20 (1.7)	2.16 (0.63)	7.68 (2.32)
≥ 15 years	11.13 (0.27)	6.64 (0.25)	47.59 (1.39)	12.8 (1.11)	47.6 (2.31)	34.34 (2.66)	34.51 (2.98)	40.70 (3.4)
Born in the U.S.	82.52 (0.35)	89.85 (0.30)	19.97 (1.21)	84.63 (1.49)	15.36 (1.75)	56.41 (2.98)	54.31 (3.34)	31.1 (3.94)
Mental health disorders <sup>a</sup> **								
Zero	81.41 (0.29)	80.63 (0.33)	89.1 (0.97)	83.63 (1.28)	88.12 (1.49)	77.90 (2.26)	81.91 (2.10)	84.87 (3.7)
One	13.89 (0.26)	14.49 (0.29)	8.18 (0.87)	12.16 (1.18)	9.31 (1.40)	16.10 (2.3)	11.50 (1.57)	11.78 (2.87)
Two or three	4.70 (0.18)	4.88 (0.20)	2.81 (0.50)	4.21 (0.69)	2.58 (0.81)	6.1 (1.26)	6.59 (1.58)	3.35 (0.99)
Psychological distress <sup>a</sup> **	2.31 (0.3)	2.32 (0.4)	2.6 (0.10)	2.17 (0.12)	2.24 (0.20)	3.40 (0.26)	2.59 (0.26)	1.89 (0.28)

Figures represent % (SE) unless otherwise noted. U.S. = United States.

<sup>a</sup>Figures represent M (SE)

\*\*p ≤ .5; \*\*\*p ≤ .1; Indicate significant differences between subgroups.

**Table 2.** Regression models (Dependent variable: Psychological distress).

Parameter	Model 1: Demographic Characteristics		Model 2: Mental Health Disorders		Model 3: Latinx Subgroups		Model 4: Interaction Terms	
	<i>b</i>	S.E.	<i>b</i>	S.E.	<i>b</i>	S.E.	<i>b</i>	S.E.
Intercept	3.82**	0.18	10.4**	0.28	10.8**	0.28	9.97**	0.30
Age	-0.2**	0.0	-0.2**	0.0	-0.2**	0.0	-0.2**	0.0
Female ( <i>ref. male</i> )	0.53**	0.7	0.19**	0.6	0.19**	0.6	0.18**	0.6
Unmarried ( <i>ref. married/cohab.</i> )	0.25**	0.7	0.21**	0.7	0.19**	0.7	0.19**	0.7
Education ( <i>ref. less than H.S.</i> )								
High school	-0.63**	0.14	-0.52**	0.12	-0.54**	0.12	-0.53**	0.12
Some college/Assoc.	-0.52**	0.13	-0.57**	0.11	-0.58**	0.11	-0.57**	0.11
College Grad or higher	-0.77**	0.14	-0.68**	0.12	-0.70**	0.12	-0.70**	0.12
Unemployed ( <i>ref. employed</i> )	1.20**	0.9	0.63**	0.7	0.62**	0.7	0.62**	0.7
Income	-0.1**	0.1	-0.1**	0.1	-0.1**	0.1	0.1**	0.1
Language ( <i>ref. English</i> )								
Spanish	0.14	0.25	0.5	0.23	0.26	0.25	0.24	0.24
Other	0.2	0.23	0.9	0.20	0.23	0.21	0.19	0.21
Years in US ( <i>ref. born in US</i> )								
< 5 years	-1.17**	0.25	-0.40	0.23	-0.40	0.23	-0.43*	0.22
5-9 years	-0.57*	0.29	0.6	0.28	0.9	0.27	0.7	0.27
10-14 years	-0.95**	0.18	-0.42*	0.18	-0.38*	0.20	-0.38*	0.20
≥ 15 years	-0.27**	0.10	-0.5	0.8	-0.3	0.9	-0.5	0.9
Mental health d/o ( <i>ref. two or three</i> )								
Zero			-7.17**	0.22	-7.16**	0.22	-7.3**	0.25
One			-4.6**	0.24	-4.6**	0.24	-3.99**	0.26
Latinx subgroup ( <i>ref. non-Latinx</i> )								
Cuban/Cuban Am.					-0.51	0.36	1.52	2.19
Mexican					-0.42*	0.18	0.94	0.99
Mex-Am.					-0.6	0.14	1.7	1.25
Central/S. Am.					0.2	0.23	-1.45	2.18
Puerto Rican					0.73**	0.26	2.98**	0.95
Other Latinx					-0.24	0.26	-0.88	1.25
No MH d/o*Puerto Rican							-2.67**	0.98
<i>df</i> <sup>a</sup>	14 (300)		16 (300)		22 (300)		34 (300)	
<i>F</i> statistic	69.0**		145.71**		108.0**		79.40**	
<i>n</i>	20,124		20,123		20,123		20,123	

Nonsignificant interactions were not included in the table, to maintain brevity.

<sup>a</sup>Figures represent numerator (denominator)

\**p* ≤ .5

\*\**p* ≤ .1

entered in the last step given that it is the variable of most interest in the current study. The interaction term was created by creating a multiplicative term of the variables believed to interact as is recommended practice (Tabachnick et al., 2007), in this case, that included the independent variable, number of mental health disorders and the moderator variable, Latinx subgroup. Because the two variables were discrete, no centering was needed or further statistical manipulation prior to creating the multiplicative interaction term. Analyses were conducted using SAS version 9.4.

## Results

### Sample characteristics

Table 1 shows the distributions of characteristics by Latinx subgroup. The average annual income of Cubans, Puerto Ricans, Central and South Americans, and other Latinxs ranged between \$51,121 and \$53,232 well above Mexicans and well below Mexican Americans.



Puerto Ricans and Cubans had the highest levels of unemployment (49.27% and 48.61%, respectively). It should be noted, however, that the unemployed category included participants who were not looking for a job. Mexican participants had the lowest levels of education, with more than half (52.20%) reporting less than a high school education. The majority of participants lived in the United States for at least 15 years.

With regard to health status, Puerto Ricans exhibited approximately twice the rate of mental health disorders in their lifetime as Mexicans (22.11% versus 10.99%). Puerto Ricans and other Latinxs reported the highest rate of comorbid mental health problems whereas Central and South Americans reported the lowest. Finally, average psychological distress is highest among Puerto Ricans ( $M = 3.40$ ,  $SD = 0.26$ ) and lowest among Cubans ( $M = 1.89$ ,  $SD = 0.28$ ).

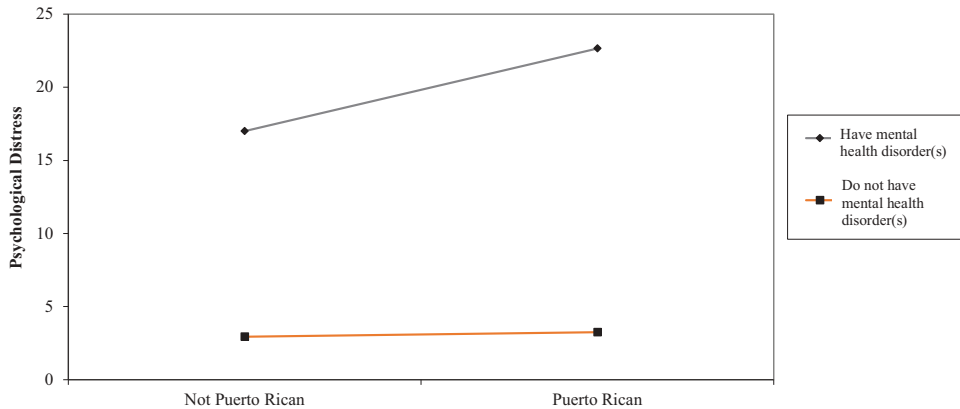
### **Multivariate results**

The regression coefficient results are presented in Table 2. Model 1, accounts for the demographic characteristics that serve as protective or risk factors for psychological distress. Results from Model 1 suggest that those who are older, have greater than a high school education, were not born in the U.S., report lower rates of psychological distress. Additionally, a significant and negative relationship was found between income and psychological distress. In contrast, being female, unmarried, or unemployed were all significantly associated with higher levels of psychological distress. Mental health disorder(s) as a risk factor for psychological distress were introduced in Model 2. The associations between demographic characteristics and psychological distress remained the same in Model 2 with the exception of years in the U.S. In Model 2, a negative association was found between being in the U.S. for 10–14 years and psychological distress. Compared to those who have two or three mental health disorders, there was a negative and significant association between having a mental health disorder ( $b = -4.6$ ,  $p < .1$ ) and not having any mental health disorders ( $b = -7.17$ ,  $p < .1$ ) and psychological distress.

Latinx subgroups were entered in Model 3. All significant demographic characteristics remained significant in Model 3. Model 3 yielded similar significant negative associations between having a mental health disorder ( $b = -4.6$ ,  $p < .1$ ) and not having a mental health disorder ( $b = -7.16$ ,  $p < .1$ ) and psychological distress. Among the Latinx subgroups, a negative and significant association was found between being Mexican and psychological distress ( $b = -.42$ ,  $p < .5$ ), while a positive and significant association was found between being Puerto Rican and psychological distress ( $b = .73$ ,  $p < .1$ ).

### **Interaction effects**

Various two-way interactions were tested in Model 4. Interactions terms were modeled between mental illness category (e.g., no mental health disorder, one mental health disorder, two or three mental health disorders) and the various Latinx subgroups. For the sake of brevity, only the coefficients for significant interactions are presented (the full regression model with all interactions is available from the authors upon request). Upon entering the interaction terms in Model 4, the significant relationship between being Mexican and psychological distress was no longer significant. The direct relationship being Puerto Rican remained positively associated with psychological distress in Model 4 ( $b = 2.98$ ,  $p < .1$ ). The only significant interaction term that was that found between having no mental health disorders and being Puerto Rican ( $b = -2.67$ ,  $p < .1$ ). In order to



**Figure 2.** Interaction plot.

ease interpretation, we plotted the interaction between having no mental illness and being Puerto Rican (see [Figure 2](#)). The interaction plot suggests that mental health conditions are associated with the psychological distress levels of Puerto Ricans to a greater extent than other Latinx subgroups. The rate of change in psychological distress between Puerto Ricans with no mental health condition and those with a mental health condition was greater than that of the other Latinx subgroups.

## Discussion

Puerto Ricans generally reported the highest levels of psychological distress, whereas Cubans, Mexicans, and Mexican Americans reported the lowest distress. As expected, these observations are concordant with previous studies ([Bratter & Eschbach, 2005](#); [Shrout et al., 1992](#); [Rivera et al., 2008](#); [Zhang et al., 2012](#)), confirming that aggregation of health outcomes among Latinxs, specifically psychological distress, undermines the substantial variation found across subgroups. Latinxs, as a whole, had substantially more intense psychological distress when reporting multiple mental disorders compared to those who had only one mental disorder. Modeling this outcome also suggested potential risk and protective factors for levels of psychological distress as they related to demographic characteristics. Having less than a high school education, being unmarried, female gender, residing less than 5 years in the United States, and speaking Spanish were associated with increased psychological distress. In contrast, results indicated that living more than 10 years in the United States, speaking English, being employed, and being married may protect against increased psychological distress.

Assessment of Latinx subgroups demonstrated that some groups were more prone to increased psychological distress than others. Of note, Puerto Ricans with at least one mental disorder resulted in psychological distress levels greater than similarly affected non-Puerto Ricans. Although it is difficult to deduce from this study why comorbidity is strongly associated with increased psychological distress among Puerto Ricans, this finding is congruent with previous findings (e.g., [Alegría et al., 2007](#); [Bratter & Eschbach, 2005](#)) regarding increased mental health morbidity among Puerto Ricans compared to all other Latinx groups.

When considering demographic, socioeconomic, and acculturation covariates, no single protective or risk factor affected risk of psychological distress among all Latinx subgroups.

Speaking Spanish may be a protective component for Mexican Americans. In contrast, this may be a risk factor for Puerto Ricans. Similarly, education was a risk factor for increased psychological distress among Mexicans but protective for Puerto Ricans in this study. Although previous literature (e.g., Alegría et al., 2006; Canino & Alegría, 2009; Gil et al., 2002; Vega & Gil, 2005) identified that the magnitude of both protective and risk factors vary among Latinx subgroups, the results from this study confirmed findings observed by Rivera et al. (2008), suggesting that protective and risk factors have an inverse effect among subgroups. Such findings are unique and indicative of the impact of protective and risk factors on psychiatric morbidity among subgroups. Mirowsky and Ross' (1980) ethnic-culture perspective postulates that sociocultural factors affect the nature of health problems between subgroups, but is limited in terms of identifying specific sociocultural processes that may explain observations in this study, specifically the inverse effect of protective and risk factors among subgroups. Several concepts can partially explicate these observations.

Frustrated status theory (Alegría et al., 2006; Burnam et al., 1987; Robins & Regier, 1991; Vega et al., 1998) asserts that U.S.-born Latinxs experience higher pressure to attain status and are thus more distressed and at greater risk of psychiatric morbidity than their foreign-born counterparts. Social status expectations for U.S.-born Latinxs are measured against the standard of perceived status attainment found among their peers (Alegría et al., 2006). Therefore, U.S.-born Latinxs subject to the standards of the dominant U.S. culture may adopt the value of higher education as a form of status attainment. However, this theory does not help explain why increased education was a risk factor for increased psychological distress among Mexicans in this study. In the context of an aggregated evaluation of Latinx groups, frustrated status theory may indeed be valid. When assessing needs within individual Latinx subgroups, the theory is not as effective. Thus, the use of frustrated status theory is relevant to psychiatric morbidity as a general Latinx phenomenon but limited in explaining such effects within Latinx subgroups.

Further refinements and studies are needed to develop a more accurate theory regarding psychiatric morbidity among Latinxs.

Grant et al. (2004) also identified traditional cultural retention as a protective factor for Mexican Americans. This study found that Mexican Americans' advantage over Euro-Americans regarding the risk of psychiatric disorders was related to maintaining traditional values of strong family cohesion and religiosity. According to Santiago-Rivera et al. (2002, p. 39), a survey by *The Washington Post* found that "Latinos who retained dominant use of the Spanish language have a more traditional value structure than those who are bilingual." Findings from the current study suggest that the safeguarding effect of speaking Spanish among Mexican Americans buffers psychological distress. However, this hypothesis is limited to Mexican Americans, because it does not help explain why the remaining Latinx groups were at risk of increased psychological distress related to speaking Spanish.

In sum, these theories are limited in terms of adequately explaining the inverse relationship of risk and protective factors among Latinx groups. Nevertheless, these explanations are illustrative of the complex influence of sociocultural factors on each subgroup and hint at an underlying mechanism that has yet to be determined. Although

Rivera et al. (2008) began to identify the varied effect of protective and risk factors among Latinx subgroups, research is needed to determine the underlying mechanisms that explain these observations.

The current study has various potential limitations. For instance, the data from this study did not assess the gamut of various sociocultural factors that influence intergroup dynamics. Risk and protective factors for the Latinx population also include factors such as discrimination, cultural conflict (e.g., acculturative stress), social network measures, immigration status, and other sociocontextual factors not available in the NHIS. Second, proxy measures for acculturation were used to assess intergroup dynamics in this study, rather than a thorough measure of the acculturation process. Although the variables used were appropriate, a better evaluation of acculturation is possible using data rich in socio-cultural factors. Finally, the analysis does not support any claim that mental health conditions affect psychological distress among Puerto Ricans more than for other Latinx groups. Further, more extensive studies will be required to corroborate such findings.

### ***Implications for clinical practice and literature***

Despite these limitations, these findings can help practitioners and public health officials determine how to prioritize mental health programs for Latinx populations at greatest risk of negative outcomes (Gilmer et al., 2007; Ojeda & Bergstresser, 2008). Targeted efforts can efficiently address Latinx health needs in various parts of the country where certain Latinx groups are most prevalent. These efforts will help achieve the ultimate goal of providing quality services that are congruent with an increased understanding of the sociocultural dynamics found among Latinx groups. Furthermore, such an approach is congruent with the Grand Challenges for Social Work's goal to achieve equal opportunity and justice (American Academy of Social Work & Social Welfare [AASWSW], 2016; Calvo et al., 2015). As social work practitioners and researchers support our Latinx community members, addressing social injustices and inequalities to care must require increased awareness of the unique needs each Latinx enclave possess. As such, policies that promote equitable access to care should be advocated on the part of both practitioners and researchers.

Provided that psychological distress is a manifestation of mental health and influenced by cultural practices, values, and group experiences that distinguish Latinx subgroups, the next step is to understand how psychological distress manifests among Latinxs. Although the K6 scale used by the NHIS has been validated for use across ethnic groups (Drapeau et al., 2012; Kessler & Andrews et al., 2002; Kim et al., 2011), it should not be assumed that the impact of culture can be removed from subjective interpretations of symptoms (Bratter & Eschbach, 2005). Therefore, future studies must aim to identify interpretations of psychological distress among Latinxs to better assess behaviors that are unique to Latinxs in general and among Latinx groups.

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## Data availability statement

The data that support the findings of this study are openly available in Centers for Disease Control and Prevention's National Center for Health Statistics at [https://www.cdc.gov/nchs/nhis/nhis\\_2012\\_data\\_release.htm](https://www.cdc.gov/nchs/nhis/nhis_2012_data_release.htm)

## Declaration of interest statement

The authors declare that they have no conflict of interest.

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