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Ethnic and Gender Variations in The Associations between Family Cohesion, Family Conflict, and Depression in Older Asian and Latino Adults

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Introduction

Depression is a growing public health concern in Asian and Latino older adults. The number of immigrants from Asia and Latin America has increased exponentially in recent years, and the majority of older Asians and Latinos are foreign born [1, 2]. Studies have shown that older minorities and immigrants experience disproportionately high rates of depression and disparities in mental health services [3].

Families have a deep and long-lasting impact on array of older adult's health outcomes. Strong family and social ties appear to buffer individuals from the consequences of life and health crises [4, 5], whereas hostility and unresolved conflicts in families are powerful predictors of poor disease course and mortality among those with depression [6, 7]. Studies have found that receiving social support is an independent predictor of better mental health outcomes [8, 9]. As cultural phenomena, the quality of family relationships such as family conflict and family cohesion may impact depression outcomes differently among different cultural groups. Yet, few studies have examined whether these cultural variations in family conflict and family cohesion have meaningful impacts on late-life depression in immigrant and culturally diverse populations [10, 11]. In their study of Latino American populations, Rivera and colleagues [10] concluded that ethnic variations exist in the relationships between family cohesion, family conflict, and psychological distress among Latino sub-groups. Lincoln and Chae [11] also noted the variations in moderating effect of emotional support on the associations between negative interaction with family and major depressive disorders in African Americans and Caribbean Blacks. Yet, if such variations also exist

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between Latino and Asian populations has not been examined fully. Our paper addresses this knowledge gap by using a nationally representative sample of community dwelling Asian and Latino older adults.

Theoretical/conceptual model: Psychosocial Theory of Depression

Psychosocial theories explain that late-life depression is a function of complex interplays among physical, psychological, social, and environmental factors[12], and that the impact of negative life events on late-life depression is mediated or moderated by a wide range of factors. For example, George [13] identified multiple domains of vulnerability and protective factors related to late-life depression: demographics (e.g., age, gender, race/ethnicity), early life events (e.g., education, trauma), later life events (e.g., income, marital status), social integration (e.g., religious and community participation), risk and protective factors (e.g., social support), and provoking agents and coping efforts (e.g., life stress and coping). The current analysis focuses on family conflict as the major risk factor and family cohesion as the major protective factor of depression in elderly Latinos and Asian Americans, because family becomes major sources of social support, and thus becomes increasingly salient to older adult's mental health.

Methods

Participants

This is a cross-sectional, descriptive study, using data from the National Latino Asian American Study (NLAAS), a nationally representative epidemiological study of mental health among Asian and Latino populations [14]. The sampling design has been well documented else where [15, 16]. The selection of a probability sample of respondents required a four-step sampling process: a primary stage sampling of U.S. Metropolitan Statistical Areas and counties, a second stage sampling of area segments, a third stage sampling of housing units within the selected area segments, and a fourth stage sampling of the random selection of eligible respondents from the sample housing units. The weighted response rates for the combined NLAAS samples of primary and second adult respondents were 73.2% for the total sample, 75.5% for the Latino sample, and 65.6% for the Asian sample [15].

Data Collection

Data collection took place between May 2002 and November 2003. Eligibility criteria to be included in the study were: 18 years of age or older, reside in non-institutional settings in one of 50 states of the United States or District of Columbia, identify self as of Latino, Hispanic, or Spanish decent, or of Asian decent. The NLAAS instrument was administered in the respondent's choice of languages (English, Spanish, Chinese, Vietnamese, or Tagalog) by fully bilingual lay interviewers. Interviews were conducted face-to-face unless respondents requested a telephone interview. The final sample of NLAAS consisted of 4,638 community residing Latino and Asian American adults. The current analyses were limited to the subsample of individuals aged 65 years or older (N=395).

Measures

Dependent variable—The dependent variable of this study was the 12-month DSM-IV Major Depressive Episode (depression hereafter). Depression was assessed with the World Health Organization Composite International Diagnostic Interview (WMH-CIDI) [17], a structured interview that follows the criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*, [18] coded as “1” for depression and “0” for no depression. Previous studies [19, 20] showed good concordance between DSM-IV diagnoses based on the WMH-CIDI and the Structured Clinical Interview for DSM-IV Axis I disorders.

Independent variables

Family Conflict (possible scores range 0-10) (Cronbach's alpha=0.77): Family conflict measured perceived levels of conflict that might arise because of the tension between fitting into the cultural norms of strong family ties and achieving more personal goals. It was measured by five questions drawn from a subscale of the Hispanic Stress Inventory (HSI) [21]: “You have felt that being too close to your family interfered with your own goals”; “you have argued with other members of your family over different customs”; “you have felt lonely and isolated due to lack of family unity”; “family relations are less important to people close to you”; “your personal goals have been in conflict with your family”. The response options ranged from 1 (strongly agree) to 4 (strongly disagree). The family cohesion scores were calculated by reverse coding, summing, and transforming the responses to indicate how strongly the respondent agreed with the three statements. The higher scale values indicated that the respondent experienced greater conflict with his or her family.

Family Cohesion (possible scores range 0-10) (Cronbach's alpha=0.83): Family cohesion measured the perceived levels of cohesiveness of family, using a 3-item subscale of the Family Cohesion Scale developed by Olson *et al.* [14, 22]: “family members like to spend free time with each other”; “family members feel very close to each other”; and “family togetherness is very important.” The family cohesion scores were calculated by reverse coding, summing, and transforming the responses indicating how strongly the respondent agrees with the three statements offered. Higher scale values indicated that the respondent experienced greater cohesiveness in his or her family.

Covariates—Covariates include age (between 65 and 99), gender (men vs. women), race/ethnicity (Asian vs. Latino), marital status (married/cohabiting vs. divorced/separated/widowed), education (0-11 years, 12 years, 13-15 years, and greater than or equal to 16 years), living in poverty (yes vs. no), duration in the U.S. (US born, less than 5 years, 5-10 years, 11-20 years, and 20+years).

Analyses

Procedures designed for the analysis of complex sample survey data in the Stata software package were used [23]. Design-based analyses, specifically a Taylor Series Linearization approach to variance estimation, were used to account for the complex multistage clustered design of the NLAAS samples when computing estimated standard errors. All statistical

estimates were weighted, utilizing the NLAAS sampling weights to account for individual-level unequal probabilities of selection into the samples, individual non-response, and additional post-stratification to ensure U.S. population representation.

Descriptive statistics were used to estimate population parameters and examine sample characteristics. To examine the association between depression and qualities of family relationships (conflict and cohesion), we used multiple multivariate logistic models with depression as the dependent variable. Statistical significance of the associations was tested using F-tests and adjusted Wald-tests. Because of the family conflict scores and family cohesion scores were highly negatively correlated with each other ($r = -0.43$, p -value < 0.0001), we constructed separate models for family conflict and family cohesion, with same set of covariates.

The missing values for each variable included in the current analyses stayed below 2%. Because this was less than the recommended 5% for imputation [24], cases with missing values were not included in the analyses, resulting in a slightly reduced number of observations included in the final analyses. We used publically available deidentified data set. As such, this study was exempt from Institute Review Board review.

Results

A total of 395 community dwelling Latino ($N = 231$) and Asian American ($N = 164$) older adults were included in the final analyses. Table 1 shows the weighted distribution and descriptive statistics for characteristics of the study population. The mean age of the estimated population was 72.66 (SE: 0.38), the majority of them were female (57.88%), foreign born (63.23%), married/cohabiting (56.58%), and had less than a high school education (59.28%). A large number of older Latino and Asian Americans were living in poverty (23.72%) and approximately 7.42% of them had depression.

The majority of Asian older adults were female (57.49%), married/cohabiting (72.62%), foreign born (76.57%), and had graduated from high school (61.66%). More than one in five Asian older adults (21.82%) lived in poverty. The majority of Latino older adults were female (58.58%), had less than a high school-level education (71.68%), and almost one in four Latino older adults (23.72%) lived in poverty. About half of Latino older adults were married/cohabiting (49.21%); the other half were divorced/separated/widowed (48.84%).

The mean family cohesion score for the total sample was 9.24 (95% CI: 9.00, 9.47) and the mean family conflict score for the total sample was 6.07 (95% CI: 3.83, 4.25). There was no statistically significant difference in these mean scores between Asian and Latino groups and between male and female.

Late-life Depression

Table 2 summarizes the associations between sociodemographic characteristics, family cohesion, and late-life depression outcomes without adjusting for other individual characteristics. Compared to their Asian counterparts, Latino older adults experienced elevated risk for depression (weighted unadjusted OR: 4.07, 95% CI: 1.04, 15.86).

Compared to married older adults, divorced/separated/widowed older adults experienced significantly increased risk for depression (weighted unadjusted OR: 3.76, 95% CI: 1.62, 9.93). A one-point or 10% increase in family cohesion score was associated with smaller odds for depression (weighted unadjusted OR: 0.67, 95% CI: 0.58, 0.81). Conversely, a one-point or 10% increase in family conflict score was associated with higher odds for depression (weighted unadjusted OR: 1.26 95% CI: 1.01, 2.00).

Family conflict, family cohesion, and late-life depression

Table 3 presents the results from weighted multivariate logistic regression models with depression as the dependent variable stratified by gender and race/ethnicity. All models were adjusted for age, marital status, educational status, whether living in poverty or not, years in the U.S. and gender or race/ethnicity depending on the major independent variable of interest. Controlling for all covariates, a one point increase in family cohesion scores was associated with a significantly decreased risk for late-life depression among older adults (weighted unadjusted OR: 0.68, 95% CI: 0.54, 0.84).

Older men were more sensitive to both family context indicators. Greater family cohesion scores were associated with lower risk for depression (weighted unadjusted OR: 0.18, 95% CI: 0.18, 0.77) and greater family conflict score with greater risk for depression (weighted unadjusted OR: 2.45, 95% CI: 1.14, 5.30) among older men. These associations were not statistically significant among older women.

Comparing Asian and Latinos, the two indicators of the family relationship affected each group differently. In Asian older adults, the association between family cohesion and late-life depression was not statistically significant, whereas family conflict scores were significantly associated with late-life depression (weighted unadjusted OR: 1.88, 95% CI: 1.71, 3.01). On the contrary, in Latino older adults, the association between family cohesion and late-life depression was significantly associated (weighted unadjusted OR: 0.67, 95% CI: 0.51, 0.87), whereas the family conflict was not significantly associated with late-life depression.

Discussion

Family contexts have increasingly been examined as a possible explanation for the differences in late-life depression outcomes found across multicultural populations [25]. Most of the family research has linked the presence of positive family experience (high family cohesion and low family conflict) with positive mental health outcomes. In the current analyses, family cohesion, but not family conflict, was statistically significantly associated with late-life depression in overall older sample. These findings are only partially consistent with findings from previous research in Latino and Asian American populations: depression is positively associated with family cohesion [10, 26-28] and negatively associated with family conflict [28-31]. Such partial consistency may be due to how the outcomes of analyses were defined. Whereas the majority of previous research examined self-rated mental health or psychological well-being, the current analyses examined late-life depression measured by WMH-CIDI [17], an instrument with a good concordance with DSM-IV and the Structured Clinical Interview for DSM-IV Axis I disorders. It is possible

that experiencing family conflict may decrease one's general psychological well-being, but not to the degree necessary to cause major depression, a clinical condition. Further studies are needed to examine if a threshold level of family conflict and family cohesion associated with depression can be established and to explain why there is a robust inverse relationship between family cohesion and late-life depression in culturally diverse older adult populations. Another possible explanation for the discrepancy is that, in contrast to previous studies that examined populations of all ages, the current analyses was limited to older adult populations. Thus, the discrepancy may suggest that the qualities of family relationship affect depression outcomes differently in different age groups.

Previous research has often concentrated on a relationship between family context and depression, with little consideration of how this relationship is modified by race/ethnicity, income, gender, and other relevant individual characteristics. We found a significant moderating effect of gender, with men being more sensitive to family relationships than women. This is inconsistent with Walton and Takeuchi's study [26]; they concluded that family cohesion was instrumental in protecting psychological well-being of women but not men among Asian Americans. Whereas Walton and Takeuchi's study examined Asian populations of all ages, our data were limited to older adults and both Asian and Latino. This differences in age and race/ethnicity may explain the different findings of the two studies.

Few studies using NLAAS data set have explored variations between Latino and Asian populations. In our analysis, the association between each indicator of the quality of family relationships and late-life depression was modified by race/ethnicity. These variations may be explained by the fact that, although both Asian and Latino cultural groups have strong cultural emphasis on collective family life, each group may assign different meaning and importance on different aspects of family life. This finding also highlights the limited value of information from aggregated data and strongly suggests that future investigations should focus on identifying meaningful differences and similarities of family dynamics among diverse cultural groups.

The findings of our study are consistent with the previous studies. Rivera and colleagues [10] examined family cohesion and psychological distress in Latino populations. While they found significant association between family cohesion and psychological well-being in the aggregated Latino sample, they also found notable cultural variation among the Latino subgroups. Lincoln and Chae [11] concluded that the relationship social support and major depressive disorders varied between African Americans and Caribbean Blacks.

In our exploratory data analysis of six cultural subgroups available in NLAAS data (not reported), we saw evidence of similarities and differences across those six cultural groups that extended beyond Latino vs. Asian division. Certain Asian groups seemed to share more similar demographic characteristics and association between the quality of family relationship and late-life depression with a Latino subgroup than with other Asian subgroups. Unfortunately, the small sample size of each cultural group prohibited us to further explore these variations. However, based on these data, we caution readers that there are greater needs for nuance understanding of family processes among culturally diverse populations.

The relationship between depression and quality of family relationships is likely to be bidirectional [32]. Individuals with depression may be unable to engage with family in meaningful ways or may perceive the family less cohesively. Furthermore, individuals with depression may perceive their family to be more hostile, thus reporting greater family conflict scores and lower family cohesion scores. Conversely, having a depressed member may decrease cohesiveness of the family and increase conflict among family members.

Also, family conflict and family cohesion may not be mutually exclusive concepts. Rather, they may co-exist, increasing the complexity of our emotional life. Although the mixed feelings about family cohesion and conflict between different generations may be common to all older adults [33-35], it may be particularly relevant to multicultural families because of the differential rates of acculturation across multiple generations [36]. Future studies may consider collecting information about older adults' relationships with different family members (e.g. spouse, children) to examine how diverse emotional experience and relationship quality with multiple family members affect older adults' mental health outcomes.

Limitations and strengths

There are several limitations in this analysis. First, due to the cross sectional nature of data, we cannot establish causal inference. Second, the relatively small sample size in Asian older adult group and the small number of observations with positive depression may have decreased efficiency of our estimations. Third, as mentioned earlier, although the NLAAS data was collected from several subgroups in Asian and Latino populations, the small number of older adults sampled in each group make it impossible to examine variations across cultural groups, thus, limiting our ability to explore a more nuanced influence of culture on the association between family relationships and late-life depression. By directly comparing subgroups of Latino and Asian Americans, we may have gathered more finely gradated information about cultural characteristics associated with socioeconomic status, immigration, family processes, social support, and late-life depression outcomes. Also, compared to Latino group, the size of Asian older adults group is small. Lastly, the current analyses report rates of depression as diagnosed by a CIDI administered by an interviewer. Although this tool has been used with multicultural populations and interviewers had gone through extensive training, some cultural factors may have affected the likelihood that a person answers 'yes' or 'no' on the questions presented on the structured interviews and may have created bias.

Despite the above limitations, the findings of current analyses add to our knowledge base in several ways. First, despite the increasing interest, few studies have documented the roles of family processes on late-life depression in multicultural older adult populations, such as Latino and Asian populations. Minority and immigrant older adults are a particularly vulnerable population. Second, we investigated late-life depression using a highly structured and previously validated instrument [17]. The majority of previous studies have examined psychological well-being, and findings of these studies may have limited implications for clinical practice.

Implications of the study findings

The findings of this study have substantial clinical and policy implications. Given the importance of family context observed in the mental health of older Latino and Asian Americans, clinicians should consider assessing the perceived level of family cohesion and family conflict when caring for Latino and Asian American older adults. This could be done by asking simple questions such as “do you feel your family are supportive of you?”

Considering the significance of family context in emotional and mental health of minority older adults, culturally appropriate family-focused interventions that can address complex health issues, including depression, are urgently needed. Furthermore, the observed sensitivity to family context among older men warrants clinicians to be particularly sensitive to the older men's perception of family cohesion or conflict. Considering the gender disparities in depression treatment in older men [37], developing and testing interventions that directly address perceived problems with family relationships among depressed older men may be a worthy endeavor to improve population health. Policy makers may consider ways to encourage and assist family-oriented mental health care, as a part of culturally sensitive depression care for elderly Latino and Asian Americans.

Conclusions

The findings of the current analyses show that family cohesion has a robust inverse association with late-life depression in Latino and Asian older adult populations. This association varied by gender, with men being more sensitive to both family conflict and family cohesion than women. Asian and Latino older adults seem to be affected differently by family context when it comes to late-life depression outcomes. Further research is needed to better understand the complex interplay between gender, culture, family life, and late-life depression and ways to address family related factors in efforts to improve late-life depression.

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Table 1
Weighted Sample Distribution of Demographic and Socioeconomic Characteristics

	Gender		Race/Ethnicity			TOTAL SAMPLE N=395
	Male N=167	Female N=228	Latino N=231	Asian N=164		
Depression (%; 95% CI)	3.6 (0.2, 6.9)	10.4 (3.2, 17.6)	9.80 (5.06, 18.12)	2.59 (0.66, 9.61)		7.5 (2.9, 12.1)
Mean Age (95% CI)	72.4 (71.14, 73.55)	72.9 (71.92, 73.90)	72.8 (71.75, 73.86)	72.35 (71.48, 73.23)		72.67 (71.92, 73.42)
Race/Ethnicity (%; 95% CI)						
Asian	33.2 (19.8, 46.5)	33.3 (23.5, 43.0)				33.3 (22.9, 43.7)
Latino	66.8 (53.5, 80.1)	66.7 (57.0, 76.5)				66.7 (56.3, 77.1)
Gender (%; 95% CI)						
Male			41.93 (32.81, 51.64)	42.51 (36.09, 49.19)		42.12 (35.31, 49.24)
Female			58.07 (48.36, 67.19)	57.49 (50.81, 63.91)		57.88 (50.76, 64.69)
Marital Status (%; 95% CI)						
Married/Cohabiting	78.9 (67.6, 90.2)	39.3 (31.7, 47.0)	49.21 (40.54, 57.92)	71.62 (61.63, 79.85)		56.18 (48.4, 64.0)
Divorced/Separated/Widowed	20.9 (9.6, 32.1)	57.0 (48.7, 65.2)	48.84 (40.24, 57.52)	25.66 (17.29, 36.3)		41.59 (33.5, 49.7)
Never Married	0.02 (-0.02, 1.0)	0.38 (-0.01, 7.5)	1.95 (0.85, 4.41)	2.73 (0.62, 1.17)		2.2 (0.1, 4.44)
Education (%; 95% CI)						
Less than High School	51.3 (37.0, 65.6)	64.5 (55.0, 74.1)	71.68 (60.86, 80.47)	33.99 (24.96, 44.35)		59.0 (49.7, 68.0)
High School Graduate	12.9 (5.6, 20.1)	16.3 (8.1, 24.6)	12.17 (7.63, 18.87)	19.87 (12.03, 31.04)		14.9 (9.3, 20.4)
Some College	12.3 (3.0, 21.6)	10.8 (6.3, 15.1)	9.22 (4.73, 17.2)	15.68 (10.73, 22.33)		11.4 (7.1, 15.7)
College Graduate	23.5 (13.9, 33.2)	8.38 (4.0, 12.7)	6.93 (3.27, 14.08)	30.46 (22.21, 40.19)		14.8 (9.3, 20.2)
Living in Poverty (%; 95% CI)	19.5 (8.7, 30.4)	20.1 (18.1, 34.0)	23.72 (16.51, 32.84)	21.82 (15.44, 29.91)		23.1 (17.67, 29.58)
YEARS IN THE U.S. (%; 95% CI)						
U.S. BORN	40.2 (25.8, 54.7)	34.2 (22.8, 45.6)	43.41 (30.61, 57.16)	23.43 (11.69, 41.41)		36.77 (26.4, 47.2)
Less than 5 YEARS	5.5 (0.0, 11.0)	1.6 (0.0, 3.1)	2.53 (0.68, 9.03)	4.81 (2.14, 10.46)		3.29 (0.71, 5.9)
5-10 YEARS	4.7 (1.3, 9.2)	3.6 (6.4, 18.1)	1.18 (0.55, 2.53)	9.89 (6.01, 15.86)		4.08 (2.3, 5.8)
11-20 YEARS	4.7 (1.3, 8.2)	12.3 (6.4, 18.1)	3.41 (1.82, 6.29)	20.39 (12.16, 32.15)		9.05 (5.5, 12.6)
20+ YEARS	44.8 (31.9, 57.8)	48.3 (36.8, 59.8)	49.47 (36.98, 62.02)	41.48 (31.51, 52.2)		46.8 (36.8, 56.8)
Mean Family Cohesion Score (95% CI)	9.22 (8.95, 9.49)	9.25 (8.94, 9.55)	9.26 (9.00, 9.52)	9.21 (8.95, 9.47)		9.24 (9.01, 9.47)
Mean Family Conflict Score (95% CI)	3.85 (3.65, 4.04)	4.18 (3.88, 4.50)	3.98 (3.74, 4.23)	4.17 (3.91, 4.43)		4.04 (3.83, 4.26)

Table 2
Risk for depression associated with Sociodemographic Characteristics

		Depression (%)	Unadjusted OR (95% CI)
SEX	Male	3.60%	Ref
	Female	10.21%	3.05 (0.94, 9.93)
Race/Ethnicity	Asians	2.59%	Ref
	Latinos	9.79%	4.07 (1.04, 15.86)
Marital Status	Married/Cohabiting	3.77%	Ref
	Divorced/Separated/Widowed	12.84%	3.76 (1.62, 8.75)
Education	Less than High School	9.95%	Ref
	High School Graduate	5.98%	0.93 (0.64, 1.35)
	Some College	2.10%	0.77 (0.53, 1.13)
	College Graduate	2.79%	0.83 (0.58, 1.20)
Living in Poverty	No	7.43%	Ref
	Yes	7.39%	0.99 (0.36, 2.76)
YEARS IN THE U.S.	US born	4.11%	Ref
	Less than 5 Years	7.33%	1.84 (0.14, 23.46)
	5-10 Years	1.25%	0.30 (0.02, 3.73)
	11-20 Years	6.74%	1.68 (0.19, 15.27)
	20+ Years	10.86%	2.84 (0.63, 12.81)
Family Cohesion			0.67 (0.56, 0.81)
Family Conflict			1.26 (1.01, 1.59)

Table 3
Variation in the associations between family contexts and late-life depression by gender and race/ethnicity

	Total Sample OR (95% CI)	MODEL I (by Gender)		MODEL II (by Race/Ethnicity)		
		Male	Female	Asian	Latino	
Family Cohesion	0.68 (0.54, 0.85)	0.38 (0.18, 0.77)	0.77 (0.58, 1.04)	0.70 (0.38, 1.28)	0.67 (0.51, 0.87)	
Family Conflict	1.46 (0.96, 2.20)	2.45 (1.14, 5.30)	1.34 (0.93, 1.92)	1.88 (1.71, 3.01)	1.30 (0.87, 1.97)	

^aModel I was controlled for race/ethnicity, age, marital status, educational status, living in poverty, and years in the U.S.

^bModel II was controlled for gender, age, marital status, educational status, living in poverty, and years in the U.S.

^cAll models were statistically significant at p<0.0001.