

2011

Familism and family environment among suicidal Latinas: Three family types

Juan B. Peña

Jill A. Kuhlberg

Luis H. Zayas

Ana A. Baumann

Lauren Gulbas

See next page for additional authors

[Let us know how access to this document benefits you.](#)

Follow this and additional works at: http://repository.brynmawr.edu/gsswsr_pubs

 Part of the [Social Work Commons](#)

Custom Citation

Peña, J.B., Kuhlberg, J.A., Zayas, L.H., Baumann, A.A., Gulbas, L.E., Hausmann-Stabile, C., & Nolle, A.P. 2011. Familism and family environment among suicidal Latinas: Three family types. *Suicide & Life-Threatening Behavior* 41.3: 330-341.

This paper is posted at Scholarship, Research, and Creative Work at Bryn Mawr College. http://repository.brynmawr.edu/gsswsr_pubs/84

For more information, please contact repository@brynmawr.edu.

Authors

Juan B. Peña, Jill A. Kuhlberg, Luis H. Zayas, Ana A. Baumann, Lauren Gulbas, Carolina Hausmann-Stabile, and Allyson P. Nolle



Published in final edited form as:

Suicide Life Threat Behav. 2011 June ; 41(3): 330–341. doi:10.1111/j.1943-278X.2011.00032.x.

Familism, Family Environment, and Suicide Attempts among Latina Youth

Juan B. Peña, Jill A. Kuhlberg, Luis H. Zayas, Ana A. Baumann, Lauren Gulbas, Carolina Hausmann-Stabile, and Allyson P. Nolle

George Warren Brown School of Social Work, Washington University in St. Louis

Abstract

This study examined the relationship between familism and family environment type as well as the relationship between family environment type and suicide attempts among Latina youth. Latina teen attempters ($n=109$) and non-attempters ($n=107$) were recruited from the NYC area. Latent class analysis revealed three family environment types: tight-knit; intermediate-knit; and loose-knit. Tight-knit families (high cohesion and low conflict) were significantly less likely to have teens that attempted suicide as compared to intermediate-knit families or loose-knit families. Moreover, familism increased the odds of being in the tight-knit family vs. the loose-knit family and the odds of being in the tight-knit family vs. the intermediate-knit. Results suggest that familism may protect against suicide behavior among Latinas via its influence on family environment.

Keywords

suicide; adolescent; Hispanic; familism; family

Over the past two decades, adolescent Latinas have had elevated rates of suicidal behaviors compared to their White female counterparts with as many as 1 in 9 Latina high school students reporting a suicide attempt during the past year (Eaton et al., 2006; Eaton et al., 2008; Eaton et al., 2010; Grunbaum et al., 2002; Grunbaum et al., 2004; Johnson et al., 2008; Kann et al., 1995; Kann et al., 1996; Kann et al., 1998; Kann et al., 2000). These rates are troubling given the gravity of such an act and its association with increased risk for future attempts, hospitalization, and death by suicide (Ostamo & Lonnqvist, 2001; Suokas, Suominen, Isometsa, Ostamo, & Lonnqvist, 2001). Moreover, this disparity has not been restricted to one or two Latino subgroups. Elevated rates of suicidal behavior have been documented in Colombian, Cuban, Dominican, Ecuadorian, Mexican, Nicaraguan, and Puerto Rican adolescents (Fortuna, Perez, Canino, Sribney, & Alegria, 2007; Garcia, Skay, Sieving, Naughton, & Bearinger, 2008; Garofalo, Wolf, Wissow, Woods, & Goodman, 1999; Rew, Thomas, Horner, Resnick, & Beuhring, 2001; Tortolero & Roberts, 2001; Zayas, Bright, Alvarez-Sanchez, & Cabassa, 2009).

Among the risk and protective factors associated with suicidal behavior, family cohesion and family conflict are identified as important areas of focus for Latina teens (Brent et al., 1988; Marttunen, Aro, & Lonnqvist, 1993; Wagner, 1997). We define family cohesion as the “degree of commitment, help and support family members provide for one another”, and family conflict as the “amount of openly expressed anger, aggression, and conflict among

family members” (R. H. Moos & Moos, 1986). Although low family cohesion and high family conflict are associated with suicidal behavior among many young Latinas and other female teens (Brent et al., 1988; Garcia et al., 2008; Herrera, Dahlblom, Dahlgren, & Kullgren, 2006; Marttunen et al., 1993; Wagner, 1997; Zayas & Pilat, 2008), there is a paucity of research examining how these related domains may combine to create types of family environments that are associated with suicidal behavior among Latinas. For the purpose of this report, we define family environment as a composite of the social-environmental characteristics of a family across interpersonal relational dimensions (R. H. Moos & Moos, 1986). Specifically, we focus on how the dimensions of family cohesion and conflict combine to create the social milieu of a family system.

We posit that there are types of family environments in which suicide attempts may have a higher probability of occurring through complex interactions of conflict and cohesion. We argue that cultural factors (e.g., level of commitment to family) are associated with conditions for Latinas’ suicide attempts at least in part through its influence on family environment. *Familism* is one such factor that may influence the family environment (Coohey, 2001; Valenzuela & Dornbusch, 1994).

Despite the frequent invocation of familism influencing Latino family environments, little research has tested a model examining the relationships between familism, family environment, and adolescent suicidal behavior. Some research has examined the relationship of family conflict to the higher risk for suicidal behavior among adolescents or the relationship of family cohesion to lower risk (Asarnow, 1992; Fortuna et al., 2007). There is also some recognition that cultural and familial factors are interrelated and likely play a role in suicide attempts among Latina adolescents (Canino & Roberts, 2001). Yet, unclear is how combinations of familial factors (e.g., cohesion and conflict) create distinct family environments types and how these family types relate to risk for suicide attempts among Latinas. Moreover, there is a paucity of research testing the association between familism and family environment and between family environment and suicide behavior within a single model.

The difficulty stemming from the insufficient understanding of the relationships between familism, family types, and suicide attempts may in part be due to conceptual and methodological challenges in defining and measuring familism. Familism is often conceptualized as attitudinal or behavioral, the former describing an individual’s ascription to familistic values, and the latter describing an individual’s behaviors that demonstrate ideals of familism. We use an attitudinal conceptualization of familism consisting of four-dimensional components (Lugo Steidel & Contreras, 2003). The first component is the belief in the subjugation of the needs of the self before the needs of the family. The second component is family interconnectedness or the belief that family members should maintain strong emotional bonds and be involved in each other’s daily life. The third component is reciprocity or the belief that family members should be able to turn to each other and depend on support during times of need. The fourth component is familial honor or the belief that family members have a duty to protect the family name and honor. These four components combine to create a cultural ideal for how family members should relate to each other. This conceptualization of familism as attitudinal does not assume that beliefs in this cultural ideal necessarily translate into behaviors within a given family environment and avoids measurement difficulties that may arise by examining the relationship between familism and behavioral based measures of family characteristics such as cohesion.

While we view the relationship between familism and family environment as fluid and bi-directional, from an ecological perspective, we conceptualize the Latino family as a micro level system embedded in a cultural context that includes familism. Although familism is

not a cultural value unique to Latinos (Holub, Tomiyama, Su, Wang, & Chaudhary, 2006), it has been characterized as a central tenet of Latino culture (Zinn, 1982). Moreover, there is evidence that Latino adolescents have different cultural views related to family than their White non-Hispanic counterparts in the US (Fuligni, Tseng, & Lam, 1999). However, the cultural context where familism is a core value is a dynamic one especially for Latina adolescents raised within a broader US context. These Latino families and teens are often embedded within more than one cultural context which can lead to a variety of possibilities for the internalization of cultural values and norms among teens and their parents. Depending on their levels of acculturation or adoption of US culture values and their levels of enculturation or maintenance of tradition Latino cultural values, Latino youth and their parents may end up with shared or different cultural beliefs about family. Children usually acculturate quicker than their parents, increasing the likelihood for dissonance between the cultural beliefs of youth and their parents. However, acculturation and enculturation are not mutually exclusive processes.

Although we do not directly test the theory of segmented assimilation in this study, we do use it as a guiding framework for the development of our hypothesis and interpretation of our results. The theory of segmented assimilation (Portes & Rumbaut, 2001) describes selective acculturation as a pattern of assimilation where children maintain values related to their family's culture of origin while also acculturating into select aspects of their US cultural context in a paced manner. Selective acculturation distinguishes itself from other patterns of assimilation where children lose values related to their family's culture of origin. Dissonant acculturation occurs with loss of the family's culture of origin by the youth in combination with rapid acculturation that greatly outpaces their parents. Consonant acculturation occurs when both parent and child acculturate quickly. Segmented assimilation theory posits that of the three-acculturation patterns, youth with selective acculturation will be the most likely to have tighter family ties and the least likely to have family conflict. The theory also suggests that of the three-acculturation patterns, youth experiencing the selective acculturation pattern will be the least likely to develop problems associated with their social context (e.g. joining a gang, addiction) in part due to the protectiveness of their family environment.

In this report, we examine the relationship between familism and family environment as well as the association between family environment and a suicide attempt. Our analytic strategy is to identify types of family environments based on reports of family levels of cohesion and conflict by adolescent Latinas with and without suicide attempt histories. We hypothesize that as Latina youths' familism increases so will their likelihood to be in family environments that have higher levels of cohesion and / or lower levels of conflict. Further, we hypothesize that Latina youth who are in family environments with higher levels of cohesion and / or lower levels of conflict will be less likely to be suicide attempters.

Methods

Using a cross-sectional design, we recruited adolescent Latinas reporting a suicide attempt within the preceding six months and a comparison group of adolescent Latinas reporting no lifetime histories of suicide attempts. We recruited attempters from social service agencies and hospitals that serve largely Hispanic populations in the New York City area and non-attempters through primary care health care agencies and community programs in the same communities. Exclusionary criteria for participation were being outside the age range of 11 and 19, being in foster care, mental retardation, or having a diagnosis of a psychotic disorder (e.g. schizophrenia). Degree of lethality of the suicide attempt was not an exclusionary criterion. Interviews were conducted by doctoral and master's level social workers and psychologists, all bilingual and bicultural Hispanic women. The institutional review boards

of our university and recruitment sites approved all human subject procedures used in the project.

Measures

Latent Class Indicators for Family Types—We measured family cohesion and conflict with the interpersonal-domain subscales of the Family Environment Scale (FES) (R. H. Moos & Moos, 1986). Each subscale contains nine dichotomous “yes” or “no” items probing the adolescents’ descriptions of their family (e.g. “Family members really help and support each other,” and “Family members sometimes hit each other”). We summed scores of each subscale, and then standardized them for ease of interpretation of results. Thus, a score of 0 indicates that the respondent’s answer was at the mean of the sample, and a score of 1 or -1 indicates a score that is one standard deviation above or below the mean of the sample, 2 or -2 would be two standard deviations above or below the mean, and so on. Alpha coefficients for the conflict and cohesion subscales for this sample were borderline, .66 and .69 respectively. However, the model fit for a factor analysis using the conflict scale (CFI = .96 and TLI = .95) and the cohesion scale (CFI = .96 and TLI = .97) in this sample were good. These results are consistent with findings in other samples that also provide evidence for the underlying factor structures of these two scales while also reporting modest to borderline alpha coefficients (Sanford, Bingham, & Zucker, 1999). Moreover, Moos (R. H. Moos, 1990) suggest that the modest to borderline alphas reported for these scales are acceptable given the wide range of behaviors covered with these scales.

Attempter Status—While many of the girls who had attempted suicide had been initially identified by teachers, counselors, or other adults and referred for mental health evaluations, it was the counselors treating the Latina attempters that determined that the subject had attempted suicide during the preceding six months via interviews with the girl. Suicide attempts were defined as any self-inflicted, potentially injurious behavior with a nonfatal outcome for which there is evidence (either explicit or implicit) of intent to die (Silverman, Berman, Sanddal, O’carroll, & Joiner, 2007). After identifying girls that met our inclusionary criteria, and if both parents and daughters assented, the counselor shared the attempter’s contact information with the research project manager for follow up. The non-attempters were recruited from non-mental health organizations in the community and self-reported that they had never made a suicide attempt in their lifetime. We created a binary variable to classify the respondents as either having attempted suicide, or being a member of the comparison group of non-attempter participants.

Predictor Variables—We used an 18 item attitudinal scale to measure familism (Lugo Steidel & Contreras, 2003). This scale includes four dimensions related to beliefs about familial support, familial interconnectedness, familial honor, and subjugation of self for family. Respondents were asked to indicate how much they agree or disagree with statements such as: “Parents and grandparents should be treated with great respect regardless of their differences in views”; “Children should help out around the house without expecting an allowance”; and “A person should often do activities with his or her immediate and extended families, for example, eat meals, play games, or go somewhere together.” To provide a sense of magnitude of difference, we standardized this scale so that a one-unit change in the logistic coefficient of our model corresponds to one standard deviation change. The alpha for this scale in our sample was .87. The model fit for a factor analysis of this scale within our sample was also good (CFI = .95 and TLI = .94).

Covariates—Covariates included the age of the adolescent at the time of the interview and her ancestry (e.g. Mexican, Dominican, etc). As an indicator of social economic status, we

used neighborhood poverty level which we operationalized as the percentage of families in her zip code area under the poverty line based on U.S. Census data.

Statistical Analysis

With Mplus version 5.2, we performed Latent Class Analysis (LCA) to identify family types with family cohesion and conflict as our indicators. To determine the number of latent classes or family types we estimated the model fit across a set of LCA models with increasing numbers of latent classes. A combination of criteria was used to determine the number of latent classes including: 1) examination of fit indices (e.g., BIC, AIC, etc) of which we weighed the values for the BIC and the sample adjusted BIC as most accurate given its superior performance for LCA models and 2) clinical judgment regarding the practical utility of classes for prevention or treatment efforts (Nylund, Asparouhov, & Muthén, 2007). Consistent with the views of Nylund and colleagues (2007), we first identified the point where our model fit indices plateau or bottom across the different LCA models we executed. This flattening or bottoming effect suggests minimal or no improvement in model fit with the inclusion of additional classes. If any two models had fit indices that were similar, we considered if the model with the greater number of classes added any heuristic, theoretical, or clinical value. Multinomial logistic regression models were used to examine the relationship between our latent classes (dependent variable) and familism (independent variable). Age of the adolescent, Hispanic ancestry, and neighborhood poverty level were covariates in our model. LCA measurement models may become unstable with the inclusion of covariates, suggesting a misspecified covariate effect that may exist between measurement indicators for the latent variable and covariates (Nylund-Gibson & Masyn, 2008). We used a procedure suggested by Nylund and Masyn (2008) of examining changes in logistic thresholds between the LCA with and without covariates to test the stability of our LCA measurement model. The Mplus “Auxiliary (e)” command, which uses posterior probability-based multiple imputations, was used to determine the differences in attempter and non-attempter membership across different family types. To avoid experimental-wise error from multiple group comparisons, we used the Bonferroni–Holm or Holm adjustment (Aickin & Gensler, 1996).

Problems related to bias can occur depending on the degree of missingness and the underlying mechanisms related to missingness (Collins, Schafer, & Kam, 2001). Approximately 89% of our sample had complete data across all variables within our sample. Of the 11% of cases that did not have complete data, the majority was due to a single variable (neighborhood poverty). Although missingness within our dataset was relative modest, using ad-hoc approaches such as listwise deletion, make strong assumptions that data are missing completely at random (MCAR). We thus used a Maximum Likelihood strategy to handle missing data for indicator variables. Simulations studies using methods such as multiple imputation or maximum likelihood show an elimination or reduction of bias related to missingness as well as an increase in efficiency across a variety of underlying missingness mechanisms (e.g. MCAR, MAR). Moreover, simulation studies show that there are few risks of increasing bias when taking this approach (Collins et al., 2001).

Results

Sample Characteristics

Our sample consisted of 109 attempters and 107 non-attempters. As shown in Table 1, non-attempters girls were more likely to be Colombian than were attempters (16.8% v. 3.7%, $p < .001$). The percentage of households living in poverty in the communities of attempters was higher than that for non-attempters (32.9% vs. 27.0%, $p < .001$). Attempters reported

higher levels of conflict in their family and lower levels of family cohesion than did non-attempters.

Number and Description of Subtypes

Fit indices used in determining the number of classes in LCA bottom with a three-class solution. The four-class solution had the closest model fit value to the three-class solution but with a slightly worse model fit: the AIC was 1131.772 for three classes vs. 1133.491 for four classes; the BIC was 1166.239 for three classes vs. 1178.299 for four classes; and the sample size adjusted BIC was 1134.544 for three classes vs. 1137.096 for four classes. Using the LCA model with a three-class solution, we describe three family types. “The tight-knit family,” showed a high level of family cohesion and a low level of family conflict. “The intermediate-knit family” was one with a moderate-low level of cohesion and moderate-high level of conflict. “The loose-knit family,” had low levels of family cohesion and high levels of conflict. The intermediate-knit families made up the largest proportion of our sample ($n = 110$, 50.9%), followed by the tight-knit families ($n = 68$, 31.5%), and the smallest group was the loose-knit family ($n = 38$, 17.6%). The four-class solution included the three previously described family types, plus a family type that was similar to the tight-knit family but with slightly higher levels of cohesion and lower levels of conflict. Based on the small percentage of cases in the fourth family type, its similarities with tight-knit family, and its worse model fit we use the three family type solution as our final model.

Figure 1 shows the three-class solution for the different family types in the sample. Rather than depicting a trend related to a dimension on the x-axis, such as time, each line on the graph connects the standardized mean scores for family cohesion and family conflict for a given family environment type. With standardized scores, a zero on the graph refers to the mean of the entire sample while a one refers to a score one standard deviation above the mean. As illustrated by figure 1, unlike the other two family types, the tight-knit family type had a positive standardized mean value for cohesion and a negative standardized mean value for conflict.

After examining differences between our LCA model with and without the covariates for our model, we found no evidence of instability in our three-class solution measurement model when the covariates were included. To analyze the bivariate relationships between family types with familism, we ran a latent class multinomial logistic regression with family types as our outcome (Table 2). For every one standard deviation increase in familism, the odds in being in the tight-knit family vs. the loose-knit family increased by 3.59 (CI = 2.08, 3.49) and the odds in being the tight-knit family vs. the intermediate-knit family increased by 1.68 (CI = 1.00, 2.81). Moreover, for every one standard deviation increase in familism, the odds of being in the intermediate-knit family vs. the loose-knit family increased by 2.14 (CI = 1.31, 3.49).

Next, we included our covariates in the model including Hispanic ancestry, age, and level of neighborhood poverty. Even after controlling for these covariates, the relationship between familism and family types remained statistically significant. The magnitude of the relationships also remained relatively unaltered (see Table 2). None of the covariates exhibited significant relationships to family type membership. As a final step, we added suicide attempt as an outcome of our family types in our model. Tight-knit families were significantly less likely to have teens that attempted suicide as compared to intermediate-knit families or loose-knit families (28.9% vs. 47.1% and 58.5% respectively, $p < .01$).

Discussion

Our study examined the relationship between familism and family environment type as well as the relationship between family environment type and suicide attempts among Latina youth. Latent class analysis revealed three family environment types using adolescent reports on family conflict and cohesion: tight-knit (i.e., high cohesion and low conflict); intermediate-knit (i.e., moderate to low cohesion and moderate to high conflict); and loose-knit (i.e., low cohesion and high conflict). Consistent with our hypotheses, an increase in familism was associated with a greater likelihood for Latinas to be in a (1) tight-knit family vs. an intermediate-knit family, (2) a tight-knit family vs. a loose-knit family, and (3) an intermediate-knit family over a loose-knit family even after adjusting for our control variables. Tight-knit families were significantly less likely to have teen suicide attempters when compared to other family environment types.

These findings suggest a set of complex and dynamic processes that involve interplay among a central Latino cultural value, family environment, and suicidal behavior among Latina youth. The concept of selective-acculturation from the theory of segmented assimilation may help to contextualize our findings (Portes & Rumbaut, 2001). According to this framework, girls who come to internalize cultural ideals such as familism from an early age may react to parental demands, rules, and expectation in ways that are more culturally acceptable to parents. This process of affiliative obedience is associated with greater levels of parental approval among Latinos (Alegria, Sribney, Woo, Torres, & Guarnaccia, 2007) and may lead to greater family cohesion and lower family conflict. Besides being more culturally attuned to their parents' expectations, the attitudinal beliefs of familism, such as interconnectedness and reciprocity, are likely to encourage behaviors that increase family cohesion and reduce family conflict. An alternative explanation is that within a tight-knit family milieu, Latinas are more likely to internalize values related to familism. We suspect that a combination of both these processes occurs. Familism leads to tight-knit families and tight-knit families reinforce beliefs in familism. Moreover, we posit that the flexibility in the family system and parents' behaviors may moderate the protective elements of familism for Latinas. High levels of familism among Latina youth when combined with an inflexible family system and overly harsh parenting may diminish or reverse its protective effect. We urge future research that models the complex interactions between culture and family environment over time.

The theory of segmented assimilation may also help to contextual findings related to intermediate- and loose-net families. Although not conclusive, the findings related to these family environment types are consistent with processes describe by consonant- and dissonant-acculturation where youth with lower levels of familism would be expected to have greater family conflict and less family cohesion. Reasons for this include the potential cultural mismatch between parent and adolescent as would be the case for dissonant acculturation or a shift to cultural beliefs about family among youth that are associated with a decrease in family cohesion and an increase in family conflict as could be the case for either dissonant acculturation or consonant acculturation. The latter case of a shift in cultural beliefs associated with less cohesion and more conflict could also occur for parents in the case of consonant acculturation. Thus during a time when youth are struggling between the need for autonomy and connectedness, a mismatch in cultural beliefs or a shift in cultural ideals related to family may become a catalyst for higher conflict or lower cohesion within the family environment. Moreover, these results are consistent with other studies that have found a relationship between U.S. nativity, acculturation, or immigrant generation status and suicide, suicide attempt, or suicide ideation (Pena et al., 2008; Sorenson & Shen, 1996; Vega, Gil, Warheit, Apospori, & Zimmerman, 1993). Although these studies did not examine familism, we would expect foreign-born youth to have higher levels of familism

than their US- born counterparts. We recommend future studies to test these hypotheses by modeling if familism mediates the relationship between immigrant generation status and suicide risk. Future studies should also test the potential mechanisms described in this paper such as the relationship between patterns of acculturation (dissonant-acculturation and consonant-acculturation) and the family environment types we describe in this report.

Our findings also suggest that factors such as neighborhood poverty and country of origin may be related to suicide attempts among Latina teens. Future studies should test if these findings are replicated in larger samples that are more representative. If findings are replicated, potential mechanisms related to the relationship between neighborhood poverty and countries of origin to suicidal behavior should be identified and explored. For instance, is there a stress-diathesis component to suicide behavior that may relate to being raised in a neighborhood context of poverty?

Clinical implications for our findings support the development of family-based interventions that address issues related to family conflict and cohesion among Latina teens having difficulty with their families. These family-based interventions need to be sensitive to potential cultural issues impacting the family environment such as familism of both the teen and their parents. Culturally sensitive family based approaches have shown promising results for improving bonding and reducing conflict in Latino families and adolescents (Gonzales, Dumka, Mauricio, & Germán, 2007; Pantin et al., 2003). Future research needs to evaluate the efficacy for such an approach in reducing suicide behavior among Latina adolescents.

There are some limitations to our findings. First, we used non-probability sampling techniques that limit the generalizability of our results. Results may extend only to settings like those from which we recruited our sample: NYC area social service agencies and hospitals. More representative sampling can help establish the validity of the three family types. Second, we used self-report of respondents to measure constructs related to familism and family context. Third, we did not model how parental familism may relate to or interact with family environment or youth familism. We urge future replication that does. Fourth, the directionality of our model can be contested because the cross-sectional nature of our data does not allow temporal order to be established. For instance, suicide attempts may precede or contribute to family environments with high conflict and low cohesion. Fifth, there may be confounding effects not examined by our study. For example, child maltreatment may influence attitudinal familism and family environment or influence family environment and suicide attempt. Sixth, we were unable to examine how developmental changes from early adolescent to late adolescence might moderate the influence of family environment on suicide attempts. We recommend studies using larger samples to test if the influence of family environment on suicide attempts changes with age. Seventh, the reliability of the family environment subscales were borderline. However, the model fit indices for the underlying factor structures for these scales were good. These results are consistent with others who have found evidence for an underlying factor structure for each of these scales (Sanford et al., 1999). Moreover, Moos (R. H. Moos, 1990) suggest that the borderline and modest alphas reported for these scales are acceptable given the wide range of behaviors covered with this construct. Lastly, the results of our study are limited to the outcome of suicide attempt and do not generalize to other suicide related outcomes including ideation, planning, or death by suicide.

Our study is unique in its use of latent class analysis to identify family environment types and in examining how the cultural factor of familism influences suicide behavior in part via its affect on the family environment. The categories of tight-knit families, intermediate-knit families, and loose-knit families may provide a framework for future research. This report

builds on and extends research on the relationship between family conflict, cohesion and suicidality among adolescents in general and Latina teens in specific (Fortuna et al., 2007; Razin et al., 1991). The results provide evidence for an ecological framework where familism relates to family environments and family environments relate to suicide behavior.

Acknowledgments

Support was provided by grant R01 MH070689 from the National Institute of Mental Health to Luis H. Zayas. Additional support came from the Center for Latino Family Research.

References

- Aickin M, Gensler H. Adjusting for multiple testing when reporting research results: The bonferroni vs holm methods. *American Journal of Public Health*. 1996; 86(5):726–728. [PubMed: 8629727]
- Alegria M, Sribney W, Woo M, Torres M, Guarnaccia P. Looking beyond nativity: The relation of age of immigration, length of residence, and birth cohorts to the risk of onset of psychiatric disorders for latinos. *Research in Human Development*. 2007; 4(1):19–47. [PubMed: 19412354]
- Asarnow JR. Suicidal ideation and attempts during middle childhood: Associations with perceived family stress and depression among child psychiatric inpatients. *Journal of Clinical Child Psychology*. 1992; 21(1):35–40.
- Brent DA, Perper JA, Goldstein CE, Kolko DJ, Allan MJ, Allman CJ, Zelenak JP. Risk factors for adolescent suicide. A comparison of adolescent suicide victims with suicidal inpatients. *Archives of General Psychiatry*. 1988; 45(6):581–588. [PubMed: 3377645]
- Canino G, Roberts RE. Suicidal behavior among latino youth. *Suicide & Life Threatening Behavior*. 2001; 31:122–131. [PubMed: 11326756]
- Collins LM, Schafer JL, Kam CM. A comparison of inclusive and restrictive strategies in modern missing data procedures. *Psychol Methods*. 2001; 6(4):330–351. [PubMed: 11778676]
- Coohey C. The relationship between familism and child maltreatment in latino and anglo families. *Child Maltreatment*. 2001; 6(2):130–142. [PubMed: 16705788]
- Eaton DK, Kann L, Kinchen S, Ross J, Hawkins J, Harris WA, Lowry R, McManus T, Chyen D, Shanklin S, Lim C, Grunbaum JA, Wechsler H. Youth risk behavior surveillance--united states, 2005. *MMWR Surveill Summ*. 2006; 55(5):1–108. [PubMed: 16760893]
- Eaton DK, Kann L, Kinchen S, Shanklin S, Ross J, Hawkins J, Harris WA, Lowry R, McManus T, Chyen D, Lim C, Brener ND, Wechsler H. Centers for Disease Control and Prevention (CDC). Youth risk behavior surveillance--united states, 2007. *MMWR.Surveillance Summaries : Morbidity and Mortality Weekly Report.Surveillance Summaries / CDC*. 2008; 57(4):1–131. [PubMed: 18528314]
- Eaton DK, Kann L, Kinchen S, Shanklin S, Ross J, Hawkins J, Harris WA, Lowry R, McManus T, Chyen D, Lim C, Whittle L, Brener ND, Wechsler H. Centers for Disease Control and Prevention (CDC). Youth risk behavior surveillance - united states, 2009. *MMWR.Surveillance Summaries : Morbidity and Mortality Weekly Report.Surveillance Summaries / CDC*. 2010; 59(5):1–142. [PubMed: 20520591]
- Fortuna LR, Perez DJ, Canino G, Sribney W, Alegria M. Prevalence and correlates of lifetime suicidal ideation and suicide attempts among latino subgroups in the united states. *J Clin Psychiatry*. 2007; 68(4):572–581. [PubMed: 17474813]
- Fuligni AJ, Tseng V, Lam M. Attitudes toward family obligations among american adolescents with asian, latin american, and european backgrounds. *Child Development*. 1999; 70(4):1030–1044.
- Garcia C, Skay C, Sieving R, Naughton S, Bearinger LH. Family and racial factors associated with suicide and emotional distress among latino students. *The Journal of School Health*. 2008; 78(9):487–495. [PubMed: 18786041]
- Garofalo R, Wolf RC, Wissow LS, Woods ER, Goodman E. Sexual orientation and risk of suicide attempts among a representative sample of youth. *Archives of Pediatrics & Adolescent Medicine*. 1999; 153(5):487–493. [PubMed: 10323629]

- Gonzales, NA.; Dumka, LE.; Mauricio, AM.; Germán, M. Immigrant families in contemporary society. Guilford Press; 2007. Building bridges: Strategies to promote academic and psychological resilience for adolescents of mexican origin; p. 268-286.
- Grunbaum JA, Kann L, Kinchen S, Ross J, Hawkins J, Lowry R, Harris WA, McManus T, Chyen D, Collins J. Youth risk behavior surveillance--united states, 2003. *MMWR Surveill Summ.* 2004; 53(2):1-96. [PubMed: 15152182]
- Grunbaum JA, Kann L, Kinchen SA, Williams B, Ross JG, Lowry R, Kolbe L. Youth risk behavior surveillance--united states, 2001. *MMWR Surveill Summ.* 2002; 51(4):1-62. [PubMed: 12102329]
- Herrera A, Dahlblom K, Dahlgren L, Kullgren G. Pathways to suicidal behaviour among adolescent girls in nicaragua. *Social Science & Medicine (1982).* 2006; 62(4):805-814.
- Holub WL, Tomiyama AJ, Su Y, Wang Y, Chaudhary N. Cultural models, socialization goals, and parenting ethnotheories: A multicultural analysis. *Journal of Cross-Cultural Psychology.* 2006; 37(2):155-172.
- Johnson AO, Mink MD, Harun N, Moore CG, Martin AB, Bennett KJ. Violence and drug use in rural teens: National prevalence estimates from the 2003 youth risk behavior survey. *The Journal of School Health.* 2008; 78(10):554-561. [PubMed: 18808475]
- Kann L, Kinchen SA, Williams BI, Ross JG, Lowry R, Grunbaum JA, Kolbe LJ. Youth risk behavior surveillance--united states, 1999. *MMWR CDC Surveill Summ.* 2000; 49(5):1-32. [PubMed: 12412614]
- Kann L, Kinchen SA, Williams BI, Ross JG, Lowry R, Hill CV, Grunbaum JA, Blumson PS, Collins JL, Kolbe LJ. Youth risk behavior surveillance--united states, 1997. *MMWR CDC Surveill Summ.* 1998; 47(3):1-89.
- Kann L, Warren CW, Harris WA, Collins JL, Douglas KA, Collins ME, Williams BI, Ross JG, Kolbe LJ. Youth risk behavior surveillance--united states, 1993. *MMWR CDC Surveill Summ.* 1995; 44(1):1-56. [PubMed: 7739513]
- Kann L, Warren CW, Harris WA, Collins JL, Williams BI, Ross JG, Kolbe LJ. Youth risk behavior surveillance--united states, 1995. *MMWR CDC Surveill Summ.* 1996; 45(4):1-84. [PubMed: 8841032]
- Lugo Steidel AG, Contreras JM. A new familism scale for use with latino populations. *Hispanic Journal of Behavioral Sciences.* 2003; 25(3):312-330.
- Marttunen MJ, Aro HM, Lonnqvist JK. Precipitant stressors in adolescent suicide. *Journal of the American Academy of Child and Adolescent Psychiatry.* 1993; 32(6):1178-1183. [PubMed: 8282662]
- Moos RH, Moos B. Family environment scale test manual. 1986
- Moos RH. Conceptual and empirical approaches to developing family-based assessment procedures: Resolving the case of the family environment scale. *Family Process.* 1990; 29(2):199-208. [PubMed: 2373215]
- Nylund KL, Asparouhov T, Muthén BO. Deciding on the number of classes in latent class analysis and growth mixture modeling: A monte carlo simulation study. *Structural Equation Modeling.* 2007; 14(4):535-569.
- Nylund-Gibson, KL.; Masyn, KE. Society for Prevention Research Annual Meeting. San Francisco, CA: 2008. Covariates and mixture modeling: Results of a simulation study exploring the impact of misspecified covariate effects.
- Ostamo A, Lonnqvist J. Excess mortality of suicide attempters. *Social Psychiatry and Psychiatric Epidemiology.* 2001; 36(1):29-35. [PubMed: 11320805]
- Pantin H, Coatsworth JD, Feaster DJ, Newman FL, Briones E, Prado G, Schwartz SJ, Szapocznik J. Familias unidas: The efficacy of an intervention to promote parental investment in hispanic immigrant families. *Prevention Science.* 2003; 4(3):189-201. [PubMed: 12940469]
- Pena JB, Wyman PA, Brown CH, Matthieu MM, Olivares TE, Hartel D, Zayas LH. Immigration generation status and its association with suicide attempts, substance use, and depressive symptoms among latino adolescents in the USA. *Prevention Science.* 2008; 9(4):299-310. [PubMed: 18855139]

- Portes, A.; Rumbaut, RG. *Legacies : The story of the immigrant second generation*. Berkeley: University of California Press; 2001. Chapter 8: The crucible within; p. 192-232.
- Razin AM, O'Dowd MA, Nathan A, Rodriguez I, Goldfield A, Martin C, Goulet L, Scheftel S, Mezan P, Mosca J. Suicidal behavior among inner-city hispanic adolescent females. *General Hospital Psychiatry*. 1991; 13(1):45–58. [PubMed: 1993520]
- Rew L, Thomas N, Horner SD, Resnick MD, Beuhring T. Correlates of recent suicide attempts in a triethnic group of adolescents. *Journal of Nursing Scholarship*. 2001; 33(4):361–367. [PubMed: 11775307]
- Sanford K, Bingham CR, Zucker RA. Validity issues with the family environment scale: Psychometric resolution and research application with alcoholic families. *Psychological Assessment*. 1999; 11(3):315.
- Silverman MM, Berman AL, Sanddal ND, O'carroll PW, Joiner TE. Rebuilding the tower of babel: A revised nomenclature for the study of suicide and suicidal behaviors. part 2: Suicide-related ideations, communications, and behaviors. *Suicide & Life-Threatening Behavior*. 2007; 37(3): 264–277. [PubMed: 17579539]
- Sorenson SB, Shen H. Youth suicide trends in california: An examination of immigrant and ethnic group risk. *Suicide & Life-Threatening Behavior*. 1996; 26(2):143–154. [PubMed: 8840418]
- Suokas J, Suominen K, Isometsa E, Ostamo A, Lonnqvist J. Long-term risk factors for suicide mortality after attempted suicide--findings of a 14-year follow-up study. *Acta Psychiatrica Scandinavica*. 2001; 104(2):117–121. [PubMed: 11473505]
- Tortolero SR, Roberts RE. Differences in nonfatal suicide behaviors among mexican and european american middle school children. *Suicide & Life-Threatening Behavior*. 2001; 31(2):214–223. [PubMed: 11459254]
- Valenzuela A, Dornbusch SM. Familism and social capital in the academic achievement of mexican origin and anglo adolescents. *Social Science Quarterly*. 1994; 75(1):18–36.
- Vega WA, Gil A, Warheit G, Apospori E, Zimmerman R. The relationship of drug use to suicide ideation and attempts among african american, hispanic, and white non-hispanic male adolescents. *Suicide Life Threat Behav*. 1993; 23(2):110–119. [PubMed: 8342210]
- Wagner BM. Family risk factors for child and adolescent suicidal behavior. *Psychological Bulletin*. 1997; 121(2):246–298. [PubMed: 9100488]
- Zayas LH, Bright CL, Alvarez-Sanchez T, Cabassa LJ. Acculturation, familism and mother-daughter relations among suicidal and non-suicidal adolescent latinas. *The Journal of Primary Prevention*. 2009; 30(3–4):351–369. [PubMed: 19399622]
- Zayas LH, Pilat AM. Suicidal behavior in latinas: Explanatory cultural factors and implications for intervention. *Suicide & Life-Threatening Behavior*. 2008; 38(3):334–342. [PubMed: 18611132]
- Zinn MB. Familism among chicanos: A theoretical review. *Humboldt Journal of Social Relations*. 1982; 10(1):224–238.

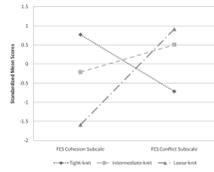


Figure 1. Results of latent class analysis for Family Environment Scale (FES): Standardized mean scores for FES cohesion and FES conflict subscales for tight-knit, intermediate-knit, and loose-knit families.

Table 1

Sample Characteristics of Latina Suicide Attempters and Non-attempters

Variable	All Adolescents <i>M(SD) / N(%)</i>	Attempters <i>M(SD) / N(%)</i>	Non-attempter <i>M(SD) / N(%)</i>	<i>P</i> ≤
Age	15.5 (2.0)	15.3 (0.2)	15.7 (0.2)	.113
Poverty	29.9 (12.8)	32.9 (1.0)	27.0 (1.4)	.001
Hispanic Group				
Puerto Rican	77 (35.7%)	41 (37.6%)	36 (33.6%)	.542
Dominican	64 (29.6%)	36 (33.0%)	28 (26.2%)	.270
Mexican	22 (10.2%)	12 (11.0%)	10 (9.4%)	.686
Colombian	22 (10.2%)	4 (3.7%)	18 (16.8%)	.001
Other	31 (14.4%)	16 (14.0%)	16 (14.68%)	.890
Familism	7.4 (1.2)	7.4(1.3)	7.5 (1.0)	.655
Family Conflict ^{<i>l</i>}	4.0 (2.3)	4.4 (2.2)	3.6 (2.2)	.004
Family Cohesion ^{<i>l</i>}	6.0 (2.1)	5.5 (2.2)	6.5 (1.9)	.001

^{*l*}The data represents unstandardized scores, although standardized values are used in LCA.

Table 2

Multinomial Logistic Regression Results of Odds Ratios (95% Confidence Intervals) for Family Environmental Types

Variable	<i>Tight knit vs. Loose knit</i>	<i>Tight knit vs. Intermediate knit</i>	<i>Intermediate knit vs. Loose knit</i>
<i>Unadjusted Odds Ratios</i>			
Familism	3.59 (2.08, 3.49)***	1.68 (1.01, 2.81)*	2.14 (1.31, 3.49)**
<i>Adjusted Odds Ratios</i>			
Familism	3.79 (2.11, 6.81)***	1.70 (1.01, 2.85)*	2.23 (1.23, 4.05)**
Age	.96 (.76, 1.20)	.95 (.79, 1.14)	1.00 (.79, 1.28)
Poverty	.40 (.13, 1.26)	.99 (.96, 1.03)	.99 (.94, 1.04)
Hispanic Group ¹			
Dominican	.40 (.13, 1.26)	1.66 (.57, 4.83)	.24 (.07, .84)
Mexican	3.87 (.29, 51.28)	4.22 (.91, 19.64)	.92 (.06, 14.40)
Colombian	1.84 (.20, 16.73)	4.16 (.90, 19.31)	.44 (.04, 4.62)
Other	.46 (.94, 1.03)	1.76 (.55, 5.64)	.26 (.06, 1.28)

p<.001,

**
p<.01,

*
p<.05

¹ Puerto Rican is the reference group