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Prevalence and Correlates of Lifetime Suicidal Ideation and Attempts among Latino Subgroups in the United States

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Abstract

Objective—Limited data is available to understand the prevalence and correlates of suicidal behavior among U.S. Latino subgroups. This paper compares the prevalence of lifetime suicide ideation and suicide attempts among major U.S. Latino ethnic subgroups and identifies psycho-sociocultural factors associated with suicidal behaviors.

Method—The National Latino and Asian American Study (NLAAS) includes Spanish and English speaking Mexicans, Puerto Ricans, Cubans and other Latinos. Descriptive statistics and logistic models were used to determine demographic, clinical, cultural and social correlates of lifetime suicide ideation and attempts.

Results—The lifetime prevalence of suicidal ideation and attempts among Latinos was 10.2% and 4.4%, respectively. Puerto Ricans were more likely to report ideation as compared to other Latino subgroups but this difference was eliminated after adjustments for psychiatric and sociocultural factors. Most lifetime suicidal attempts described by Latinos were reported as occurring when they were under the age of 18 years. Any lifetime DSM-IV diagnoses, including dual diagnoses, were associated with an increased risk of lifetime suicidal ideation and attempts among Latinos. In addition, female gender, acculturation (born in U.S. and English speaking) and high levels of family conflict were independently and positively correlated with suicide attempts among Latinos, even among those without any psychiatric disorder.

Conclusions—These findings reinforce the importance of understanding the process of acculturation, the role of family and sociocultural context for suicide risk among Latinos. These should be considered in addition to psychiatric diagnoses and symptoms in Latino suicide research, treatment and prevention, especially among young individuals.

The estimated rates of suicide attempts vary among U.S. ethnic groups.[1] Although not all studies are in agreement in regards to the variance across populations; some have shown that there may be variation among Latino subgroups.[2, 3] Studies have suggested that suicide attempts may be less common among Latinos as compared to white non-Latinos even in the presence of depression or other psychiatric disorders highly correlated with suicide attempts.

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[2] Most studies have suggested that suicide attempts are more prevalent among Puerto Ricans as compared to other Latino groups in the U.S. including Mexicans and Cubans.[4, 5] However, even among Puerto Ricans, rates of suicide completion are lower as compared to their white non-Latino counterparts.[2, 3] Less is known about suicidal ideation as this is not usually reported in epidemiological studies. There is some suggestion in the literature that there are cultural and social factors that may protect Latinos from suicide ideation and attempts including the potentially protective role of family supports, religion and other social support.[6–9]

In contrast, the process of acculturation to U.S. culture may be associated with tensions in cultural values (e.g. intergenerational conflict, retention or loss of Spanish language, discrimination or feelings of isolation) especially for immigrant young people[8] and may introduce stressors that predispose them to mental health problems over time. These patterns of immigration, acculturation, and sociocultural supports may also differ across Latino subgroups and contribute to variations in the risk for suicidal behaviors.

Aims of the Study

The aim of this paper is to advance the current knowledge on suicide attempt rates and correlates among a U.S. representative sample of Latinos of the National Latino and Asian American Study (NLAAS). We have the opportunity to examine these issues in a representative sample of U.S. born and immigrant Latino groups and for both Spanish and English speakers. The NLAAS also provides a rich array of sociocultural factors, like nativity, acculturation and use of family supports, which may be important correlates of lifetime suicidal ideation and attempts.

Method

Data Source, Data Collection and Study Sample

Data come from the National Latino and Asian American Study.[10] The NLAAS is based on a stratified area probability sample design of persons 18 years of age and older in the noninstitutionalized population of the coterminous United States and Washington D.C. The sampling frames and sample selection procedures selected for this study are described in detail elsewhere.[11] In summary, the NLAAS sample design includes two components: the NLAAS core sample which provides a nationally representative sample of all Latino origin groups regardless of geographic residential patterns and the NLAAS-HD supplements which are targeted oversampling of geographic areas with a 5% or more ethnic density of Latino and Asian households. In this paper, we report data on the Latino sample. Interviews were conducted in both English and Spanish by trained interviewers between May 2002 and November 2003. Written informed consent was obtained after all interview procedures were explained to participants. All study methods and protocols were approved by the investigators' Internal Review Board. The final response rate for the Latino sample was 75.5%.[11, 12]

Measures

Determination of Psychiatric Disorders and Suicidal Behaviors

Lifetime psychiatric disorders were measured using the diagnostic interview of the World Mental Health Survey Initiative version of the World Health Organization- Composite International Diagnostic Interview (WMH-CIDI).[13] The WMH-CIDI is a fully structured diagnostic instrument administered by trained lay interviewers. WMH-CIDI diagnoses are based on criteria of the Diagnostic and Statistical Manual of Mental Disorders, version 4 (DSM-IV) and ICD-10 symptom criteria. The validity of earlier versions of the English and Spanish CIDI diagnostic assessments were found to be consistent with those obtained independently by trained clinical interviewers.[14, 15] The lifetime psychiatric conditions included in the

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analyses are known correlates of suicidal behaviors in the literature regarding the general population and include: any lifetime depressive disorder (major depression or dysthymia), any lifetime anxiety disorder (any DSM-IV anxiety disorder: generalized anxiety disorder, social anxiety, panic disorder or PTSD), or any lifetime substance disorders. Substance use disorders is a composite variable which includes meeting full DSM-IV criteria for alcohol and/or drug abuse or full DSM-IV criteria for alcohol or drug dependency. Respondents are included as positive if they meet criteria for abuse or dependency for at least one substance. In addition, we examined the impact of dual diagnosis (non-substance and substance disorder together) on suicidal behaviors.

Suicidal ideation and attempt was taken from the suicidality section of the WMH-CIDI. The specific questions were: Have you ever seriously thought about committing suicide? Those individuals endorsing a history of suicidal thought were then asked: Did you ever attempt suicide? If respondents positively endorsed this probe, they were also asked at what age they first attempted suicide. They were also asked about the intention of the attempt (i.e. I made a serious attempt to kill myself and it was only luck that I did not succeed; I tried to kill myself, but knew that the method was not fool proof; My attempt was a cry for help, I did not intend to die). Specific questions regarding intention were included in order to better understand the possible lethality and meaning behind these attempts and to further frame our understanding of any epidemiological findings.

We also attempted to use 12-month diagnoses and suicidal ideation/attempts in our analyses. Despite the fact that our data may be one of the largest samples of US Latinos to consider the topic, suicidality is a very rare event. In fact, suicide attempt in the past 12 months was present in less than 2% of Hispanic NLAAS respondents. Thus, we have focused on lifetime disorders and suicidality in order to have appropriate power to fit reliable statistical models.

Latino Ethnicity

We coded Latino subgroups based on respondent self-reported ethnic subgroups: Mexican, Puerto Rican, Cuban and Other Latino American/Hispanics. Ethnicity response choices were defined and asked using United States Census categories.

Sociocultural and Acculturation Variables

We include several sociocultural variables from scales included in the NLAAS in our analyses in order to examine the role of nativity/language, church attendance, family and social support in suicidal ideation and suicide attempt among Latinos. Nativity and language use are primary proxies for level of acculturation.[16] However, we aimed to include variables which consider different facets of acculturation and social support rather than to use a single scale of acculturation or support.[10] This allowed us to examine some of these different facets individually and to consider that these may have differential effects on mental health as well as be independently associated with suicidality.

Language

One assessment of English language proficiency was obtained from the English Proficiency scale of the Cultural Identity Scales for Latino Adolescents.[17] The 3-item scale has a standardized Cronbach’s alpha of .90 for the English language interviews and .96 for the Spanish language interviews.[12] Response categories for this scale range from poor [1] to excellent [4]. Representative questions include: “How well do you speak English?” and “How well do you read in English (from excellent to poor)?” We recoded this variable as dichotomous with individuals considered English proficient if they rate their English use as good to excellent. We also include English language spoken as a child (vs. Spanish language or bilingual as a child). Studies have found that Latino youth who speak English (and are not bilingual) represent

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a group at risk of disconnection and conflict with their family.[18–20] Some of these youth also can also exhibit limited proficiency in either language (No Spanish with suboptimal English) resulting in further social marginalization and thus at risk for poorer mental health outcomes.[21] Previous studies completed with the NLAAS have found this variable to be correlated with many psychiatric disorders among Latino adults as well.[10]

Nativity

Nativity is coded as a dichotomous variable: U.S. born versus foreign born. In addition, we include the age at immigration for foreign born and birthplace of parents among U.S. born to further differentiate level of personal and family exposure to U.S. culture at an early versus later stage of life. Previous studies have found that foreign born Latinos and those arriving after six years of age are less likely to suffer from psychiatric disorders as compared to US born and those who arrived earlier than age six.[10] Thus we wanted to examine the effect of nativity on suicidality given this association with psychiatric disorder.

Family Cultural Conflict Scale

The Family Cultural Conflict scale is a subscale of the Hispanic Stress Inventory (HSI).[22] The 5-item scale has standardized Cronbach's alphas of .77 for the English language interview and .79 for the Spanish language interview.[12] In the NLAAS, three different response categories were used, ranging from hardly ever [1] to often [3] with maximum and minimum scores of 5 and 15, respectively. Representative items include: "Because of the lack of family unity, you have felt lonely and isolated" and "Your personal goals have been in conflict with your family".

Family Support Scale

The family support scale is constructed by adding up three questions assessing level of support: How often do you talk on the phone or get together with family or relatives who do not live with you? How much can you rely on relatives who do not live with you for help if you have a serious problem? How much can you open up to relatives who do not live with you if you need to talk about your worries? The scale has a standardized Cronbach's alpha of .77 in both languages. Response categories for this scale range from a lot [1] to not at all [4] with maximum and minimum scores of 3 and 12, respectively. It is also reversely coded from the raw variable in order that higher values indicate more support. All scales were transformed so that their range was 0–1; the odds ratios for these scales represent the comparison of a subject with the highest possible score to a subject with the lowest possible score.

Church Attendance

We examined the frequency of church attendance in order to capture social support in a faith based context and the relaying of religious values that have been noted in the literature to be protective against suicidality, for example the moral disincentive to suicidality.[6, 23] Respondents were asked how often they attend church and response categories include: once or more times a week, less than once per week or never.

Statistical Analyses

We estimated the prevalence of suicidal ideation and attempts for all Latinos. We used chi-square statistics to compare suicide rates by Latino subgroups and to test differences in the variables of interest by lifetime suicidal ideation and suicidal attempt status. We conducted three logistic regression models to determine the effects of demographics, psychiatric diagnoses, language/nativity, and social support factors on suicide ideation and suicide attempt. The first model included all significant variables after backward inclusion and tests of collinearity. The second and third models included all of these same variables but the second

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model only included those respondents with any psychiatric disorders while the third model only included those without any of the assessed psychiatric disorders. Odds ratios were calculated to assess risk across groups. We also completed a sensitivity analyses using 12-months diagnoses and 12-month suicidal ideation and attempt (in place of lifetime variables) to test for similar trends in associations. Because there was such a small proportion of reported 12-month ideation and attempt (yielding unstable confidence intervals in regressions) these variables could not be used as the primary focus of analyses (even though parallel trends in associations were found). All of the analyses used weighted data using STATA[24] to adjust for the complex sampling design and non-response.

Results

Prevalence of Suicide Ideation and Attempts and Tests of Difference

Table 1 summarizes the results from chi-square tests comparing ethnic groups and demographics by suicidal status for all U.S. Latinos. The weighted prevalence of lifetime suicidal ideation for Latinos was 10.1 % and 4.4% for lifetime suicide attempt. Sixty-two percent of our sample reported that their attempted suicide occurred when they were under the age of 18 years. Forty-one percent of all respondents reporting a history of lifetime suicide attempt indicated that they felt it was a serious attempt and it was only by luck that they survived. There was no statistically significant group difference in rates of suicidal ideation or attempt among Latino subgroups. Females were not more likely to have suicidal thoughts even though they had a higher rate of attempts as compared to men. Latinos who were English proficient and born in the United States were more likely to have lifetime suicide ideation and attempts as compared to Spanish speaking and foreign born. Forty-one percent of all respondents reporting a history of lifetime suicide attempt (n=117) indicated that they felt the attempt was a serious one and it was only by luck that they survived.

Table 2 summarizes the results from the chi-square tests comparing psychiatric diagnoses rates by suicidal status for all U.S. Latinos. Latinos with any lifetime DSM-IV depressive, anxiety or substance disorder were more likely to report lifetime suicidal ideation and attempts than those without these disorders. However, we also found that suicidal ideation was present in 6% or more of individuals who did not meet DSM-IV criteria for any depressive, anxiety or substance use disorders.

Correlates of lifetime suicidal ideation and attempts

Table 3 summarizes the results of the full regression model examining correlates of suicidal ideation and suicide attempt. Ethnicity was not associated with higher odds of suicidal ideation after adjusting for demographic, sociocultural and psychiatric covariates. Significant correlates of suicidal ideation in the fully adjusted model include being English proficient, U.S. nativity with one or more parents being U.S. born, never attending church, higher family cultural conflict (four-fold increase in odds of suicidal ideation) and having any individual DSM-IV psychiatric disorder (depressive, anxiety, substance, and comorbid disorder variables). In addition, having 16 years of education or more was associated with a 50% reduction in the odds of lifetime suicidal ideation as compared to those with less education.

Significant positive correlates of suicide attempt included: female gender, presence of any psychiatric diagnoses and dual diagnoses, English primary language spoken as a child, and higher scores in family cultural conflict. Nativity variables were not significantly correlated with the likelihood of suicide attempts after adjusting for other covariates. Having higher scores in family support was the only significant protective factor of both suicidal ideation and attempt, reducing the odds of both suicidal behaviors by 60%.

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Correlates of suicidal ideation and attempt stratified by presence of Lifetime Disorders

In Table 4 we summarize results from the regression models examining correlates of lifetime suicidal ideation and attempts among Latinos stratified by presence/absence of any lifetime psychiatric disorder. Among Latinos with any psychiatric disorder, being English proficient was associated with two times the likelihood of having lifetime suicidal ideation. Lifetime depressive and comorbid diagnosis are additionally important correlates of suicidal behaviors as is attending church less than once per week as compared to those who attend weekly. Family support is associated with a 70% reduction in the odds of lifetime attempt among those with psychiatric disorders.

Among those with psychiatric disorder, female gender and higher family cultural conflict are associated with increased likelihood of suicidal attempts. In fact, higher family conflict is associated with quadrupling the odds of lifetime suicide attempts among those with psychiatric disorders.

Among Latinos without any disorders (n=1663) female gender and family conflict remain as strong correlates of both lifetime suicidal ideation and attempts. Additionally, being a U.S. native with one or both parents U.S. born was associated with four times the odds of lifetime suicidal ideation in this group. Never attending church was associated with three and six times the odds of ideation and attempts in those without disorder, respectively.

Discussion

Our central aim was to further understand suicide behaviors among Latinos by providing prevalence rates of lifetime suicidal ideation and attempts among a U.S. representative sample. We also examined variation across Latino ethnic subgroups as well as identify psychosocial and cultural correlates of suicidal behaviors. We found no Latino group difference in suicidal ideation. Our findings differ from previous reports in the literature that have found higher rates of suicide attempts among Puerto Ricans in local[2] but not national samples. Our results show a lack of Latino group variation in suicide attempt rates potentially related to our use of a nationally representative sample which adjusts for differences across group distributions (for example including Puerto Ricans outside of the New York Metropolitan area), conducting interviews in English and Spanish, and our inclusion of an additional category of Other Latinos with rates approaching that of Puerto Ricans (further lowering differences in rates across Latino subgroups).

We were able to include a larger repertoire of psychiatric and social variables than those used in many previous studies on this subject. We considered variations in nativity, English proficiency, church attendance, and family relationships as potentially important sociocultural correlates of suicidality that could contribute to our understanding of differences in suicide rates across Latino subgroups. Because the Latino population is heterogeneous in terms of ethnicity, geography, acculturation, migration patterns, education, and socioeconomic status, we wanted to consider these differences in our examination of suicide behaviors. For example, U.S. born Latinos have been found to have a higher rate of mental health and substance abuse problems as compared to recent immigrant Latino populations[25] and it has been hypothesized that increased exposure to the dominant U.S. culture (acculturation and time living in the U.S.) may be related to poorer mental health outcomes for Latinos over time.[26, 27] Our findings do suggest that potentially different aspects of acculturation like current English proficiency, language spoken as a child, and parental US nativity may be risk factors for suicidal behaviors.

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However, the mechanism by which acculturation is a potential risk factor for disorder and suicidality warrants further investigation. Oquendo and colleagues[6] conducted a study including a mixed Latino and non-Latino white patient sample with depression, bipolar disorder or schizophrenia, and interviewed these patients regarding lifetime suicide acts along with the administration of the Reasons for Living Inventory (RFLI). They found that on the RFLI, Latinos scored significantly higher on subscales regarding responsibility to family and moral objections to suicide. Multivariate analyses suggested that although being Latino was independently associated with less suicidal ideation, less suicidal attempts held a stronger relationship to moral objections to suicide and using family support as a coping mechanism than to ethnicity. These results point to areas of culturally influenced coping strategies, especially use of family, and values that may contribute to variations in level of suicidal risk across different Latino ethnic populations with varying levels of acculturation.

Our results also evidenced that higher scores on family support were associated with decreased odds of lifetime suicidality while higher family cultural conflict was associated with an increased likelihood of both lifetime suicide ideation and attempts. Familism (family centeredness) may result in an important source of social support that may be protective for mental health but may also pose an area of important clinical intervention when there is family conflict.[7–9] Accumulated stress in the family, family loss or instability and significant family conflict can all be factors linked to suicide attempts[28] and a potentially critical issue for Latinos who are traditionally family-centered.[29]

It has been speculated that a shift in sociocultural frameworks and community supports as one integrates in the United States contributes to an increased prevalence of mental health disorders and suicidal behavior[30] among immigrant Latinos and poses an ongoing risk for suicide among U.S. born Latinos. Since positive social supports is a known protective factor in regards to mental health and suicidal behavior,[28, 31] the loss of such supports in the context of other stressors like acculturative distress, discrimination, may pose a meaningful stress to mental health for immigrant populations.

Religious participation, in contrast, has been found to play an important role in Latino culture even in the US and has been hypothesized to be influential in the lower rates of suicide among Latinos.[23] Religious frameworks may define suicide as sinful and deny suicide as an option to cope with emotional distress. Our study examines church attendance and this may include individuals who experience the social obligation to attend and may not necessarily always reflect personally embraced religiosity and spirituality. However, churches can provide grounding in religious, cultural and civic values while nurturing social skills and encouraging constructive involvement in community and family life[23] that may represent an additional and influential source of social support for many. It was not surprising that we found an inverse relationship between increasing church attendance and suicidality in our study.

Our results also need to be considered in gender and developmental contexts. Female gender appears to be one of the most significant risk factors for suicide attempts among Latinos in our study even among women without psychiatric disorder. The finding that Latina women are more likely to attempt suicide is consistent with findings for women in the general U.S. population.[32] However, smaller studies and theoretical frameworks for research have suggested that the process of acculturation and related shifting family and gender roles may be an especially stressful situation for young women.[7–9, 31]

More rigid family structures with an emphasis on restrictive, authoritarian parenting may impair the capacity to respond flexibly to a changing cultural environment (e.g. during immigration).[7, 8] Specific family-cultural issues may emerge in the differences between the traditional values, beliefs, and socialization practices of the family's original culture versus

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those of the host culture, and between the rapidly acculturating and developing adolescent female and her less acculturated, more traditional parents. Changing perceptions of gender roles and family obligation can be an important and central family stressor in this context. Research on this topic primarily has focused on Puerto Rican girls but is becoming a recognized phenomenon across Latino ethnicity.[7] In contrast, traditional Latino family values can also help support young women's positive mental health by providing a healthy sense of cultural identity, a strong work ethic and orientation towards assisting family and others. These in turn can result in as sense of purpose, meaning, and belonging for the adolescent.[33, 34] Our results suggest again the importance of examining the complexity of family dynamics in understanding suicide risk among young Latinas. Almost two-thirds of our sample reported that their attempted suicide occurred when they were under the age of 18 years. The patterns and history of suicidal behaviors that are reported by respondents reinforces the concern for the higher rate of suicide attempts reported nationally among Latina adolescent girls as compared to their non-Latina counterparts and the social and psychiatric mechanisms involved in these outcomes.[7, 35]

Interestingly, the sociocultural correlates for suicidal behaviors we have discussed thus far are similar across the presence or absence of diagnosable psychiatric disorder. Female gender remains the strongest correlate of suicide attempt regardless of diagnostic status. Family conflict is similarly correlated with suicide attempt in both Latinos with and without disorders, while church attendance is a significant protective factor for the no-disorder group. We might expect diagnosis to precede ideation and attempt in an orderly causal chain. However, our findings raise the question of whether suicidality as a behavioral phenomenon has important correlates that are independent of the presence of a full DSM-IV diagnosis. For example, risk for Latinas may be a function of conflicts within feminine role expectations.[7–9, 36] An otherwise "healthy" individual might endanger self in response to chronic exposure to family conflict. In contrast to recent research advances linking brain function and processes to psychopathology[37, 38] these findings suggest precursors to suicidality that are contextual rather than or in addition to biological factors. Alternatively, we should consider that the presence of distress in the study population may not always be defined by DSM-IV diagnostic criteria but embedded in a combination of psychosocial and interpersonal stressors.

We find it is important to frame these findings in a cultural context that considers the interaction of immigrant and cultural minority communities within the mainstream US culture. Specifically, we aim to examine some of the potentially different contributions of different facets of acculturation and social support on suicidality. For example, we find that being English proficient and speaking English as a child are both positively related to lifetime suicide attempt. These findings support those of other studies which have found that more acculturated individuals (of which English language is one important proxy) show higher rates of psychiatric disorder as compared to less acculturated recent immigrants.[10, 25] Similarly, speaking English as a child has been associated with family disconnection and mental health risk as compared to bicultural and bilingual identity which has been associated with academic success and better mental health for Latinos and other immigrants.[19, 33, 34]

It may seem contradictory that we found higher educational attainment is negatively associated with suicide attempts since this variable usually is also associated with higher acculturation and English proficiency. It is important to remember that acculturation is not good or bad in and of itself but represents a more complex process.[39] We can imagine a more educated individual becoming more acculturated (and being English proficient) yet simultaneously building personal resources, such as achieving a higher social position, which can be protective to mental health.[40] Additionally, achieving a higher education does not necessarily mean letting go of a bicultural and/or bilingual identity.

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Our results also provide evidence that meeting criteria for any DSM-IV psychiatric disorder is highly correlated with suicide ideation and attempts among Latinos, even when adjusting for age, gender and language/nativity. Therefore, the appropriate identification and diagnosis of these conditions continues to be an important component of treatment and prevention for Latinos in addition to addressing sociocultural risk factors. This is a serious challenge for a population which tends to have less access to mental health services than the general population due to lack of insurance, a shortage of culturally and linguistically trained service providers and stigma.[27, 41]

Limitations of study

Our results are limited by the cross-sectional nature of our data. Therefore, a discussion of causal relationships is not possible. In addition, we were only able to examine lifetime suicidal behaviors due to the very low 12-month prevalence of suicide attempts that limited our statistical analyses. Epidemiological data is limited in providing information and clarification about the richness of social context and culture, even though the NLAAS is particularly strong in this area. For example, a qualitative study of the sociocultural context of suicide attempts among Latina adolescent attempters is a next step in further examining the dynamic role of gender, family, social supports and culture in a particular Latino subgroup. Similarly, it is difficult to ascertain the meaning of suicidal attempt for respondents (e.g. are these gestures?). We are able to somewhat contextualize this in our finding that over 40% of respondents reported their attempts as having been serious and that they had not expected to survive.

Implications for prevention and treatment among Latinos

Social and cultural supports may be important factors influencing variations in suicide risk across Latino groups. Complete assessment and screening for suicidality should not be limited to depressive disorders but should be considered in the presence of dual or comorbid diagnoses. Our results also point to the importance of using a complete bio-psychosocial-cultural model in treating and considering suicidal risks among diverse groups of Latinos. Linear assimilation models continue to dominate public health research despite the availability of more complex acculturation theories that propose multidimensional frameworks, reciprocal interactions between the individual and the environment, and other acculturative processes. Our findings, regarding family conflict and the complexity of acculturation as a potentially dynamic and influential issue related to suicidal behaviors even in absence of full DSM-IV diagnoses, point to the importance of examining this area in clinical research and treatment with Latino subgroups.

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Table 1

Demographic comparisons of all US Latinos by lifetime history of suicidal ideation and attempt

Weighted	Latinos N=2554	
	Suicidal Ideation % (n=263)	**Suicide Attempt % (n=117)**
NLAAS Sample	10.1	4.4
Latino Subgroup		
Puerto Rican	14.2	6.9
Cuban	7.0	2.9
Mexican	9.8	3.9
Other Latino	9.9	4.9
	F(2.3,90.0)=2.4, p=.09	*F*(2.3,88.4)=2.5, p=.07
Gender		
Female	11.7	6.1
Male	8.6	2.7
	F(1,39)=2.5, p=.13	*F*(1,39)=16.9, p=.0002
Age Categories		
18–24 years	11.4	6.1
25–34 years	8.4	3.2
35–49 years	11.2	5.0
50–64 years	11.0	4.0
65 years or more	7.4	2.3
	F(2.9,111.9)=0.8, p=.51	*F*(2.9,113.3)=1.5, p=.23
Education		
Less than 9 years	7.8	3.9
9–11 years	10.0	4.3
12 years	11.0	3.9
13–15 years	13.9	6.5
16 years or more	6.2	2.7
	F(3.5,137.2)=3.9, p=.007	*F*(3.1,122.7)=1.6, p=.19
Household poverty		
yes	10.0	5.2
no	10.3	4.1
	F(1,39)=0.2, p=.88	*F*(1,39)=0.6, p=.45
Language proficiency in English		
Poor	4.1	2.7
Fair	9.8	3.5
Good	10.8	3.7
Excellent	16.0	7.1
	F(2.4,94.2)=15.0, p<.0001	*F*(2.5,96.7)=4.8, p=.006
Nativity		
US born	14.7	6.0
Foreign born	7.0	3.2
	F(1,39)=50.1, p<.0001	*F*(1,39)=253.4, p<.0001
US born by parents' nativity		
1 or 2 parents born in US	16.9	6.9
0 parents born in US	9.9	4.4
	F(1,39)=5.3, p=.03	*F*(1,39)=1.3, p=.25
Foreign born by age of arrival		
Age of arrival 0–6 years	13.5	6.7
Age of arrival 7–17 years	8.2	3.8
Age of arrival 18–24 years	5.4	1.8
Age of arrival 25+ years	5.1	2.8
	F(2.8,10.2)=27.8, p=.014	*F*(2.9,112.8)=3.1, p=.03
Religious service attendance		
< once per week	7.2	1.6
Once per week	6.9	3.6
1–3 times per month	9.3	3.5
< once per month	9.8	4.7
Never	14.3	6.2
	F(2.8,108.3)=2.9, p=.04	*F*(2.8,110.8)=2.2, p=.10

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Table 2

Diagnostic comparisons of all US Latinos by lifetime history of suicidal ideation and attempt

	Latinos N=2554	
Weighted	**Suicidal Ideation % (n=263)**	**Suicide Attempt % (n=117)**
DSM-IV Lifetime Disorders		
Any lifetime disorder: Female	26.7	15.9
No lifetime disorder: Female	5.0	1.7
	$F(1,39)=104.9$, $p<.0001$	$F(1,39)=95.8$, $p<.0001$
Any lifetime disorder: Male	26.2	9.2
No lifetime disorder: Male	1.6	0.2
	$F(1,39)=182.1$, $p<.0001$	$F(1,39)=163.4$, $p<.0001$
Any lifetime disorder: Full Sample	26.4	12.6
No lifetime disorder: Full Sample	3.2	0.9
	$F(1,39)=253.4$, $p<.0001$	$F(1,39)=202.4$, $p<.0001$
Any depressive disorder: Full Sample	31.6	17.6
No depressive disorder: Full Sample	6.6	2.2
	$F(1,39)=109.9$, $p<.0001$	$F(1,39)=137.8$, $p<.0001$
Any anxiety disorder: Full Sample	33.4	16.5
No anxiety disorder: Full Sample	6.0	2.2
	$F(1,39)=182.4$, $p<.0001$	$F(1,39)=69.4$, $p<.0001$
Any substance disorder: Full Sample	30.3	12.3
No substance disorder: Full Sample	7.6	3.4
	$F(1,39)=91.5$, $p<.0001$	$F(1,39)=27.6$, $p<.0001$

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Table 3

Logistic regression models (odds ratios and 95% Confidence Intervals shown) of suicide ideation and attempt.

	Suicide Ideation (n=263)	Suicide Attempt (n=117)
Latino Subgroup		
Puerto Rican	0.9 [0.5, 1.6]	0.9 [0.5, 1.7]
Cuban	0.9 [0.5, 1.6]	1.0 [0.4, 2.2]
Other Latino	0.9 [0.6, 1.3]	1.1 [0.6, 2.0]
Mexican	1	1
Female	1.5 [0.8, 2.6]	2.7 [1.8, 4.0]***
Age (category years)		
18–24	1.3 [0.6, 2.8]	2.0 [0.8, 5.2]
25–34	1	1
35–49	1.1 [0.7, 1.9]	1.2 [0.5, 3.0]
50–64	1.6 [0.9, 2.9]	1.2 [0.5, 3.0]
65+	1.5 [0.6, 3.8]	0.8 [0.2, 3.3]
Education		
Less than 9 years	1.3 [0.7, 2.2]	2.1 [0.8, 5.1]
9–11 years	0.8 [0.4, 1.8]	0.9 [0.5, 1.6]
12 years	1	1
13–15 years	1.2 [0.8, 1.9]	1.5 [0.6, 3.4]
16 years or more	0.5 [0.3, 0.9]*	0.7 [0.2, 2.3]
English proficiency	1.8 [1.1, 3.0]*	1.5 [0.6, 3.3]
More English spoken as child	1.4 [0.8, 2.3]	2.1 [1.1, 4.0]*
Nativity		
Respondent U.S. born and:		
One or both parents U.S. born	1.7 [1.1, 2.8]*	0.1 [0.5, 2.4]
Both parents foreign born	1.3 [0.6, 2.8]	0.8 [0.2, 3.0]
Respondent foreign-born and:		
Age at time of arrival into U.S. 0–6 years	1.7 [0.8, 3.6]	1.4 [0.5, 3.6
Age at time of arrival into U.S. 7 years or older	1	1
Religious attendance		
Once or more per week	1	1
Less than once per week	1.4 [0.9, 2.2]	1.4 [0.6, 3.4]
Never	1.9 [1.1, 3.4]*	1.9 [0.8, 4.8]
Family support scale[1]	0.4 [0.2, 0.8]*	0.4 [0.2, 0.9]*
Family conflict scale[1]	4.2 [2.1, 8.5]***	6.4 [3.1, 13]***
No disorder	1	1
Depressive disorder only	5.9 [3.3, 10]***	9.1 [4.2, 20]***
Anxiety disorder only	7.9 [4.8, 13]***	7.6 [3.4, 17]***
Substance-use disorder only	4.4 [2.4, 8.1]***	5.5 [2.3, 13]***
Depressive and anxiety disorders	14.5 [8.0, 26.3]***	23.8 [10.9, 51.8]***
Substance and non-substance disorders	23.8 [13.9, 40.9]***	27.8 [12.5, 61.7]***

* $p < 0.05$,

** $p < 0.01$,

*** $p < 0.001$

[1] Scales scaled to go from 0 to 1, so odds ratios represent comparison of highest to lowest values.

Ideation: F (26, 14) =64.2, p<.0001 Attempt: F (26, 14) =29.11, p<.0001

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Table 4

Logistic regression models (odds ratios and 95% confidence intervals) of suicide ideation and attempt stratified by presence or absence of any lifetime DSM-IV depressive, anxiety, or substance-use disorders.

	Disorder (n=704)		No disorder (n=1663)	
	Ideation	**Attempt**	**Ideation**	**Attempt**
Latino Subgroup				
Puerto Rican	1.0 [0.5,1.8]	0.9[0.3,1.9]	0.7[0.3,1.6]	0.5[0.1,3.9]
Cuban	0.8 [0.4,1.6]	0.8 [0.3, 1.9]	1.1 [0.4, 2.8]	1.6 [0.4, 7.2]
Other Latino	0.6 [0.3–1.1]	0.9 [0.5, 1.8]	1.5 [0.8, 2.9]	1.4 [0.4, 5.1]
Mexican	1	1	1	1
Female	1.0 [0.5, 1.9]	2.0 [1.3, 3.2]**	3.1 [1.3, 7.4]*	50.4 [6.8, 374]***
Age (category years)				
18–24	1.2 [0.6, 2.7]	1.9 [0.9, 4.2]	1.3 [0.3, 6.0]	1.6 [0.3, 8.6]
25–34	1	1	1	1
35–49	1.3 [0.6, 2.7]	1.3 [0.5, 3.2]	1.1 [0.5, 2.5]	1.6 [0.2, 11]
50+	1. 5 [0.7, 3.4]	1.3 [0.5, 3.4]	2.0 [0.9, 4.4]	1.1 [0.1, 7.9]
Nativity				
Respondent U.S. born and:				
One or both parents U.S. born	1.0 [0.6, 1.7]	0.8 [0.3, 2.2]	4.0 [1.3, 12]*	1.4 [0.3, 7.2]
Both parents foreign born	0.7 [0.3, 1.3]	0.4 [0.1, 1.4]	3.3 [0.8, 14]	2.5 [0.4, 17]
Respondent foreign-born and:				
Age at time of arrival into U.S. 0–6 years	1.0 [0.4, 2.3]	1.2 [0.3, 3.9]	4.5 [1.0, 2.1]	0.6 [0.1, 4.7]
Age at time of arrival into U.S. 7 years or older	1	1	1	1
English proficiency	2.1 [1.1, 3.9]*	1.5 [0.6, 3.5]	1.1 [0.5, 2.3]	0.8 [0.3, 2.2]
More English spoken as child	1.8 [1.0, 3.2]	2.0 [1.1, 4.0]*	1.1 [0.4, 3.3]	2.5 [0.5, 12]
Education				
College degree or more	0.4 [0.2, 0.7]***	0.7 [0.3, 1.9]	0.6 [0.2, 2.5]	0.1 [0.0, 1.3]
Church attendance				
1+ per week	1	1	1	1
<1 per week	1.8 [1.1, 3.1]*	1.6 [0.6, 4.0]	1.0 [0.5, 1.9]	1.1 [0.1, 8.2]
never	1.7 [0.9, 3.0]	1.4 [0.6, 3.3]	2.6 [1.2, 6.0]*	6.5 [1.2, 34]*
Family support scale[1]	0.4 [0.1, 1.2]	0.3 [0.1, 0.9]*	1.1 [0.3, 3.7]	3.6 [0.3, 45]
Family conflict scale[1]	1.9 [0.9, 3.9]	4.1 [1.6, 10]**	23.2 [5.0, 107]***	69.8 [9.1, 536.4]***
Depressive disorder Only	1	1	---	---
Anxiety disorder only	1.6 [0.8, 3.3]	0.9 [0.3, 2.7]	---	---
Substance-use disorder Only	0.8 [0.4, 1.5]	0.6 [0.3, 1.5]	---	---
Depressive and anxiety disorders	3.3 [1.7, 6.3]***	2.8 [1.1, 7.1]*	---	---
Substance and non-substance disorders	4.0 [2.0, 7.9]***	3.1 [1.0, 9.4]	---	---

* $p < 0.05$,

** $p < 0.01$,

*** $p < 0.001$

[1] Scales scaled to go from 0 to 1, so odds ratios represent comparison of highest to lowest values. Ideation Disorder: F (21, 19) =12.86, p<.0001

Attempt Disorder: F (21, 19) =29.14, p<.0001

Ideation No Disorder: F (17, 23) =12.86, p<.0001

Attempt No Disorder: F (17, 23) =3.56, p<.01