

6-8-2018

# Economic Pressure and Depressive Symptoms among Latino Youth: The Role of Control Beliefs and Family Obligation

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## Recommended Citation

Castro, Ashley, "Economic Pressure and Depressive Symptoms among Latino Youth: The Role of Control Beliefs and Family Obligation" (2018). *College of Science and Health Theses and Dissertations*. 268.  
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Economic Pressure and Depressive Symptoms among Latino Youth:  
The Role of Control Beliefs and Family Obligation

A Thesis

Presented in

Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

By

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June 2018

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## **Acknowledgments**

This thesis was a labor of love that could not have been completed without the support of many individuals. I would like to express my sincerest gratitude to Dr. Antonio Polo for his insights and guidance throughout the entire process, and Dr. Kathryn Grant for her helpful feedback. Thank you to my parents, Ricardo, and Iliana for their unwavering support and for continuously reminding me why I undertook this work. Most of all, I extend my deepest gratitude to the many families who generously shared their experiences and allowed us to learn from them.

## **Biography**

The author was born in the Bronx, New York, on August 17, 1988. She graduated from Hunter College High School and received her Bachelor of Arts degree in Psychology and Anthropology with Honors from Wesleyan University in 2010.

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## Abstract

Latino youth in the United States experience high rates of both poverty and of depressive symptoms and disorders (CDC, 2012; DeNavas-Walt, Proctor, & Smith, 2014). According to the Adaptation to Poverty Related Stress model (APRS; Wadsworth, Raviv, Compas, & Connor-Smith, 2005), economic pressure is positively linked to adolescent depression via coping. Using a resilience perspective, the present study extends the APRS model by exploring the role that cultural values, namely family obligation, and control beliefs play in the relation between economic pressure and depressive symptoms for Latino youth.

Participants in this study were 404 Latino children and adolescents ( $M$  age=12.02; 52.5 % girls), who were predominantly of low-income and Mexican American backgrounds. Results indicated that greater economic pressure predicted more depressive symptoms through decreased primary and secondary control beliefs, which were evaluated separately. In addition, family obligation was found to buffer against the impact of having lower secondary control beliefs on increased depressive symptoms, but did not significantly moderate any other independent path of the mediational models. Finally, family obligation was found to be a significant moderator of the mediational model including secondary but not primary control beliefs, through its attenuation of the impact of decreased secondary control beliefs on depressive symptoms. Taken together, the findings indicated that family obligation represented a cultural asset that protected Latino youth against some, but not all, of the pernicious effects of economic pressure on their adjustment.

## **Introduction**

Latinos are the largest ethnic minority group in the United States, currently constituting 17.4% of the total population. Among youth, Latinos represent an even larger share, as nearly one in four children under the age of 18 is Latino (Colby & Ortman, 2015). A disproportionate number of Latino youth and their families face financial hardship. In 2014, Latinos in the U.S. had a poverty rate of 23.6%, compared to 14.8% for the overall population. And, in that same year, 32.0% of Latino children below the age of 18 lived in poverty, compared to 21.1% of children overall in the U.S. (DeNavas-Walt, Proctor, & Smith, 2014). Whether considering income or wealth, Latino adults and children in the U.S., both native and foreign-born, fare substantially worse than the overall population (Orrenius & Zavodny, 2011; Painter II & Qian, 2016).

## **Poverty and Mental Health**

In 2014, the percentage of Latino youth ages 12-17 who had experienced at least one major episode of depression over the prior year was 11.5%, which was higher than any other major ethnic minority group in the U.S. (Center for Behavioral Health Statistics and Quality, 2015). In addition, Latino youth, especially girls, report higher rates of depressive symptoms and suicidal behaviors— also more than any other major ethnic or racial group in the United States (Centers for Disease Control and Prevention, 2012). Poverty appears to confer increased risk for depression among U.S. youth of all ethnic groups. Among Latinos, the percentage of youth below the poverty level experiencing moderate to severe depression is significantly higher, at 13.4%, than for youth at

or above the poverty level (7.6%) (Pratt & Brody, 2014).

Several reviews and meta-analyses have explored the link between poverty or perceptions of economic hardship and mental health among youth and adults (Das, Do, Friedman, McKenzie, & Scott, 2007; Lund et al., 2010; Patel & Kleinman, 2003; Reiss, 2013). In addition to income, financial insecurity, community violence, and rapidly changing lifestyles (e.g., migration from rural to urban environments, weakened social ties, etc.) have emerged as strong predictors of mental health problems (Patel & Kleinman, 2003; Präg, Mills, & Wittek, 2016). Research on subjective reports of socioeconomic status (SES), which encompasses various indicators of perceptions of economic hardship, has found that it is related to youth mental health. Among the mental health outcomes that have been linked with lower subjective SES and increased perceptions of financial hardship, a particularly strong relation with adolescent depression has been found (Quon & McGrath, 2014). Importantly, the impact of poverty-related stress on internalizing symptoms has been found to be similar in magnitude for preadolescents (ages 6-10) and adolescents (ages 11-18) (Wadsworth et al., 2008).

Despite the fact that Latino youth are at disproportionate risk for depression (Center for Behavioral Health Statistics and Quality, 2015) and have high rates of poverty (DeNavas-Walt et al., 2014), few studies have examined how perceptions of economic hardship are associated with depressive symptoms in this population. A notable exception is a recent study that included adolescents from several ethnic backgrounds, including Latinos. Subjective SES was assessed using an 8-item scale in which adolescents compared their economic status to that

of their peers. In this study, Latino adolescents reported significantly lower subjective SES compared to their European American counterparts. In addition, the study found that among Latino youth, along with those of every other ethnic group studied, lower subjective SES was associated with higher depressive symptoms (Destin, Richman, Varner, & Mandara, 2012). Although a number of studies with adolescent samples have found that perceptions of greater financial hardship are associated with greater depressive symptoms, more research is needed to understand the mechanisms by which these constructs are related for youth of ethnically diverse backgrounds, and among low-income Latino youth specifically. The present study aims to address this gap in the literature.

### **Economic Pressure and the Family Stress Model**

One aspect of the subjective experience of poverty that has been widely studied with youth is economic pressure. Economic pressure refers to “the painful realities created by hardship conditions, such as being unable to purchase necessary goods and services, having to make significant cutbacks in daily expenditures...and being unable to pay monthly bills” (Conger et al., 2002, p. 180). The Family Stress Model (FSM) has examined the pathways through which parental economic pressure impacts adolescent well-being, with caregiver conflict as a key mechanism (Conger, Conger, Elder, Lorenz, & et, 1993; Conger & Elder Jr, 1994; Elder, Conger, Foster, & Ardel, 1992). The classic FSM proposed that economic pressure adversely impacts the mental health of caregivers, which leads to increased conflict among caregivers and poor parenting. In this model, poor parenting directly results in youth internalizing and externalizing problems.

The FSM emerged from research with poor rural European American families in the Midwest during the farm crisis of the 1980s, and it has since been evaluated with other ethnic groups (Conger, Conger, & Martin, 2010). Several studies have examined the FSM to study adjustment in Latino youth with mixed results. Mistry, Vandewater, Huston, and McLoyd (2002) found that the FSM predicted poorer adjustment in urban Latino youth, although their outcomes of interest were social behavior and behavior problems. In a study that tested and expanded the FSM with Mexican American parents and their 5<sup>th</sup> grade children, it was found that the addition of mother's acculturation strengthened the model for this sample through its association with marital problems (Parke et al., 2004). Specifically, it was found that greater maternal acculturation predicted more marital problems and less hostile parenting, which the authors hypothesized may be related to a stronger orientation toward egalitarian relations in the family. However, a longitudinal examination of the FSM with Mexican-origin families found limited evidence for the mediational pathways proposed in the original model (White, Liu, Nair, & Tein, 2015). In this study, mothers' perceptions of economic pressure predicted adolescent externalizing symptoms through increases in harsh parenting but there was no impact on parental warmth nor on adolescent internalizing symptoms, while the model including fathers' perceptions of economic pressure showed no support for the traditional mechanisms of the FSM. This finding is especially significant as it is one of very few examinations of the FSM with Latino families that has explicitly examined depressive symptoms among youth. In sum, there is evidence to suggest that

greater economic pressure is linked to poorer adolescent adjustment, though traditional models benefit from adaptation to better explain this association within Latino families.

### **The Adaptation to Poverty Related Stress Model**

The FSM has been extended in key ways by research with the Adaptation to Poverty Related Stress (APRS) model, which shifts the focus toward adolescent perceptions of economic pressure and their responses to this form of stress. The APRS model links economic pressure to adolescent mental health outcomes, including internalizing symptoms, through both adolescent coping and family conflict (Wadsworth, Raviv, Compas, & Connor-Smith, 2005). It draws from both the FSM and the Responses to Stress Model (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000), which links coping and stress responses to adolescent mental health outcomes. Wadsworth and Berger (2006) found that economic pressure is negatively associated with primary and secondary control coping, and that both forms of coping are negatively associated with anxious/depressed behaviors. Using the APRS model, Wadsworth et al. (2005) found that secondary control coping, but not primary control coping, mediates the relation between economic pressure and a composite measure of anxiety and depressive symptoms. Key pathways in the APRS model have received broad empirical support with ethnic minorities, but its fit with Latino families remains unclear (Wadsworth, Raviv, Santiago, & Etter, 2011).

One of the important ways in which the APRS model has expanded our understanding of how economic pressure relates to depressive symptoms is by

focusing on the adolescent's perception of their economic pressure. As a psychologically meaningful construct (Roosa, Deng, Nair, & Burrell, 2005), when economic pressure is assessed from the perspective of adolescents there is an opportunity to more directly connect their experiences of poverty to their psychological well-being. The APRS model achieves this goal by including the adolescent's, rather than the caregiver's, perspective of economic pressure.

In addition, to better understand how adolescents are agents in their own adjustment, it is important to explore how they respond and react to stressors in their lives. In the traditional FSM, it is parents who respond to financial hardship and transmit the stress to their children through family dysfunction. By incorporating primary and secondary control coping into the model, the APRS model helps to clarify how adolescents themselves respond to economic pressure. Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001) defined coping in youth as "conscious volitional efforts to regulate emotion, cognition, behavior, physiology, and the environment ... [that] draw on and are constrained by the biological, cognitive, social and emotional development of the individual" (p. 89). Weisz, Rothbaum, and Blackburn (1984) described primary control coping as an individual's attempt to "enhance their rewards by influencing existing realities (e.g., other people, circumstances, symptoms, or behavior problems)" (p. 955) in response to a stressor. Initially regarded as the only adaptive response to stress (prior to being labeled as "primary"), this style of coping stood in contrast to learned helplessness, which was widely viewed at the time as a maladaptive response to adversity that indicated unhealthy resignation to

one's circumstances. As coping research evolved, researchers began to reframe the passive "resignation" some people displayed in response to stress as a style of coping called secondary control coping (Rothbaum, Weisz, & Snyder, 1982).

Secondary control coping has been described as "attempts to fit in with the world and 'flow with the current'" (Rothbaum et al., 1982, p. 8). The labelling of one form of control as primary and the other as secondary was not meant to imply that they differed in importance or sequentially as part of a person's coping repertoire, but rather reflects differences in "emphasis" (Rothbaum et al., 1982). Within the APRS model, both primary and secondary control coping have been hypothesized to mediate the relation between economic pressure and adjustment for adolescents, though empirical support has only been found for secondary control coping as a mediator (Wadsworth et al., 2005).

Overall, research with the APRS model has revealed important ways that financial hardship contributes to poor mental health among adolescents, though the model has yet to be evaluated specifically with Latino youth. As with research using the FSM, adaptations to the APRS model may be helpful in elucidating unique ways in which Latino youth experience and respond to economic pressure.

### **Control Beliefs**

One important way in which the APRS model can be expanded is by examining primary and secondary control beliefs rather than primary and secondary control coping. Numerous studies have found that coping strategies, including the use of either primary or secondary control coping in a given situation, are influenced by control beliefs (Compas, Banez, Malcarne, &



Worsham, 1991; Sandler, Kim-Bae, & MacKinnon, 2000; Vanlede, Little, & Card, 2006). Control beliefs play an important role in the appraisal process in the cognitive theory of stress (Folkman, 1984; Lazarus & Folkman, 1984). In their Transactional Model of Stress and Coping, Lazarus and Folkman (1984) described coping as a dynamic process that consists of two forms of appraisal, one concerned with evaluating the stressor itself, and the other concerned with assessing coping resources. Both forms of appraisal are influenced by control beliefs. As with coping, control beliefs have also been conceptualized as primary or secondary. In accordance with the coping taxonomy to which they correspond, primary control beliefs refer to the extent to which an individual believes that she can actively control the outcomes of situations or her responses to them, whereas secondary control beliefs refer to the extent to which an individual believes that she can control her internal reaction to the stressful situations. There is ample evidence that control beliefs change throughout childhood and stabilize in late adolescence. Secondary control beliefs, in particular, appear to increase with age, and adults generally endorse more secondary control than children and adolescents (Band & Weisz, 1988; Brandtstädter & Renner, 1990). Primary control beliefs appear to develop earlier and be more stable across the lifespan (Compas et al., 1991). Thus, early adolescence represents a critical period for the development of appropriate and healthy control beliefs.

Across many studies, control beliefs have been linked to mental health. Endorsement of a greater sense of control, and more primary and secondary control beliefs in particular, has been associated with better mental health

outcomes in youth (Kanner & Feldman, 1991; Weisz, Francis, & Bearman, 2010; Weisz, Weiss, Wasserman, & Rintoul, 1987), including Latino youth (Taylor, Jones, Anaya, & Evich, 2017). In a sample of primarily Mexican-origin 5<sup>th</sup> graders and their parents, youth's effortful control beliefs, which included measures of attentional and behavioral control, were negatively associated with depressive symptoms and aggression/frustration (Taylor et al., 2017). Primary control beliefs are thought to be more adaptive in circumstances where an individual is able to influence outcomes, while secondary control beliefs are thought to be most adaptive in situations where an individual cannot exercise much control over the stressful situation (Wadsworth & Compas, 2002).

Control beliefs have previously been found to mediate the relation between various forms of stress and youth adjustment (Deardorff, Gonzales, & Sandler, 2003; L. S. Kim, Sandler, & Tein, 1997). Culpin, Stapinski, Miles, Araya, and Joinson (2015) found evidence that economic adversity in childhood predicted depression at 18 years through its impact on control beliefs. Similarly, Deardorff et al. (2003) examined stress, primary control beliefs, and depressive symptoms among ethnically diverse youth, and found that economic pressure predicted decreased control beliefs, though not depressive symptoms. Thus, although the APRS model examines coping strategies as a mediating factor between economic pressure and mental health, the literature provides evidence that examining control beliefs as potential mechanisms may contribute to our understanding of how SES relates to risk for depression in youth. Previous research has identified associations among economic pressure, internalizing

symptoms, and both primary and secondary control coping (Wadsworth & Berger, 2006), but primary control coping has not been found to mediate the relation between economic pressure and internalizing symptoms (Wadsworth et al., 2005). Examining control beliefs may shed light on this surprising finding. To the author's knowledge, the present study is the first to incorporate an evaluation of both primary and secondary control beliefs within the framework of the original APRS model.

### **Cultural Values as Buffers Against Stress**

The APRS model can be further expanded to more fully capture the experiences of Latino youth through the inclusion of culture-specific processes or variables. Coll et al. (2000) have argued that to gain understanding of how culture influences outcomes it is necessary to deliberately and carefully consider the role of particular cultural variables. For example, previous research with African American youth has identified culturally-specific coping strategies that are protective against stressors that are highly salient for this population, such as discrimination (Gaylord-Harden & Cunningham, 2009; Gaylord-Harden, Burrow, & Cunningham, 2012). Cervantes and Castro (1985) also developed a theoretical framework for examining coping among Mexican Americans that draws from research showing that cultural factors influence all aspects of the appraisal and coping process for this population. Thus, incorporating culturally-relevant factors into stress models yields a richer understanding of how ethnically diverse youth and their families navigate stressful circumstances.

Further research is needed to understand how culture impacts Latino

youth's responses to poverty-related stress. It is especially important to examine cultural assets and protective factors within the lives of Latino youth, as research with this population has historically focused on deficits (Coll et al., 2000; Rodriguez & Morrobel, 2004). Research with Latino youth suggests that family values may be especially influential cultural factors for this group. Strong family cohesion and interdependence are traditional and commonly held cultural values for Latino adolescents (García et al., 2000). Greater commitment to the family has been associated with better adjustment among Latino youth (Germán et al., 2009; Stein et al., 2015). The present study aims to answer the call for more research concerned with positive development for ethnic minority youth (Cabrera & Committee, 2013), by expanding the APRS model to incorporate a specific cultural variable, family obligation, that may play a protective role for Latino adolescents facing economic hardship.

Family obligation refers to a diverse set of expectations that an individual has with respect to supporting and assisting other members of their family, especially their parents. Adolescents who are part of cultures that traditionally emphasize the family tend to have a greater sense of family obligation (Fuligni et al., 1999). This sense of obligation to the family arises from traditional hierarchies within the family and an emphasis on deference and respect toward elders, which are commonly found in Latino families (Halgunseth, Ispa, & Rudy, 2006). Evidence for the importance of family obligation as a traditional Latino value can be found by examining interethnic and intergenerational differences in its endorsement. For example, Latino adolescents have reported a significantly

greater sense of family obligation compared to their European American counterparts (Fuligni et al., 1999). In addition, first-generation Mexican American youth have reported a greater sense of family obligation than third-generation youth (Fuligni et al., 1999). Research with young adults has also found that, across ethnic groups, individuals whose parents were born in another country had stronger family obligation attitudes compared to those whose parents were born in the U.S. (Tseng, 2004).

Family obligation has been associated with fewer internalizing symptoms in Mexican American adolescents (Telzer, Tsai, Gonzales, & Fuligni, 2015), and thus represents a potential protective factor for Latino youth. While there has been little research on how family obligation, specifically, is protective for Latino youth, prior research has explored how other cultural values can buffer against stress for this population. For example, Umaña-Taylor and Updegraff (2007) found that stronger cultural orientation buffered against the effects of discrimination on self-esteem and depressive symptoms for Latino boys. One of the most commonly examined cultural values in research with Latino youth is familism, a multidimensional construct that is closely related to family obligation. Familism has been found to buffer against the detrimental effects of various stressors, including discrimination (Umaña-Taylor, Updegraff, & Gonzales-Backen, 2011) and mother-adolescent conflict (Vargas, Roosa, Knight, & O'Donnell, 2013) for Latino youth. Hypothesized explanations for the protective role of family values among Latino youth include the attenuated influence of deviant peers, increased sense of purpose, and increased self-esteem. However,

the mechanisms by which family values are protective for ethnic minority youth are not well understood and have been identified as an important area for further research (Neblett, Rivas-Drake, & Umaña-Taylor, 2012).

### **Family Obligation and Control Beliefs**

Little is known about how cultural values, such as family obligation, relate to control beliefs for Latinos, but findings from the coping literature may provide helpful insights. Cross-cultural comparisons have consistently found differences in preferences for particular coping strategies and their associations with adjustment across cultures (Kuo, 2011). However, these comparisons typically refer to cultural differences based on race, ethnicity, or religion, and conceptualize them as reflecting collectivistic or individualistic orientations. Recently, more attention has been paid to culturally-specific values that relate to coping within particular cultural groups. A study with Asian American college students found that greater adherence to Asian cultural values (a composite construct) predicted greater use of engagement coping and decreased use of disengagement coping (Wong, Kim, & Tran, 2010). Among a sample of White and Black caregivers of elderly relatives with dementia, familism was not significantly associated with ethnicity but was significantly associated with greater use of maladaptive avoidant coping (Kim, Knight, & Longmire, 2007).

Research with Latinos has also suggested an association between culturally-specific values and coping strategies. A qualitative study with Latino college students found that “*el que dirán*,” a cultural value related to concerns about others’ judgment of one’s self, was associated with less support-seeking as

a coping strategy (Chang, 2015). Santiago, Torres, Brewer, Fuller, and Lennon (2016) found that greater familism interacted with higher stress to predict more engagement coping (a broader category that includes primary and secondary control coping) among Latino adolescents. While the research suggests that cultural values impact and interact with coping (and by association, control beliefs), the interaction between particular cultural values and primary and secondary control beliefs has not yet been explored for any ethnic group.

### **Family Obligation and Economic Pressure**

Although the nature and extent to which economic pressure and family values are related have not yet been systematically studied, some data indicate that these two constructs may interact in important ways. Arora and Wheeler (2017) examined the role of family cohesion and familism values as potential protective factors against depressive symptoms for Mexican-origin adolescents facing a variety of stressors. One of the stressors examined was subjective economic hardship measured through two questionnaire items completed by adolescents. While there was no significant interaction between economic hardship and family variables, familism and family cohesion were found to buffer against the negative impact of negative school safety and general discrimination, respectively, on depressive symptoms (Arora & Wheeler, 2017). In a study that tested the FSM with Mexican-origin families, stronger familism values among mothers buffered against the negative impact of their perceived economic pressure on their maternal warmth (White et al., 2015).

With regard to family obligation, specifically, poorer young adults have

reported a greater sense of family obligation values than those from wealthier backgrounds (Fuligni & Pedersen, 2002). Among older Asian American adolescents, family obligation has been found to buffer against the negative impact of socioeconomic pressure on academic outcomes (Kiang, Andrews, Stein, Supple, & Gonzalez, 2013). However, no study to date has evaluated whether family obligation has a similar buffering effect for Latino youth facing economic pressure.

Exploring the role of family obligation as a protective factor for low-income Latino youth using the APRS model can help clarify how it contributes to their resilience when facing financial hardship. Specifically, it is possible to evaluate the buffering role of family obligation in the context of a process whereby control beliefs mediate the relation between economic pressure and depressive symptoms. Within this model, family obligation may buffer against: a) the impact of economic pressure on control beliefs; b) the impact of decreased control beliefs on depressive symptoms; or c) both processes. This study will be the first to evaluate the potential buffering role of family obligation for low-income Latino youth in the context of the APRS model.



## **Rationale**

Research has shown that the experience of economic hardship among youth is associated with socioemotional well-being, particularly depressive symptoms, but the nature of this association among Latino adolescents is not well understood. The Adaptation to Poverty Related Stress (APRS) model has found support for a mediational process whereby economic pressure impacts youth coping, which in turn impacts youth mental health symptoms. This study examines the mediational role of control beliefs, rather than coping style, in the APRS model. In addition, to address the need for more asset-focused research with Latino youth, the present study also extends the scope of the APRS model by incorporating the cultural value of family obligation. Family obligation may play a central role in the resilience of Latino youth experiencing financial hardship, but no study to date has examined this possibility within the context of the APRS model.

## **Statement of Hypotheses**

### **Hypothesis I:**

Ia. In contrast with previous findings for primary control coping in the APRS model, it is expected that primary control beliefs will account for, or mediate, the relation between economic pressure and depressive symptoms.

Ib. Consistent with previous findings for secondary control coping in the APRS model, it is expected that secondary control beliefs will account for, or mediate, the relation between economic pressure and depressive

symptoms.

**Hypothesis II:**

Ila. Family obligation will be significantly related with primary and secondary control beliefs. Higher family obligation will be associated with higher primary control beliefs and with higher secondary control beliefs.

Ilb. Family obligation will be significantly related with depressive symptoms. Higher family obligation will be associated with fewer depressive symptoms.

Ilc. Family obligation will buffer, or moderate, the relation between economic pressure and primary control beliefs. Similarly, family obligation will moderate the relation between economic pressure and secondary control beliefs. More specifically, higher economic pressure will be associated with lower primary and secondary control beliefs, but to a lesser degree among youth with higher family obligation.

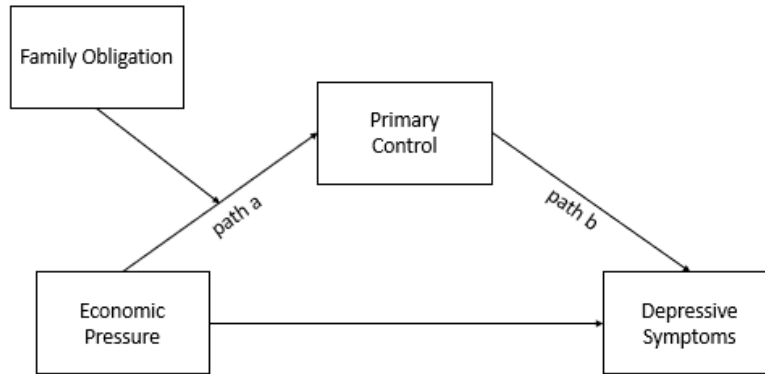
Ild. Family obligation will buffer, or moderate, the relation between primary control beliefs and depressive symptoms. Similarly, family obligation will moderate the relation between secondary control beliefs and depressive symptoms. More specifically, lower primary and secondary control beliefs will be associated with more depressive symptoms, but to a lesser degree among youth with higher family obligation.

**Hypothesis III:**

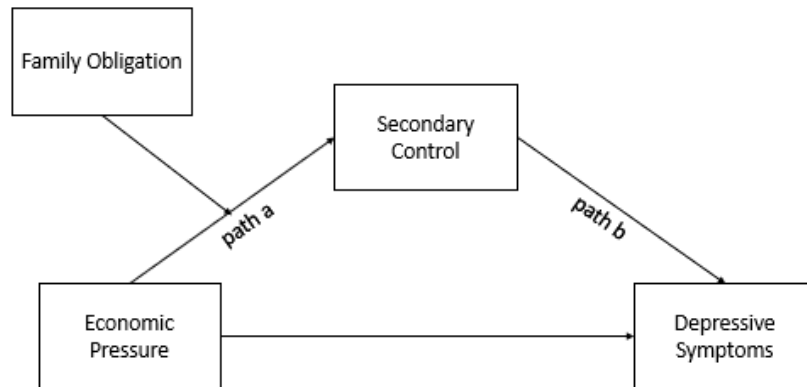
IIIa. A moderated mediation model will be evaluated in which it is expected that family obligation will significantly buffer, or moderate, the

relation between economic pressure and control beliefs (primary and secondary, separately) such that the indirect effect of economic pressure on depressive symptoms through control beliefs is decreased at higher levels of family obligation (see path a in Figures 1 and 2). In other words, it is expected that the mediating effect of control beliefs will be weaker among adolescents with higher family obligation due to a weaker relation between economic pressure and control beliefs.

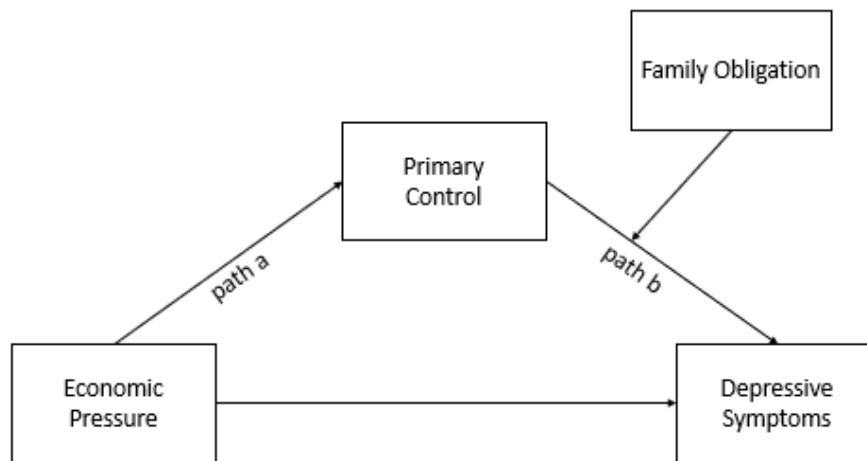
IIIb. A moderated mediation model will be evaluated in which it is expected that family obligation will significantly buffer, or moderate, the relation between control beliefs and depressive symptoms such that the indirect effect of economic pressure on depressive symptoms through control beliefs is decreased at higher levels of family obligation (see path b in Figures 3 and 4). In other words, it is expected that the mediating effect of control beliefs will be weaker among adolescents with higher family obligation due to a weaker relation between control beliefs and depressive symptoms.



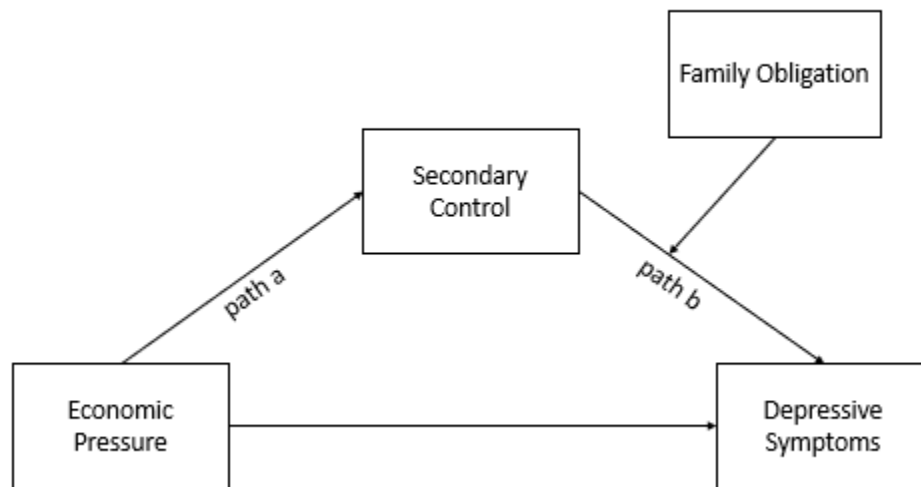
*Figure 1.* Moderated mediation model with primary control beliefs as mediator and moderation on path a.



*Figure 2.* Moderated mediation model with secondary control beliefs as mediator and moderation on path a.



*Figure 3.* Moderated mediation model with primary control beliefs as mediator and moderation on path b.



*Figure 4.* Moderated mediation model with secondary control beliefs as mediator and moderation on path b.

## Method

The data used in this study were collected as part of a larger project designed, in part, to evaluate a school-based depression intervention. Students across several schools were initially invited to complete a classroom survey (T1), and then a subsample of those students were subsequently invited to complete an in-person individual interview (T2). The data for this study included measures from both time points but analyses did not look at changes across time on any of the measures.

### Participants and Design

The sample of the present study was comprised of 404 Latino children and adolescents. Participants were 52.5% female, ages 10 to 14 years old ( $M = 12.02$ ,  $SD = 0.93$ ), and attending public schools in a large Midwestern city. Nine schools were selected for inclusion into the study based partly on having significant enrollment of Latino students. The most commonly represented Latino ethnic subgroup was Mexican (63.9%;  $n = 258$ ), followed by mixed Latino background (18.5%;  $n = 75$ ), Puerto Rican (11.1%;  $n = 45$ ), and Central or South American (5.9%;  $n = 24$ ). The majority of adolescents were born in the United States (88.6%;  $n = 358$ ), while the majority of parents were foreign-born (73.8%;  $n = 298$ ).

### Measures

*Demographic Information.* Demographic information for the participants was collected through both the classroom survey and the individual interview. For the purposes of this study, relevant items of note included where the adolescent

was born and their Latino background (e.g., Mexican). Children also reported the countries of origin of their parents. Information about the participants' age, sex, and grade in school was also collected.

*Family Economic Pressure Index* (R. D. Conger et al., 1992). Economic pressure was assessed during the classroom survey with a modified version of the original measure. This version, modified for use with adolescents, has been used in previous research and demonstrated good internal consistency (Grant et al., 2004). The 10 items in this scale ask adolescents to report on their family's unmet financial needs and constraints. Youth indicated their agreement with statements such as: "My family has enough money to pay our bills" by using a Likert scale from *Strongly Agree* (1) to *Strongly Disagree* (5). A mean score was used such that higher scores indicated higher economic pressure. The measure showed high internal consistency in this sample ( $\alpha = .90$ ).

*Perceived Control Scale for Children (PCSC; Weisz, Southam-Gerow, & McCarty, 2001)*. Primary control beliefs were measured using the PCSC, which is a 24-item self-report measure that assessed children's beliefs on their ability to control outcomes of situations in the academic, social, and behavioral domains. A sample item includes: "I can do well on tests at school if I study hard." All items were rated using a Likert scale from *Very False* (1) to *Very True* (4), and a mean score was used in which higher scores indicated greater perceived primary control. Internal consistency in this sample was high ( $\alpha = .87$ ). This measure was administered during the individual interview.

*Secondary Control Scale for Children (SCSC; Weisz et al., 2010)*.

Secondary control beliefs were measured using the SCSC, a 20-item scale that assesses children's beliefs about their ability to control their psychological responses to outcomes as opposed to controlling the outcomes themselves. The items tap into several strategies associated with secondary control, including finding a silver lining, distraction, avoiding rumination, and avoiding negative thinking. For all items, options ranged from *Very False* (1) to *Very True* (4). A sample item includes: "I can usually find something to like, even in a bad situation." A mean score was used in which higher scores indicate greater perceived secondary control. The internal consistency in this sample was good ( $\alpha = .88$ ). This measure was administered during the individual interview.

*The Family Obligation Scale (Fulgini et al., 1999)*. The Family Obligation scale is a 25-item self-report measure of youth's views on various forms of obligation to their family members across three subscales. The first scale, *current assistance*, assessed how often adolescents believe they should assist and spend time with family members. An example of the 12 Likert-scale items in this scale was "How often do you think you should take care of your brothers and sisters." The options for these items ranged from *Almost Never* (1) to *Almost Always* (5). The *respect for family* scale assesses adolescent beliefs in the importance of demonstrating respect to family members. This scale contains seven items, of which an example is: "Treat your parents with great respect." For these items, the options ranged from *Not At All Important* (1) to *Very Important* (5). The third scale, *future support*, used the same response options as *respect for family*, and asked adolescents how important it is for them to assist and spend time with



family members in the future. An example item for this scale is “Have your parents live with you when you get older.” Previous research has found the three scales to be highly correlated and thus combined them to produce an average that represents a general measure of family obligation (Telzer, Masten, Berkman, Lieberman, & Fuligni, 2011). Therefore, a mean score was used in this study in which a higher score indicated greater family obligation. Internal consistency in the present study for the general measure of family obligation was found to be high ( $\alpha = .87$ ). This measure was administered during the individual interview.

*Children’s Depression Inventory (CDI; Kovacs, 1992).* Children’s depressive symptoms were assessed using the CDI during the individual interview. The CDI is a 27-item self-report scale of cognitive, affective, and behavioral depressive symptoms. Each item consists of three statements with different levels of severity. Participants were asked to pick which statement was most true for them during the prior two weeks. For example, they were to pick one of the following: “I do not feel alone,” “I feel alone many times,” “I feel alone all the time.” Item 9, which assesses suicidal ideation and behavior was omitted since it was addressed elsewhere in the interview as part of another assessment. A sum score was used such that higher scores indicated higher depressive symptoms. The internal consistency of the CDI with the current sample was good ( $\alpha = .90$ ).

## **Procedure**

As noted earlier, the data for the present study were collected as part of a larger study aimed at evaluating a school-based intervention for youth chronically

at-risk for depression. Study information was presented to all students in target grades across all partner schools. Packets including a letter of invitation to participate in a classroom-based survey and a parental consent form were sent home with all students. Signed parental consent forms were collected from the students over the course of two to three weeks. Classroom surveys took place during a time period agreed upon by the principal investigator, the principal of the school, and teachers. Students whose parents had consented and who themselves assented to participate were surveyed. A member of the research team read the items out loud as participants followed along with their paper surveys. Each survey administration lasted approximately 45 minutes to one hour. Students were given a small prize (e.g., pen/pencil) for returning the signed parental consent form and those who completed the survey were entered into classroom raffles which offered gift cards and other prizes worth \$5 to \$15.

A subsample of students who completed the initial in-class survey were invited to participate in an individual interview lasting approximately two hours. Recruitment was done by calling parents using contact information provided in the survey parental consent forms. At the beginning of this interview meeting, parental consent and child assent were obtained. Interviews were typically conducted at the schools and were scheduled at a time that was convenient for both parent and child. Students were given a \$25 gift card upon completion of their interview. A total of 410 students completed the individual interview. Students who were not Latino ( $n = 6$ ) were excluded from the present study. As part of the larger study design, students at-risk for depression (as determined by a

score of 13 or greater on the Children's Depression Inventory) were oversampled (n = 105; 26.0%). The final sample for this study consisted of 404 Latino students who completed both the initial surveys and individual interviews.

## Results and Analyses

The data were examined for missingness. Out of 42,420 expected observations across the main study variables, 6 (0.0001%) were missing. Missing observations were addressed using within-item mean imputation. Descriptive statistics and correlations among study variables are presented in Table 1 and Table 2, respectively.

Table 1

*Means and Standard Deviations for Key Study Variables (N=404)*

	<i>Mean</i>	<i>Standard</i>	<i>Range</i>
Economic	2.31	0.77	1.00 - 5.00
Family	3.96	0.55	1.40 - 5.00
Primary	3.34	0.43	1.88 - 4.00
Secondary	3.07	0.49	1.25 - 4.00
Depressive	9.23	7.88	0.00 - 39.00

Bias analyses were conducted to evaluate systematic differences between participants who completed both the classroom survey and individual interview and those who were only administered the classroom survey. Compared to those who only completed the classroom survey, participants who also completed the interview did not differ significantly in age ( $t(1,392) = -0.59, p = 0.56$ ) or gender ( $\chi^2(1, N = 1,395) = 0.02, p = 0.88$ ). However, participants who completed the interview were more likely to have foreign-born parents ( $\chi^2(1, N = 1,395) = 62.19, p < 0.001$ ).

An examination of the correlations among key study variables (see Table 2) revealed that economic pressure and depressive symptoms were significantly and positively correlated, such that greater economic pressure was associated with more depressive symptoms. In addition, primary and secondary control beliefs were significantly and negatively correlated with depressive symptoms, so that higher endorsement of these beliefs was associated with fewer depressive symptoms. To explore potential covariates for the main analyses, the correlations among age, gender, and parental nativity with the outcome variables (depressive symptoms, primary control beliefs, and secondary control beliefs) were evaluated. Age and parental nativity were not significantly correlated with the dependent variables in the analyses so they were not included as covariates in the main analyses. On the other hand, gender was significantly correlated with depressive symptoms, primary control beliefs, and secondary control beliefs. Being a girl was associated with reports of higher economic pressure, lower primary and secondary control beliefs, and higher depression symptoms. Therefore, gender was included as a covariate whenever applicable in all subsequent analyses.

Table 2

*Correlations Across Key Study Variables (N=404)*

Measure	1	2	3	4	5	6	7
1. Economic Pressure							
2. Family Obligation	-.10*						
3. Primary Control Beliefs	-.22**	.20**					
4. Secondary Control Beliefs	-.22**	.24**	.60**				
5. Depressive Symptoms	.28**	-.24**	-.60**	-.66**			
6. Gender	.12*	-.09	-.15**	-.18**	.19**		
7. Age	-.03	-.23**	.01	-.08	.05	.08	
8. Parental Nativity	-0.004	.07	.02	.05	-.04	.06	-.05

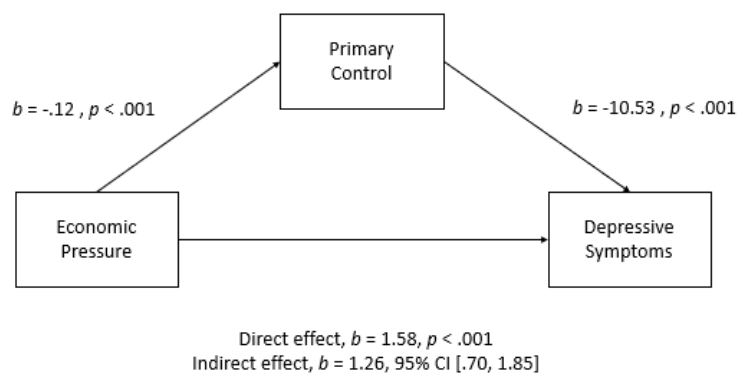
*Note.* \* $p < .05$ , \*\* $p < .01$ . Gender dummy coded 1 = male, 2 = female.

### Hypothesis I

Two separate mediation analyses were conducted to test Hypotheses Ia and Ib. Each mediational model was tested using bias-corrected bootstrapping with the PROCESS macro for SPSS (Hayes, 2013). In bootstrapping, resamples are repeatedly drawn from the data with replacement, and unstandardized estimates of the effect are calculated for each resample (10,000 for this study). These estimates are then used to construct a 95% confidence interval. If the confidence interval does not contain zero, the effect is considered significant. This

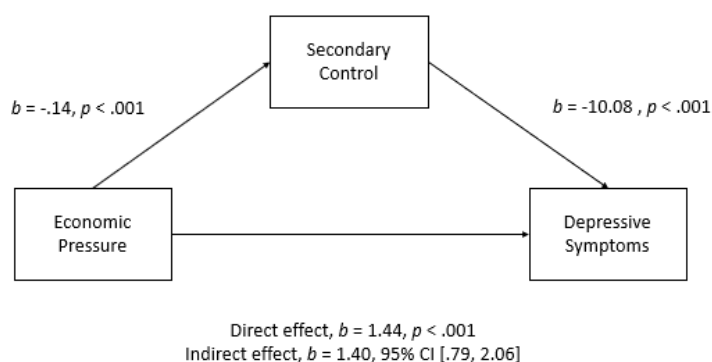
approach for testing statistical significance is preferred over others, such as the Sobel test, because it does not assume the data are normally distributed (Hayes, 2009; Preacher & Hayes, 2004). In mediation, bootstrapping is used to derive the point estimate of  $ab$ , which represents the product of ( $a$ ) the effect of the independent variable ( $X$ ) on the mediator and ( $b$ ) the effect of the mediator on the dependent variable ( $Y$ ) controlling for  $X$ . Statistically,  $ab$  is equivalent to the difference between the total effect of  $X$  on  $Y$  (independent of the mediator) and the direct effect of  $X$  on  $Y$  (controlling for the mediator), and is thus a simpler way of assessing mediation than the causal steps approach (Preacher & Hayes, 2008). There are several ways to calculate effect size for mediation models, but Miočević, O'Rourke, MacKinnon, and Brown (2017) suggest bias-corrected bootstrap interval estimates of  $ab/sy$  (the partially standardized indirect effect) for single-mediator models because it is less biased than other popular methods. PROCESS automatically calculates this statistic for mediation models.

*Hypothesis 1a.* As predicted, primary control beliefs significantly mediated the relation between economic pressure and depressive symptoms,  $b = 1.26$ , 95% BCa CI [0.70, 1.85] (see Figure 5). The partially standardized indirect effect size was 0.16. These results indicate that greater economic pressure predicts greater depressive symptoms through decreased primary control beliefs. The results did not change when controlling for gender (data not shown).



*Figure 5.* Primary control beliefs as a mediator between economic pressure and depressive symptoms.

*Hypothesis 1b.* Also as predicted, secondary control beliefs were a significant mediator of the relation between economic pressure and depressive symptoms,  $b = 1.40, 95\% \text{ BCa CI } [0.79, 2.06]$  (see Figure 6). The partially standardized indirect effect size was 0.18. These results indicate that greater economic pressure predicts greater depressive symptoms through decreased secondary control beliefs. Secondary control beliefs remained a significant mediator when controlling for gender (data not shown).



*Figure 6.* Secondary control beliefs as a mediator between economic pressure and depressive symptoms.



## Hypothesis II

Hypotheses IIa and IIb were evaluated using Pearson correlations. As hypothesized, family obligation was significantly and positively correlated with both primary and secondary control beliefs (see Table 2). Also as predicted, family obligation was significantly and negatively correlated with depressive symptoms (see Table 2), such that greater endorsement of family obligation was associated with fewer depressive symptoms.

Four separate moderation analyses were conducted with PROCESS to evaluate Hypotheses IIc and IId. Bootstrapping using 10,000 iterations and a bias-corrected 95% confidence interval was used in the analyses. To establish moderation, the interaction term of the predictor and the moderator must significantly predict the outcome, with significance determined by the confidence interval not including zero.

*Hypothesis IIc.* The first set of moderation analyses examined family obligation as a moderator of the relation between economic pressure and control beliefs (primary and secondary, separately). The model including primary control beliefs was tested first. Contrary to the hypothesis, family obligation was not a significant moderator of the association between primary control beliefs and economic pressure,  $b = 0.01$ , BCa 95% CI [-0.08, 0.11],  $t = .25$ ,  $p = 0.81$ . Results did not change when gender was included as a covariate (data not shown).

The next moderation analysis examined family obligation as a moderator of the relation between economic pressure and secondary control beliefs. Once again, contrary to expectations, family obligation did not emerge as a significant

moderator of this relation,  $b = -0.03$ , BCa 95% CI [-0.13, 0.07],  $t = -0.50$ ,  $p = 0.62$ . Adding gender as a covariate did not change the results (data not shown).

*Hypothesis IIc.* The second set of moderation analyses examined family obligation as a moderator of the relation between control beliefs (primary and secondary, separately) and depressive symptoms. The model including primary control beliefs was tested first. Contrary to expectations, family obligation was not a significant moderator of this relation,  $b = 1.88$ , BCa 95% CI [-1.42, 5.03],  $t = 1.45$ ,  $p = 0.15$ . Controlling for gender did not change the results (data not shown).

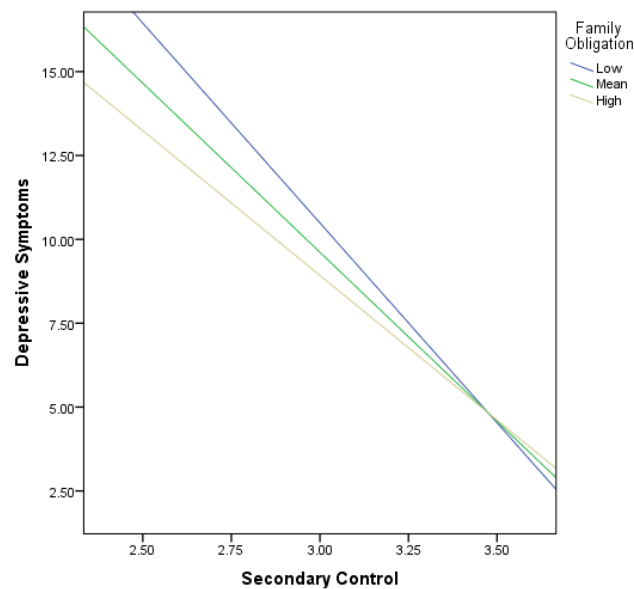
The final moderation analysis tested the model including secondary control beliefs. As expected, family obligation was a significant moderator of the relation between secondary control beliefs and depressive symptoms,  $b = 3.02$ , BCa 95% CI [0.94, 5.10],  $t = 3.07$ ,  $p < 0.01$ . Family obligation remained a significant moderator when gender was included as a covariate (results not shown). Further probing of the interaction revealed that the negative relation between secondary control beliefs and depressive symptoms is significant at all levels of family obligation but is strongest among participants with lower levels of family obligation (see Figure 7 and Table 3).

Table 3

*The Conditional Indirect Effects of Secondary Control Beliefs on Depressive Symptoms by Levels of Family Obligation*

	FO	Effect	SE	<i>t</i>	<i>p</i>	LLCI	ULCI
Low	3.41	-12.00	0.84	-14.33	<.001	-13.64	-10.35
Mean	3.96	-10.33	0.61	-17.01	<.001	-11.52	-9.13
High	4.51	-8.66	0.79	-10.93	<.001	-10.22	-7.10

*Note.* N=404. FO= Family Obligation; LLCI= lower level of confidence interval; ULCI = upper level of confidence interval.



*Figure 7.* Family obligation as a moderator of the relation between secondary control beliefs and depressive symptoms.

### Hypothesis III

Two separate sets of moderated mediation analyses were conducted to test Hypotheses IIIa and IIIb. In moderated mediation, the conditional effect of a moderator on a mediational model is evaluated. In other words, this assesses

whether the mediational effect differs depending on the level of the moderator. In this study, the mediational models examining primary and secondary control beliefs as independent mediators were previously established to be significant in Hypothesis I. To assess the impact of family obligation on these models, moderated mediation was tested using bias-corrected bootstrapping with 10,000 resamples using the PROCESS macro. In PROCESS, bootstrapping using a bias-corrected 95% confidence interval and 10,000 iterations was employed for two separate moderated mediation models. In the first model, the moderator is included as a conditional effect on the first path of the mediational model (e.g., from economic pressure to primary control beliefs). In the second model, the moderator is included as a conditional effect on the second path (e.g., from primary control beliefs to depressive symptoms). For both models, PROCESS automatically calculates an “index of moderated mediation,” which represents the slope of the line relating the indirect effect to the moderator.

*Hypothesis IIIa.* The first set of moderated mediation analyses tested family obligation as a moderator of the mediational model through its effect on the relation between economic pressure and control beliefs (path a; see Figures 1 and 2). This hypothesis was first tested for the mediational model including primary control beliefs. The results of the moderated mediation analysis indicated that family obligation is not a significant moderator when included in path a ( $b = -0.12$ , BCa 95% CI [-1.19, 0.86]). Results did not change when controlling for gender (data not shown). Family obligation was also tested as a moderator on path a of the mediational model including secondary control beliefs. In this sample,

family obligation was not found to be a significant moderator of the mediational model when included in path a ( $b = 0.26$ , BCa 95% CI [-0.74, 1.30]). Controlling for gender did not change the results (data not shown).

*Hypothesis IIIb.* The second set of moderated mediation analyses tested family obligation as a moderator of the mediational models through its effect on path b of the model (see Figures 3 and 4). Once again, family obligation was first tested with the model including primary control beliefs, where it is presumed to be acting on the path between primary control beliefs and depressive symptoms. Results of the moderated mediation with this model were not significant ( $b = -0.21$ , BCa 95% CI [-0.68, 0.19]). Results did not change when controlling for gender (data not shown). Family obligation was also tested as a moderator of path b in the mediational model including secondary control beliefs. Results for this model indicated that there was a significant moderation effect of family obligation on the mediational model:  $b = -0.42$ , BCa 95% CI [-0.82, -0.11], with the negative coefficient indicating that the indirect effect is weakened in the presence of greater family obligation due to its interaction with secondary control beliefs. Further probing of the conditional indirect effects revealed that the indirect effect remained significant at all levels of family obligation. However, the impact of secondary control beliefs as a mediator between economic pressure on depressive symptoms through secondary control beliefs was greatest at lower levels of family obligation. Results did not change when controlling for gender (data not shown).

## Discussion

Although the connection between poverty and mental health is well-established (Das et al., 2007; Lund et al., 2010; Patel & Kleinman, 2003; Reiss, 2013), the mechanisms underlying this relation are not well understood and several important gaps remain in the literature. Multiple studies have highlighted how the subjective experiences of economic disadvantage impact mental health (Patel & Kleinman, 2003; Präg et al., 2016), but less is known about how children and adolescents' experiences of financial hardship relate to their adjustment. In the last few decades, researchers have used the Family Stress Model (FSM; Conger et al., 1992) and the Adaptation to Poverty Related Stress (APRS; Wadsworth et al., 2005) model, in both their original and adapted versions, to understand potential pathways through which economic pressure impacts youth maladjustment.

The present study aimed to address several gaps in the literature and drew primarily from the APRS model to explore the impact of economic pressure on depressive symptoms in a sample of predominantly low-income Latino youth in an urban setting. First, this study is one of few to examine the impact of economic pressure on depressive symptoms for Latino youth. This is an especially critical relation to explore, given the 32% poverty rate and high rates of depressive symptoms in this population (Centers for Disease Control and Prevention, 2012; DeNavas-Walt et al., 2014). Consistent with the literature (Wadsworth et al., 2011), early adolescents in this sample who reported higher economic pressure reported more depressive symptoms. The size of the association is consistent with associations found in ethnically diverse low-income youth samples (Wadsworth et

al., 2011) and, given the disproportionate poverty rates among Latino youth, suggests that the impact is especially significant for this population.

A second contribution of this study is that it examined novel explanatory pathways linking economic pressure and depressive symptoms for Latino youth. Some previous research has examined coping responses as mediating factors in the relation between economic pressure and adjustment (Wadsworth et al., 2005), with primarily European American samples. The present study makes a unique contribution to the literature by examining primary and secondary control beliefs as potential mediators with a sample of Latino youth. Consistent with the literature (Kanner & Feldman, 1991; Weisz et al., 2010; Weisz et al., 1987), higher youth primary and secondary control beliefs were associated with lower depressive symptoms in this sample. Furthermore, as expected, both primary and secondary control beliefs were found to be mediators of the relation between economic pressure and depressive symptoms, with greater economic pressure predicting decreased control beliefs.

The inclusion of control beliefs in the model is important because control beliefs have previously been found to mediate the relation between various forms of stress and adjustment (Deardorff et al., 2003; Kim et al., 1997) and because control beliefs have previously been found to predict coping style (Sandler et al., 2000; Vanlede et al., 2006). Thus, the finding that control beliefs behave similarly to coping style in the relation between economic pressure and depressive symptoms is a unique and significant contribution to the literature that increases our understanding of how economic adversity impacts depressive symptoms.

While control beliefs only partly explained the relation between economic pressure and depressive symptoms, this finding highlights a specific vulnerability for youth facing economic adversity and has important implications for interventions targeting depression for lower-income youth. In particular, depression interventions that focus on primary and secondary control, such as Primary and Secondary Control Enhancement Training (PASCET; Weisz, Southam-Gerow, Gordis, & Connor-Smith, 2003), may be especially beneficial for this population.

Another unique contribution of this study is its asset-focused examination of Latino youth adjustment in the face of financial hardship. To the author's knowledge, this is the first study to extend the APRS model to include a potentially protective cultural value for Latino youth. A focus on resilience among Latino youth is especially important because of a historic emphasis on deficits in research with Latino populations (Coll et al., 2000; Rodriguez & Morrobel, 2004). Recent research has found that family values are protective for Latinos against a variety of stressors (Germán et al., 2009; Stein et al., 2015). While the protective role of family values had been previously evaluated within the FSM (White et al., 2005), it had not been evaluated within the APRS model until the present study. The present study examined the potentially protective role of family obligation, which has been found to be more highly endorsed among Latino compared to European American youth (Fuligni et al., 1999). Higher family obligation was associated with lower depressive symptoms in this predominately low-income sample, consistent with findings from previous studies (Juang & Cookston, 2009;



Telzer et al., 2015). In addition, youth who reported higher family obligation also reported higher levels of primary and secondary control beliefs. This finding makes a new contribution to the literature on control beliefs, which have not previously been linked to family obligation or any other family values. That a greater sense of family obligation is associated with a greater sense of primary and secondary control for Latino youth provides a new way of understanding how family values may be protective for this population.

The potentially protective role of family obligation in the context of the APRS model was examined in several ways. First, family obligation was examined as a buffer against the impact of greater economic pressure on decreased control beliefs, and as a buffer against the impact of decreased control beliefs on greater depressive symptoms. Family obligation emerged as a significant moderator, but only for the relation between secondary control beliefs and depressive symptoms. Contrary to expectations, family obligation did not buffer against economic pressure for primary or secondary control beliefs. Family obligation was also not a buffer against the impact of decreased primary control beliefs on depressive symptoms. There are a number of ways to interpret these findings, given little prior work done in this area. It is possible that greater family obligation helps youth compensate for several vulnerabilities associated with youth depression that are more closely related to decreased secondary control, but not primary control, beliefs. For example, even in the absence of self-efficacy with regard to their ability to control their internal responses to stressful events, youth with stronger family obligation attitudes may feel a greater sense of purpose

that contributes to a better ability to interpret or reframe negative experiences in more positive ways. Likewise, carrying out duties for the family may result in regular distractions from stressors and consequently limit opportunities for rumination. It is also possible that youth who have a higher sense of obligation to the family also perceive their family members as being more obligated to them, and thus are more comfortable turning to family members for social support. It is not possible to explore these hypotheses regarding the interaction between secondary control beliefs and family obligation using the data available for the present study. Further research is needed that examines the relation between family obligation and depressive symptoms by examining the possibilities described above (e.g., sense of purpose, rumination, etc.) and also considers different components of family obligation (see Zeiders et al. 2013).

The final set of analyses in the present study evaluated the protective role of family obligation using moderated mediation, in which family obligation was proposed to moderate either of two paths in the previously evaluated mediation models. In one of the models evaluated, and as expected, family obligation significantly moderated the mediational model such that the negative impact of economic pressure on depressive symptoms was decreased through its buffering of the relation between secondary control beliefs and depressive symptoms. These results indicate that for youth with a greater sense of family obligation, economic pressure has less of an impact on depressive symptoms, specifically due to an attenuated impact of decreased secondary control beliefs on depressive symptoms. On the other hand, despite the numerous ways in which family obligation could

protect Latino youth against depression, the present study did not find that it moderated the mediational model including secondary control beliefs when evaluated as a moderator on the path between economic pressure and secondary control beliefs. Family obligation also did not moderate either mediational model including primary control beliefs.

The different findings for the mediational models including primary and secondary control beliefs suggest that the greatest impact of economic pressure occurs for Latino youth who have a lower sense of family obligation, specifically because it does not appear to confer protection against decreased primary control beliefs. It appears, then, that poverty's impact on a young individual's self-efficacy with regard to their ability to influence their environment is especially harmful for their well-being and may require special consideration in depression treatment for Latino youth. However, it is worth noting that the results indicate that even when family obligation is protective, it is not enough to eliminate the harmful impact of economic pressure on depressive symptoms.

To understand why family obligation demonstrated a different relation with the mediational models including primary and secondary control beliefs, it may be important to consider the nature of economic pressure. Financial hardship is typically a chronic stressor that youth have little control over. It is thought that secondary control coping is most adaptive when confronted with situations that cannot be changed, while primary control coping is beneficial for situations that can be changed or influenced. Although the present study does not evaluate coping, there is evidence in the literature that control beliefs influence coping.

Perhaps for youth low in family obligation a decreased sense of secondary control contributes to less secondary control coping when facing economic pressure, but for youth high in family obligation this process is disrupted and secondary control coping is less negatively impacted by decreased secondary control beliefs.

Perhaps this unexamined pathway between secondary control beliefs and secondary control coping is differentially impacted by greater family obligation through compensatory factors previously described (e.g., decreased rumination). Future studies should explore factors, such as cultural values, that may impact the association between control beliefs and coping, and how this hypothesized relation can contribute to the APRS model.

Overall, while unexpected, these findings are consistent with those of a previous study that found that familism and family cohesion buffered against depressive symptoms for several stressors, but not economic pressure (Arora & Wheeler, 2017). Similarly, a recent study found that greater family obligation acted as either a protective or vulnerability factor depending on the stressor and outcome examined (Milan & Wortel, 2015). The present study underscores the complexity of family values for Latino youth adjustment. It also raises the possibility that economic pressure is especially pernicious for youth, and that traditional protective factors may not be enough to mitigate its impact.

Although it was not the focus of the present study, the finding that family obligation values decrease with age is worth discussing. Given family obligation's negative association with depressive symptoms, it is possible that the decrease in family obligation values as youth grow older contributes to their increased risk of

developing depression through adolescence. Previous research has found that older Mexican American adolescents spend less time with their parents and more time with their peers compared to younger adolescents (Updegraff, McHale, Whiteman, Thayer, & Crouter, 2006). As youth increase their socialization with peers throughout adolescence, a diminished role within the family may be a risk factor for depression in Latino youth. Interestingly, Fuligni and Pedersen (2002) found that family obligation values increased throughout young adulthood in a diverse sample, with the greatest increases found among those who were of Latin American origin, were poorer, and whose family most recently immigrated to the United States. More research is needed to understand how socialization practices impact the trajectory of family obligation values throughout adolescence into young adulthood, and how this impacts risk for depression.

While the present study makes several unique contributions to the literature, it is important to consider the results of the study in the context of its limitations. First, the data used in this study were cross-sectional, which limits the ability to establish causality and directionality. It would be especially important to clarify directionality between control beliefs and depressive symptoms due to their relatively high correlations and because decreased control beliefs are often symptoms of depression. Although previous studies have established directionality with primary and secondary control  *coping* (Wadsworth et al., 2013), future studies should evaluate directionality for primary and secondary control  *beliefs* using longitudinal data. Similarly, although the present study proposes that economic pressure contributes to depressive symptoms, it is

possible that youth who are depressed perceive their financial circumstances more negatively and thus experience greater economic pressure. In addition, although age was only correlated with family obligation in this sample, it is very possible that the processes examined in this study operate differently for youth of different ages. Given the developmental trajectory of primary and secondary control beliefs, as well as potentially changing perceptions of economic hardship through middle and late adolescence, it is important for future studies to examine the impact of poverty on adjustment for youth of different ages. Finally, it is important to note that recruitment for this study oversampled youth at risk for depression, which may limit the generalizability of the results. On the other hand, this sample may have allowed for an exploration of a broader range of depressive symptoms and experiences with economic pressure.

This study was conducted during and immediately after the Great Recession, which was the most significant and economic downturn in the United States since the Great Depression in the 1930's and provided an opportunity to examine how experiences of financial hardship impacted Latino youth during this unique period in history. Overall, this study makes several important contributions to the literature linking economic adversity and mental health. First, it establishes that perceptions of economic pressure are associated with increased depression symptomatology for predominantly low-income Latino youth. Second, it confirms that primary and secondary control beliefs are impacted by increased economic pressure and that they mediate its relation with depressive symptoms as suggested by the APRS model. Lastly, it provides a comprehensive examination of the role

of family obligation in these processes. Consistent with previous research on the protective role of family values for Latinos, the present study found that family obligation has mixed ability to protect Latino youth from the negative impacts of economic pressure and decreased control beliefs. The findings of this study underscore the importance of further research into how family values relate to adjustment for Latino youth, with particular focus on how they manifest behaviorally and cognitively for youth and their family members. It is clear that despite the many benefits of family obligation, the impact of financial hardship on youth is not fully mitigated by this cultural asset. More research is needed to understand how economic hardship confers risk for depression and how depression interventions may address this unfortunately common stressor.

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