



# HHS Public Access

Author manuscript

*Community Ment Health J.* Author manuscript; available in PMC 2016 May 01.

Published in final edited form as:

*Community Ment Health J.* 2015 May ; 51(4): 404–413. doi:10.1007/s10597-014-9774-z.

## Rural Latinos' Mental Wellbeing: A Mixed-methods Pilot study of Family, Environment and Social Isolation Factors

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Latinos migrate to the U.S. primarily to escape economic hardship and gain a better life; however, in the migration process they frequently lose their social networks, community ties, and nuclear or extended family relationships (Bathum & Baumann, 2007). Migration to less populated rural areas may involve greater social adjustment, particularly in terms of culture, economics, and environment. In addition, because rural communities often discriminate against outsiders, immigrants are often pushed out of social and environmental spaces, leading to cultural, geographic, linguistic and social isolation; which can detrimentally affect their wellbeing by acting as chronic stressors (Ornelas, Perreira, Beeber, & Maxwell, 2009; Raffaelli, Tran, Wiley, Galarza-Heras, & Lazarevic, 2012; Sano, Garasky, Greder, & Browder, 2011; Stacciarini et al., 2014).

Several factors, such as gender, age, immigration policies, and community support systems, influence how Latino family members adjust to the immigration stressors. In men, social marginalization, which is the fear of being excluded because one's ethnic background, is linked with anxiety and depressive symptoms. Whereas in women, separation from family, which entails the loss of both emotional and instrumental support, are significantly associated with symptoms of depression (Hiott, Grzywacz, Arcury, & Quandt, 2006). Similarly, immigrant children must cope with separation from family, learning a new language, adjusting to different living conditions, experiences of discrimination and integrating within a new social environment at school which contributes to anxiety and

depression among Youth (Ko & Perreira, 2010; Potochnick & Perreira, 2010; Stacciarini, et al., 2014). All family members are also affected by harsh immigration policies, which can strengthen or weaken community ties by either increasing feelings of solidarity or tension and conflict (Valdez, Padilla, & Valentine, 2013). As a result, family, friends, neighbors, and community agency networks are vital to providing emotional, moral, instrumental, and financial support to Latino immigrants, particularly in environments that makes such support dangerous or even illegal (Ayón & Naddy, 2013). Taken together, all these factors can lead to social isolation and adverse mental health outcomes in Latino immigrant families.

Few studies are available on social isolation and mental wellbeing among rural Latinos. Thus far, preliminary data indicates that social isolation is significantly related to depression, anxiety, substance abuse, and intimate partner violence among adults (Grzywacz et al., 2006; Hiott, Grzywacz, Davis, Quandt, & Arcury, 2008; Jesse & Swanson, 2007; Tomaka, Thompson, & Palacios, 2006). In adolescents, social isolation was found to significantly relate to suicidal ideation (Chang, Sanna, & Hirsch, 2010).

Despite all the challenges to the family upon immigration to the U.S., without the support of their extended family networks, *familismo* may still protect the mental well-being of family members (Gonzales et al., 2011; Heilemann, Coffey-Love, & Frutos, 2004; Schmitz, 2006). *Familismo* is a deeply held Latino cultural value, which refers to the priority placed on the family and the willingness to sacrifice personal interests for the greater good of the family unit, as well as strong feelings of family member support (e.g. loyalty, reciprocity and solidarity). However, migration to the US can dramatically shift *familismo* through the introduction of stressors that can compromise the family environment (Gonzales et al., 2011; Leidy, Guerra, & Toro, 2012; Smith-Morris, Morales-Campos, Castañeda Alvarez, & Turner, 2013).

The purpose of this pilot study is to describe family and social environments aspects in terms of protective factors and modifiable risks associated with mental well-being in Latino immigrants living in rural areas of north Florida. Although this state is generally known as an immigrant friendly area, largely due to the established Cuban population in Miami, it is now encountering a novel influx of Mexican immigrants settling in “new destinations”—rural areas unaccustomed to seeing large numbers of Latinos (Terrazas, 2010).

The specific aims of this study were to: 1) Describe rural Latino immigrant mother and adolescent dyads’ perceptions of familial and community environments in their lives and how these contexts affect their mental wellbeing; and 2) Examine rural Latino immigrant mothers and adolescent dyads’ mental wellbeing and the relationship with *familismo* and social isolation.

## Conceptual Framework

This study is framed within a multilevel ecological model, which offers a way of looking at complex community conditions and explores potential links between social determinants and wellbeing (Scott & Wilson, 2011; Sweat & Denison, 1995). The model organizes potential social determinants of health at five levels: (1) individual, (2) familial, (3) environmental, (4) structural, and (5) superstructural. In this study, the model was adapted to

explore individual perceptions of family, social, and rural environments as well as protective factors and risks to mental well-being.

## Methods

This is a pilot mixed-method study with an embedded design (Creswell & Clark, 2011), using concurrent qualitative and quantitative data; to augment the understanding of multi-level perspectives in real life and cultural influences on the wellbeing of rural Latinos. A community engagement research approach was used in this study, which was the first step in an ongoing collaboration between Latino community leaders and academic partners to develop a mental health promotion intervention for rural Latinos in Florida. A mixed-methods design was recommended by the community-academia advisory board previously constituted (Stacciarini et al., 2011). This study was approved by the University of Florida IRB, prior to commencement.

## Participants

The sample inclusion criteria were: 1) Immigrant mothers, at least 25 years old, who self-identified as Latino, lived in one of three rural counties in North Florida, spoke Spanish, and had at least one adolescent child between the ages of 11 to 18 years old; 2) Adolescents between ages 11 and 18, who attended public school, and spoke either English or Spanish. Data was only collected if both mother and adolescent agreed to participate and only one adolescent from each family was interviewed. If mothers had more than one child at home, the child was chosen according age group equivalence: Group (1) 11–14 years, then in another Group (2), 14–18 years. For families with more than one child in the same group age bracket, gender equivalence was used. Mothers who identified as Puerto Ricans were excluded because their immigration experience and/or status were vastly different from that of other Latino immigrants. The final sample in the study was N=62 (n=31 mothers and n=31 adolescents).

Community engagement principles were used to identify and recruit this perceived, hard-to-reach population (e.g. rural Latino immigrants): 1) members of the study team talked to potential participants during church and community events, 2) the PI received referrals from community advisory board members, 3) community workers followed up on recruitment efforts, and 4) pursued referrals from other study participants.

**Instruments**—The socio-demographic/family characteristics questionnaire, which was developed through a collaborative effort between the PI and community leaders, was administered, followed by in-depth, ethnographic semi-structured interviews with both mothers and adolescents. The interview used open-ended questions to encourage participants to talk about their perceptions regarding family relationships and their connections with the rural community where they live. A subsequent quantitative assessment was performed with the same participants, including a demographic questionnaire and three structured instruments: the Family Environment Scale (FES) Real Form, the SF-12v2™ Health Survey and the short version (8 items) of PROMIS Health Organization Social Isolation. The FES subscales of cohesion, expressiveness, and conflict measure perceived family support, family organizational structure, and perceived familial environment. An FES index is

created by adding the expressiveness scale, the cohesiveness scale, and the reverse coded conflict scale; and it is an acceptable measure of *familismo*.

The mental component score of the SF-12v2™, which measures vitality, social functioning, emotion, and mental health, was used to assess mental wellbeing ( $\alpha = .80$  for mothers and  $\alpha = .85$  for adolescents). *Proprietary* scoring procedures were used to create a mental component score (MCS-12) that ranged from 0 to 100, and have a mean score of 50 (SD=10). Higher scores reflected better perception of well-being. The PROMIS social isolation scale ( $\alpha = .93$  for mothers and  $\alpha = .90$  for adolescents) assessed perceptions of being avoided, excluded, detached, disconnected from, or unknown by, others. A score of 50 (SD=10) is the average for the United States general population, and higher scores indicate a poor perception of social isolation.

**Data Collection**—The interviewer was a bilingual lay-health community worker (*promotora*) who was extensively trained in data collection and human subject protection by the PI. The *promotora* met individually with mothers and adolescents to conduct the interview and administer instruments in the participants' homes. Mothers were asked to give consent for themselves and their child, and adolescents were asked for assent prior to participation. Data collection was performed in either English or Spanish, depending on participant preference, but standard language was used. Most interviews were conducted in Spanish with mothers and in English with adolescents.

**Data Analysis**—Interviews were digitally recorded, transcribed and thematic analysis (Ryan & Bernard, 2003) was used to identify common and significant content. Interview transcripts were analyzed in the original language, using NVivo, and the quantitative data was analyzed using SAS version 9.3 (Cary, N.C.) Data were checked for out of range values, missingness, and distributional form. An FES index was formed by summing the FES expressiveness scale, the FES cohesiveness scale, and the reverse coded FES conflict scale. Relationships between two quantitative variables were analyzed with Spearman correlation tests. Relationships between a quantitative variable and a categorical variable were analyzed with Wilcoxon rank sum tests (for variables with two levels) and Kruskal-Wallis tests (for variables with three levels). The level of significance was set at .05. Two-sided tests were conducted for all tests of hypotheses.

## Results

Using one of the analytical processes for mixed-method research, qualitative and quantitative data sets were independently analyzed, and results of both analyses combined at the interpretative level (Sandelowski, 2000). The results were examined through the prism of the ecological model (see Figure 1).

### QUALITATIVE RESULTS

Themes emerged from the transcribed interviews without a pre-existing structure, and following the ecological framework, they were then arranged in three levels: 1) family environment, 2) rural community environment and 3) social environment (see Figure 1). The family environment is described according to 3 main themes: *a) Mother-adolescent*

*relationship, b) father-adolescent relationship and c) family separation*; the rural community environment is described according to 2 main themes: a) *Racism and discrimination and b) Lack of geographic mobility*; and the social environment is described in one theme: a) *undocumented status*. These themes were returned to the community advisory board (CAB) for refinement and validation (Miles & Huberman, 1994). Because *social isolation* was a resulting theme that encompassed features of most other themes, the CAB recommended that it be separated. Whenever possible, the themes for mothers and adolescents were combined to demonstrate their perceptions about the same issues. All themes are presented below, along with interview excerpts that clarify their meaning. Although all transcripts were analyzed in the original language (mostly in Spanish for mothers), an English idiomatic translation faithful to the original meaning is presented here.

### Family environment

**Mother-adolescent relationships:** Both mother and adolescents perceived emigration to the U.S. as a family sacrifice; however, mothers expressed that it was ultimately worthwhile because their children had the opportunity for a better life. Adolescents discussed their mothers' sacrifices and felt a responsibility to live up to them, especially because so many sacrifices had been made on their behalves. Mothers had strong expectations that their children would achieve a high degree of educational, financial, and professional success due to opportunities their parents never had. As a result, family expectations and opportunities compelled adolescents to become high achievers.

*Adolescent: I hope to achieve something really big that will make my parents feel proud of coming from Mexico to the U.S. I know it's very dangerous but I would like to make my parents feel proud of me. When I have problems, I look to my mom 'cause she...she told me what she suffered through crossing the border... I want to help her. She didn't have an opportunity to finish her school and she wants me to, and I wanna grow up to be some—like I wanna finish school. I wanna go to a good college, and then do somethin' like real—like a job that will give me enough money and everything.*

Essentially, adolescents viewed their mothers as source of continuous support, and mothers prized open communication with their children. Some mothers considered language a barrier to communication with their children, particularly with younger children who had spent the majority of their lives in the U.S. and only wanted to speak English.

Conflictive relationships resulted when mothers' chastised adolescents for not fulfilling their responsibilities and when adolescents felt that parental expectations were too strict. These conflicts occasionally exacerbated and compromised the mental wellbeing of the mother or child. Overall, mothers described the importance of persevering despite financial or emotional difficulties in order to care for the family.

*Mother: Well, I just draw strength from...the children that I have and draw strength to continue because if I didn't make myself strong I think I would not be able to go on. Many times, there are times when you have little... I was going through a very difficult time and my son who I have here, was saying that I don't love him and was on the verge of wanting to take his life. I know that there are very*

*difficult things that one has to go through, but you take strength from where you have none in order to keep going.*

**Father-adolescent relationships:** Typically, mothers who remained married to the biological fathers of their children expressed that adolescents had positive paternal relationships. They indicated that despite their husbands' long work hours, adolescents either confided in fathers more or were equally close to both parents. Similarly, adolescents perceived their paternal relationship as positive, but marginal, due to limited communication resulting from their fathers' long work hours.

Adolescent: *My dad ain't...there by the time school starts 'cuz he goes to work early.*

However, it was common for mothers who were divorced or separated from the biological fathers of their children to express that the relationship between fathers and adolescents was either nonexistent or negative.

Mother: *Her father came [to the U.S.] when I was pregnant and never came back. And I have always felt alone because I know that my daughter isn't happy without her father...He met her when she was fifteen, and he doesn't love her...He got married and got papers here...he will not arrange papers for her because it will interfere with his papers.*

Both adolescents and mothers agreed that it takes time to adjust to the new male figures in the household when the biological father is absent.

Adolescent: *Yeah, I feel like he's just somebody my mom's dating...He pays the bills, and I live here, so I respect him, but we don't have that much in common.*

**Family Separation:** Mothers and adolescents depicted the pain and loneliness of being away from nuclear and extended family in their native countries. The degree to which adolescents were affected by the separation depended upon whether or not they were raised in the U.S. Adolescents raised in the U.S. were sad that extended family could not visit them, but they were used to the long distance relationships that were maintained through telephone and email. However, adolescents who immigrated at an older age often found the separation difficult because they had close relationships with family members in their native countries. In some cases, extended family members had been the primary caregivers for adolescents after one or both parents had migrated to the U.S. for work. In these cases, some adolescents found that the separation made the parental relationship closer, while others felt the separation made this relationship more distant. In addition, mothers described an emotional tug of war between caring for their children in the U.S. and those in their home countries.

Mother: *Well, I say that no one will ever say that it was worth it, because, um, we are losing a lot of things and so are the girls, umm, in not being able to interact with their grandparents... Sometimes I'm in a place with there are people, a lot of people, and sometimes, I feel that I am alone. And I don't know, I say that it is because my mother or my sisters are far away...so it's like this emptiness that I have.*



Adolescent: *...I miss my brother [left behind] and I still haven't adjusted to being here.*

Mothers were also fearful of potentially being separated from their U.S. born children if they were deported. As well, adolescents expressed constant fear and pronounced distress about the possibility that their parents might be deported. These feelings were exacerbated in families that had some children born in the U.S. and others born in their home countries. This fear often increased the isolation of mothers, who only left the house for essential activities such as work, grocery shopping, and driving the children to school.

Mother: *It's one of the reasons why we don't go out much because sometimes the racism of people, if, if it's a policeman, if you get a racist police officer, he will take you to jail, he will deport you. And I am with my daughters, I'm afraid that they will deport me.*

Adolescent: *I feel lonely it's 'cause if they take my mom or they deport her and they deport everybody I know, I feel lonely 'cause I'll be the only one with my sis and have nowhere. Sometimes I'm sad 'cause like I hear on the news all the things that happen and stuff. And like I get to thinking if that ever happens to me, it would be hard...Like how they get deported and families get separated and stuff like that.*

### Rural community environment

**Racism and discrimination:** Both mothers and adolescents constantly described experiences of racism and discrimination in their rural community. While mothers experienced racism in casual interactions in the community, many adolescents experienced overt racism from their peers in school, through derogatory remarks or jokes, negative comments on Facebook, and exclusion from activities. Indeed, adolescents perceived themselves as “outsiders” in their schools and often in the rural communities where they lived. This was common for adolescents born or raised in the U.S. as well as for adolescents who had immigrated later in their lives.

Mother: *We see people...who look negatively at you...and call you a derogatory name and they think that you don't know, but yes, you do understand and well, you just keep quiet and that's it. There are a lot of people who don't like that we are here and look at you like you had a disease that they want to get away from.*

Adolescent: *The school I go to...there's a lot of Whites, and not much Blacks, but sometimes I feel like—you know how it is [laughter], there is like a difference. We're um like a really redneck town so I guess that's what triggers it too. A lot of people are really racist here, and some White parents won't allow some kids to be hanging out with Black kids or Mexicans, because they'll teach them to do bad things and stuff like that.*

For many, the church was the only safe place in the community, where they felt welcomed and accepted.

Mother: *In the church all the people see you in a positive light. I feel comfortable with all the American people... they look at you in a positive light, they treat you*

*well. I have been participating in the breakfast, and only Americans go, they treat you very well.*

**Lack of geographic mobility:** Mothers expressed distress about being geographically isolated from services and other people within the rural areas. Lack of transportation was considered a major problem for mothers who limited or avoided driving, either due to economic reasons or for fear of being stopped by the police. Adolescents expressed disappointment about not being able to participate in extracurricular activities due to lack of transportation.

*Mothers: Well, really I don't like the area where I live. We were used to living in the city, where there were more activities and in this place there aren't any, it is a lot more difficult to interact with people and do activities. Although there are few services, you can't get there because of a lack of transportation, if you could go to an English class, to take my children to the library so that they learn more, it would help, but we can't go.*

### **Social Environment**

**Undocumented status:** Mothers and adolescents described their undocumented status as an endless source of fear in their lives. Mothers were concerned that their undocumented status may negatively affect their children's well-being by inhibiting parental involvement, limiting extracurricular activities, and increasing fears and anxieties related to deportation.

*Mother: With my children, one of them is...more stressed about the legal papers. I wish that there was someone who could help us in how to give him advice, like a psychologist.*

*Adolescent: It's really hard due to the fact that my mom is illegal; both of my parents and most of my family members. My mom doesn't have any papers so it makes me feel I'm trapped 'cuz she can't work [or] have a certain thing; it just makes me feel trapped.*

**Social Isolation**—As a resulting theme, feelings of isolation among the mothers were linked to the loss of their extended family network, difficulties confiding others, geographic isolation, and having lost a sense of community. Women who did not have family in the U.S. discussed the practical consequences of this loss of instrumental support as well as their frustration about the lack of a sense of community among Latinos in their area. Mothers also worried about the effect of this isolation on their children. However, many adolescents said they did not feel isolated and attributed this to their family, friends, or school support. Adolescents who felt isolated cited a lack of friends, difficulty with English, conflict with or absence of family, personal or parental immigration status, and barriers to social interaction. These adolescents also mentioned having difficulty finding someone to confide in.

*Mother: We don't have someone [to help], it is a way in which you can feel alone, we don't have someone to turn to... everything in here is done only for money. If we find someone, we have to pay them to do this favor for us. So you can feel alone, [because] there is no one. Without money, there is nothing. I think there is a lack of*



*connection even between Hispanics, we don't help each other. ...They [children] don't go out. We go...for example on the weekend we go to the store, quickly to buy things... to give them a little distraction. In a sense, they are like prisoners.*

*Adolescent: When I first came, it was kind of hard for me to understand English. It took me like five years to understand, like read it and write it. It was hard. You feel lonely 'cause it's...it's kinda sad to see how we, some kids quit school 'cause they just like, "I can't do it." I see some that are doing it. I've always felt alone. I've only had one person I could actually rely on since fifth grade... Like I mean, yeah, I have a good relationship with my mom but there are just some things that me and her, just really can't talk about, 'cuz you know, she's still my mom and not only she's my friend, but she's still my mom and its weird... there are just days that I feel so alone and I just break down.*

## QUANTITATIVE RESULTS

The quantitative aim of the study sought to answer four questions relating to family environment perceptions, mental health, and social isolation among mothers and their children: 1) What are the relationships among outcome measures (FES subscales [Expressiveness, Cohesion and Conflict], the SF12 mental health component [SF12-MH]), and social isolation for mothers? 2) What are the relationships among the outcome measures (FES subscales, SF12-MH and social isolation) for adolescents? 3) What are the explanatory variables of mother FES subscales, the mental health component, and social isolation? 4) What are explanatory variables of adolescent FES subscales, the mental health component, and social isolation?

Mothers (n=31) were mostly Mexican (96.8%), had a mean age of 35.7 years old (SD 5.1), with an educational attainment mean of 9.1 (SD 3.3) years and the majority (68%) does not work outside home. Slightly more of the mothers (65%) had lived in the U.S. more than 10 years; however, almost all of the mothers (94%) chose to use Spanish language forms, suggesting low acculturation. Mothers had a mean of 3.4 (SD 1.4) children and the majority (77%) did not have children in their home countries. The adolescents (n=31) mean age was 13.0 years old (SD 2.0) and 42% were male. Of the adolescents, 67% preferred speaking English, 20% preferred speaking Spanish, and 13% preferred speaking both.

Mothers' and adolescents' family environment scores were significantly different than the U.S. population norms, suggesting better expressiveness and cohesion and less conflict. Although mothers had lower scores for mental well-being (indicative of poor mental well-being) compared to U.S. norms, the mean was not found to be significantly different. The mean for adolescents' mental well-being was significantly higher than the general population, implying better mental well-being. Descriptive statistics of outcome measures are presented in Table 1 for mothers and adolescents. The family environments for mothers and adolescents were not correlated, which may be due to the different acculturation stages.

Mental wellbeing of mothers was positively associated with their perceptions on family cohesion ( $r_s = .31$ ,  $p = .10$ ) and negatively related to family conflict ( $r_s = -.49$ ,  $p = .05$ ). As expected, social isolation was strongly related to mental health among mothers ( $r_s = -.52$ ,  $p = .01$ ).

05) and adolescents ( $r_s = -.38, p .05$ ). Overall, the *familismo*/FES index for mothers was correlated to mental wellbeing ( $r_s = .48, p .05$ ), but this result was not confirmed for adolescents.

Several demographics, the FSE subscales, and social isolation were examined as explanatory variables for mental well-being and social isolation between mothers and adolescents, but employment was the only variable found to significantly predict family cohesion and social isolation. Non-working mothers had higher levels of family cohesion and reported less social isolation. Mothers with children outside the U.S. had lower scores for mental wellbeing than mothers whose children resided in the U.S., but the difference for this small sample size was not significant. Social isolation of mothers was a significant explanatory variable of mental well-being in adolescents ( $r_s = -.37, p .05$ ). In addition, maternal age, education, and mental health were close to being significant explanatory variables of mental well-being in adolescents.

## Discussion

This mixed-method pilot study highlighted how *family, rural, and social environments* can protect or impair wellbeing in rural Latino immigrant mother and adolescent dyads. The family environment is described according to 3 main themes: 1) *Mother-adolescent relationship*, 2) *father-adolescent relationship* and 3) *family separation*; the rural community environment is described according to 2 main themes: 1) *Racism and discrimination* and 2) *Lack of geographic mobility*; and the social environment is described in one theme: 1) *undocumented status*.

Although parent-adolescent relationships were described as having both positive and negative aspects, usually mothers-adolescents pairs felt highly connected; in fact this cohesion was observed in both qualitative and quantitative data. Nevertheless, fathers were typically seen absent due to work or lack of interest in their children's lives. The conflict scores for both mother and adolescents were lower than the US norm, but several intrafamilial conflicts were qualitatively identified: 1) parental high expectations, which adolescents were supposed to meet; 2) different levels of acculturation between parents and adolescents, which led to communication barriers in the parent/adolescent relationship, 3) paternal absence and 4) family fragmentation due to emigration to the U.S. or deportation to a native country. However, mothers sustained the primacy of family, and were adept in finding ways to cope with these conflicts and provide economically and emotionally for their children. In other words, they were capable of "*persevering despite the difficulties*", which is a substantial part of the *familismo* protective mental health factor.

Different levels of acculturation and language skills between family members can create communication barriers in family relationships, as observed in the relationship between mothers and adolescents. Indeed, studies indicate that the acculturation discrepancy between Latino adolescents and parents predicts decreased family cohesion, adaptability, and *familismo* (Smokowski, 2007). However, if adolescents are more acculturated to American society, they can become "cultural brokers" for their parents and facilitate easier adjustment to the new environment. This can be an asset to the family, but it can also cause a power

imbalance as seen in the qualitative responses between children and parents. As a result, adolescents may rebel, causing a decrease in trust between parents and adolescents as well as overall harm to the family unit. Despite this tendency, mothers seem to “*persevere*” and the linguistic acculturation discrepancy does not seem to be related to maternal parenting practices (Gonzales, Dardoff, Formoso, Barr, & Barrera Jr., 2006). The value of family cohesion between mothers and adolescents, identified qualitatively was confirmed by the FES scores. Family cohesion has been found to be a powerful component within the Latino culture (Nair, White, Rosa, & Zeiders, 2013).

Significant correlation between FES cohesion, conflict, and mental wellbeing scores were identified among mothers, but not among adolescents. *Familismo* has been found to be negatively associated with depressive symptoms for parents and negatively associated with internalizing behavior for children (Heilemann, et al., 2004). Although this study did not confirm the association of *familismo* with adolescent mental well-being, several studies have found that *familismo* has a direct relationship with adolescent suicide attempts (Peña et al. 2011).

The qualitative data suggests that multiple aspects beyond intrafamilial relations, including *rural* and *social* environmental interactions, may affect mental wellbeing; for example, racism and discrimination, lack of geographic mobility and undocumented status were described as constant stressors. In fact, higher levels of perceived discrimination have been found to negatively impact mental health in adults and adolescent (Finch, 2000; Heilemann, et al., 2004), particularly when combined with fear of deportation due to immigration status (Finch, 2000; Nair, et al., 2013). Discrimination has been described as worse in rural environments (Carlisle, Mamdani, Schachar, & To, 2012); it can affect first-generation Latino youth even after a short time (i.e. 4.5 years) and substantially increase their risk of depression (Sharkey, Johnson, & Dean, 2011). Also, undocumented immigrants may find it more difficult to hide in rural areas, which have greater socio and spatial visibility. Studies have demonstrated that members of excluded groups have difficulty navigating rural public spaces without feeling stigmatized, which over time can impact their mental wellbeing (Loury, Jesse, & Wu, 2011; Mora et al., 2013).

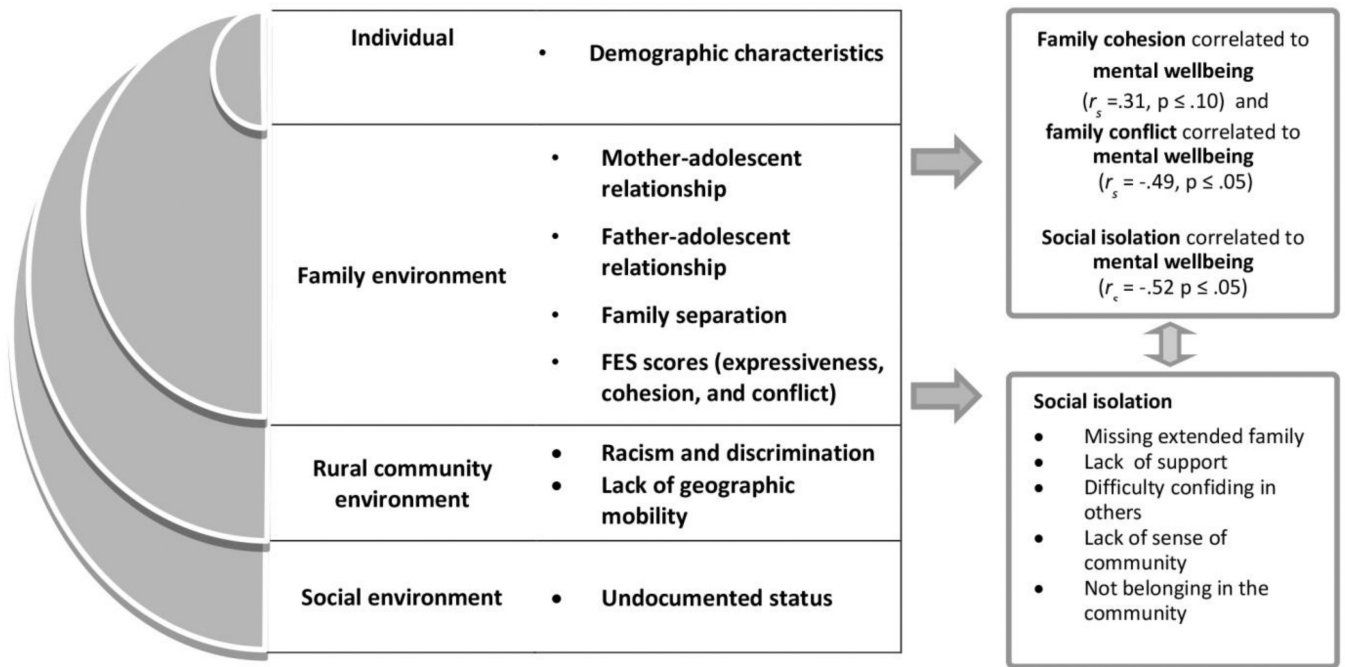
Qualitatively, social isolation seems to be an overarching theme and a considerable risk factor for mental wellbeing among mothers and adolescents. Additionally, social isolation was found to be a significantly related to mothers’ wellbeing and also an explanatory variable of adolescents’ wellbeing. Mothers described family dynamic changes (e.g. loss of family support), the rural environment (e.g. geographic isolation) and the social environment (e.g. not being able to network due to discrimination and undocumented status), when discussing social isolation. Adolescents suffered similar emotional issues presented by their mothers and a lack of friends, parental immigration status, and difficulty with the language within the school environment were significant barriers to social connection. These findings are similar to those previously reported in the literature on mental health in Latino women and adolescents (Heilemann, et al., 2004; Ornelas, et al., 2009; Shattell, Smith, Quinlan-Colwell, & Villalba, 2008), indicating that our results may have a high degree of reliability.

This study has several limitations and cannot be generalized because of the small sample size and the fact that it is limited to a rural area of a single state (Florida), which may vary from other US states. However, this pilot study is significant because to our knowledge, it is the first to demonstrate a possible link between social isolation of mothers and adolescents' mental wellbeing. Thus, social isolation could be a significant risk factor of mental wellbeing in Latino immigrant families living in rural areas, and community interventions targeting this familial-social-cultural and environmental variable are warranted. Larger studies and community-based interventions are needed with members of this understudied population, especially considering the social injustices, health inequities, and adverse social conditions that they are regularly exposed to (Dinwiddie, Gaskin, Chan, Norrington, & McCleary, 2013), especially in rural areas where the resources are scarce.

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**Figure 1.**  
Results through the Prism of the Ecological Model



**Table 1**

Descriptive Statistics of Outcome Measures for Mothers and Adolescents

Scales	Mother Mean (SD)	Adolescent Mean (SD)	US population (mean)	Comparison of Mother to US Population (p-value)	Comparison of Adolescent to US Population (p-value)
<b>FES_E</b>	55.0 (9.0)	51.2 (9.9)	50	<.0001	<.0001
<b>FES_C</b>	57.7 (10.4)	59.0 (6.8)	48	<.0003	<.0001
<b>FES_Con</b>	41.9 (9.3)	41.7 (8.6)	49	<.0001	<.0001
<b>SF12_MH</b>	47.5 (10.1)	53.0 (8.4)	50	.3580	0.0426
<b>Promis 8 (social isolation)</b>	49.0 (9.4)	44.3 (7.1)	50	.4871	<.0001

**FES-E** – Family Expressiveness, **FES-C** – Family Cohesion and **FES\_Con** - Family Conflict

**Table 2**

Relationships among Outcomes for Mothers

Spearman Correlation Coefficients					
	FES_E	FES_C	FES_Con	SF12_MH	Promis8
FES_E	-				
FES_C	.08**	-			
FES_Con	-.34**	-.31**	-		
SF12_MH	.25	.31**	-.49*	-	
Promis 8	-.15	-.44*	.59*	-.52*	-

\*\* p less than or equal to .10

\* p less than or equal to .05

**Table 3**

Relationships among Outcomes for Adolescents

	Spearman Correlation Coefficients			
	FES_E	FES_C	FES_Con	SF12-MH
<b>FES_E</b>	-			
<b>FES_C</b>	<b>.37*</b>	-		
<b>FES_Con</b>	-.04	-.19	-	
<b>SF12-MH</b>	-.25	-.05	-.22	-
<b>Promis 8</b>	-.29	-.26	-.04	<b>-.38*</b>

\*\* p less than or equal to .10

\* p less than or equal to .05