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Ni de aquí, ni de allá: Puerto Rican Acculturation-Acculturative Stress Profiles and Depression

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Objective: Acculturation-acculturative stress profiles and their association with depression symptoms were examined in a sample of mainland Puerto Ricans ($N = 367$) using latent profile analysis. **Methods:** Bidimensional behavioral acculturation, bidimensional ethnic identity, and acculturative stress were used as indicators to derive profiles. Differences in depressive symptoms across latent profile members were determined using an automatic mixture modeling with continuous outcomes approach. **Results:** Three profiles were identified, each demonstrating a distinctive configuration of adherence to bidimensional behavioral acculturation, bidimensional ethnic identity, and level of acculturative stress. The largest profile resembled individuals following a partial marginalization strategy. Participants in this profile were also reported more depression symptoms than all other participants. **Conclusions:** The identification of a large partial marginalization profile offers important information about sociocultural indicators of depression among Puerto Ricans living in the United States.

Keywords: Puerto Ricans, acculturation, ethnic identity, acculturative stress, depression

Almost 2 million more Puerto Ricans live in the U.S. mainland than in the island of Puerto Rico (5.5 million vs. 3.1; U.S. Census, 2017). While a majority of U.S. Puerto Ricans were born in the mainland United States (71%), about 29% were born in the island (Krogstad, Lopez, & Desilver, 2015). The U.S. Puerto Rican population is only expected to increase as the island's financial crisis and slow recovery after Hurricane María, which impacted the island on September 20, 2017, continue. For example, it is estimated that within the first 2 years after the hurricane, anywhere between 114,396 to 212,607 Puerto Ricans will migrate to the U.S. mainland (Meléndez & Hinojosa, 2017). The persistent sociopolitical association between the United States and Puerto Rico creates a unique migration and acculturation experience for Puerto Ricans (Capielo Rosario, Lance, Delgado-Romero, & Domenech Rodríguez, 2018). This unique acculturation may in turn put mainland Puerto Ricans at risk of experiencing psychological distress (Alegría et al., 2007).

Mental health disparities also differentiate Puerto Ricans from other Latina/os in the United States. Even after controlling for demographic and socioeconomic covariates, Puerto Ricans consistently report more depression symptoms than other Latina/os (Jetelina, Reingle Gonzalez, Vaeth, Mills, & Caetano, 2016; Wassertheil-Smoller et al., 2014). In light of this unparalleled migration and persistent mental health disparity, it is urgent for

psychologists to understand how acculturation-acculturative profiles manifest among Puerto Ricans and how these could be associated with depression symptomatology.

According to Berry's (2006) acculturation transactional model, psychological maladjustment may be the result of the stress (i.e., acculturative stress; Duarte et al., 2008) associated with acquiring aspects of the host cultural group (i.e., acculturation; Gibson, 2001) and retaining aspects of the heritage culture (i.e., enculturation; Kim & Omizo, 2006). Part of this transaction could also involve the exploration, affirmation, and resolution of membership in the heritage and/or in the dominant ethnic groups (i.e., ethnic identity; Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004). Although acculturation, enculturation, acculturative stress, and ethnic identity have been identified as correlates of depression symptoms among U.S. Latina/os, support for these relationships is equivocal among mainland Puerto Ricans (Bekteshi, Van Hook, Levin, Kang, & Van Tran, 2017; Capielo, Delgado-Romero, & Stewart, 2015). Puerto Ricans' unique relationship with the United States may explain these inconsistencies. However, the literature's focus on variable-centered analyses (e.g., regression) in which Latina/os are assumed homogenous with respect to how acculturation manifests and influences depression may blur this important distinction. The present study addresses this limitation by investigating the presence of heterogeneous Puerto Rican acculturation-acculturative stress profiles and how these may be differentially related to depression symptoms.

Specifically, we identified distinct profiles based on levels of Puerto Rican behavioral enculturation, American behavioral acculturation, Puerto Rican and American ethnic identities, and acculturative stress using latent profile analysis (LPA). LPA is a person-centered analytic technique that allows for the identification of meaningful profiles consisting of participants with multiple, coexisting characteristics along indicators (e.g., acculturation, ac-

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culturative stress). Such profiles can also be linked to health behaviors (Collins & Lanza, 2010). The present study also investigates how these profiles differ in depression symptoms using the method created by Bolck, Croon, and Hageaars (2004), known as the BCH approach.

Puerto Rican Acculturation

U.S. laws and norms have informed every aspect of Puerto Rican life ever since Puerto Rico become an unincorporated territory of the United States in 1898 (Duany, 2003). To illustrate, unlike any other Latina/o immigrant group, U.S. citizenship allows Puerto Ricans to migrate to the U.S. mainland without restrictions. These distinctive circumstances may influence how Puerto Ricans negotiate acculturation, enculturation, and ethnic identity. For example, while some have shown that circular migration provides Puerto Ricans with new opportunities to preserve Puerto Rican culture (Duany, 2003), others have reported that it may cause Puerto Ricans to feel estranged from Puerto Rican and American culture (Aranda, 2006). Capielo Rosario et al. (2018) further illustrate the complexity of Puerto Rican acculturation by showing how compared to Florida Puerto Ricans, island Puerto Ricans had a similar use of American cultural behaviors (e.g., speaking English) but a stronger American ethnic identification. Guided by this literature, the present study seeks to understand how mainland Puerto Ricans could be described along Puerto Rican and American cultural orientations and acculturative stress profiles and how these are in turn associated with depression symptoms.

Behavioral and Ethnic Identity Acculturation

Acculturation is a bidimensional phenomenon of adherence to the host (acculturation) and heritage cultures (enculturation; Flannery, Reise, & Yu, 2001). According to Berry's (1997) acculturation typology model, four strategies reflect the interplay between acculturation and enculturation: *assimilation* (adherence to the host culture and disconnection from the heritage culture), *separation* (disconnection from the host culture and retention of heritage culture), *biculturalism* (adherence to both cultures), and *marginalization* (disconnection from both cultures). Acculturation also operates across multiple domains (e.g., cultural behaviors, ethnic identity; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). However, a majority of the literature continues to focus on behavioral domains (Schwartz et al., 2010). To bridge this methodological gap, we integrate bidimensional behavioral (e.g., language use) and bidimensional ethnic identity (i.e., Puerto Rican ethnic identity and American ethnic identity) domains. Ethnic identity is generally defined as a sense of belongingness and commitment an individual may have toward an ethnic group (Phinney, 2003). Ethnic identity operates within a continuum of exploration, affirmation, and resolution (Umaña-Taylor et al., 2004). According to the ethnic identity framework developed by Umaña-Taylor et al. (2004), individuals may learn about an ethnic group (i.e., *exploration*), form positive or negative feelings about their ethnic group (i.e., *affirmation*), and develop a clear understanding of what it means to be a member of the ethnic group and commit to this identity (i.e., *resolution*).

Ethnic identity has also been defined as a nuanced domain of acculturation (Liebkind, 2006; Schwartz et al., 2010). To illustrate,

while cultural behaviors have been categorized under a *contact* domain of acculturation (Liebkind, 2006), ethnic identity has been proposed as an *identification* domain of acculturation (Snauwaert, Soenens, Vanbeselaere, & Boen, 2003). Thus, ethnic identity has been increasingly evaluated as a domain of acculturation (Capielo Rosario et al., 2018; Meca et al., 2017). For Puerto Ricans, evaluating bidimensional ethnic identity as an acculturation indicator seems particularly important given their relationship with the United States and their endorsement of Puerto Rican and American ethnic identity labels (López & Patten, 2015). Based on the literature and Puerto Rico's relationship with the United States, we define bidimensional ethnic identity acculturation as a simultaneous and independent exploration, affirmation, and resolution of Puerto Rican and American ethnic identities. Therefore, the present study also conceptualizes ethnic identity along Berry's (1997) framework: assimilation (high dominant ethnic identity exploration, affirmation, and resolution), separation (high heritage ethnic identity exploration, affirmation, and resolution), biculturalism (high bidimensional ethnic identity exploration, affirmation and resolution), and marginalization (low bidimensional ethnic identity exploration, affirmation and resolution).

Various studies provide support for Berry's acculturation strategies among Latina/os in the United States. For example, acculturation profiles have differentiated Mexican American participants along assimilation, separation, biculturalism, and marginalization clusters (Gonzales-Backen, Bámaca-Colbert, Noah, & Rivera, 2017). Using an aggregate Latina/o sample, Schwartz and Zamboanga (2008), identified six acculturation profiles (i.e., American oriented bicultural, assimilated, full bicultural, partial bicultural, separated, and undifferentiated). However, little is known about how these strategies manifest across mainland Puerto Ricans. Thus, more research is needed to understand specific Puerto Rican profiles and how these might differentially relate to depression symptoms.

Acculturative Stress

Acculturative stress is defined as the stress a person may experience during the acculturation process (Duarte et al., 2008). How much acculturative stress an individual experiences may in part depend on which of the aforementioned acculturation strategies is followed (Schwartz & Zamboanga, 2008). For instance, while biculturalism may be associated with the least amount of acculturative stress (Berry, 2006), marginalization may be linked to the highest level of acculturative stress (Caplan, 2007). Separation and assimilation are believed to be associated with moderate levels of stress, with those endorsing separation experiencing more acculturative stress than those who endorse assimilation (Caplan, 2007). According to Berry (2006), the proposed relationships between acculturation and acculturative stress may also be explain by the premigration and postmigration experiences of acculturating individuals. To illustrate, while biculturalism may necessitate having positive premigration and postmigration contact with the dominant group (e.g., Americans) and heritage group (e.g., Puerto Ricans), marginalization may require negative premigration and postmigration experiences with both cultures (Berry, 2006).

Although multiple studies provide evidence for the association between acculturation strategies and acculturative stress, these do not always align with Berry's proposed relationships. For instance,

Donà and Berry (1994) reported that bicultural Central American refugees in Canada experienced less acculturative stress than those in the assimilation and separation groups. However, results from Revollo et al. (2010) showed that assimilation was associated with the least amount of acculturative stress and biculturalism had no relationship to acculturative stress among immigrants in Spain. Among U.S. Latina/os, assimilation has been linked to higher acculturative stress than separation (Schwartz & Zamboanga, 2008). Given these inconsistencies, the current study integrates acculturative stress as a profile indicator instead of a correlate of acculturation and depression. Exploring acculturation and acculturative stress simultaneously could provide more nuanced information about how depression is associated with a particular Puerto Rican acculturation-acculturative stress profile.

Research Questions

Although the current literature provides important information about U.S. Latina/os based on multiple acculturation dimensions, the extant literature has not combined bidimensional behavioral acculturation, bidimensional ethnic identity acculturation, and acculturative stress to derive profiles of Puerto Rican adults living in the United States; thereby, failing to recognize how heterogeneity among Latina/os may influence the identification of these profiles. There is also paucity in our understanding of how these profiles may be associated with depression symptomatology experienced by this community. To address these gaps, the current study conducted an LPA to empirically evaluate Berry's acculturation model (1997) by identifying groups of Puerto Rican participants with similar patterns of scores on bidimensional behavioral acculturation, bidimensional ethnic identity acculturation, and acculturative stress. Given the uniqueness of Puerto Rican migration and prolonged contact with the United States, LPA provides the most appropriate analytical technique, as it does not make assumptions about how many profiles should emerge (Schwartz & Zamboanga, 2008). Thus, if Berry's acculturation strategies are identified on these data, findings could help provide empirical support for the applicability of the model across mainland Puerto Ricans. Lastly, the present study elucidates the relationship between identified profiles and depression symptoms among mainland Puerto Ricans.

The following two research questions are examined: First, what types of bidimensional acculturation-acculturative stress profiles are identified among U.S. mainland Puerto Rican adults? We hypothesize that at least four profiles (biculturalism, marginalization, separation, and assimilation) would emerge from the data along behavioral and ethnic identity acculturation dimensions (Berry, 1997). We also hypothesize that (a) the participants categorized in the biculturalism profile (high Puerto Rican and American behavioral and ethnic identity orientation) will also be characterized by the lowest level of acculturative stress in comparison to all other profiles, (b) participants in the marginalization profile (low Puerto Rican and American behavioral and ethnic identity orientation) will also be described by the highest level of acculturative stress in comparison to all other profiles, (c) participants in the separation profile (high Puerto Rican behavioral and ethnic identity orientation and low American behavioral and ethnic identity orientation) will be characterized by medium levels of acculturative stress in comparison to peers, and (d) participants in the

assimilation profile (low Puerto Rican behavioral and ethnic identity orientation and high American behavioral and ethnic identity orientation) will also be characterized by medium levels of stress like their peers in the separation profile.

Second, do the aforementioned profiles of behavioral and ethnic identity acculturation dimensions predict differences depression symptoms across mainland Puerto Rican adults? According to our third hypothesis, (a) participants in both the biculturalism (low acculturative stress) and separation (medium acculturative stress) profiles will report low levels of depression symptoms in comparison to peers, and (b) participants in the assimilation (medium acculturative stress) and marginalization (high acculturative stress) profiles will report highest levels of depression symptoms in comparison to peers.

Method

Participants

Participants for this study consisted of 367 mainland Puerto Rican adults, with 64.85% identifying as men and, 35.15% as women. Most participants reported living in the south (39.9%), followed by 21.3% in the west, 18.3% in the northeast, and 16.7% in the Midwest region of the United States. Compared with data from the American Community Survey (U.S. Census Bureau, 2016) on the mainland Puerto Rican population, our sample was slightly older with a median age of 32 ($M = 32.86$, $SD = 7.29$) versus 29.9 in the general mainland Puerto Rican population. While 23.44% of participants (vs. 37% in the general Puerto Rican mainland population) indicated they were born in the island, 76.56% (vs. 71% in the general Puerto Rican mainland population) reported they were born in the mainland. Average years in the United States was 18.19 ($SD = 12.51$) among those who were born in the island. Our sample was more likely to report being married than the general Puerto Rican mainland population (74.4% vs. 34.9%). The sample also had a higher educational attainment than the mainland Puerto Rican population. Most of the sample indicated having completed a bachelor's degree or higher (67.21% vs. 18.6%). Median household income was somewhat higher in the sample (\$50,000), than in the general mainland Puerto Rican population (\$42,856).

Procedures

Data for this study were collected after receiving Institutional Review Board Approval. The sample was recruited via the Internet and Puerto Rican Facebook groups.¹ Additionally, community centers, organizations, and other institutions that serve Puerto Ricans were contacted and asked to share recruitment materials via social media or e-mail. At the end of the survey, participants were

¹ Researchers have examined how online research participants may be different from in-person research participants along demographic, location, motivation, psychological distress (e.g., report of depression symptoms), and response styles determinants (Gosling, Vazire, Srivastava, & John, 2004). Results indicate that online participants were not significantly different from in-person research participants along age, motivation, response style (Gosling et al., 2004), or psychological distress (Kraut et al., 2002). On the contrary, scholars suggest that online studies may enhance generalizability by recruiting more men and allowing participants from a wide range of regional locations to participate (Gosling et al., 2004).

also asked to share the study link with others whom they thought met eligibility for the study.

Participants were asked to confirm participation eligibility before giving informed consent, be between the ages of 18 and 65, identify as Puerto Rican, and live in the U.S. mainland. After giving consent, participants completed the online survey. Although the survey was available in English and Spanish only 39 participants chose to answer in Spanish. Thus, we only included English responders in the analysis because we would have been unable to assess measurement invariance and other comparisons across language groups. Each participant received a \$10 Amazon gift card as a compensation for their time.

Instruments

Demographics. Participants answered questions about their age, annual household income, civil status, education, gender, nativity, years in the United States, and zip code.

Bidimensional behavioral acculturation. The Revised Acculturation Rating Scale for Mexican Americans-II (ARSMA-II; Cuéllar, Arnold, & Maldonado, 1995) is a bidimensional 30-item summated rating measure, designed to assess Latina/o behavioral orientation (LOS) and Anglo behavioral orientation (AOS). Using a Likert-type scale from 1 (*not at all*) to 5 (*extremely often or almost always*), 16 items help generate the LOS score (LOS; “I write in Spanish”) and 14 items are used to create the AOS score (e.g., “My friends now are of Anglo origin”). Six items on the LOS were modified to include the terms “Puerto Rico” and “Puerto Rican” instead of “Mexico” and “Mexican.” Although items on the AOS were used to assess American behavior acculturation, the term Anglo American was not changed to American. The ARSMA-II has demonstrated strong psychometric properties with other Latina/o groups (Lorenzo-Blanco, Unger, Baezconde-Garbanati, Ritt-Olson, & Soto, 2012). Reliabilities for the current sample were $\alpha = .81$ for the Latina/o orientation (Puerto Rican) substance and $\alpha = .77$ for the Anglo orientation (American).

Bidimensional ethnic identity. The Ethnic Identity Scale (EIS; Umaña-Taylor et al., 2004) was used to assess bidimensional ethnic identity orientation. The EIS is a 17-item scale that assesses three domains of ethnic identity: exploration (7 items, “I have participated in activities that have exposed me to my ethnicity”), affirmation (6 items, “I dislike my ethnicity”) and resolution (4 items, “I understand how I feel about my ethnicity”). Each item on the EIS is scored using a 4-point Likert-type scale ranging from 1 (*Does not describe me at all*) to 4 (*Describes me very well*). After reverse coding six negatively worded items, a summated total score for each dimension was calculated for each participant with higher scores indicating higher levels of exploration, affirmation, and resolution. “When participants take the EIS, they are given examples of different ethnic groups (e.g., American, Mexican, Puerto Rican; Umaña-Taylor et al., 2004). In order to measure Puerto Rican and American ethnic identity, we asked participants to complete the EIS twice. Participants were given the following instruction: “Even though Puerto Ricans often identify as Puerto Rican and American, we only want you to think of your Puerto Rican identity when responding to the following statements.” Additionally, we added the term “Puerto Rican” to each item for the purpose of clarification. The second time, participants were asked to only think of their American identity and used the term

“American” on each item. The Cronbach’s alphas in the current study for Puerto Rican ethnic identity exploration, affirmation, resolutions were $\alpha = .66$, $.88$, and $.65$, respectively. Alpha coefficients for American ethnic identity exploration, affirmation, and resolution were $.63$, $.87$, and $.65$, respectively.

While the Alpha coefficients for the exploration and resolution subscales were lower than might be desired, these were close to the .70 standard often cited as acceptable reliability (Lance, Butts, & Michels, 2006). It is also worth noting that reliabilities $\geq .60$ have also been described as acceptable (Anastasi, 1998). This is particularly the case when the measure used reflects a meaningful content of the construct being assessed (Schmitt, Butcher, & Lowman, 1996) as it was the case with our use of the EIS.

Acculturative stress. Levels of acculturative stress was measured with The Social, Attitudinal, Familial and Environmental Acculturative Stress (SAFE; Mena, Padilla, & Maldonado, 1987). The SAFE scale consists of 24 items that assess acculturative stress in social, attitudinal, familial, and environmental contexts of acculturating individuals (Mena et al., 1987). Example items include “I don’t feel at home” and “It bothers me when people pressure me to become part of the main culture.” Each item is rated on a five-point scale ranging from 1 (*not stressful*) to 5 (*extremely stressful*). The scale yields a total score by summing all the items. Scores range from 24 to 120 with higher scores indicating more acculturative stress. Reported Cronbach’s alpha coefficients for the SAFE with aggregate Latina/o samples have ranged from $.87$ to $.89$ (Negy, Schwartz, & Reig-Ferrer, 2009). Reliability in the current study was $\alpha = .91$.

Depression. The Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977) was used to assess self-reported depression symptoms. The CES-D is a 20-item scale that looks at affective, somatic, and interpersonal circumstances related to depression symptoms. Sample items include “My sleep was restless” and “I felt sad.” A total score is calculated by adding all items with scores ranging from 0 to 60, with higher scores reflecting more symptoms. Though originally developed for clinical populations, previous studies on the CES-D have shown its capacity to differentiate clinical from nonclinical populations (Torres, 2010). The CES-D appears to have sound psychometric properties with aggregate Latina/o populations with internal consistency reported at $\alpha = .89$ (Chung et al., 2003). The Cronbach’s alpha estimated for the current study sample was $\alpha = .84$.

Data Analysis Plan

LPA was conducted using Mplus 7.1 (Muthén & Muthén, 2010) to examine whether different conceptually meaningful profiles of bidimensional acculturation, bidimensional ethnic identity, and acculturative stress emerged among mainland Puerto Rican adults. We then tested whether the resulting profiles had different levels of depression at assessment.

LPA involves (a) grouping participants based on similar characteristics on single or multiple dimensions and (b) generating groups that maximize similarity within the group and minimize similarity between groups. LPA aligned with the objectives of this study, which were to determine distinct configurations (i.e., profiles) of potential bidimensional acculturation, bidimensional ethnic identity, and acculturative stress patterns and to examine whether profiles differed in depression symptoms. LPA also al-

lows for the estimation of measurement error to improve accuracy of estimates.

Three major analytic steps were conducted. First, latent profiles were specified based on measures of bidimensional acculturation, bidimensional ethnic identity, and acculturative stress. This involved determining how many profiles were appropriate through an iterative process in which fit for models with fewer profiles was compared to fit for models with more profiles using the Vuong–Lo–Mendell–Rubin test (VLMR; Lo, Mendell, & Rubin, 2001). The VLMR test compares the fit of two nested models that differ by one profile. When the *p* value for the VLMR test is significant, the complex model fits significantly better than the more parsimonious model. A nonsignificant *p* value indicates that the model fit is not significantly different, and therefore the more parsimonious model is desired. Akaike information criterion (AIC), Bayesian information criterion (BIC), and entropy were reviewed to determine the appropriate number of profiles. Lower AIC and BIC values are more favorable, and entropy values near 1.00 indicate better classification of participants into profiles (Collins & Lanza, 2010).

On the second step, we evaluated differences in depression symptoms across the profiles by estimating profile specific depression means using the automatic BCH method proposed by Bolck et al. (2004). The automatic BCH method uses maximum likelihood estimation to simultaneously estimate the measurement model for the latent profile indicators and the auxiliary variable model (e.g., depression symptoms) without affecting profile identification or membership. The final step performed was a multivariate analysis of variance difference (MANOVA) tests to compare the profiles across indicators and demographic variables. Significant results were explored by Games-Howell and Bonferroni pairwise comparisons.

Results

Latent Profiles

Three latent profiles were identified along study indicators, partially supporting our first hypothesis. Models with one to six profile solutions were compared. Model fit comparisons are shown on Table 1. Differences between the three identified profiles were also observed after conducting a MANOVA, Pillai's Trace = 1.58, $F(2, 18) = 140.67, p < .001$. Bidimensional acculturation, bidimensional ethnic identity, and acculturative stress significantly differed by profile (see Table 2 and Figure 1).

The first profile was composed of 299 (81%) participants that reported discrepant levels on the following determinants in comparison to all other profiles: (a) lowest Puerto Rican behavioral enculturation, (b) low American behavioral acculturation, (c) low level of Puerto Rican ethnic identity exploration and affirmation, (d) lowest Puerto Rican ethnic identity resolution, (d) moderate American ethnic identity exploration, (e) low American affirmation and resolution, and (f) highest acculturative stress.

Profile 2 consisted of 29 participants (8%) reporting: (a) moderate Puerto Rican behavioral enculturation, (b) low American behavioral acculturation, (c) low Puerto Rican ethnic identity exploration, (d) high Puerto Rican ethnic identity affirmation, (e) moderate Puerto Rican ethnic identity resolution, (f) lowest American ethnic identity exploration, (g) high American ethnic identity affirmation, (h) low American ethnic identity resolution, and (i) the lowest level of acculturative stress. Lastly, Profile 3 consisted of 39 participants (11%) and had the following characteristics in comparison to the two other profiles: (a) highest Puerto Rican behavioral enculturation, (b) high American behavioral acculturation, (c) high Puerto Rican ethnic identity exploration and affirmation, (d) highest Puerto Rican ethnic identity resolution, (e) highest American ethnic identity exploration, (f) high American ethnic identity affirmation and resolution, and (g) moderate acculturative stress.

Informed by previous work (Berry, Phinney, Sam, & Vedder, 2006), we also compared profile scores to the grand mean. As illustrated in Figure 2, Profile 1 was characterized by *z*-scores below the mean in all but one acculturation indicator (i.e., American ethnic identity exploration) and closely resembled the standard scores of the acculturation group described by Berry et al. (2006) as “marginal” (p. 324). Relative to scale scores, profile 1 members reported a modest use of American and Puerto Rican behaviors and low Puerto Rican and American ethnic identity. As expected, this profile also had the highest scores on acculturative stress; therefore, they were named the *Partial Marginalization-High Stress* profile. Profile 2 presented with the lowest level of acculturative stress and relatively high levels of Puerto Rican behavioral enculturation and ethnic identity indicators and low American behavioral acculturation and high Puerto Rican ethnic identity affirmation and resolution but high American ethnic identity affirmation, thus were labeled *Partial Separation-Low Stress*. Lastly, Profile 3 participants were characterized by high scores across all bidimensional acculturation and ethnic identity indicators. Although this profile was hypothesized to have the lowest levels of acculturative stress, this group presented with medium

Table 1
Model Fit Indices for One- to Six-Profile Solutions

Model	AIC	BIC	aBIC	VLMR <i>p</i> value	Entropy <i>R</i> ²
One-profile solution	20561.62	20639.67	20576.22	—	—
Two-profile solution	15915.99	16025.27	15936.43	.00	.997
Three-profile solution	15506.49	15654.79	15534.23	.02	.999
Four-profile solution	15285.67	15473.00	15320.72	.29	.993
Five-profile solution	13457.79	13684.31	13500.29	.56	.994
Six-profile solution	13354.09	13619.65	13403.91	.54	.994

Note. The bolder profile indicates the best-fitting solution. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; aBIC = adjusted Bayesian information criterion; VLMR = Vuong-Lo-Mendell-Rubin test.

Table 2
Means, Standard Deviations, and Proportions of Profiles on Study Variables

Variables	Profile 1 Partial Marginalization- High stress (<i>n</i> = 299)	Profile 2 Partial Separation-Low stress (<i>n</i> = 29)	Profile 3 Full Biculturalism- Medium Stress (<i>n</i> = 39)	Significant Differences Between Profiles	<i>F</i> (2, 351) or χ^2 (2, 351)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
Puerto Rican behavioral enculturation	3.25 (.17)	4.10 (.48)	4.37 (.54)	1 < 2, 3; 2 < 3	346.66**
American behavioral acculturation	3.21 (.19)	3.30 (.42)	3.73 (.40)	1, 2 < 3	67.60**
Puerto Rican ethnic identity exploration	2.89 (.23)	2.87 (.73)	3.71 (.33)	1, 2 < 3	113.43**
Puerto Rican ethnic identity affirmation	2.04 (.25)	3.82 (.25)	3.88 (.23)	1 < 2, 3	1187.46**
Puerto Rican ethnic identity resolution	2.92 (.30)	3.58 (.64)	3.83 (.36)	1 < 2, 3; 2 < 3	131.67**
American ethnic identity exploration	2.91 (.23)	2.21 (.51)	3.46 (.47)	1, 2 < 3; 2 < 1	128.47**
American ethnic identity affirmation	2.04 (.24)	3.62 (.51)	3.60 (.56)	1 < 2, 3	577.05**
American ethnic identity resolution	2.88 (.29)	2.81 (.73)	3.52 (.52)	1, 2 < 3	45.61**
Acculturative stress	3.30 (.16)	1.67 (.42)	2.43 (.81)	1 > 2, 3; 2 < 3	402.44**
Depression symptoms	1.69 (.015)	.56 (.65)	.99 (.74)	1 > 2, 3; 2 < 3	110.93**

** $p < .001$.

levels, thus it was labeled *Full Biculturalism-Medium Stress*. Unexpectedly, an assimilation profile was not identified.

Differences in Depression Symptoms

As stated in our third hypothesis, the Partial Marginalization-High Stress participants reported higher frequency of depression symptoms ($M = 33.93$, $SD = 3.10$) than the Partial Separation-Low Stress participants ($M = 11.33$, $SD = 13.06$), $\chi^2(2) = 77.87$, $p < .001$; as well as the Full Biculturalism-Medium Stress participants ($M = 18.76$, $SD = 14.38$), $\chi^2(2) = 33.36$, $p < .001$. Significant differences in depression symptoms were also found between participants in the Partial Separation-Low Stress and those in the Full Biculturalism-Medium Stress group, $\chi^2(2) = 4.12$, $p = .04$, with those with a Partial Separation-Low Stress profile reporting the lowest levels of depression symptoms, providing support for our third hypothesis.

Post-Hoc Comparisons of Demographic Variables Between Latent Profile Groups

MANOVA. Potential differences in age, level of education, household income, Puerto Rican population density per zip code², and years in the United States³ between latent profiles were examined via MANOVA. We examined the Pillai's Trace test of multivariate significance. Results of the MANOVA indicated that at least one significant difference between group means existed for at least one of the dependent variables [$F(10, 194) = 7.70$, $p < .001$; Pillai's Trace = .57]. Based on the significant MANOVA result, individual comparisons were examined across groups. Significant differences were found for age, Puerto Rican population density, and income, indicating that variance was unequal across profiles for these dependent variable [age $F(2, 100) = 8.149$, $p = .001$]; Puerto Rican population density [$F(2, 100) = 4.71$, $p = .01$]; household income [$F(2, 100) = 14.64$, $p < .001$]. Due to the heterogeneous variance between profile groups, comparisons between profile groups based on these three demographic variables were examined using the Games Howell Nonparametric Post Hoc Test. Results of the Games Howell test demonstrated differences only based in age and median household income. As for age,

profile 1 (Partial Marginalization-High Stress; $M = 29.62$ years, $SD = 6.11$ years) was younger than profile 2 (Partial Separation-Low Stress; $M = 44.40$ years, $SD = 12.09$ years), and profile 3 (Full Biculturalism-Medium Stress; $M = 41.13$ years, $SD = 8.88$ years). No age differences were found between profiles 2 and 3. Regarding household income, participants in profile 1 had a lower household income ($M = 48,957.83$, $SD = 17,997.67$) than those on profile 2 ($M = 82,800.00$, $SD = 53,466.76$) and profile 3 ($M = 93,387.10$, $SD = 60,443.18$). No violations of equality of error variance were found based on education and years in the U.S., thus Bonferroni post hoc comparisons were conducted for education and years in the U.S. across latent profiles. No differences based on education and years in the United States were found between profiles.

Chi-square analyses. Potential proportional differences in gender and nativity were examined via chi-square analyses. For gender, an overall difference in gender group comparisons was found between profiles, $\chi^2(2, N = 367) = 86.87$, $p < .001$. More profile 1 (Partial Marginalization-High Stress; 75.92%) participants identified as men than profile 2 (Partial Separation-Low Stress; 13.79%), and profile 3 (Full Biculturalism-Medium Stress; 17.95%). For nativity, an overall difference in nativity was found between profiles, $\chi^2(4, N = 367) = 167.34$, $p < .001$. More profile 1 participants (90.30%) reported they were born in the U.S. mainland, than members of profile 2 (17.24%) and profile 3 (17.95%).

Discussion

The present study provides important information on the acculturation and mental health of Puerto Rican adults. To our knowledge, this is the first study to use a person-centered rather than variable-centered approach to examine how distinct acculturation-acculturative stress profiles would be associated with depressive

² To test differences in Puerto Rican population density between latent profiles, we used the participants' zip code to find the percentage of Puerto Ricans living per participants' zip code using 2016 American Community Survey 5-year estimates.

³ Years of living in the United States was only available for Puerto Rican participants born in the island.

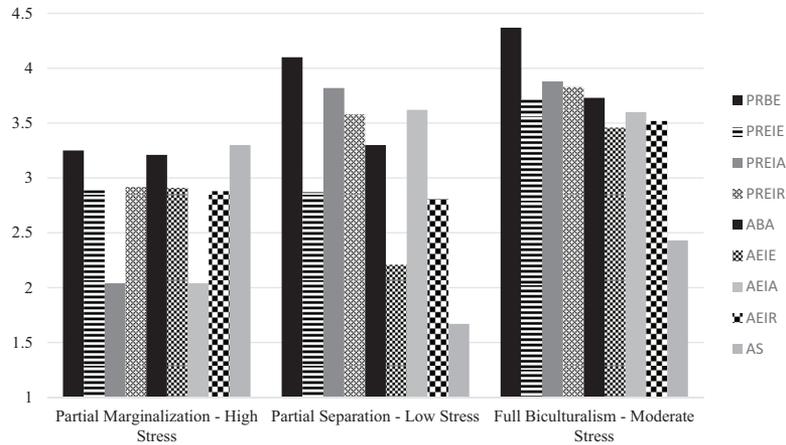


Figure 1. A visual depiction of differences between the three profiles. PRBE = Puerto Rican behavioral enculturation; PREIE = Puerto Rican ethnic identity exploration; PREIA = Puerto Rican ethnic identity affirmation; PREIR = Puerto Rican ethnic identity resolution; ABA = American behavioral acculturation; AEIE = American ethnic identity exploration; AEIA = American ethnic identity affirmation; AEIR = American ethnic identity resolution; AS = Acculturative stress.

symptoms among Puerto Rican adults living in the United States. We identified profiles of persons who share similar levels of multiple, distinctive bidimensional behavioral acculturation, bidimensional ethnic identity acculturation, and acculturative stress characteristics. The present study also described relations between participants' profile membership and their depression symptoms (and sociodemographic differences) to inform the development of psychological interventions for depression disparities affecting Puerto Rican adults.

Theoretical Implications for Berry's Model

Although Berry's (1997) acculturation strategies have been observed among U.S. Latina/o samples (Gonzales-Backen et al.,

2017; Schwartz & Zamboanga, 2008), these studies often assume homogeneity across Latina/o ethnic groups. As described in the Introduction, the relationship between Puerto Ricans and the U.S. mainland is unique and studying Puerto Ricans as a distinct ethnocultural group advances the literature on the cultural determinants of U.S. Latina/os mental health. An examination of the three identified profiles reveals further evidence for the uniqueness of mainland Puerto Rican acculturation.

Profile 1 (Partial Marginalization-High Stress), the largest profile, was characterized by relatively low adherence to Puerto Rican and American cultural behaviors and ethnic identities with the exception of the group's moderate level of American ethnic identity exploration. While this profile had similar characteristics to

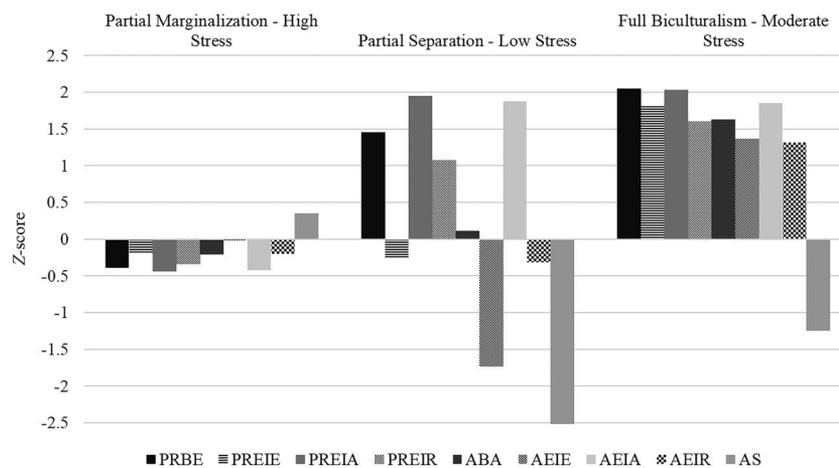


Figure 2. Visual depiction of differences between the three profiles relative to the sample mean. PRBE = Puerto Rican behavioral enculturation; PREIE = Puerto Rican ethnic identity exploration; PREIA = Puerto Rican ethnic identity affirmation; PREIR = Puerto Rican ethnic identity resolution; ABA = American behavioral acculturation; AEIE = American ethnic identity exploration; AEIA = American ethnic identity affirmation; AEIR = American ethnic identity resolution; AS = Acculturative stress.

profile 2 (Partial Separation—Low Stress) along American behavioral acculturation and American ethnic identity (resolution), it makes sense that Puerto Ricans who only have a modest use of American cultural behaviors and a low American ethnic identity resolution would be similar to Puerto Ricans following a separation strategy. An examination of sociodemographic differences between profiles also revealed that Profile 1 was characterized by (a) having the largest proportion of men, (b) having the largest proportion of U.S. born participants, (c) having the lowest household income, and (d) being the youngest group. Consistent with our prediction and theory, those in the Partial Marginalization-High Stress profile also exhibited the highest level of acculturative stress. These results are consistent with previous work which has found that Latina/os endorsing marginalization are more likely to experience acculturative stress than those who follow a bicultural or separation strategy (Cano, Castillo, Castro, De Dios, & Roncancio, 2014). The identification and magnitude of this profile is significant as the validity of marginalization has been questioned (del Pilar & Udasco, 2004). Even though Meca and colleagues (2017) identified a marginalization profile in a sample of undocumented Latina/os, marginalization only accounted for a third of their sample, whereas in the current study it accounted for 81% of the sample. Although it has been suggested that it may be impossible for a person to develop a cultural identity without adhering to either their heritage or the dominant cultures (Schwartz et al., 2010), this assertion does not take into account the formation of new cultural identities previously documented among mainland Puerto Ricans. For instance, physical and language disconnection from the island and the racism and discrimination New York Puerto Ricans faced upon arrival, impacted the culture and identity of this population (Caragol-Barreto, 2005). The Newyorican identity emerged as a response to this othering (Bernard-Carreño, 2010). Although we did not measure discrimination, previous research has shown that U.S. born Latina/os are more likely to report experiencing racial and ethnic discrimination than foreign-born Latina/os (Finch, Kolody, & Vega, 2000). Given the large proportion of U.S. born Puerto Ricans in this profile, it is possible that disconnection from American culture may be a reflection of their familiarization with racial and ethnic hierarchies in the U.S. or experiencing rejection based on these hierarchies. The Partial Marginalization-High Stress profile was also characterized by participants with lower household income. Lower income may not only put individuals at a risk of experiencing acculturative stress (Jasinskaja-Lahti & Yijälä, 2011) but also prevents them from maintaining a connection to the heritage culture (e.g., inability to travel to the homeland; Berry, 2006). Hence, when faced with rejection from the dominant culture (e.g., discrimination) and less opportunities to connect with the heritage culture, mainland Puerto Ricans may see a chance to explore and form new cultural identities. Although we did not assess the presence of a cultural orientation apart from Puerto Rican and American culture, scholars have suggested terms such as Orlando Rican and Nuyorican to describe the cultural identity of mainland Puerto Rican communities (Duany, 2014). Thus, partial marginalization among Puerto Ricans may not be indicative of an absent cultural identity but instead an opportunity to create new identities.

Alternatively, Profile 1 (Partial Marginalization-High Stress) participants may be reflective of Puerto Ricans experiencing “cultural homelessness” (Vivero & Jenkins, 1999, p. 6). Cultural

homelessness occurs when a member of a minority group is either rejected by or has difficulty negotiating multiple cultural backgrounds (Vivero & Jenkins, 1999). Although this phenomenon has been observed among multiracial and multiethnic individuals, it can also describe individuals who have been exposed to multiple cultural backgrounds (Navarrete & Jenkins, 2011), such as Puerto Ricans. Experiences of racism and discrimination on the mainland (Arellano-Morales et al., 2015), could lead Puerto Ricans to feel rejected by the dominant culture. Geographical separation and the rejection of mainland Puerto Ricans by island Puerto Ricans for being Americanized (Bernard-Carreño, 2010) may lead to losing Puerto Rico as a cultural home. Disconnection from Puerto Rican culture may also be a reflection of internalized negative messages about Puerto Rican culture and society documented among mainland Puerto Ricans (Rosario, Schaefer, Ballesteros, Renteria, & David, in press; Rivera Ramos, 1998). Participants in the Partial Marginalization-High Stress profile (1) were also more likely to be younger (29.62 years of age) and be U.S. born (90%) than participants in profile 2 (44.40 years of age; 17.24% U.S. born) and profile 3 (41.13 years of age; 17.95% U.S. born). Migration at younger ages and/or having cross-cultural contact at a young age is also thought to put individuals at a higher risk of experiencing cultural homelessness (Hoersting & Jenkins, 2011). Thus, it is possible that as younger and/or U.S. born Puerto Ricans try to negotiate distinct Puerto Rican and American cultural expectations, they may feel that regardless of the choice they make, it will always be “the wrong choice” (Navarrete & Jenkins, 2011, p. 793). This cultural conundrum is captured on the title of this paper with the phrase *ni de aquí ni de allá* [neither from here nor from there] as was first noted in Juan Flores’ (1993) essays on Puerto Rican identity, in which he describes the Puerto Rican diaspora as being in the cultural limbo of not belonging anywhere. Cultural estrangement has been associated with negative feelings. To illustrate, Aranda (2006) found that mainland Puerto Ricans associated their cultural displacement with feelings of sadness and loneliness. A final characteristic of this group was the high proportion of men within the profile (75.91%) compared to the percentage of men in profile 2 (13.79%) and profile 3 (17.95%). A potential explanation for this may lie in the negative messages Latino men may receive regarding emotional expression and mental health seeking behaviors thus putting them at risk for experiencing more acculturative stress and depression symptoms (Castillo et al., 2015). This experience seems to be supported by our results, as individuals in the Partial Marginalization-High Stress Profile (1) reported the highest levels of depression symptomatology. Lastly, this profile had a moderate exploration of American culture by engaging in activities such as reading books about American history and culture and attending American cultural activities. Given the long-standing sociopolitical and sociocultural influence of the United States on the island and White American cultural hegemony in the United States, exploring American culture may be unavoidable for Puerto Ricans.

Profile 2 (Partial Separation-Low Stress) participants indicated generally low levels of adherence to American behavioral and ethnic identity acculturation in comparison with participants in Profile 3 (Full Biculturalism-Medium Stress). Moreover, Profile 2 (Partial Separation-Low Stress) participants indicated higher levels of Puerto Rican behavioral and ethnic identity affirmation and resolution in comparison with members of the Profile 1 (Partial

Marginalization-High Stress). Furthermore, Profile 3 (Full Biculturalism-Medium Stress) members endorsed the highest levels of behavioral and ethnic identity Puerto Rican behavioral enculturation and American acculturation, compared to peers in all other profiles. The distinct bidimensional behavioral and ethnic identity acculturation characteristics represented by members of Profile 2 (Partial Separation-Low Stress) and Profile 3 (Full Biculturalism-Medium Stress) were broadly consistent with our predictions based on the aforementioned literature.

Contrary to our hypotheses, Profile 2 (Partial Separation-Low Stress) members reported the lowest levels of acculturative stress and depression symptomatology. Although biculturalism is said to be associated with better psychological adjustment and mental health than separation (Berry, 2006), results have been equivocal. While some scholars have shown that biculturalism may protect U.S. Latina/os against psychological distress as those with bicultural attachment may experience less acculturative stress (Meca et al., 2017), others indicate that biculturalism may actually put some Latina/os at risk of experiencing mental health problems because the individual may not be able to always maintain cultural competence in both cultures (Torres, 2010). The latter interpretation of biculturalism as a potential risk factor was reflected by the present study's sample. Moreover, the medium levels of acculturative stress endorsed by Profile 3 (Full Biculturalism-Medium Stress) participants also may explain why they reported more depression symptomatology than those in Profile 2 (Partial Separation-Low Stress). Although individuals with a bicultural stance may possess the skills to function within both cultures, they also may experience more stressors related to developing intercultural competency (Torres & Rollock, 2004). Having to maintain positive person-cultural environment interactions may place some in this community at greater risk for experiencing acculturative stress and psychological distress (Kapke, Gerdes, & Lawton, 2017).

The absence of an assimilation profile is also noteworthy. If replicated, these results could suggest that despite the long-lasting relationship between Puerto Rico and the U.S., Puerto Ricans may not see assimilation as a desirable acculturation strategy. Alternatively, even if Puerto Ricans seek to assimilate, this strategy may not be a viable option for a mostly visual minority population (Schwartz et al., 2010).

Clinical Implications

Our study also provides implications for practitioners. While all participants indicated clinically noteworthy depression levels, Profile 1 (Partial Marginalization-High Stress) participants reported markedly high levels of depression and acculturative stress in comparison to peers. Thus, clinicians should have knowledge of the concept of marginalization, as it seems to uniquely apply to Puerto Rican adults living in the United States. Case conceptualizations of Puerto Rican clients should integrate potential presence of moderate marginalization and its role, in terms of clients' presenting concerns, should be explored and integrated into interventions. For instance, with the help of mental health counselors, clients' potentially internalized negative beliefs could be disentangled from positive beliefs about culture and identity to reduce acculturative stress and psychological distress. Similarly, mental health practitioners should assess for potential loneliness and sadness that is possibly attributed to experiences of cultural home-

lessness among Puerto Ricans clients. Scholars have identified income and negative stigma toward mental health professionals as barriers that may prevent young Latino men from seeking mental health services (Gonzalez, Alegria, & Prihoda, 2005). Given the age, gender, and socioeconomic characteristics of the Partial Marginalized-High Stress profile, it is also important to focus on interventions that improve access of mental health care for younger Puerto Rican men.

It is noteworthy that the lowest levels of depression were reported by those associated with a partial separation stance. When counseling clients indicating separation, mental health professionals are encouraged to explore whether and how clients' demonstration of separation could enhance resilience against depression even further through reconnection with valued parts of their heritage culture. It is imperative to simultaneously attend to and challenge potential internalized negative perceptions of Puerto Rican culture as these could be risk factors for future acculturative stress and depressive symptoms over one's lifetime.

Finally, clinicians should be knowledgeable of biculturalism and how it may uniquely contribute to Puerto Rican clients' presenting concerns of depression and acculturative stress. For instance, when Puerto Rican clients present with characteristics of bicultural identities, it seems particularly important for clinicians to assess for intercultural competencies as well as potential stressors related to intercultural incompetence by using the appropriate assessments (e.g., Torres, 2013). For example, the Mexican Intercultural Competence Scale (e.g., Torres, 2013) could be useful in assessing the presence of skills necessary to successfully navigate the heritage and receiving cultures.

Limitations and Future Directions

Some study limitations should be noted when discussing these findings. Specifically, the present study's sample largely consisted of mainland-born persons, were slightly older, and indicated higher educational and socioeconomic status than the general Puerto Rican population.

In order to test the generalizability of results, a replication of this study is warranted with samples of first-generation Puerto Ricans and samples of Puerto Rican adults along lower sociodemographic statuses. Additionally, we did not measure the presence of other cultural identities or orientations (e.g., Orlando Rican), which may explain the majority of the sample's disconnection from Puerto Rican and American culture (marginalization). The present study also is cross-sectional and does not allow for causal inference between the variables assessed. A longitudinal analytic design, such as latent class growth modeling to track directional and rate of changes in bidimensional acculturation, bidimensional ethnic identity, and acculturative stress characteristics as well as associations with depression can support the investigation of how Puerto Rican acculturation unfolds overtime. A longitudinal design could also prove helpful in identifying disconnection from Puerto Rican and American culture and the creation of new cultural identities and orientations.

Conclusions

Results highlight the uniqueness of bidimensional behavioral and ethnic identity acculturation among Puerto Ricans on the U.S.

mainland. The present study also answers the call to investigate specific Latina/o ethnocultural groups, instead of assuming homogeneity across Latina/os (e.g., Vaeth, Caetano, & Rodriguez, 2012). As Puerto Ricans displaced by Hurricane María continue to migrate to the mainland, this investigation provides valuable information psychologists can utilize to contextualize depression symptomatology, particularly among Puerto Ricans who may find themselves facing the cultural challenge of not being *ni de aquí, ni de allá*.

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