UNIVERSITY OF CALIFORNIA,
IRVINE

Familism, Social Support, and Psychological and Physical Health

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Psychological Science

by

Karina Corona

Dissertation Committee:
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2019

DEDICATION

This dissertation is dedicated to the loving memory of Dr. Raymond Buriel.

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Encyclopedia Entries

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Manuscripts Invited for Resubmission or Under Review

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Manuscripts in Preparation

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Corona, K. (2013). *The benefits of real and ideal familism: Implications for Latino psychological health*. Research presented at UCI's Competitive Edge Summer Research Symposium, Irvine, CA.

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Corona, K. (2012). *The Latino/a paradox: Use of traditional medicine*. Research presented at The Twentieth Annual UC Berkeley California McNair Scholars Symposium, Berkeley, CA.

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Corona, K., Campos, B., & Chuansheng, C. (2015). *Familism protects psychological well-being and physical health*. Poster presented at the Annual Meeting of the Society for Personality and Social Psychology, Long Beach, CA.

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ABSTRACT OF THE DISSERTATION

Familism, Social Support, and Psychological and Physical Health

By

Karina Corona

Doctor of Philosophy in Psychological Science

University of California, Irvine, 2019

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Research indicates that people's willingness to use or seek social support are influenced by cultural norms and values; however, its unknown how these mechanism influence health and well-being across contexts. One cultural construct that is relevant to social support is familism. Familism is a set of norms and attitudes that capture cultural ideals of how family relationships should be. Its central components of familism include fulfilling obligations to family, using family as referents for decision-making, and providing support to the family (Sabogal, Marín, Otero-Sabogal, Vanoss Marín, & Perez-Stable, 1987). My dissertation examined a) the link between familism and social support, (b) how these constructs come together to influence well-being in the context of stressful circumstances, and (c) whether familism can protect individuals from the possibility that social support will go wrong (e.g., threaten the self) and have negative effects or enhanced its positive effects.

To address these questions, the first study used data from a nationally representative sample of Latinos. The second and third studies used a sample of Latino, East Asian, and European Americans from a large, public institution. In Study 1 and 2, familism was tested as a moderator of the stress-buffering relationship between social support and psychological and health outcomes. The independent moderating effects of familism and social support were also

tested. In Study 3, familism was tested as a moderator of the relationship between received social support and self-efficacy.

The results of the three studies were mixed. In Study 1 and 2, results indicated that familism does not consistently moderate the relationship of perceived stress, social support, and health outcomes. Also, it was not clear whether familism may buffer the effects of perceived stress independently of social support and vice versa. In Study 3, participants who received emotion-focused support during stressful circumstances reported higher self-efficacy if they also had high levels of familism. These findings shed light on the role that cultural values play in whether social support is beneficial for psychological and physical health outcomes. The results from my dissertation may shed light on the circumstances in which familism may be advantageous.

CHAPTER 1: INTRODUCTION

Theoretical and empirical evidence suggests that social relationships can buffer or

moderate the negative effects of stress and, in turn, benefit individuals' mental and physical

health (Cohen & Wills, 1985; House, Landis, & Umberson, 1988). One way in which social

relationships can buffer the negative effects of stress is through social support (Taylor et al.,

2004). Social support can be provided in many forms, but its key element is the subjective

assessment that resources are available for one's goals and needs. Socially supportive

relationships have been shown to be associated with decreased depression, decreased anxiety,

and better recovery from coronary heart disease (Taylor, 2012). However, it is known that in

some cases social supportive relationships may themselves enhance or be sources stress (Rook,

2014; Rook, 1998).

An emerging literature indicates that the offering, use, and effectiveness of social support

is culturally variable (e.g., Kim, Sherman, Ko, & Taylor, 2006; Kim, Sherman, & Taylor, 2008).

For example, it is now known that people's willingness to use or seek support may be influenced

by their cultural norms (Kim et al., 2008). Asian and Asian Americans report asking for social

support less often than European Americans while coping with stress because they seek to

maintain harmony in their relationships and not burden others with their stressors (Taylor et al.,

2004). While these findings are a major advancement for the field's understanding of social

support, many questions about cultural variation in social support process remain to be

addressed.

One cultural construct that is relevant to social support is familism. Familism is a set of

norms and attitudes that capture cultural ideals of how family relationships should be. The ideal

"shoulds" of familism emphasize close and warm relationships that prioritize the family before

the self. Its central components of familism include fulfilling obligations to family, using family as referents for decision-making, and providing support to the family (Sabogal et al., 1987). Familism is prevalent among Latinos, including U.S. Latinos, but also among other collectivist cultural groups. People who endorse the ideals of familism tend to report well-being benefits; however, in some instances, people also report psychological distress (i.e., Schwartz et al., 2010; Valdivieso-Mora, Peet, Garnier-Villarreal, Salazar-Villanea, & Johnson, 2016).

While a number of studies have shown that (a) familism is generally associated with positive well-being outcomes (i.e., Valdivieso-Mora et al., 2016) and (b) familism may serve a similar role as social support by alleviating the negative effects of stress on well-being (i.e., Berkel et al., 2010), the literature addressing the association, if any, between social support and familism in the context of stress is scant. The overall goal of this dissertation was to understand the interplay between familism and social support and how these constructs influence psychological and physical health in the context of stressful circumstances. Another aim of the dissertation was to examine whether the potential threat or benefits that received social support can have on self-efficacy may be moderated by familism. In the following sections, I review the theoretical background guiding these dissertation studies. First, I review the evidence showing why social relationships are important for well-being. Next, I focus on social support, its consequences for psychological and physical health, and the specific roles it plays in the main effect and stress buffering hypotheses. I also review the familism literature, including how this construct is measured and how it may vary across cultures. I focus on the complex interplay between familism, social support, and well-being. Last, I address the gaps in the literature and suggest that familism and social support can be reasonably hypothesized to have implications for psychological and physical health will be tested in this dissertation.

Social Relationships and Well-Being

Humans are social animals with a need to belong to valued social groups (Baumeister & Leary, 1995). Therefore, it is not surprising that people are embedded in societies and interconnected in their own communities (Berkman & Glass, 2000). Empirical studies show consistent evidence that social relationships or the presence of others is important for health (i.e., Berkman & Glass, 2000; Berkman, Glass, Brissette, Seeman, 2000). Individuals' social nature ultimately leads to information sharing, companionship seeking, and establishing close relationships. Social relationships have been shown to have an effect on individual's well-being in their daily life as well as during stressful circumstances (Cohen & Wills, 1985; Taylor, 2012). For example, a daily diary study examining the association between paramedics' sleep and work stress found that occupational stress had no effect on the sleep quality of the paramedics when they reported high social support. On the other hand, the paramedics that reported low perceived social support reported a negative effect of occupational stress on their sleep quality (Pow, King, Stephenson, & DeLongis, 2017).

Decades of research show that social relationships or being socially integrated have a direct and powerful influence on health and well-being (Cohen & Wills, 1985; House et al., 1988). For instance, people who report strong social networks and social relationships tend to have better health outcomes in terms of reduced morbidity and mortality, the development of post traumatic disorder, and relapse and onset of depression than their counterparts (i.e., Berkman & Syme, 1979; Sapolsky, 2004; Johnson et al., 1997; Ozbay et al., 2007). In a longitudinal study, social relationships or having social contacts predicted longevity among both men and women controlling for health habits, health status, and socioeconomic status (Berkman & Syme, 1979).

While social relationships tend to have positive outcomes, individuals' need to belong is not always met or achieved. When this occurs, the lack of social relationships and connections has detrimental effects on health, attachment, and well-being (i.e., Baumeister & Leary, 1995). Indeed, Rook (1984) found that negative social interactions may have stronger negative effects on well-being than positive social interactions. Horwitz, McLaughlin, & White (1998) found similar results in a sample of spouses. In that case, couples with problematic relationships experienced negative effects (i.e., depression) that were twice as strong as the couples with supportive relationships. These studies highlight that social relationships may not always be good for well-being and can, instead, be a source of stress and conflict at times.

Social Support

Research examining the role of social relationships on physical and psychological health has focused on various kinds of social relationships and social processes including social networks, social integration, social ties, and social support (Berkman & Glass, 2000). This dissertation specifically focused on one aspect of social relationships: social support. House, Umberson, and Landis (1988) argue that although social support and social integration tend to be used interchangeably, social support emphasizes the relational context and processes by which social relationships have consequences for health. The relational context and processes associated with social support are important since cultures have different patterns and norms for how social relationships should be (Kim et al., 2008). Moreover, social support itself is a broad, complex, and a multidimensional construct. In general, social support is defined as the perception or experience that one is cared for, part of a social network, and that supportive actions are readily available when needed (i.e., House et al., 1988; Taylor, 2012).

The studies examined perceived and received social support. Perceived social support is an individuals' perception or feeling that support is available if needed. Received social support is defined as the actual, received supportive actions (Uchino, 2009). Both kinds of social support can be derived through various relationship processes such as being socially integrated with peers, having a romantic partner, or having strong family relationships (Reis, Collins, & Berscheid, 2000). Studies have found that perceived social support consistently shows more beneficial effects compared to received support (i.e., Barrera, 2000). Perceived social support is associated with lower perceived stress (Cohen & Wills, 1985), mortality associated with cardiovascular disease (Berkman, Leo-Summers, & Horwitz, 1992), and depression in single mothers (Cairney, Boyle, Offord, & Racine, 2003). The effects of received social support are more variable. For example, pregnant women who received more support had better labor progress but there was no effect on postpartum depression (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993). Based on the evidence in the social support literature, this dissertation will use perceived social support to examine psychological and physical outcomes (i.e., Cohen & Will, 1985) while using received social support to study self-efficacy (i.e., Bolger & Amarel, 2007).

One explanation for the variability in received social support's benefits is that receiving support may have implications for self-esteem and threaten one's sense of independence (Uchino, 2009). Bolger, Zuckerman, and Kessler (2000) suggest that visible support, defined as direct and overt supportive acts, may lead recipients to feel like they are incompetent or a burden to others. In this way, received social support can have a negative effect on peoples' self-efficacy. Bandura (1994) defined self-efficacy as "people's beliefs about their capabilities to produce effects." This is of importance because having a strong sense of efficacy enhances

people's accomplishments and well-being through motivation, cognition, selection, and affective processes. Bolger and Amarel (2007) manipulated the threat associated with visible support and found that if recipients were told they could handle the task they experienced less distress from receiving social support. However, neither form of visible support had a positive effect compared to invisible support which occurs when the supportive acts are outside of the recipients' awareness or the supportive acts are noticed but not coded as support by the recipient.

The Delicate Balance of Received Support

Although social support is generally thought to be beneficial, receiving social support does not necessarily mean positive outcomes and/or experiences; for some individuals, receiving social support under specific circumstances may be perceived as threatening or controlling (Taylor, 2012). For example, the negative consequences of received social support in the context of stress has been observed when partners try to modify each other's health behaviors; in this case received social support may be often seen as ill-intentioned rather than helpful (Taylor, 2012). Social support may also not be helpful for a number of reasons including: the social support providers are driven away. According to Cohen and McKay (1984), social support may also not be helpful if the stressor is not socially acceptable and brings guilt and shame. In a sample of young cancer survivors, social support was seen as ineffective when it was perceived to communicate pity (Iannarino, Scott, & Shaunfield, 2017). Nonetheless, cancer survivors did report receiving effective support that included behaviors that expressed honesty, empathy, and respect.

Main Effect and Stress Buffering Hypotheses

When social support goes well, there are two distinct models by which it can influence psychological and physical health outcomes; main effect and stress buffering (Cohen & Wills,

1985). The main or direct effect model proposes that social support has a direct effect on health outcomes independent of whether the target person is experiencing stress (Cohen & Wills, 1985). Stress refers to situations that are appraised as threatening and in which demands exceed the individual's resources (i.e., major life changes, illnesses, and chronic health conditions) (Lazarus, 1966). In this model, having higher social support may be related to better well-being because social support provides positive affect, a sense of self-worth, and/or helps individuals avoid negative situations. In contrast, the stress-buffering hypothesis refers to the process by which social support resources are able to ameliorate the negative effects of stressful circumstances. In this case, social support is able to intervene on the effect stress has on pathological consequences such as depression, anxiety, and substance abuse (Cohen, 2004).

There is empirical evidence that favors both social support models. Consistent with the main effect model, a ten-year literature review found that both marital status and perceived social support were significant predictors of cardiovascular health (Compare et al., 2013). It is hypothesized that the stress-buffering model has a higher bar since the effects of stress may be too strong to be counteracted. For instance, Burton, Stice, and Seeley (2014) found that negative life events predicted the onset of depression among adolescent girls and neither perceived social support from peers or parents ameliorated the effect. However, there is also evidence consistent with the stress-buffering hypothesis. A recent study found that four dimensions of perceived social support (i.e., tangible, emotional, instrumental, positive interaction support) weakened the effect of immigration stress on alcohol use severity among immigrant Latino adults (Cano et al., 2017). Therefore, these stress-buffering effects warrant additional study to understand the processes by which social support can ameliorate the impact of stress on well-being. The

literature also warrants further research on the role that culture plays in the patterns of the stress-buffering hypothesis.

As seen in Figure 1, the stress-buffering hypothesis proposes that perceived social support is beneficial by moderating or changing the strength of the association between the independent and dependent variables. At high levels of stress, individuals that have more social support resources report better health outcomes than those with lower levels of social support. The higher levels of social support should serve as a protective factor and help the individuals cope with the stressors effectively (Cohen, 2004). To test this statistically, the levels of social support and stress are interacted and whether the effect of stress depends on the levels of social support is examined.

Social Support

Stress → Psychological and Physical Health Outcomes
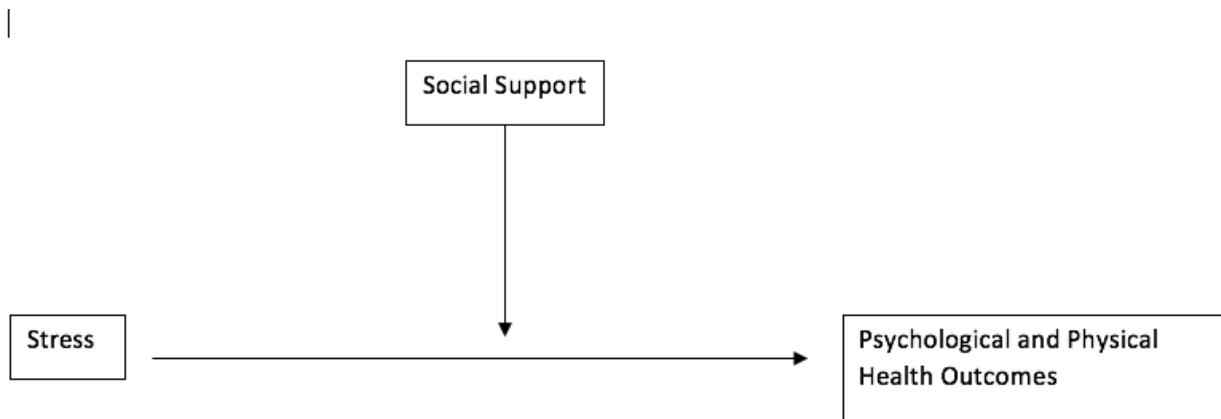
Figure 1. Stress-buffering hypothesis.

Culture and Social Support

Culture has implications for how people view, use, and give social support (Kim et al., 2006). While social support plays an important role for health and well-being across cultures, culture appears to shape the use, perception, and effectiveness of social support for people of various backgrounds (Kim et al., 2008). Therefore, there has been a shift in the social support literature to study the implications that arise from receiving and giving social support across

different cultures. Taylor et al. (2004) suggests that culture may act as a moderator for how social support is given and perceived. To date, much of what we know about the interplay between culture and social support is based on Asian and Asian American samples.

One of the major findings in the area of social support and culture is the extent to which culture influences the explicit use of social support. Taylor et al., (2004) found that Korean, Asian, and Asian American participants reported using social support less often than European Americans while coping with stress. The cultural difference can be attributed to Asian and Asian Americans striving to maintain harmony in their relationships and not burdening others with their stressors. European Americans' greater use of explicit support may be attributed to using social support to solve personal problems (Taylor et al., 2004).

Additional studies have provided further evidence for the cultural shaping of relational goals in support seeking behaviors (Kim et al., 2006; Sherman et al., 2008). Kim et al. (2006) asked participants to either think about a personal, ingroup, and outgroup goal and report a stressful event and how they solved it. European Americans were more likely to state that they would ask others for support compared to Asian Americans. Results also indicated that only Asian American participants were affected by the primes; Asian Americans reported that they were less willing to seek social support when primed with ingroup goals compared to personal or outgroup goals. This shows that only individuals from Asian cultures take into account their close others when deciding whether or not to ask for social support. While this research is very important to begin to understand how Euro-American populations utilize social support, it does not capture all the cultural variations that may influence social support.

There is evidence showing that in certain cultural contexts receiving social support may pose a threat to the recipient. An area of literature that has clearly shown the potential negative

effects of social support across cultures is advice giving. According to Knapp and Daly (2002), advice may be perceived as threatening to people's face as it indicates constraints on one's autonomy. Chentsova-Dutton and Vaughn (2012) examined cultural variations in advice giving and effectiveness and found that Russians were more likely to describe advice as characteristic of supportive relationships than European Americans. This suggests that there could be less tension between social support and effectiveness in Russian cultural contexts (Chentsova-Dutton & Vaughn, 2012). On the other hand, in European American cultural contexts the threat of the advice seemed to be augmented by the preference for independent selves.

Familism

A cultural construct that is relevant to social support processes and its benefits is familism. Familism helps define how family relationships should be and is distinct from how family relationships actually are or the behaviors that take place within the family unit (Sabogal et al., 1987). Familism values include showing strong feelings of loyalty and respect towards the family unit (Schwartz, 2007; Triandis, Marin, Betancourt, Lisansky, & Chang, 1982). It also emphasizes close, warm, and supportive relationships that prioritize the immediate and nuclear family (i.e., uncles, aunts, and grandparents) before the self (Campos et al., 2014). Overall, having strong familism values plays a role in establishing relationships between individuals and their families (Katiria Perez & Cruess, 2014). These dissertations studies examined the role familism plays in the stress buffering hypothesis as well as its implications for the negative/positive outcomes of social support. Familism is hypothesized to be relevant to how individuals benefit from perceived social support as well as whether the negative effects that may arise from received social support can be ameliorated.

Familism was originally studied to examine the similarities and differences in the family dynamics of U.S. Latino and European Americans (Keefe, Padilla, & Carlos, 1979; Sabogal et al., 1987). Unfortunately, this research led to misconceptions regarding Latino family relationships (Campos et al., 2014). Familism was viewed as a disadvantage and a deficit that hindered social advancement. However, familism is now recognized to be associated with benefits such as healthy pregnancy outcomes (Campos et al., 2008), prosocial behaviors (Calderón-Tena, Knight, & Carlo, 2011), and protective of adolescents' externalizing behaviors to those exposed to deviant behaviors (Germán, Gonzales, & Dumka, 2009). Nonetheless, familism is also associated with costs. For instance, familism has been shown to have implications for psychological distress among college aged students (e.g., Schwartz et al., 2010) and suicidal distress among adolescent Latinas (Kuhlberg, Peña, & Zayas, 2010). To better understand its possibilities, the dissertation studies examined the association of familism values with perceived social support and how these constructs influence psychological and physical health in the context of stressful circumstances.

Measuring Familism

There are a number of ways researchers have operationalized familism values across studies (e.g., Losada et al., 2008; Knight et al., 2010; Valdivieso-Mora et al., 2016). For instance, some measures of familism focus on the behaviors related to family values that are exhibited or manifested (Valdivieso-Mora et al., 2016). Behavioral familism include visiting family, spending time at home, having phone conversations, and helping family members (Comeau, 2012). Other measures focus on the familial structure or the physical proximity between an individual and their family members (Valdivieso-Mora et al., 2016). Structural familism scales tend to measure how far away individuals live from their immediate and nuclear family members (e.g.,

Valenzuela & Dornbusch, 1994). However, most studies tend to focus on the attitudinal familism; the thoughts and feelings individuals hold about how their family relationships should be (Valdivieso-Mora et al., 2016). Attitudinal familism scales focus on the extent to which individuals believe that family members should be close to each other and provide financial assistance to each other.

For these dissertation studies, I used the Sabogal et al. (1987) 14-item attitudinal familism measure (see Appendices for items). The scale is the most commonly used scale in the literature; it was developed using both English and Spanish items and is available in both versions (Sabogal et al., 1987). Attitudinal scales are also more stable relative to behavioral measures of familism (Comeau, 2012; Sabogal et al., 1987). According to Sabogal et al., (1987), the strength of attitudinal familism does not vary despite changes in acculturation and socio-demographical variables such as language, national background, and accessibility to family. Another advantage of using the Sabogal et al., (1987) Familism scale is that the measure is self-reported. Since the scale measures attitudes rather than behaviors or structural components, it is helpful in understanding expectations for family relationships rather actual behaviors (Campos et al., 2014). Last, measuring people's attitude better reflects their subjective experiences, which may not match their objective experiences.

Familism across Cultures/Ethnicities

While familism is a Latino cultural value, there is evidence that other cultural backgrounds may share similar values associated with this family value orientations (Schwartz, 2007). For instance, familism and filial piety among Asian cultures focus on respecting, obeying, and attending to the needs of elders such as parents and grandparents (Kim et al., 2008; Schwartz, 2007; Taylor et al., 2004; Yeh & Bedford, 2003). While familism and filial piety both

emphasize being courteous and supporting older parents financially and emotionally, Asian

culture also places a strong focus on carrying out parents' wishes after their death (Yeh &

Bedford, 2004). The cultural orientation that is most valued among individuals from African

cultural backgrounds is communalism in which social relationships and ties are valued more than

individual achievements (Schwartz, 2007). Like familism, this cultural value promotes strong

kinships bonds and ties that in turn may provide support for daily life (Schwartz, 2007).

According to Schwartz (2007), familism, filial piety, and communalism values are similar

cultural orientations and they cluster onto one familial factor. A number of studies have focused

on the variations between U.S. Latino, Asian, and European Americans familism levels (e.g.,

Knight et al., 2010; Triandis et al., 1982; Schwartz, 2007). Sabogal et al.'s, (1987) initial

familism investigation found that Latino Americans were more likely to endorse all three

subscales of familism compared to European Americans. These results have been replicated

showing that Latino Americans tend to report higher familism values than European and Asian

Americans (i.e., Campos et al., 2014).

Familism, Social Support, and Well-Being

Research shows that familism may have important implications for health and well-being

outcomes. However, little is known about the processes through which familism values may be

protective. One possibility is that familism augments the benefits of social support during

stressful circumstances. However, most studies on familism have not taken into account social

support or stressful circumstances and have focused on the direct effects of familism. The

literature suggests that familism itself may not necessarily be beneficial but rather it is the

interconnectedness between familism and social support that is beneficial (i.e., Campos et al.,

2014). Consistent with this hypothesis, a recent meta-analysis found that familism had a small,

direct effect on depression, suicide, and internalizing behaviors (i.e., withdrawn, somatic complaints, and anxious/depressed). There was also no effect on substance abuse or externalizing behaviors (i.e., delinquent and aggressive behavior) (Valdivieso-Mora et al., 2016). Other studies have shown that values that prioritize family over self (i.e., familism, filial piety, and communalism) are strongly associated with high self-esteem, life satisfaction, meaning in life, and overall well-being (Schwartz et al., 2010). Nonetheless, researchers continue to speculate that familism may influence the quality of life, self-care, and disease experience related to HIV, diabetes, and breast cancer among Latinos (Katiria Perez & Cruess, 2014). It is likely that familism may not have direct effects on well-being or health outcomes as familism may contribute to health through relationship processes that facilitate social support.

As the literature on familism has moved away from expecting direct effects from cultural values, scholars have started to address whether familism may have indirect effects on well-being outcomes. Recent work has examined whether familism may have indirect effects on well-being through social support. Campos et al., (2014) found that familism does have beneficial effects in Latino, East Asian, and European Americans through the pathway of higher perceived social support. Participants with higher levels of familism reported better mental health, less perceived stress, and fewer depressive symptoms (Campos et al., 2014). The literature has also addressed whether familism may act as a buffer to stressful circumstances, mirroring the effects of social support. Berkel et al., (2010) found that familism values were a risk reducer or mediator of discrimination in a sample of Mexican American adolescents. In this case, those who experienced more discrimination and reported more familism also, in turn, reporting less internalizing (i.e., conduct disorder and oppositional defiant disorder), externalizing (i.e., anxiety and depression), and academic self-efficacy. Umaña-Taylor and Updegraff (2007) found that

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familism values were a protective factor or moderator between discrimination and depression and self-esteem for Mexican American boys. For those with higher familism, there was no association of discrimination with depression or self-esteem. These results suggest that familism value can have a moderating and/or mediating effect on health outcomes. In previous work, I found that familism had both buffering effects and direct effects on health and well-being. There was no effect of perceived stress on subjective health and self-esteem in participants who reported high levels of familism. While familism did not attenuate the effect of stress on loneliness, depression, and physical symptoms, familism was directly associated with lower loneliness, depression, and physical symptoms (Corona et al., 2017).

One of the aims of this dissertation is to empirically investigate the associations of familism and social support. Some familism studies have included indices of social support and may shed light on the association. For instance, in a study of dementia caregivers, African American ethnicity was associated with higher familism which was related to perceived positive support. In that study, perceived positive support was linked to feeling less burdened about providing support (Shurgot & Knight, 2005). Fuller-Iglesias and Antonucci (2016) found a positive correlation between familism and frequency of contact and no association with proportion of family in network. Last, in a study of pregnant Latinas, familism was positively correlated with social support and negatively correlated to stress and anxiety (Campos et al., 2008). Altogether, these studies show that familism and social support may be positively associated.

In summary, the association between familism and social support has not been thoroughly examined. The literature has clearly shown that direct effects of familism on psychological and health outcomes are either small or not significant. This same literature hints

that familism and social support moderate the effect of health outcomes in the context of stress. It is possible that familism's emphasis on close relationships, interconnectedness, and helping family members may enable people to better use social support. That is, the more individuals' value familism the more likely and easier it will be for them to benefit from the positive outcomes associated with social support. It is possible that familism is one psychological variable that augments social support's moderation in the stress-buffering model.

Present Studies

These dissertation studies examined the association of familism with social support as well as whether and how that association influences psychological and physical health in the context of stress. The first aim of this dissertation was to examine whether social support's moderating effect may be augmented by familism values (see Figure 2. Arrow 1). It is also possible that familism and social support may have independent moderating effects (see Figure 2. Arrow 2). The second aim was to examine whether familism moderates the negative or positive effects that may result from receiving social support during stressful circumstances.
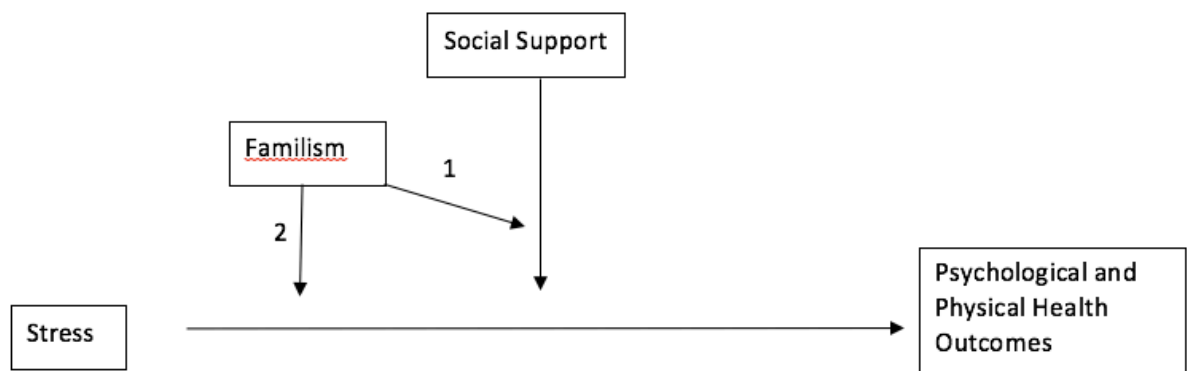
Figure 2. Familism's possible role in the stress-buffering hypothesis.

Study 1 was a secondary data analysis examining the role of familism and social support in the stress buffering hypothesis. The participants in this study were a representative sample of Latino Americans in the U.S. Study 2 aimed to replicate Study 1 by examining the interplay, if any, between familism, social support, and psychological and physical health outcomes in a diverse sample. The participants in this study were of Latino, East Asian, and European American cultural backgrounds. While Studies 1 and 2 focused on familism's role on the positive effects of social support, Study 3 examined whether familism moderated the negative or positive effects that may be experienced when receiving social support. Specifically, Study 3 examined whether familism moderates the link of received social support and self-efficacy.

CHAPTER 2: STUDY 1

Overview and Hypotheses

Study 1 examined the specific role familism plays in the association of perceived stress, social support, and psychological/physical health outcomes. A body of literature has shown that perceived stress may have adverse effects on psychological and physical health outcomes and that the unfavorable outcomes may be attenuated or moderated by social support (Cohen & Wills, 1985). Study 1 examined whether familism had an influence or effect in the association between perceived stress and psychological/health outcomes as moderated by social support. This possibility was tested using a sample of nationally representative sample of Latino Americans.

Familism may enhance the moderation effect of social support on psychological and physical health outcomes in the context of perceived stress. The stress-buffering hypothesis states that social support changes the strength of the association between stress and health outcomes. This moderated moderation relationship is pictured Figure 2 Arrow 1.

> Hypothesis 1A: Among those that have high levels of familism, social support would show a stronger stress-buffering effect on psychological and physical health outcomes in the context of stress.

Study 1 also examined whether familism and social support show independent moderating effects of perceived stress on psychological and physical health. This model is depicted in Figure 2 Arrow 2. Given the diversity of the Latino group, this study also explored whether the models vary by Latino background.

> Hypothesis 1B: Both familism and social support would show stress-buffering effects.

> Hypothesis 1C: All Latino background groups would show stress-buffering effects.

Methods

Study 1 used secondary data from the baseline Hispanic Community Health Study/Study of Latinos (HCHS/SOL) as well as the Sociocultural Ancillary Study. The HCHS/SOL is a multi-center epidemiological study broadly aimed at investigating Hispanic/Latino health including protective and risk factors. The study assessed a range of health factors and risk/protective factors for chronic diseases including cardiovascular disease, pulmonary disease, as well all-cause mortality. The Sociocultural Ancillary Study focused on the sociocultural and psychological factors that have implications for Latino health. The primary outcomes of the ancillary study were cardiovascular disease and metabolic syndromes. The HCHS/SOL was funded by the National Heart, Lung, and Blood Institute and the National Institute Diabetes, and Digestive, and Kidney Diseases (Gallo et al., 2014).

The target sample of the original HCHS/SOL study was 16,000 Hispanic/Latino persons of Cuban, Puerto Rican, Dominican, Mexican, and Central/South American backgrounds. Participants were recruited from four Field Centers across the U.S. including Miami, San Diego, Chicago and the Bronx area of New York. The data were collected between March 2008 and June 2011. The participants' ages ranged from 18-74 years old at time of enrollment. At baseline, participants underwent clinical examinations including biomarkers and interviews. Health outcomes and changes have also been assessed at annual interviews. The ancillary study collection began in 2009 (Gallo et al., 2014).

Participants

The sample utilized in Study 1 included 5006 participants. This sample completed the baseline clinical exam as well as the Sociocultural ancillary study. Descriptive analyses show that participants in the HCHS/SOL-Sociocultural Ancillary study were representative of the

baseline sample with lower participation among participants of higher socioeconomic status (Gallo et al., 2014). The weighted samples showed that 45.21% of the participants were male and 67% of the participants were between the ages of 18-49 years old. A majority of the sample indicated that their language of preferences was Spanish (*n* = 3776, 75.4%) and a smaller group indicated that their language of preference was English (*n* = 1231, 24.6). The ethnic background of the subsample was 37% Mexican (*n* = 1829), 20% Cuban (*n* = 1017), 16% Puerto Rican (*n* = 789), 12% Dominican (*n* = 585), 8% Central American (*n* = 379), and 5% South American background (*n* = 239). Last, 83% of the sample reported annual incomes below $40,000.

Measures

All measures were available in English and Spanish per participant preference.

Familism. The Sabogal et al., (1987) Familism Scale is a 14-item scale designed to measure how people believe family relationships should be. The measure was available in either Spanish or English depending on participant preference. The scale is comprised of three different subscales (a) obligations to the family (b) perceived social support from family (c) and using the family as referent in decision making. The scale was rated on a 5-point Likert scale (1 = *disagree a lot*; 5 = *agree a lot)* to indicate agreement with items. Sample items include "One should have the hope of living long enough to see his/her grandchildren grow up", "One should be embarrassed about the bad things done by his/her brothers and sisters", and "When someone has problems he/she can count on help from his/her relatives". For the present study, the three subscales of familism were used independently in the analyses per Campos et al. (2019). Cronbach's alphas were not available for data used in secondary data analyses.

Social Support. The Interpersonal Support Evaluation List-12 (ISEL-12; Cohen, Mermelstein, Kamarck, & Hoberman, 1985) was used to measure aspects of perceived (i.e.,

functional) social support. The scale is a short form of the 40-item Interpersonal Support

Evaluation List (ISEL; Cohen & Hoberman, 1983). The 12-item scale is rated on a true or false

Likert scale (1 = *Definitely False*; 4 = *Definitely True*). Sample items include "If I were sick, I

could easily find someone to help me with me daily chores" (Tangible Support), "I don't often

get invited to do things with others" (Belonging Support), and "When I need suggestions on how

to deal with a personal problem, I know someone I can turn to" (Appraisal Support). Scale

psychometrics on HCHS/SOL study sample suggest that both the one factor and three factor

model fit the data well, but the three subscales are not unique (Merz et al., 2014). The 12-item

scale is consistent across languages and Latino background. Merz et al., (2014) has suggested the

ISEL-12 for use in Latino samples.

     Perceived Stress. Perceived stress was measured using a 10-item Perceived Stress Scale

(PSS; Cohen, Kamarck, & Mermelstein, 1983). The scale measures the extent to which a

person's demands exceed their ability to cope. The 10-item version of the scale measures global

perceived stress in the last 30 days. The scale is rated on a 5-point Likert scale (1 = *Never*; 5 =

Always). Example items includes "In the last month, how often have you felt that you were

unable to control the important things in your life". The ratings were summed to create a total

score.

Health Outcomes

     Depressive symptoms. Depressive symptoms were measured using an abbreviated 10-

item Center for Epidemiologic Studies Depression Scale (CES-D-10; Irwin, Artin, & Oxman,

1999). The CESD measures the frequency of depression symptoms experienced in the past week

(Andresen, Malmgren, Carter, & Patrick, 1994). The shortened version of the scale is widely

used and has been shown to have good accuracy, validity, and reliability compared to the 20-

item version. The scale is rated on a 0 = rarely or none of the time (< 1 day)", 1 = some or a little

of the time, 2 = occasionally or a moderate amount of time, 3 = all of the time (5-7 days).

Example items include "I was bothered by things that usually don't bother me" and "I had

trouble keeping my mind on what I was doing". The scores are summed with total scores ranging

from 0 to 30.

Anxiety. Anxiety was measured using the 10-item Spielberger Trait Anxiety Inventory

(STAI; Spielberger, Gorsuch, & Lushene, 1970). The STAI measures trait anxiety or the general

enduring presence of the emotion. The scale is rated on a 4-point Likert scale (1 = *Almost Never*;

4 = *Almost Always*). Example items include "I worry too much over something that really

doesn't matter" and "I am content; I am a steady person." The scores are summed to create a

total score and range from 10 to 40.

Self-esteem. Self-esteem was measured using the Rosenberg's Self-Esteem 6-item Scale

(Rosenberg, 1965). The scale is a global measure of self-esteem and it includes both negative

and positive feelings about the self. The measure is widely used, and it is a one factor measure.

The scale is rated 4-point Likert scale (1 = *Strongly Agree*; 4 = *Strongly Disagree*). Sample items

include "I feel that I am a person of worth, at least on an equal plane with others" and "I am able

to do things as well as most other people". Items are reverse coded as needed. Scores are

summed to create a total score where higher scores indicate higher self-esteem.

Subjective Health. Subjective health was measured using the Short Form Health Survey.

The scale measures overall health-related quality of life (Ware, Kosinski, & Keller, 1996). The

measure is composed of 12 items selected from the SF-36 Health Survey. The measure includes

two subscales: a Physical Component Summary (PCS) and a Mental Health Component

Summary (MCS) score. The Physical Component includes questions regarding physical roles,

physical functioning, and bodily pain. The Mental Health Component includes questions regarding social functioning, emotional role, and mental health. The scale is scored is using a standardized algorithm. The items are rated on a 0 to 100 scale where 0 indicates lowest health levels.

Procedure

The complete recruitment and study procedures for the baseline and ancillary studies can be found in other publications (e.g., Gallo et al., 2014; Sorlie et al., 2010; LaVange et al., 2010). Participants in the baseline study were recruited into a longitudinal study consisting of observations, follow up interviews, clinical exams, and medical records. The baseline questionnaire averaged seven hours in length (Sorlie et al., 2010). The HCHS/SOL-Sociocultural Ancillary was a cross-sectional study sampled to include equal number of participants from all four field centers. The interviews were conducted 9 months after baseline if the participants were eligible and willing to participate. The ancillary study took approximately 1-3 hours and was completed face to face.

Data analysis plan

The first step of the analysis plan was to screen for outliers, missing data, and indicators of normality. The second was to calculate descriptive statistics including correlations for all study variables. Third, the moderated moderation hypothesis was tested using the PROCESS Macro v2.13 in SPSS (Hayes, 2013). These hypotheses were tested using both PROCESS Statistical Models 2 and 3 (see Figures 3 and 4). Model 2 was used to test for the independent moderation effects of familism and social support and Model 3 for the moderated moderation effect. Demographic variables including gender, age, income, and ethnicity were used control

variables in the models. All variables were mean automatically centered by PROCESS Statistical

Models per Aiken and West (1991).

Model 2

Conceptual Model

Statistical Model

Conditional effect of X on $Y = c'_1 + b_7M + c'_4W$
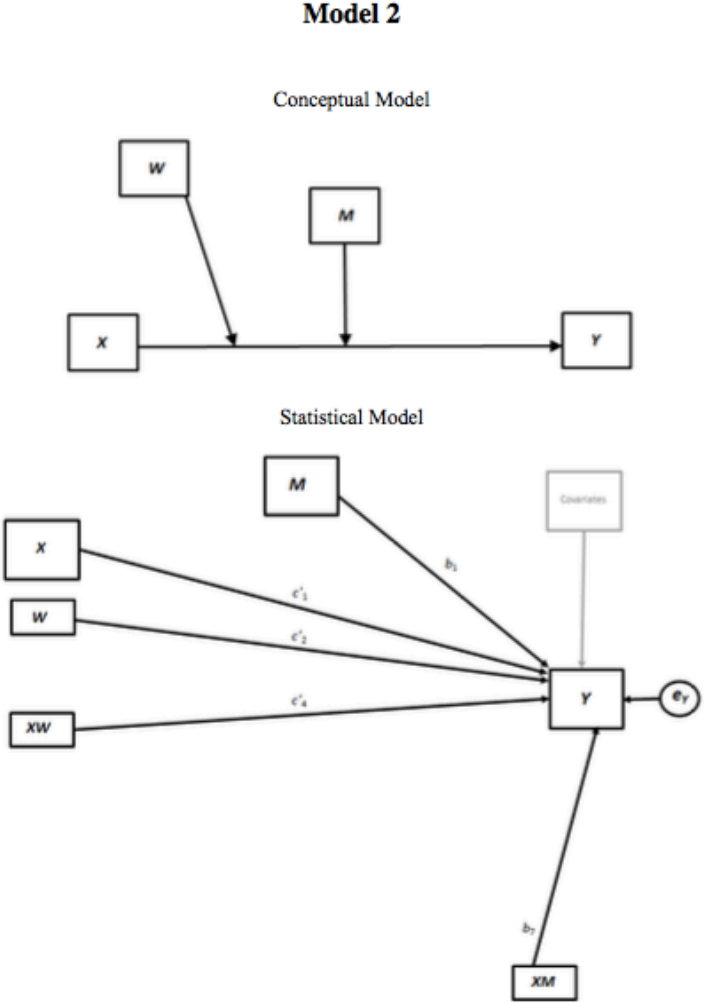
Figure 3. Hayes Process Model 2.

Model 3

Conceptual Model
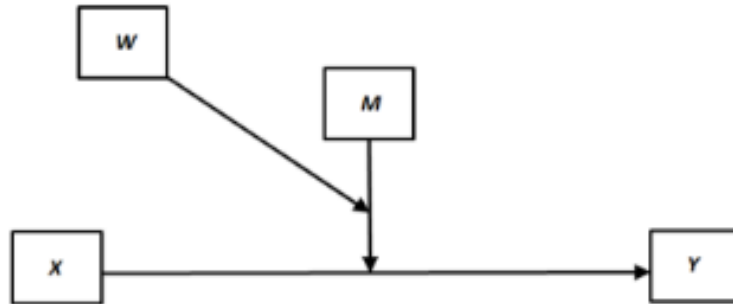
Statistical Model
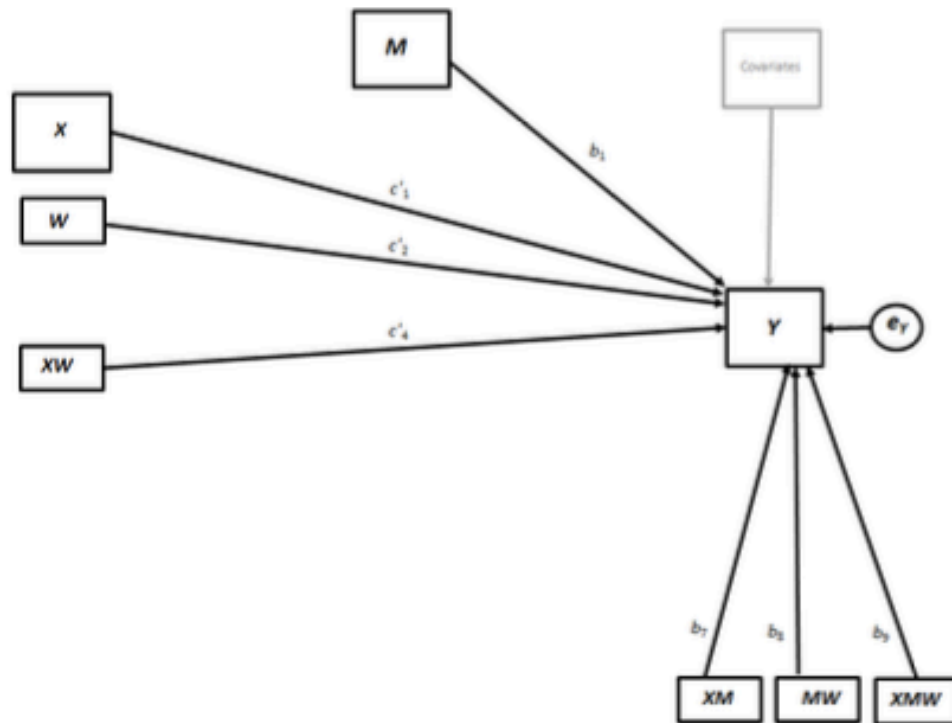
Figure 4. Hayes Process Model 3.

An exploratory analysis explored whether the models varied by Latino subgroup background (e.g., Mexican, Cuban, Puerto Rican). As noted earlier, Latino cultural background is not homogenous; the similarities and differences among the various subgroups that may be relevant for psychological processes are not yet understood. Due to its sample size, these data are uniquely poised to explore to within group differences and similarities.

Results

Study 1 examined whether among participants that had high levels of familism, social support would show a stronger stress-buffering effect on psychological and physical health outcomes than participants with lower levels of familism. The moderated moderation was explored in the context of stress. Table 1 shows the bivariate correlations among the study variables.

Table 1. Bivariate Correlations between Study Variables

	1	2	3	4	5	6	7	8	9
1. Familial Obligations	-	.51**	.38*	.09**	-.00	-.01	.02†	.18**	.01
2. Family Support		-	.35**	.13**	-.06**	-.06**	.02	.13**	-.04*
3. Family as Referents			-	-.13**	.04*	.01	-.12**	-.15**	.09**
4. ISEL [a]				-	-.38**	-.35**	.10**	.40**	-.44**
5. Depression					-	.66**	-.15**	-.35**	.70**
6. Perceived Stress						-	-.11**	-.36**	.66**
7. Physical Health							-	.12**	-.13**
8. Self-Esteem								-	-50**
9. Anxiety									-

Note. [a] Interpersonal Support Evaluation List.

$* p < .05.$ $** p < .001.$ $† p < .10$

Depression

      A three-way interaction of perceived stress, social support, and familial obligations indicated no moderated moderation of these variables on depressive outcomes, $b = .0001$, t (4777) = 2.84, $p = .72$. The two-way interactions between the variables were also not significant. There was also no significant two-way interaction between perceived stress and social support predicting depressive symptoms, $b = -.02$, t (4777) = -1.09, $p = .28$. There was no significant interaction between perceived stress and familial obligations $b = -.0005$, t (4777) = -.04, $p = .97$. There was no significant interaction between social support and familial obligations $b = .0004$, t (4777) = .06, $p = .95$. On the other hand, only perceived stress was significantly associated with depressive outcomes, $b = .74$, t (4777) = 2.60, $p = .01$.

      Analyses indicated similar results testing the moderated moderation of perceived stress, social support, and familial support on depressive outcomes. There was no significant three-way interaction between perceived stress, social support, and familial support, $b = .0006$, t (4774) = 1.10, $p = .27$. However, there was a significant two-way interaction between perceived stress and social support, $b = -.0151$, t (4774) = -2.17, $p = .03$, indicating that social support moderated the relationship of perceived stress and depressive symptoms. However, there was no significant interaction between perceived stress and familial support, $b = -.0151$, t (4774) = -.95 $p = .34$. There was also no significant interaction between social support and familial support, $b = .0029$, t (4774) = .26, $p = .80$. There was a significant association between perceived stress and depressive symptoms, $b = .89$, t (4774) = 4.80, $p < .0001$.

      There was no three-way interaction between perceived stress, social support, and familial reference, $b = .0003$, t (4778) = 1.03, $p = .31$. However, there was an interaction between perceived stress and social support predicting depressive symptoms, $b = -.0129$, t (4778) = -2.55,

p = .01. There was also no significant interaction between social support and familial reference, *b* = -.0103 *t* (4778) = -1.24, *p* = .22. The two-way interaction between social support and familial reference was non-significant, *b* = -.0070, *t* (4778) = -1.26, *p* = .21. Overall, perceived stress was positively associated with depressive symptoms, *b* = .8940, *t* (4778) = 6.37, *p* < .0001.

Self-Esteem

There was no significant three-way interaction between perceived stress, social support, and familial obligations, *b* = .0003, *t* (4748) = 1.02, *p* = .31. The two-way interaction between perceived stress and social support, *b* = -.0072, *t* (4748) = -.83, *p* = .41, as well as familial obligations, *b* = -.0142, *t* (4748) = -1.57, *p* = .12 was not significant. Last, there was no interaction between social support and familial obligations, *b* = -.0023, *t* (4748) = -.37, *p* = .71. Therefore, the main effects were also interpreted. Participants with high levels of familial obligations reported higher self-esteem, *b* = .3794, *t* (4748) = 2.17, *p* = .03.

Analysis indicated no significant three-way interaction between perceived stress, familial support, and social support, *b* = .0004, *t* (4781) = 1.02, *p* = .36. There was also no two-way interaction between perceived stress and social support, *b* = -.0038, *t* (4781) = -.65, *p* = .61. The interaction between perceived stress and familial support was non-significant, *b* = -.0119, *t* (4781) = -.89, *p* = .37. There was also no-significant interaction between the predictor social support and familial obligations, *b* = .0077, *t* (4781) = .82, *p* = .41. Main effects indicated that perceived stress, social support, and familial support were also not associated with participants' self-esteem levels.

There was also no significant moderated moderation of social support and familial referents predicting self-esteem, *b* = -.0002, *t* (4785) = -.71, *p* = .48. However, there was an interaction between perceived stress and familial reference, *b* = .0149, *t* (4785) = 2.18, *p* = .03.

On the other hand, there was no significant interaction between perceived stress and social support predicting self-esteem, $b = .0046$, t (4785) = 1.11, $p = .26$. There was also no significant two-way interaction between social support and familial references, $b = .0071$, t (4785) = 1.56, $p = .12$. Participants that reported higher levels of familial referents also reported significantly lower levels of self-esteem, $b = -.42$, t (4785) = -3.18, $p = .002$. Participants that reported higher levels of perceived stress also reported significantly higher self-esteem, $b = -.45$, t (4785) = -3.91, $p = .0001$.

Anxiety

There was a non-significant three-way interaction between perceived stress, social support, and familial obligations predicting anxiety symptoms, $b = .0001$, t (4779) = 1.11, $p = .71$. There was no significant interaction between perceived stress and social support, $b = -.01$, t (4785) = -1.30, $p = .19$ as well as familial obligations, $b = -.0043$, t (4785) = -.45, $p = .65$. Last, there was no interaction between social support and familial obligations, $b = -.0020$, t (4785) = -.31, $p = .75$. Results indicated that participants that reported higher perceived stress reported higher levels of anxiety symptoms, $b = .79$, t (4785) = 3.18, $p = .001$.

There was a non-significant interaction between perceived stress, social support, and familial support, $b = .0000$, t (4776) = -0.03, $p = .98$. The two-way interaction between perceived stress and social support, $b = -.0083$, t (4776) = -1.39, $p = .16$, and familial support, $b = -.0006$, t (4776) = -.05, $p = .96$, was non-significant. Last, there was a non-significant interaction between the predictors social support and familial support, $b = .0087$, t (4776) = .89, $p = .37$. However, participants that reported higher perceived stress reported higher anxiety symptoms, $b = .00$, t (4776) = 4.24, $p < .0001$.

Consistent with the hypotheses, there was a marginally significant three-way interaction between perceived stress, social support, and familial reference, $b = .0004$, $t (4780) = 1.72$, $p = .09$. The two-way interaction between perceived stress and social support was significant at $b = -.02$, $t (4780) = -3.72$, $p = .0002$. The two-way interaction between perceived stress and familial reference was marginally significant at $b = -.0130$, $t (4780) = -1.76$, $p = .07$. The two-way interaction between social support and familial obligations was also marginally significant at $b = -.0084$, $t (4780) = -1.76$, $p = .08$. Participants that reported higher perceived stress also reported higher anxiety than participants with lower perceived stress, $b = .90$, $t (4780) = 7.44$, $p < .0001$. Participants that reported higher familial reference also reported higher anxiety, $b = .32$, $t (4780) = 2.28$, $p = .02$.

Physical Health

The three-way interaction between perceived stress, social support, familial obligations was not significant, $b = -.0011$, $t (4756) = -1.21$, $p = .23$. There was also no two-way interaction between perceived stress and social support, $b = .0307$, $t (4756) = 1.33$, $p = .18$. There was also no two-way interaction between perceived stress and familial obligations, $b = .0208$, $t (4756) = .86$, $p = .39$. Last, there was a non-significant interaction between social support and familial obligation, $b = .0052$, $t (4756) = 32$, $p = .74$.

The three-way interaction between perceived stress, social support, and familial support was not significant, $b = -.0018$, $t (4753) = -1.46$, $p = .14$. There was also a non-significant interaction between perceived stress and social support, $b = .0244$, $t (4753) = 1.63$, $p = .10$, as well as familial obligations, $b = .0171$, $t (4753) = .70$, $p = .49$. The two-way interaction between social support and familial obligations was also non-significant, $b = .0171$, $t (4753) = .70$, $p = .50$.

There was a non-significant interaction between perceived stress, social support, and familial reference, $b = .0007$, t (4757) = 1.12, $p = .26$. The two-way interaction between perceived stress and social support predicting physical health was not significant, $b = -.0092$, t (4757) = -.84, $p = .40$. Results also indicated the familial reference also did not moderate the relationship between perceived stress and physical symptoms, $b = -.0275$, t (4757) = -1.54, $p = .12$. The two-way interaction between social support and familial reference was also non-significant, $b = -.0186$, t (4757) = -1.56, $p = .12$. Main effects indicated that participants that reported higher familial reference reported better physical health, $b = .61$, t (4757) = -1.75, $p = .08$.

Hypothesis 1B tested whether both familism and social support would show stress-buffering effects independent of each other. The results partially supported this hypothesis.

Depression

To test the independent effects of social support and familism, a two-way interaction between perceived stress and social support as well as the familism subscales was included in the Hayes Model 2. In regard to the outcome of depressive symptoms, only the two-way interaction between perceived stress and social support was significant, $b = -.0078$, t (4779) = -6.26, $p < .0001$. The two-way interaction between perceived stress and familial obligations was non-significant, $b = .0024$, t (4779) = .75, $p = .45$. Participants that reported higher social support $b = -.14$, t (4779) = -13.48, $p < .0001$ as well as familial obligations $b = .04$, t (4779) = 1.95, $p = .05$ reported higher depressive symptoms.

Similar to the independent effects of social support presented above, social support had an independent moderating effect compared to familial referents, $b = -.0078$, t (4780) = -6.30, $p < .0001$. The two-way interaction between perceived stress and familial reference was not

significant, $b = -.0035$, t $(4780) = -.64$, $p = .52$. On the other hand, social support did have a significant effect on depression symptoms, $b = -14$, t $(4780) = -13.23$, $p < .0001$.

Perceived stress and social support had a moderating effect independent of familial support, $b = -.0076$, t $(4776) = -6.05$, $p < .0001$. Perceived stress and familial support had a non - significant interaction predicting depressive symptoms, $b = -.0044$, t $(4776) = -.94$, $p = .34$. Participants that reported higher social support reported higher depressive symptoms, $b = -14$, t $(4776) = -13.44$, $p < .0001$.

Anxiety

Results indicated a significant two-way interaction between perceived stress and social support, $b = -.0085$, t $(4781) = -7.97$, $p < .0001$. The interaction between perceived stress and familial obligations was not significant, $b = -.0009$, t $(4781) = -.34$, $p = .73$. Participants that reported lower social support, $b = -.14$, t $(4781) = -13.44$, $p < .0001$, and higher familial obligations, $b = .05$, t $(4781) = 2.78$, $p = .01$ reported higher anxiety than those with higher social support and lower familial obligations, respectively.

The two-way interaction of perceived stress and social support was significant, $b = -.0089$, t $(4782) = -8.35$, $p < .0001$. On the other hand, the interaction between perceived stress and familial reference was not significant, $b = -.0008$, t $(4782) = -.41$, $p = .68$. The relationship between social support and anxiety was significant, $b = -.14$, t $(4782) = -13.44$, $p < .0001$. Similarly, the association between familial reference and anxiety was also significant, $b = .0711$, t $(4782) = 4.63$, $p < .0001$.

Results indicated a significant two-way interaction between perceived stress and social support predicting anxiety, $b = -.0085$, t $(4778) = -7.83$, $p < .0001$. On the other hand, the interaction between perceived stress and familial support was not significant, $b = -.0045$, t (4778)

= -1.12, p = .26. The relationship between social support and anxiety was significant b = -.16, t (4778) = -18.06, p < .0001. Similarly, the association between familial support and anxiety was also significant, b = .1101, t (4778) = 3.74, p = .0002.

Self-esteem

Results indicated a significant two-way interaction between perceived stress and familial referents predicting self-esteem, b = .0088, t (4787) = 4.57, p < .0001. On the other hand, the two-way interaction between perceived stress and social support was only marginally significant, b = .0017, t (4787) = 1.64, p = .10. Participants that reported higher familial referents reported lower self-esteem, b = -.08, t (4787) = -4.47, p < .0001. Participants that reported higher social support reported higher self-esteem, b = .17, t (4787) = 19.69, p < .0001.

The interaction between perceived stress and familial obligation was significant predicting self-esteem, b = -.0065, t (4786) = -2.56, p = .01. On the other hand, the two-way interaction between perceived stress and social support was not significant, b = .0016, t (4786) = 1.55, p = .12. Participants that reported higher familial obligations reported higher self-esteem, b = .24, t (4786) = 12.84, p < .0001. Similarly, participants that reported higher social support reported higher self-esteem, b = .16, t (4786) = 19.30, p < .0001.

The interaction between perceived stress and familial support was marginally significant, b = -.0064, t (4783) = -1.67, p < .10. On the other hand, the interaction between perceived stress and social support was not significant, b = .0014, t (4783) = 1.36, p = .17. Familial support was associated with higher self-esteem, b = .13, t (4783) = 4.71, p < .001; social support was associated with higher self-esteem as well, b = .17, t (4783) = 19.56, p < .001.

Physical Health

Results indicated that there was no significant two-way interaction between perceived stress and familial support predicting physical health outcomes, $b = .00$, $t (4755) = -.39$, $p = .69$. Similarly, there was no significant interaction between perceived stress and social support, $b = .00$, $t (4755) = 1.08$, $p = .28$. There was also no main effect of familial support on physical health, $b = .04$, $t (4755) = .53$, $p = .57$. Similarly, there was also no main effect on social support on physical health, $b = .00$, $t (4755) = .14$, $p = .89$.

Analyses found similar results testing for the independent moderating effects familial obligations and social support on the relationship between perceived stress and physical health. The two-way interaction between perceived stress and familial obligation was not significant, $b = .00$, $t (4758) = -.42$, $p = .67$. The two-way interaction between perceived stress and social support was not significant, $b = .00$, $t (4758) = 1.10$, $p = .27$. Similarly, there was no main effect of familial obligations, $b = .03$, $t (4758) = .50$, $p = .62$ or social support, $b = .00$, $t (4758) = .22$, $p = .83$ on physical health.

Last, results indicated that there was no independent moderating effect of familial referents and perceived stress on physical health, $b = .00$, $t (4759) = -42$, $p = .67$. There was also a non-significant interaction between social support and perceived stress, $b = .00$, $t (4759) = 1.00$, $p = .32$. Moreover, there was no main effect of familial reference on physical health, $b = -.02$, $t (4759) = -.39$, $p = .69$. There was also no main effect of social support on health outcomes, $b = .05$, $t (4759) = .21$, $p = .83$.

The last hypothesis 1C examined whether the models tested above were consistent across the homogenous group of Latino Americans. Table 2 and 3 show whether the moderated moderations and independent stress-buffering effects were consistent across the groups. Detailed results are included in Appendix B. Overall, the results indicating moderated moderations as

tested by three-way interactions are mixed. Table 2 shows that the group that consistently

showed a moderated moderation of familism, social support, and perceived stress was Cuban

Americans. In this group, familism subscales moderated the interaction of perceived stress and

social support on self-esteem and physical health.

Results indicated a similar pattern when testing the independent moderating effects of

familism and social support (see Table 3). Across the groups, results indicated that social support

consistently moderated the relationship between perceived stress and health outcomes. On the

other hand, it was less consistent that familism moderated the relationship between perceived

stress and health outcomes independent from the social support moderation. In comparison to all

the Latino background subgroups, participants of Cuban American background showed the most

social support and familism moderations.

Table 2. Moderated Moderations of Perceived Stress, Social Support, and Familism across Latino Subgroups

	Dominican			Central American			Cuban			Mexican			Puerto Rican			South American		
	1. Familial Obligations	2. Familial Support	3. Familial Referents	1.	2.	3.	1.	2.	3.	1.	2.	3.	1.	2.	3.	1.	2.	3.
Depression																		
Stress x Social Support																√	√	
Stress x Familism																√		
Stress x Social Support x Familism																√		
Self-esteem																		
Stress x Social Support	√	√	√			√												
Stress x Familism	√	√																
Stress x Social Support x Familism	√	√																
Anxiety																		
Stress x Social Support							√	√	√				√	√				√
Stress x Familism								√						√				

Stress x Social Support x Familism						√		√	√				√		
Physical Health															
Stress x Social Support	√					√	√			√			√		√
Stress x Familism	√												√		
Stress x Social Support x Familism	√					√	√			√					

Table 3. Independent Moderations of Perceived Stress x Social Support and Perceived Stress x Familism across Latino Subgroups

	Dominican			Central American			Cuban			Mexican			Puerto Rican			South American		
	1. Familial Obligations	2. Support from Family	3. Familial Referents	1.	2.	3.	1.	2.	3.	1.	2.	3.	1.	2.	3.	1.	2.	3.
Depression																		
Familism													√		√			
Social Support	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Stress x Familism							√											
Stress x Social Support	√	√	√				√	√	√	√	√	√	√	√	√	√	√	√
Anxiety																		
Familism							√	√	√	√	√	√						√
Social Support	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Stress x Familism											√					√		
Stress x Social Support	√	√	√				√	√	√	√	√	√	√	√	√	√	√	√
Self-esteem																		

Familism	√			√		√	√		√	√	√	√	√		√		
Social Support	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Stress x Familism	√						√	√				√	√		√	√	√	
Stress x Social Support	√	√	√	√	√	√							√	√	√			
Physical Health																		
Familism	√											√			√		
Social Support																		
Stress x Familism							√									√		
Stress x Social Support							√					√	√	√	√	√	√	

Discussion

Overall, Study 1 tested whether social support's moderating effect between perceived stress and various psychological and physical health would be augmented by familism. The results did not support this hypothesis. While the study found no evidence supporting the moderated moderation, results indicated that overall social support did moderate the effect of perceived stress on health outcomes. To further test whether the moderating effects of social support and familism were significant independent of each other, a second hypothesis tested the independent moderating effects of social support and familism subscales. The results were mixed indicating familism and social support, independent of each other's effects, attenuated the effect of perceived stress on psychological and physical health outcomes.

This study sheds novel light on whether social support and familism are values that work together, increasing each other's beneficial effects, or work independently of each other. These findings have implications for future research on receiving social support and familial relationships in the context of health outcomes. For instance, results showed that social support as well as familism may have independent positive effects of outcomes such as self-esteem. Research examining the possible benefits of social support in a medical setting may also want to examine the independent effects of familism and vice versa. While this study did not show that familism values augment the effect of social support, familism still has independent effects that should be explored and examined.

The third hypothesis in this study examined whether the moderated moderations and stress-buffering effects were consistent across people of different Latino American backgrounds. Results found that the moderated moderations and stress-buffering effects were not consistent across the groups. Instead, the patterns indicated that Cuban Americans consistently showed the

moderated moderation as well as the independent moderations of familism and social support. This study made no hypothesis as to whether which subgroup would show the effects. Therefore, it is not clear from this study why Cuban Americans were more likely to show the effects. Future work should explore whether acculturation or age has any implication in the relationships between familism, social support, and health across Latino backgrounds.

A strength of this study is that the dataset examined is one of the largest sample of Latinos Americans' health and cultural value to date. Therefore, this study was able to examine the relationship between social support, familism, and psychological/physical health outcomes in a representative sample of Latino Americans in the U.S. Past studies of Latino Americans have been limited to convenient samples of college-aged students or particular groups in medical settings. This study had participants from a wide age range and heterogenous Latino backgrounds.

A limitation of the study was its focus on one type of social support; the Interpersonal Support Evaluation List. It is possible that specific forms of social support would have different implications for its relationship to familism and the health outcomes examined. For example, familism may interact differently with informational, instrumental, emotional, and appraisal support. In this study, psychometrics suggested that the measure of social support was a one rather than three factor measure (e.g., belonging, tangible etc.). Moreover, the familism measure used in this study included a subscale for social support; it is possible that familism's support subscale augmented the effects of the emotional aspect of social support. Future work should use multiple measures of social support to see if this has any implications for the effects of familism on health outcomes. Last, given the large sample size and number of tests, marginal results should be interpreted as promising significant results rather than equivalent to significant results.

Future work using this dataset should focus on whether the association between familism

and social support changes over time. It is still possible that familism may help increase the

beneficial effects of social support over an extended period of time. By having a stronger value

towards family relationship may help offset the negative effects of perceived stress. In addition,

it would be beneficial to explore whether acts as a moderator when examining specific types of

stress. For example, if participants are facing a stressor specific to family health concerns or

increased familial obligations, familism may augment the positive effect of social support on

outcomes.

CHAPTER 3: STUDY 2

Overview and Hypotheses

The aim of Study 2 was to replicate the findings of Study 1 and extend the research to East Asian and European Americans. This would advance the understanding of cultural variations in the role that familism plays in the stress-buffering hypothesis. Previous research has shown that culture and ethnicity may shape how perceived social support and familism are valued across different backgrounds (Campos et al., 2014; Taylor, 2012). In order to increase the validity of this replication, the measures were consistent across the studies. In addition, a second commonly used measure of perceived social support, the Medical Outcomes Study Social Support Survey (MOS-SS; Sherbourne & Stewart, 1991), was added. Having an additional measure of perceived social support helped explore whether the results are consistent across measures of the same construct.

Hypothesis 2A: Latino Americans would report higher familism levels compared to European and Asian Americans.

Hypothesis 2B: Based on Study 1, among those that had high levels of familism, social support would show a stronger stress-buffering effect on psychological health outcomes in the context of stress.

Study 2 also examined whether familism and social support independently of each other moderate the effect of perceived stress on psychological health.

Hypothesis 2C: Both familism and social support will show stress-buffering effects.

Methods

Participants

Study 2 was part of a larger study on the role of culture in the provision and use of social support. The number of participants for Study 2 was 286. The age ranged from 17 to 48 years old with a mean age of 21.24 (SD = 3.62). Over 84% of the sample was female (n = 242) and 15% was male (n = 43). One participant reported their gender as other. The participants were recruited through the University of California, Irvine, School of Social Science human subject pool. Participants received course credit for their participation. In order to participate in the study, participants had to indicate a Latino, East Asian, or European American cultural background and the being over 18 years of age.

Procedure

Study procedures were approved by the University of California, Irvine Institutional Review Board. Participants completed an online survey using the Qualtrics Survey Software at a location of their choice and convenience. The study took approximately 45-60 minutes to complete. All of study measures were conducted in English.

Measures

Familism. Familism was measured using the full 14-item Sabogal et al (1987) Familism scale. For measure description see Study 1. In Study 1, only the three subscales were analyzed. In Study 2, a mean score for Total Familism was also created and analyzed. The scale reliability was tested using Cronbach's alpha. The Cronbach's alpha was .42 for familial reference, .52 for support from family, and .53 familial obligations. The Cronbach's alpha for total familism was .57.

Social Support. The Interpersonal Support Evaluation List-12 (ISEL-12; Cohen, Mermelstein, Kamarck, & Hoberman, 1985) was used to measure aspects of perceived (i.e.,

functional) social support. For measure details see study 1 measure description. The Cronbach's alpha for this scale was .86.

Social support was also measured using the Medical Outcomes Study Social Support Survey (MOS-SS; Sherbourne & Stewart, 1991). The scale is composed of 19-items rated on a 5-point Likert type scale (1 = None of the time; 5 = All of the time). The instrument measures four functional support scales (emotional/informational support (8 items); tangible support (4 items); affectionate support (3 items); and positive social interaction (3 items)). Example items include "Someone to turn to for suggestions about how to deal with a personal problem", "Someone to confide in or talk to about yourself or your problems", and "Someone to get together with for relaxation". The scale can be scored as an overall total score as well as subscale score. Higher scores indicate higher social support. The Cronbach's alpha for this social support was .86.

Perceived Stress. Perceived stress was measured using a 10-item version of the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). Measure details are the same as described in Study 1 measure. The Cronbach's alpha for perceived stress was .83.

Psychological/Physical Health Outcomes

Depressive symptoms. Depressive symptoms were measured using an abbreviated 10-item version of the Center for Epidemiologic Studies Depression Scale (CES-D-10; Irwin, Artin, & Oxman, 1999). See study 1 for measure details. The Cronbach's alpha for depressive symptoms was .64.

Anxiety. Anxiety was measured using the 10-item Spielberger Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970). See study 1 for measure details. The Cronbach's alpha for this scale was .82.

Self-esteem. Self-esteem was measured using the Rosenberg's Self-Esteem 6-item Scale (Rosenberg, 1965). See study 1 for measure details. Cronbach's alpha for self-esteem measure was .57.

<div align="center">

Data Analysis Plan

</div>

Study 2 examined whether the models tested in Study 1 replicate in another sample of Latino, East Asian, and European Americans. Similar to Study 1, the data was examined using PROCESS Macro v2.13 in SPSS (Hayes, 2013). The same data cleaning and descriptive data techniques were used as in Study 1. To compare the means across the three groups, data was analyzed using ANOVA and planned comparisons.

Results

Table 4 includes the correlations for all study variables. Results showed that there were no significant differences between the three cultural background groups in regard to familism total, familial obligations, and support from family (see Table 5). However, there was a significant difference in participants familial reference scores. Contrary to the literature, both European Americans and Asian Americans had higher reference scores compared to Latino Americans.

Table 4. Bivariate Correlations between Study Variables.

	1	2	3	4	5	6	7	8	9
1. Familism Total	-	.66**	.74**	.63**	-.01	.30**	-.06	-.06	-.04
2. Familial Obligations		-	.11†	.33**	.13*	.41**	-.03	-.00	.07
3. Familial Referents			-	.18*	-.06	.10†	-.06	-.09	-.10†
4. Support from				-	-.10†	.12*	-.01	-.02	-.03

	1	2	3	4	5	6	7	8	9
Family									
5. ISEL [a]					-	.35**	-.33**	-.40**	.31**
6. MOS [b]						-	-.18*	-.20**	.20*
7. Depressive Symptoms							-	.56**	-.29**
8. Anxiety								-	-.48**
9. Self-esteem									-

Note. [a] Interpersonal Support Evaluation List. [b] Medical Outcomes Study Social Support Survey.
* $p < .05$. ** $p < .001$. † $p < .10$

Table 5. Sample Descriptives Means of Familism

	Latino Americans	East Asian Americans	European Americans	F
Familism Total	3.17	3.23	3.28	.75
Family Support	3.25	3.26	3.07	.74
Reference	2.99[ab]	3.32[b]	3.35[a]	3.65*
Familial Obligations	3.27	3.13	3.33	2.11

Note. [a] [b] Means sharing the same superscript are significantly different.
* $p < .05$. ** $p < .001$. † $p < .10$

Model 3

Depressive symptoms

Regression analyses indicated that familism subscales did not significantly moderate the relationship between perceived stress, MOS, and depressive symptoms (see Table 6). There were also no significant two-way interactions between perceived stress, familism, and MOS. There was only indication that there was a main effect of perceived stress in the models testing the effects of familial support and familial referent. Participants who reported higher perceived stress reported higher depressive symptoms.

Table 6. Regression Analysis for Perceived Stress and MOS [a] Predicting Depressive Symptoms

	Familial Obligation	Support from Family	Familial Referent	Familism Total
Stress	3.54	12.35†	12.29*	14.99
MOS [a]	-3.72	5.46	5.12	6.77
Stress x MOS [a]	.66	-2.56	-2.23	-3.14
Familism	-6.12	2.73	3.56	4.71
Stress x Familism	1.40	-1.46	-1.49	-2.26
MOS [a] x Familism	1.89	-1.09	-1.02	-1.47
Stress x MOS [a] x Familism	-.49	.54	.46	.71

Note. [a] Medical Outcomes Study Social Support Survey.
* $p < .05$. ** $p < .001$. † $p < .10$

Table 7 shows the regression analysis results for the moderated moderation between perceived stress, ISEL, and familism subscales predicting depressive symptoms. Results showed a marginal significant moderated moderation between perceived stress, ISEL, and familial referents predicting depressive symptoms. There were no significant two-way interactions or main effects of the study variables on depressive symptoms.

Table 7. Regression Analysis for Perceived Stress and ISEL [a] Predicting Depressive Symptoms

	Familial Obligation	Support from Family	Familial Referent	Familism Total
Stress	4.82	3.12	-3.29	-9.74
ISEL [a]	-.44	-.21	-.66	-1.40
Stress x ISEL [a]	.03	.01	.22	.41

Familism	-3.35	-2.46	-6.97	-13.66
Stress x Familism	.19	.55	2.81	4.37
ISEL[a] x Familism	.12	.04	.20	.39
Stress x ISEL[a] x Familism	-.02	-.01	-.08†	-.13

Note. [a] Interpersonal Support Evaluation List.
* $p < .05$. ** $p < .001$. † $p < .10$

Anxiety

Table 8 includes the results for the moderated moderation of perceived stress, MOS, and familism subscales predicating anxiety. There was no indication that familism total or its subscales moderated the moderation between perceived stress, social support, and anxiety. There was also no indication that the main effects of the study variables predicting anxiety were significant.

Table 8. Regression Analysis for Perceived Stress and MOS [a] Predicting Anxiety

	Familial Obligation	Support from Family	Familial Referent	Familism Total
Stress	5.88	4.97	-.86	-9.79
MOS [a]	-11.45	-6.71	-15.26	-25.53
Stress x MOS [a]	3.24	1.97	4.50	8.26
Familism	-4.90	-6.37	-12.66	-17.87
Stress x Familism	1.78	2.55	4.55	6.71
MOS [a] x Familism	2.80	1.87	4.58	7.16
Stress x MOS [a] x Familism	-.97	-.75	-1.59	-2.57

Table 9 shows the regression analysis results examining whether familism moderated the moderation between perceived stress and ISEL. Similar to the depressive symptoms results, there was a significant 3-way interaction between perceived stress, ISEL, and familial referents predicting anxiety. Results also showed that there were no significant 2-way interactions between familism and social support. On the other hand, there was a significant and marginal main effect of ISEL on anxiety in the models for familial referents and familism total. Participants with higher social support reported lower anxiety.

Table 9. Regression Analysis for Perceived Stress and ISEL [a] Predicting Anxiety

	Familial Obligation	Support from Family	Familial Referent	Familism Total
Stress	26.87	5.37	-8.72	-20.48
ISEL [a]	.28	-.74	-2.31*	-3.86†
Stress x ISEL [a]	-.33	.10	.60	1.05
Familism	10.75	-4.69	-18.40	-29.60
Stress x Familism	-4.58	1.44	5.97	8.90
ISEL [a] x Familism	-.20	.08	.58†	1.00
Stress x ISEL [a] x Familism	.10	-.03	-.19†	-.30

Self-Esteem

Regression analyses indicated that the moderation moderations of perceived stress, social support, and familism subscales predicting self-esteem were not significant (see Table 10). Results also showed there were no significant two-way interactions between any of the study variables. Last, there were no significant main effects predicting self-esteem.

Table 10. Regression Analysis for Perceived Stress and MOS [a] Predicting Self-Esteem

	Familial Obligation	Support from Family	Familial Referent	Familism Total
Stress	-9.57	.86	2.26	-4.56
MOS [a]	-7.16	3.11	5.72	-.26
Stress x MOS [a]	3.16	-.50	-1.02	1.39
Familism	-5.09	1.99	4.11	-1.99
Stress x Familism	2.29	-.44	-.83	1.23
MOS [a] x Familism	2.08	-.59	-1.34	.77
Stress x MOS [a] x Familism	-.87	.11	.25	-.47

Note. [a] Medical Outcomes Study Social Support Survey.
* $p < .05$. ** $p < .001$. † $p < .10$

Results indicated a moderated moderation between familial referents, ISEL, and perceived stress predicting self-esteem. The regression results are included in Table 11. In the model including familial referents, there was a marginal significant interaction between perceived stress and ISEL as well as an interaction between perceived stress and familial referents. Moreover, results showed a main effect of perceived stress and familism referents on self-esteem. Although there was significant moderated moderation of familial obligations on self-esteem, there was marginal interaction of perceived stress and social support on self-esteem.

Table 11. Regression Analysis for Perceived Stress and ISEL [a] Predicting Self-Esteem

	Familial Obligation	Support from Family	Familial Referent	Familism Total
Stress	-12.27	-1.03	6.51	4.80
ISEL [a]	-1.03	-.03	.87*	.67
Stress x ISEL [a]	.36†	.02	-.21†	-.13
Familism	-9.70	-.61	7.70*	6.49
Stress x Familism	3.16	-.05	-2.11†	-1.60
ISEL [a] x Familism	.32†	.03	-.22*	-.16
Stress x ISEL [a] x Familism	-.10	-.00	-.05*	.04

Note. [a] Interpersonal Support Evaluation List.
* $p < .05$. ** $p < .001$. † $p < .10$

The second set of analyses used Hayes Process Model 2 to test whether familism and social support had independent moderations on depressive symptoms, anxiety and self-esteem. Compared to Study 1, the analyses tested two distinct models per outcomes; each model included a different form of social support.

Depressive symptoms

Table 12 shows the results examining the independent moderations of social support and familism subscales. The results indicate that there were no significant two-way interactions between perceived stress and social support as well as no significant interactions between perceived stress and familism subscale. Moreover, the results also indicated that there were no main effects of social support or familism on depressive symptoms. However, perceived stress did have a positive significant effect on depressive symptoms.

Table 12. Regression Analysis for Perceived Stress X Social Support and Perceived Stress X

Familism Predicting Depressive Symptoms

	Familial Obligation		Support from Family		Familial Referent		Familism Total	
	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]
Stress	7.02*	9.73*	4.12†	7.28*	5.66*	8.04*	5.73†	8.11*
Social Support	-.05	2.59	-.05	2.39	-.03	2.32	-.04	2.34
Stress x Social Support	-.02	-.96	-.02	-.95	-.03	-.94	-.02	-.94
Familism	1.30	1.00	-1.09	-.70	.34	.21	.27	.16
Stress x Familism	-.53	-.47	.33	.23	-.05	.01	-.09	-.03

Note. [a] Interpersonal Support Evaluation List. [b] Medical Outcomes Study Social Support Survey.
* $p < .05$. ** $p < .001$. † $p < .10$

Anxiety

Table 13 shows the results of the two-way interactions predicting anxiety. There was no

indication that social support or familism had independent effects on anxiety. The results also

showed that the main effects of social support as well as familism subscales was not significant.

However, there was a main effect of perceived stress; participants who reported higher perceived

stress reported higher anxiety.

Table 13. Regression Analysis for Perceived Stress X Social Support and Perceived Stress X

Familism Predicting Anxiety

	Familial Obligation		Support from Family		Familial Referent		Familism Total	
	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]
Stress	14.11*	17.03*	8.89	12.78*	14.72*	15.94*	17.31*	18.87*

Social Support	-.45	-2.07	-.43	-.63	-.36	-.84	-.39	-2.00
Stress x Social Support	.02	-.03	.01	-.46	-.02	-.44	-.01	-.12
Familism	3.37	4.82	-1.83	-.35	3.22	3.00	5.68	6.90
Stress x Familism	-1.15	-1.56	.50	.16	-1.02	-.44	-1.91	-2.06

Note. [a] Interpersonal Support Evaluation List. [b] Medical Outcomes Study Social Support Survey.
* $p < .05$. ** $p < .001$. † $p < .10$

Self-esteem

Results indicated that social support and familism did not moderate or buffer the effect of perceived stress on self-esteem (see Table 14). The two-way interactions were not significant. Results also showed that social support, familism subscales, and perceived stress did not have a significant effect on self-esteem.

Table 14. Regression Analysis for Perceived Stress X Social Support and Perceived Stress X Familism Predicting Self-Esteem

	Familial Obligation		Support from Family		Familial Referent		Familism Total	
	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]	ISEL[a]	MOS[b]
Stress	.52	-.18	-.51	-.97	-1.63	-1.57	-.07	-.40
Social Support	.04	-.17	.09	.62	.07	.67	.09	.84
Stress x Social Support	.02	.24	.00	.01	.01	.02	.00	-.02
Familism	2.02	1.69	.39	-.00	-.70	-.72	.66	.10
Stress x Familism	-.60	-.52	-.14	-.04	.14	.12	-.28	-.18

Note. [a] Interpersonal Support Evaluation List. [b] Medical Outcomes Study Social Support Survey.
* $p < .05$. ** $p < .001$. † $p < .10$

Discussion

Study 2 aimed to replicate the findings of Study 1 in a sample of Latino Americans, East Asian Americans, and European Americans. While the hypotheses were not supported, the results do replicate some of the findings from Study 1. First, this study found that the familism levels, except familial reference were not significantly different across the three groups. European Americans and East Asian Americans reported higher familial referents levels than Latino Americans. These results are unexpected and contrary to the literature. A possible explanation is that within this college sample Latino Americans were more acculturated. Study 2 hypothesized that among those with higher familism levels, social support would show a stress-buffering effect; a moderated moderation. This hypothesis was only partially supported. The moderated moderations that were significant across the outcomes were between familial referents, perceived stress, and social support as measured by Interpersonal Support Evaluation List. These moderated moderations were not significant when social support was measured by the Medical Outcomes Study Social Support Survey. These results suggest that the moderation of social support may be specific to certain facets of familism and specific types of social support.

The second hypothesis was not supported. There was no indication of independent moderations of social support or familism subscales. However, these results were consistent across the three outcomes measured and the two measures of social support. It is possible that in this sample familism or social support do not have independent effects. Future research is needed to test whether in addition to the moderated moderations and the independent stress-buffering effects tested here there are additional mechanism by which social support and familism are beneficial. Perhaps social support and familism have indirect effects that vary across different outcomes examined.

One of the strengths of the study was that it included three different cultural groups and was able to extend the results of Study 1. The results from Study 1 and 2 were able to be compared across a number of Latino-American subgroups as well as a diverse group of college students. A second strength of the study was that it was able to analyze two distinct forms of social support; the Interpersonal Support Evaluation List-12 (ISEL-12; Cohen et al., 1985) and the Medical Outcomes Study Social Support Survey (MOS-SS; Sherbourne & Stewart, 1991). Both Study 1 and Study 2 found significant results using the Interpersonal Support Evaluation List. This form of social support included tangible, belonging, and appraisal facets of social support. On the other hand, MOS included emotional/informational support, tangible support, affectionate support, and positive social interaction. A possible explanation for the different patterns is the relationship between familism and the subscales of social support. Future work is also needed to compare the use of both scales across the various diverse backgrounds.

While Study 2 adds to our understanding of the relationship between familism and social support, it was not without limitations. One of the limitations of the study was that while it was aimed to replicate Study 1's secondary data analysis, one of the outcome variables, physical health, was not able to be analyzed. Physical health was not consistently measured across the two studies. The measures that were included in Study 2 were depressive symptoms, anxiety, and self-esteem. Therefore, this study cannot make conclusions regarding the effect of familism and social support on health outcomes. A second limitation was the unequal distribution of the gender of the sample. Over 84% of the sample was female. Although gender was controlled for in all analyses, future research should examine whether the relationship between social support and familism varies by gender. A third limitation of the study was the low Cronbach's alphas for

the familism scales. While the alphas did not vary by cultural background group, future research is needed to examine the fit of the scales across groups.

Future work is needed to compare the results across the three cultural backgrounds. Due to low power and small sample sizes, the results from more complex analyses of moderations effects could not be compared across the three groups. Future research should also focus on the distinct effect that familial referents has the three outcomes examined. In addition, it would be beneficial if future work incorporates quantitative measures to be able to fully understand the relationship between social support and familism and their effects of health outcomes.

CHAPTER 4: STUDY 3

Overview and Hypotheses
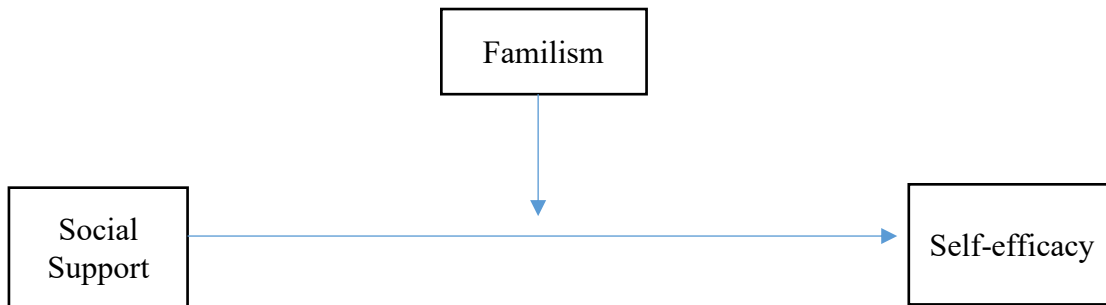
Figure 5. Familism moderating the effect of received social support on self-efficacy.

Study 3 examined whether familism moderated the potential negative or positive effects that received social support can have on self-efficacy (see Figure 5). Evidence suggests that receiving social support can enhance or pose a threat to the self-efficacy of the support recipient. On the one hand, past research has shown that receiving support can be beneficial; this includes increasing self-esteem and feelings of closeness to others. On the other hand, receiving social support can also have negative consequences; receiving support. Bolger and Amarel (2007) found that receiving visible support may have emotional costs, might be threatening, and less effective in alleviating stressors compared to other forms of support (e.g., invisible) and no support. In either case, it is yet to be determined whether the association between received social support and self-efficacy may be moderated by cultural values such as familism.

Hypothesis 3: Familism will moderate the association between received social support during stress and self-efficacy. The relationship between social support and self-efficacy is undetermined, however, it is hypothesized that familism may will be beneficial. If participants report a positive relationship between received social support and self-efficacy, familism may

enhances its beneficial effect. If participants report a negative relationship between received social support and self-efficacy, familism may help attenuate that effect.

Exploratory analyses also examined whether familism may moderate the relationship of perceptions of social support in general with self-efficacy. In this case, the measure of social support was not specific to a particular stressful situation. Moreover, exploratory analyses also examined whether familism moderated the relationship between perceptions of a stressful event and self-efficacy. No hypotheses were made regarding these exploratory analyses.

Methods

Participants

The number of participants Study 3 was 101. Participants were of Latino ($n = 39$), East Asian ($n = 38$), and European American ($n = 24$) backgrounds. The sample's ages ranged between 18-48 and the mean was 21.74, $SD = 4.56$. The sample consisted of 78.2% females and 20.8% males.

Procedures and Measures

As part of a larger data collection, participants were presented with a number of open-ended questionnaires as well as survey measures. Participants completed all the measures online at a time and place of their convenience. The study protocol was approved by the University of California, Irvine Institutional Review Board.

Participants were given a number of questions of regarding their experiences receiving social support during a stressful circumstance. The questions were adapted from Chen et al., (2012). The first prompt asked participants to recall and write about a time they faced a

significant stressor.[1] The open-ended questions were followed by close ended questionnaires to collect more detailed responses. The survey responses were used in this study's analyses.

Perceived stress. In the first prompt participants were instructed to write their responses to the following statement: "Most people encounter stressful events on a fairly regular basis. You and the people in your life run into relationship problems, financial difficulties, conflicts with family members, illness, job stressors or school-related concerns. Think back over the last three months and when you experienced a big stressor. As best you can, describe your stressor in the space below." The participants were then asked to rate the event's stressfulness (see Appendix A for full measures). The measure consisted of five items rated a 7-point Likert scale (1= *not at all*; 7= *very much*). The five items were averaged to create a total score. The reliability of the measure was α=.71.

Perceived social support. The second prompt then asked participants to recall and describe if anyone tried to help them in any way during the stressor. The prompt was broad; participants were not instructed to choose any specific person they received helped from (e.g., family, friend, stranger) as long as the person helped in a small way. Prompt 2 read: "At any point during the stressor, did someone try to do something to help you? Did they try to improve your life in some way, even a small way?" Participants were then asked to complete a 15-item questionnaire regarding the social support they received. These items were adapted from Chen et al., (2012). Within the 15-item questionnaire, three items measured emotion- focused support and three items measured problem-focused social support. The emotion-focused items included "They tried to offer comforting and encouraging words", "They tried to tell me how much they care about me", and "They tried to tell me how important I am to them." The problem-focused

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[1] The open-ended responses were not analyzed in this study.

items included "They tried to give specific suggestions about how to solve the problem", "They tried to help me think clearly about my problem", and "They provided me with advice to help me deal with the problem". This questionnaire was rated on a 7-point Likert scale ranging from 1= *not at all* to 7= *very much*. The reliabilities for emotion- and problem-focused support were .90 and .96, respectively.

In addition, the third and fourth prompt asked participants to think about whether the person that was providing social support thought they were capable of handling the stressful situation. They were asked how this made them feel. Prompt 3 read: "Do you think the person helping you thought you could, or could not handle the stress? Why or why not? How did that make you feel?" Prompt 4: "Were you worried about imposing on the person helping you? Why or why not?" These data will be reported elsewhere and were not analyzed in this study.

Self-efficacy. Self-efficacy was measured using the General Self-Efficacy Scale (Schwarzer, & Jerusalem, 1995). The scale is rated on a 4-point Likert type scale (1 = *Not at all true*, 2 = *Hardly true*, 3 = *Moderately true*, 4 = *Exactly true*). The items were averaged to create a total score. The Cronbach's alpha for reliability was .90.

Familism. Familism was measure using the 14-item Sabogal et al. (1987) Familism scale including its obligation, referent, and support subscales. For measure description see Study 1. The Cronbach's alpha for reliability for obligations to the family was .53, support from family was .72, reference to the family was .30, and familism total was .45.

Social Support. The Interpersonal Support Evaluation List-12 (ISEL-12; Cohen, et al., 1985) was used to measure aspects of perceived (i.e., functional) social support. For measure details see Study 1 measure description. The Cronbach's alpha for reliability of the measure was .84.

Social support was also measured using the Medical Outcomes Study Social Support Survey (MOS-SS; Sherbourne & Stewart, 1991). For measure details see Study 2 for measure descriptions. The Cronbach's alpha for scale reliability was .86.

Demographics. Participants self-reported their demographic information at the end of the survey. Questions included reporting cultural background, place of birth, age, and gender. Participants indicated their cultural background by choosing their ethnicity from a list of categories as well as language spoken at home, place of birth of parents, and socioeconomic status.

Data Analysis Plan

Regression analysis was used to test whether familism moderates the association between social support received and self-efficacy. All variables were mean centered per Aiken and West (1991).

Results

The correlations between the study variables are in Table 15.

Table 15. Bivariate Correlations between Study Variables

	1	2	3	4	5	6	7	8	9	10
1. Familism Total	-	.67**	.70**	.52**	.11	.36**	.02	-.09	.03	.13
2. Familism Obligation		-	.12	.18†	.21*	.37**	.06	-.09	-.02	.15
3. Familism Reference			-	.02	.05	.23*	.01	.02	.06	.04
4. Familism Support from Family				-	-.08	.06	-.04	-.13	.02	.06
5. ISEL[a]					-	.42**	.16	.34**	.30*	.30*
6. MOS[b]						-	.15	.26*	.26*	.36**
7. Stressful Situation							-	.27*	.19†	.03
8. Emotion-Focused								-	.68**	.35**
9. Problem-Focused									-	.42**
10. Self-Efficacy										-

Note. [a] Interpersonal Support Evaluation List. [b] Medical Outcomes Study Social Support Survey.
* $p < .05$. ** $p < .001$. † $p < .10$

To test whether familism moderated the relationship between the emotion-focused support, an interaction between familism subscales and emotion-focused support was created. Age, gender, and ethnicity were included as control variables. The interaction between emotion-focused support and familism total was significant, $b = 1.03$, $t(93) = 2.01$, $p = .048$. See Figure 3 for interaction. In order to better understand the interaction, a simple slopes test was used to examine that association between emotion-focused support and self-efficacy at varying levels of familism. There was a significant positive association between emotion-focused support and self-efficacy when familism was evaluated at one standard deviation above the mean, $\gamma = 1.85$, $p = .001$, and when familism was evaluated at its mean, $\gamma = .83$, $p = .002$. The association was not significant when familism was evaluated at one standard deviation below the mean, $\gamma = -.20$, $p > .05$. At average and higher levels of familism total, greater emotion-focused support was associated with higher self-efficacy. Since the interaction was significant, the main effects were not interpreted.

However, the interaction between emotion-focused and support from family was not significant, $b = .24$, $t(93) = .88$, $p = .38$. In this case, the main effects of emotion-centered support and support from family on self-efficacy were interpreted because the interaction was not significant. Participants who reported higher emotion-focused support reported higher self-efficacy, $b = .92$, $t(93) = 3.49$, $p < .05$. On the other hand, there was no main effect of support from family on self-efficacy, $b = .50$, $t(93) = 1.03$, $p = .30$. The interaction between emotion-focused support and familial obligation was significant, $b = 1.01$, $t(93) = 2.61$, $p = .01$. See Figure 4 for interaction. Simple slopes tests showed that the association between emotion-focused support and self-efficacy was significant at higher levels of familial obligations, $\gamma = 1.78$, $p < .001$. The association was also significant at mean, $\gamma = .79$, $p < .01$, but not at low levels of

familism, $\gamma = -.24$, $p = .64$. As familism increased, emotion-focused was more strongly associated with self-efficacy.

Last, the interaction between emotion-focused support and familial reference was not significant, $b = .22$, $t (93) = .79$, $p = .43$. There was a main effect of emotion-focused support on self-efficacy. Participants who reported higher emotion-focused support reported higher self-efficacy, $b = .87$, $t (93) = 3.38$, $p = .001$. On the other hand, there was no main effect of familial reference on self-efficacy, $b = .31$, $t (93) = .54$, $p = .59$.
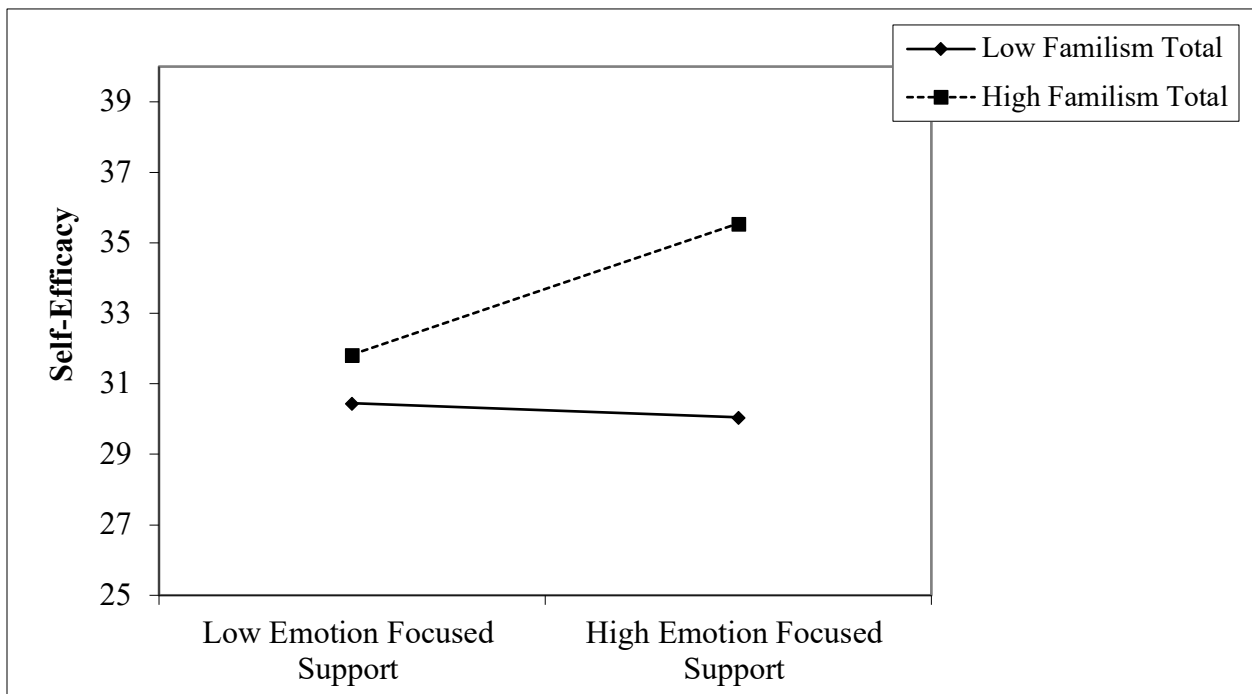
Figure 3. Interaction between Emotion-Focused Support and Familism Total.
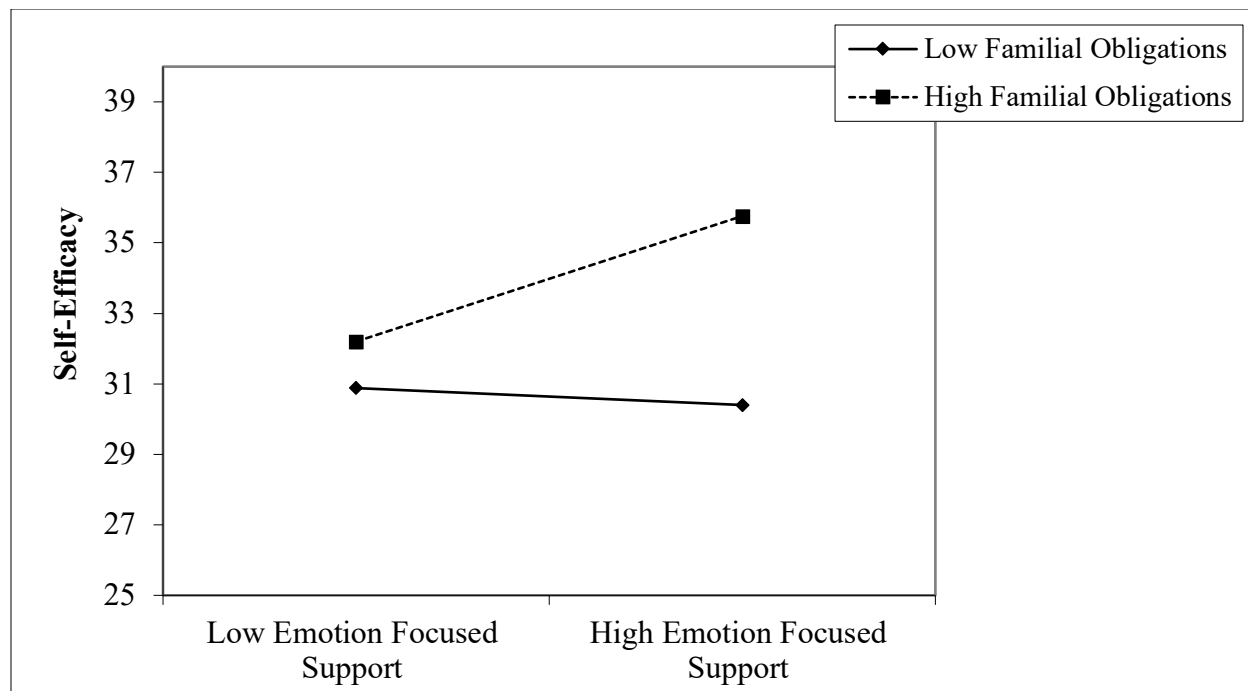
Figure 4. Interaction between Emotion-Focused Support and Familial Obligations.

Analyses also examined if familism moderated the relationship between problem-focused support and self-efficacy. The interaction between problem-focused support and familism total predicting self-efficacy was not significant, $b = .31, t(93) = .62, p = .54$. However, there was a main effect of problem-focused support on self-efficacy. Participants that reported higher problem-focused support reported higher self-efficacy compared to participants with lower levels of problem-focused support, $b = 1.04, t(93) = 4.17, p < .001$. On the other hand, there was no main effect of familism total on self-efficacy, $b = 1.11, t(93) = 1.23, p = .22$. The interaction between problem-focused support and support from family was also not significant, $b = -.15, t(93) = -.70, p = .49$. Therefore, we interpreted the main effects of problem-focused support and support from family. Participants that reported higher levels of problem-focused support reported higher self-efficacy, $b = 1.09, t(93) = 4.35, p < .001$. However, there was no main effect of support from family on self-efficacy, $b = .12, t(93) = .24, p = .81$. Moreover, results also

indicated that the interaction between problem-focused support and familial obligations was non-significant, $b = .49, t(93) = 1.35, p = .18$. There was a main effect of problem-focused support and a marginal main effect of familial obligation on self-efficacy. Participants that reported higher problem-focused support reported higher self-efficacy, $b = 1.36, t(93) = 3.82, p < .001$. Similarly, participants that reported higher familial obligations also reported higher self-efficacy, $b = 1.36, t(93) = 1.89, p = .06$. Last, the interaction between problem-focused support and familial reference was not significant, $b = .14, t(93) = .51, p = .61$. There was a main effect of problem-focused support on self-efficacy, $b = 1.10, t(93) = 4.22, p < .001$. Participants that reported higher levels of problem-focused support reported higher self-efficacy. However, there was no main effect of familial reference on self-efficacy, $b = .08, t(93) = .15, p = .88$.

Exploratory analyses tested whether familism would moderate the relationship between general social support and self-efficacy. Specifically, the measures of general social support used in the exploratory analyses were not directly associated with the stressful situations that the participants were asked to describe in Prompt 1. To test whether familism moderated the relationship perceived social support and self-efficacy an interaction between social support and familism subscales was created. The interaction was only interpreted if it was significant. If the interaction was not significant, the main effects were interpreted.

The first set of analyses examined whether familism moderated the relationship between social support and self-efficacy using the measure Medical Outcomes Study Social Support Survey (MOS). Results indicated a marginal significant interaction between social support and familial obligations predicting self-efficacy. See Table 16 for results. There were also no significant interactions between familism total, support from family or familial reference and social support. Since the interactions were not significant, the main effects were interpreted.

Results indicated a main effect of social support on self-efficacy. In other words, participants that reported higher levels of social support reported higher self-efficacy compared to participants with lower levels of social support. On the other hand, there was no main effect of familism on self-efficacy.

Table 16. Regression Analysis for Social Support and Familism Predicting Self-Efficacy

	Familism Total		Support from Family		Familial Reference		Familial Obligations	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Constant	34.47**	33.84*	34.39*	34.35*	34.61**	34.04*	34.48**	33.87**
Age	-.11	-.10	-.11	-.11	-.12	-.11	-.11	-.10
Gender	-1.44	-1.44	-1.43	-1.45	-1.31	-1.32	-1.43	-1.21
Ethnicity	-.61	-.51	-.63	-.62	-.65	-.52	-.61	-.60
MOS [a]	2.99*	3.00*	2.98*	3.01**	3.07**	3.36**	2.96*	2.81*
Familism	.02	.50	.14	.08	-.18	-.24	.11	.75
MOS [a] x Familism		1.96		-.17		1.13		2.08†

Note. [a] Medical Outcomes Study Social Support Survey * $p < .05$. ** $p < .001$. † $p < .10$

The second set of analyses examined whether familism moderated the relationship between social support and self-efficacy using the measure Interpersonal Support Evaluation List (ISEL). Results indicated that familism total and its subscales did not moderate the relationship between ISEL and self-efficacy. Therefore, the main effects of ISEL and familism on self-efficacy were interpreted. There was a significant main effect of social support on self-efficacy. Overall, participants that reported higher social support also reported higher self-efficacy. See Table 17 for results. However, results indicated that the was no significant association between familism total and its subscales on self-efficacy.

Table 17. Regression Analysis for Social Support and Familism Predicting Self-Efficacy

	Familism Total		Support from Family		Familial Reference		Familial Obligations	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Constant	33.70**	33.10*	33.82*	33.81*	33.89*	33.31*	34.08*	33.66*
Age	-.10	-.08	-.10	-.10	-.11	-.09	-.11	-.10
Gender	-1.21	-.98	-.94	-.93	-1.11	-.83	-.98	-.82
Ethnicity	-.44	-.37	-.52	-.52	-.44	-.37	-.49	-.44
ISEL [a]	.22*	.12*	.24*	.24*	.23*	.25*	.22*	.20*
Familism	.99	1.22	.36	.33	.22	.33	.72	.87
ISEL [a] x Familism		.18		-.02		.13		.10

Note. [a] Interpersonal Support Evaluation List. * $p < .05$. ** $p < .001$. † $p < .10$

Last, exploratory analyses examined whether familism and its subscales moderated the relationship between participants' perception of how stressful the event was and self-efficacy. Results indicated that familism total or its subscale did not moderate the relationship between participants' rating of how stressful the situation was and self-efficacy. See Table 18 for results. There was also no main effect of participants' ratings of how stressful the situation was and self-efficacy. Similarly, there was no main effects between familism total or its subscales and self-efficacy.

Table 18. Regression Analysis for Perceived Stress and Familism Predicting Self-Efficacy

	Familism Total		Support from Family		Familial Reference		Familial Obligations	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Constant	33.52*	30.49*	33.84*	33.84*	33.72*	33.88*	34.06*	34.00*
Age	-.07	-.07	-.08	-.08	-.08	-.09	-.09	-.09
Gender	-1.84	-1.86	-1.53	-1.53	-1.80	-1.74	-1.51	-1.60
Ethnicity	-.56	-.56	-.66	-.66	-.55	-.57	-.62	-.63
Stress	.10	.10	.15	.15	.12	.14	.10	.09
Familism	1.38	1.40	.28	.28	.40	.31	1.14	1.16
Stress x Familism		.10		.00		-.34		.70

Discussion

In sum, Study 3 tested whether the cultural variable of familism would moderate the relationship between social support received during a stressful circumstance and one's self-efficacy. Past research indicates that receiving social support during a stressful time can either have negative or positive consequences for one's self-efficacy. This study made no hypothesis regarding whether there would be a positive or negative relationship between social support and self-efficacy; rather it focused on whether familism would attenuate or enhance the potential effect of social support on self-efficacy. Overall, the results indicated that there was a positive association between social support received during a stressful time and participants' self-efficacy. However, the hypothesis that familism would moderate this potential relationship was only partially supported.

Whether familism moderated the relationship between social support received and self-efficacy was dependent on the type of social support received as well as the familism subscale being examined. Study 3 focused on two distinct forms of social support: emotion- and problem-focused social support. The results that were consistent with the hypothesis indicated that familism total as well as familial obligation moderated the association between emotion-focused

support received and self-efficacy. Having higher levels of familism enhanced the beneficial effects of social support. Participants who reported high levels of social support as well as high levels of familism reported greater self-efficacy than those with high levels of social support and low levels of familism. This pattern suggests participants benefitted the most from received emotion-focused support during stressful circumstances if they also valued strong familial relationships. On the other hand, familism and its subscales did not moderate the association between problem-focused support and self-efficacy.

While the main hypothesis was not supported, the results provided insights on the role of social support on self-efficacy. Overall, there was a consistent pattern showing that social support, both emotion-and problem-focused social support, had a positive relationship with self-efficacy. This is consistent with the literature stating that at times receiving social support is beneficial. Future work should focus on the other types of social support given during stressful times such as whether receiving unwanted material support can have potential negative consequences for one's self-efficacy.

Moreover, results indicated that there was no relationship between familism and self-efficacy. It is possible that that the cultural value of familism had an indirect relationship to self-efficacy rather than a direct effect. Another explanation may be that familism did not have a moderation or main effect on self-efficacy because participants were asked to describe a general stressful event in their life. Participants did not receive specific instructions as to whether they received support from family versus friends or strangers. Future research should focus on whether familism has an effect on self-efficacy when participants are receiving help from close family members.

Additional analyses tested whether familism would moderate the relationship between social support in general, participants' ratings of how stressful the event was, and self-efficacy. Familism did not moderate any of these relationships. A possible explanation was that familism as a cultural value enhances the support received that is particular to a situation rather than in general. Future work should also focus on whether familism plays a stronger role in stressful situations that are relevant to others rather than where the self is the focus. It also remains to be seen if the associations found would vary across participants of different cultural backgrounds. Future studies would need bigger sample sizes to detect small or medium cultural differences.

CHAPTER 5: CONCLUSION

The goals of these studies were to examine whether familism, a cultural value, plays a role in the social support stress-buffering hypothesis as well as whether familism serves as a protective factor that moderates the link of received support with self-efficacy. The three studies aimed to fill a gap in the research in understanding the interplay between social support and familism. Results were mixed and hypotheses were partially supported, yet these findings shed light on the role that cultural values play in whether social support is beneficial for psychological and physical health outcomes. First, there was some indication that familism does not consistently moderate the relationship of perceived stress, social support, and health outcomes. Second, there was some indication that familism may buffer the effects of perceived stress independently of social support and vice versa. Third, there was indication that the mixed patterns were not consistent within various homogenous subgroups of people of Latino American background.

Overall, these studies bring the field a closer understanding of how social support and familism operate together in the context of stress. As the results indicate, at times familism may augment the effects of social support and sometimes it may not be beneficial. It is a possibility that in these studies the moderated moderations were not significant because the levels of stress were too high. The beneficial effects of social support and familism may have boundary conditions that should be examined in future studies. Having continued access to larger diverse data sets, future research will be able to understand how familism and social support operate in the real world.

These studies have important theoretical and practical implications. They are a key step towards understanding the circumstances in which familism may be beneficial and advantageous

in the times of stress. This research suggests that in some cases social support literature could benefit from incorporating cultural values that are important to how people value social relationships. For instance, the findings may be particularly important for members of cultures that are known to be high in familism (i.e., U. S. Latinos) as well as those from different various backgrounds who place strong values on close and warm familial relationships. Moreover, the findings may also be particularly important for research focusing on stressors arising from close relationships (i.e., caregiving) that may take a toll on health. In these areas of research, the relationship between social support and familism may be most advantageous.

Furthermore, the last study examining self-efficacy started to fill in the gap in our understanding of whether familism augments the social support stress-buffering effect. The findings indicated that participants benefitted the most from received emotion-focused support during stressful circumstances if they also had high levels of familism. This study aimed to further our understanding of whether familism values are protective against the possible negative or positive effects that can arise from receiving social support. Understanding the association between emotion-and problem-focused social support and familism in the context of stressful circumstances could help with improving or maintaining levels of self-efficacy. Future research should also focus on whether the relationship between familism, social support, and self-efficacy has the potential to improve psychological and physical health for people from diverse backgrounds.

A direction for future research is to explore the interplay between familism and social support in a longitudinal study. The current studies were cross-sectional and cannot establish causal direction. Future studies can use a daily diary methodology to examine whether having high familism values helps people from various backgrounds benefit more from perceived social

support during stress and help buffer people from the negative aspects of received social support. Another possible future direction is to explore a developmental approach and examine at what life stage one is more likely to benefit from the association between social support and familism. At what point during development do cultural values help augment or possibly lessen the benefits of social support?

Overall, while the results did not show a clear association between social support and familism, there is indication of a positive effect of social support and cultural values on psychological health, physical health, and self-efficacy. Therefore, the current studies continue to show a need to protect a cultural value that in past was seen as deficit and a disadvantage for social advancement. In conclusion, the findings shed light on the complex relationship between familism and social support and the need to further understand the pathways in which they affect well-being.

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Familism

Please use the scale below to indicate how much each statement below describes you.

1	2	3	4	5
Very much in				**Very Much in**
Disagreement				**Agreement**

_____

_____ 1. One should make great sacrifices in order to guarantee a good education for his/her

children.

_____ 2. When one has problems, one can count on the help of relatives.

_____ 3. I would help within my means if a relative told me that she/he is in financial difficulty.

_____ 4. One should have the hope of living long enough to see his/her grandchildren grow up.

_____ 5. Aging parents should live with their relatives.

_____ 6. A person should share his/her home with uncles, aunts, or first cousins if they are in

need.

_____ 7. When someone has problems s/he can count on help from his/her relatives.

_____ 8. One should help economically with the support of younger brothers and sisters.

_____ 9. One should be embarrassed about the bad things done by his/her brothers or sisters.

_____ 10. Much of what a son or daughter does should be done to please the parents.

_____ 11. The family should consult close relatives (uncles, aunts) concerning its important

decisions.

_____ 12. One can count on help from his/her relatives to solve most problems.

_____ 13. Children should live in their parents' house until they get married.

_____ 14. One of the most important goals in life is to have children.

ISEL-12

Instructions: This scale is made up of a list of statements each of which may or may not be true about you. For each statement circle "definitely true" if you are sure it is true about you and "probably true" if you think it is true but are not absolutely certain. Similarly, you should circle "definitely false" if you are sure the statement is false and "probably false" if you think it is false but are not absolutely certain.

  1. definitely false   2. probably false   3. probably true   4. definitely true

1. If I wanted to go on a trip for a day (for example, to the country or mountains), I would have a hard time finding someone to go with me.

2. I feel that there is no one I can share my most private worries and fears with.

3. If I were sick, I could easily find someone to help me with my daily chores.

4. There is someone I can turn to for advice about handling problems with my family.

5. If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.

6. When I need suggestions on how to deal with a personal problem, I know someone I can turn to.

7. I don't often get invited to do things with others.

8. If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment (the plants, pets, garden, etc.).

9. If I wanted to have lunch with someone, I could easily find someone to join me.

10. If I was stranded 10 miles from home, there is someone I could call who could come and get

me.

11. If a family crisis arose, it would be difficult to find someone who could give me good advice

about how to handle it.

12. If I needed some help in moving to a new house or apartment, I would have a hard time

finding someone to help me.

Perceived Stress

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please

indicate with a check how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

___0=never   ___1=almost never   ___2=sometimes   ___3=fairly often   ___4=very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

3. In the last month, how often have you felt nervous and "stressed"?

4. In the last month, how often have you felt confident about your ability to handle your personal problems?

5. In the last month, how often have you felt that things were going your way?

6. In the last month, how often have you found that you could not cope with all the things that you had to do?

7. In the last month, how often have you been able to control irritations in your life?

8. In the last month, how often have you felt that you were on top of things?

9. In the last month, how often have you been angered because of things that were outside of your control?

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Center for Epidemiologic Studies Short Depression Scale (CES-D-R 10)

Below is a list of some of the ways you may have felt or behaved.

Please indicate how often you have felt this way during the past week by checking the appropriate box for each question.

Rarely or none of the time (less than 1 day)

Some or a little of the time (1-2 days)

Occasionally or a moderate amount of time (3-4 days)

All of the time (5-7 days)

1. I was bothered by things that usually don't bother me.

2. I had trouble keeping my mind on what I was doing.

3. I felt depressed.

4. I felt that everything I did was an effort.

5. I felt hopeful about the future.

6. I felt fearful.

7. My sleep was restless.

8. I was happy.

9. I felt lonely.

10. I could not "get going."

STAI

Your responses will be treated completely **confidentially**, and results will only be referred to in statistical form or anonymously.

Please read the following statements about how people feel **in general**. Circle the number that best describes how you generally feel. There are no right or wrong answers.

1   I feel nervous and restless

Almost never   1   2   3   4   5   6   7   Almost always

2   I feel satisfied with myself

Almos   1   2   3   4   5   6   7   Almost always

t never

3   I wish I could be as happy as others seem to be

Almost never   1   2   3   4   5   6   7   Almost always

4   I feel like a failure

Almost never   1   2   3   4   5   6   7   Almost always

5   I worry too much over something that doesn't really matter

Almost never   1   2   3   4   5   6   7   Almost always

6 I lack self-confidence

Almost never   1   2   3   4   5   6   7   Almost always

7 I feel secure

Almost never   1   2   3   4   5   6   7   Almost always

8 I feel inadequate

Almost never   1   2   3   4   5   6   7   Almost always

9 I am a steady person

Almost never   1   2   3   4   5   6   7   Almost always

10   I get in a state of tension or turmoil when I think about my recent concerns and

interests

Almost never   1   2   3   4   5   6   7   Almost always

Self-Esteem

*Note: HCHS measure description indicated the use of a 6-item self-esteem scale; codebook

included a 10 item measure below.

Instructions: Enter the answer given by the participant for each response. The special value,

"Q", is allowed for cases where the response 'Don't know/refused' is not listed as an option.

I am now going to read a list of statements dealing with your general feelings about yourself.

*Please tell me if you **STRONGLY AGREE**, if you **AGREE**, if you **DISAGREE or if you***

***STRONGLY DISAGREE**.*

1. I feel that I'm a person of worth, at least on an equal plane with others.

2. I feel that I have a number of good qualities.

3. All in all, I am inclined to feel that I am a failure.

4. I am able to do things as well as most other people.

5. I feel I do not have much to be proud of.

6. I take a positive attitude toward myself.

7. On the whole, I am satisfied with myself.

8. I wish I could have more respect for myself.

9. I certainly feel useless at times.

10. At times I think I am no good at all.

SF-12 HEALTH SURVEY (STANDARD)

INSTRUCTIONS: This questionnaire asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

Please answer every question by marking one box. If you are unsure about how to answer, please give the best answer you can.

1. In general, would you say your health is:

☐	☐	☐	☐	☐
Excellent	Very good	Good	Fair	Poor

The following items are about activities you might do during a typical day. Does <u>your health now limit you </u>in these activities? If so, how much?

	Yes, Limited A Lot	**Yes, Limited A Little**	**No, Not Limited At All**
2. **Moderate activities,** such as moving a table, pushing a vacuum cleaner, bowling or playing golf	☐	☐	☐
3. Climbing **several** flights of stairs	☐	☐	☐

During the <u>past 4 weeks</u>, have you had any of the following problems with your work or other regular daily activities <u>as a result of your physical health?</u>

	Yes	**No**

4. **Accomplished less** than you would like ☐ ☐

5. Were limited in the **kind** of work or other activities ☐ ☐

During the past 4 weeks, have you had any of the following problems with your work or other regular

daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	Yes	**No**
6. **Accomplished less** than you would like	☐	☐
7. Didn't do work or other activities as **carefully** as usual	☐	☐

8. During the past 4 weeks, how much did pain interfere with your normal work

(including both work outside the home and housework)?

☐	☐	☐	☐	☐
Not at all	**A little bit**	**Moderately**	**Quite a bit**	**Extremely**

These questions are about how you feel and how things have been with you <u>during the past 4 weeks.</u> For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time <u>during the past 4 weeks</u> –

	All of the Time	**Most of the Time**	**A Good Bit of the Time**	**Some of the the Time**	**A Little of the Time**	**None of the Time**
9. Have you felt calm and peaceful?	☐	☐	☐	☐	☐	☐
10. Did you have a lot of energy?	☐	☐	☐	☐	☐	☐
11. Have you felt downhearted and blue?	☐	☐	☐	☐	☐	☐

12. During the <u>past 4 weeks</u>, how much of the time has your <u>physical health or emotional problems</u> interfered with your social activities (like visiting with friends, relatives, etc.)?

☐   ☐   ☐   ☐   ☐   ☐

All of   Most of   A Good Bit   Some of   A little of   None

the time   the time   of the time   the time   the time   the time

Study 3 Questionnaires

Q1: Please indicate the extent to which each statement below describes the stressor.

	not at all (1)	(2)	slightly (3)	(4)	quite a bit (5)	(6)	very much (7)
This event was stressful to me. (1)	○	○	○	○	○	○	○
This event was negative for me. (2)	○	○	○	○	○	○	○
	○	○	○	○	○	○	○
I felt responsible for this event. (3)	○	○	○	○	○	○	○
My life was or could have	○	○	○	○	○	○	○

been affected by this event. (4)						
I was stressed about this event. (5)						

Q3:

	not at all (1)	(2)	slightly (3)	(4)	quite a bit (5)	(6)	very much (7)
They tried to offer comforting and encouraging words. (1)							
They tried to provide some concrete help (e.g., giving a ride, loaning money) to help solve the problem. (2)	❍	❍	❍	❍	❍	❍	❍
They tried to help me relax. (3)	❍	❍	❍	❍	❍	❍	❍
They tried to give me specific suggestions about how to solve the problem. (4)	❍	❍	❍	❍	❍	❍	❍
They tried to reassure and calm me down. (5)	❍	❍	❍	❍	❍	❍	❍
They tried to tell me how much they care about them. (6)	❍	❍	❍	❍	❍	❍	❍
They gave me a reassuring pat on the back or shoulder. (7)	❍	❍	❍	❍	❍	❍	❍
They tried to							

help me think clearly about my problem. (8)							
They tried to get me to talk about their feelings about the event. (9)	○	○	○	○	○	○	○
They tried to discuss the problem with me in a rational manner. (10)	○	○	○	○	○	○	○
	○	○	○	○	○	○	○
They provided me with advice to help them deal with the problem. (11)	○	○	○	○	○	○	○
The tried to help me deal with their emotions resulting from the problem. (12)	○	○	○	○	○	○	○
	○	○	○	○	○	○	○
They tried to tell me how important I am to them. (13)							
They tried to get me to see the positive side of the							

situation. (14)	○	○	○	○	○	○	○
They tried to help me feel better about the situation. (15)							

Q4:

	not at all (1)	(2)	slightly (3)	(4)	quite a bit (5)	(6)	very much (7)
The support that they provided was successful. (1)	○	○	○	○	○	○	○
The support that they provided helped me solve my problem. (2)	○	○	○	○	○	○	○
Their support made me feel better about myself. (3)	○	○	○	○	○	○	○

General Self-Efficacy Scale

1	I can always manage to solve difficult problems if I try hard enough.
2	If someone opposes me, I can find the means and ways to get what I want.
3	It is easy for me to stick to my aims and accomplish my goals.
4	I am confident that I could deal efficiently with unexpected events.
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.
6	I can solve most problems if I invest the necessary effort.
7	I can remain calm when facing difficulties because I can rely on my coping abilities.
8	When I am confronted with a problem, I can usually find several solutions.
9	If I am in trouble, I can usually think of a solution.
10	I can usually handle whatever comes my way.

Demographics

In these first questions, we are interested in learning a bit about you. All of your responses are confidential and your name (or any other identifying information) will not be associated with your responses.

Your ethnicity (indicate more than one if applicable):

Black, African American

White, Caucasian, European

Chinese

Japanese

Korean

Southeast Asian (e.g., Vietnam, Cambodia)

Indian

Pacific Islander (e.g., Samoan)

Mexican, Mexican-American, Chicano/a

Other Latino (e.g., Guatemala, Colombia)

Native American, American Indian

Middle Eastern (e.g., Egypt, Iran)

Other (Please specify)

Were you born in the U.S.?

Yes

No

How many years have you lived in the U.S.?

Do you, your parents, or grandparents speak a language other than English at home?

Yes

No

	None of the time	Some of the time	Most of the time	All the time
I speak this language with friends and acquaintances.	0	1	2	3
I feel comfortable speaking this language.	0	1	2	3
I know how to read and write in this language.	0	1	2	3

	None of the time	Some of the time	Most of the time	All the time
I speak this language at home.	0	1	2	3

	None of the time	Some of the time	Most of the time	All the time
I think in this language.	0	1	2	3

	False	Somewhat false	Somewhat true	True
I have never learned to speak this language.	0	1	2	3

What is the language (other than English) that you, your parents, and/or grandparents speak or spoke at home?

Please answer the question below based on the language you indicated above.

What language do you prefer to use? Why?

Your GENDER:

Male

Female

Other

Your AGE:

Do you have any religious identification?

None

Roman Catholic

Church of England/Anglican

Other Protestant

Evangelical Christian

Other Christian

Jewish

Shi'ite Muslim

Sunni Muslim

Hindu

Jain

Sikh

Buddhist

Other (please specify)

Do you consider your family growing up to be:

Lower working class (e.g., unskilled workers, employed off-and-on)

Upper working class (e.g., skilled workers or small farmers, steady employment)

Lower middle class (e.g., skilled trade such as carpentry, small entrepreneurs, run sizable, steady employment)

Upper middle class (e.g., professionals such as physicians, lawyers, CEOs, owners of a major industry, maybe some inherited wealth, high earned income)

Upper upper class (e.g., do not have to work for a living, can travel around the world when you feel like it, family is able to live on inherited wealth)

Which choice best describes your CURRENT socio-economic situation?

Lower working class (e.g., unskilled workers, employed off-and-on)

Upper working class (e.g., skilled workers or small farmers, steady employment)

Lower middle class (e.g., skilled trade such as carpentry, small entrepreneurs, run sizable, steady employment)

Upper middle class (e.g., professionals such as physicians, lawyers, CEOs, owners of a major industry, maybe some inherited wealth, high earned income)

Upper upper class (e.g., do not have to work for a living, can travel around the world when you feel like it, family is able to live on inherited wealth)

What is your marital status? (Please mark appropriate category.)

Single

Married

Committed Cohabitation

Other (please describe)

Do you have children?

Yes

No

Which of the following descriptions best applies to you?

1st Generation – You were born in another country.

2nd Generation – You were born in the U.S. and at least one of your parents
was born in another country.

3rd Generation – You were born in the U.S., both your parents were born in
U.S., and all your grandparents were born in another country.

4th Generation or higher – You, your parents, and your grandparents were all
born in the U.S.

Parent # 1

Indicate gender of parent #1.

Male

Female

Other

Parent # 1's ethnicity (indicate more than one if applicable):

Black, African American

White, Caucasian, European

Chinese

Japanese

Korean

Southeast Asian (e.g., Vietnam, Cambodia)

Indian

Pacific Islander (e.g., Samoa)

Mexican, Mexican-American, Chicano/a

Other Latino (e.g., Guatemala, Colombia)

Native American, American Indian

Middle Eastern (e.g., Egypt, Iran)

Other (Please specify)

Was parent # 1 born in the U.S.?

Yes

No (specify country)

Don't know

Was your GRANDMOTHER (parent # 1's mother) born in the U.S.?

Yes

No (specify country)

Don't know

Was your GRANDFATHER (parent # 1's father) born in the U.S.?

Yes

No (specify country)

Don't know

Approximately how many years of education did parent # 1 complete?

What is the highest level of education parent # 1 completed?

None

Primary, Elementary, or Middle School

High School or GED

Technical or Vocational School

Some college, no degree

Associate Degree

Bachelor's Degree

Graduate Degree (e.g., Master's, Doctorate, Medical, Law)

Other (please specify)

Parent #2

Indicate gender of parent #2.

Male

Female

Other

Parent # 2's ethnicity (indicate more than one if applicable):

Black, African American

White, Caucasian, European

Chinese

Japanese

Korean

Southeast Asian (e.g., Vietnam, Cambodia)

Indian

Pacific Islander (e.g., Samoa)

Mexican, Mexican-American, Chicano/a

Other Latino (e.g., Guatemala, Colombia)

Native American, American Indian

Middle Eastern (e.g., Egypt, Iran)

Other (Please specify)

Was parent # 2 born in the U.S.?

Yes

No (specify country)

Don't know

Was your GRANDMOTHER (parent # 2's mother) born in the U.S.?

Yes

No (specify country)

Don't know

Was your GRANDFATHER (parent # 2's father) born in the U.S.?

Yes

No (specify country)

Don't know

Approximately how many years of education did parent # 2 complete?

What is the highest level of education parent # 2 completed?

> None
>
> Primary, Elementary, or Middle School
>
> High School or GED
>
> Technical or Vocational School
>
> Some college, no degree
>
> Associate Degree
>
> Bachelor's Degree
>
> Graduate Degree (e.g., Master's, Doctorate, Medical, Law)
>
> Other (please specify)

The Medical Outcome Study Survey (MOS)

People sometimes look to others for support. How often is each of the following kinds of support available to you if you need it?

1	2	3	4	5
None	**A little**	**Some**	**Most**	**All**
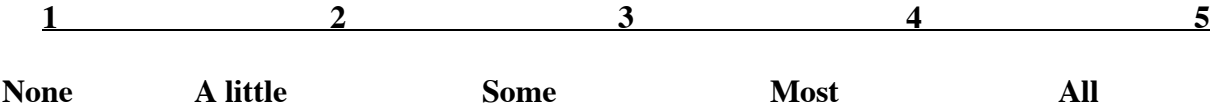
of the time   **of the time**   **of the time**   **of the time**   **of the time**

____1. Someone to help you if you were confined to bed.

____2. Someone you can count on to listen to you when you need to talk.

____3. Someone to give you good advice about a crisis.

____4. Someone to take you to the doctor if you needed it.

____5. Someone who shows you love and affection.

____6. Someone to have a good time with.

____7. Someone to give you information to help you understand a situation.

____8. Someone to confide in or talk to about yourself or your problems.

____9. Someone who hugs you.

____10. Someone to get together with for relaxation.

____11. Someone to prepare your meals if you were unable to do it yourself.

____12. Someone whose advice you really want.

____13. Someone to do things with you to help you get your mind off things.

____14. Someone to help with daily chores if you were sick.

____15. Someone to share your most private worries and fears with.

____16. Someone to turn to for suggestions about how to deal with a personal problem.

____17. Someone to do something enjoyable with.

____18. Someone who understands your problems.

____19. Someone to love and make you feel wanted.

Dominican- Model 2
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	7.90**	7.82**	7.92**
Perceived Stress	.44**	.44**	.43**
Familism	-.07	.05	-.05
Stress x Fam	-.02	-.00	-.01
ISEL	-.21**	-.21**	-.21**
Stress x ISEL	-.01†	-.01†	-.01†
Income	-.11	-.11	-.14
Gender	-.73	-.67	-.61
Age	-.04	-.02	-.03

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	18.03**	17.96**	18.09**
Perceived Stress	.41**	.41**	.41**
Familism	.02	.09	.04
Stress x Fam	.01	.00	-.00
ISEL	-.21**	-.21**	-.21**
Stress x ISEL	-.01*	-.01*	-.01*
Income	-.11	-.10	-.09
Gender	-.15	-.15	-.22
Age	-.20	-.19	-.24†

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	31.76**	31.83**	31.88**
Perceived Stress	-.13**	-.13**	-.13**
Familism	.24**	.12	-.07
Stress x Fam	-.02*	-.00	.00
ISEL	.20**	.21**	.21**
Stress x ISEL	.01*	.01*	.01*
Income	.46*	.44*	.39*
Gender	-.66†	-.64†	-.55
Age	-.18	-.19	-.17

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	50.84**	51.01**	51.31**
Perceived Stress	-.09	-.09	-.11
Familism	.31†	.06	-.02
Stress x Fam	-.01	.02	-.03
ISEL	.05	.06	.06
Stress x ISEL	.01	.01	.01
Income	1.21*	1.18*	1.15*
Gender	1.34	1.34	1.35
Age	-2.05**	-2.08**	-2.15**

Model 3

Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	-20.29	-5.61	1.07
Perceived Stress	2.05	1.17	.74
ISEL	.60	.22	-.04
Stress x ISEL	-.04	-.03	-.00
Familism	.94	.85	.18
Stress x Fam	-.05	-.05	-.01
ISEL x Fam	-.03	-.03	-.00
Stress x ISEL x Fam	.00	.00	-.00
Gender	-.77†	-.67	-.60
Income	-.12	-.11	-.15
Age	-.04	-.02	-.02

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	-17.86	13.21	40.23**
Perceived Stress	2.29*	1.41*	-1.01†
ISEL	1.41*	.71†	-.17
Stress x ISEL	-.07†	-.06*	.03†
Familism	1.88*	1.59†	-.52
Stress x Fam	-.10*	-.15*	.04
ISEL x Fam	-.05†	-.05	.02
Stress x ISEL x Fam	.003*	.01*	-.00
Gender	-.71†	-.59	-.53
Income	.45*	.39*	.39*
Age	-.18	-.19	-.18

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	11.98	16.75	12.98
Perceived Stress	.70	.32	.54
ISEL	.05	-.21	-.08
Stress x ISEL	-.02	.00	-.00
Familism	.08	-.26	.05
Stress x Fam	-.00	.03	.01
ISEL x Fam	-.00	.01	.00
Stress x ISEL x Fam	.00	-.00	-.00
Gender	-.16	-.16	-.20
Income	-.11	-.09	-.09
Age	-.21	-.19	-.23†

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	9.49	24.89	83.69*
Perceived Stress	1.95	2.37	-1.54
ISEL	1.08	1.06	-1.33
Stress x ISEL	-.06	-.10†	.07
Familism	1.77	2.72	-1.61
Stress x Fam	-.09	-.25†	.07
ISEL x Fam	-.05	-.10	.07
Stress x ISEL x Fam	.00	.01*	-.00
Gender	1.30	1.42	1.34
Income	1.20*	1.11*	1.19*
Age	-2.05*	-2.08**	-2.21**

Central American

Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	8.97**	9.04**	8.99**
Perceived Stress	.49**	.49**	.48**
Familism	-.02	-.12	.04
Stress x Fam	-.01	-.02	.00
ISEL	-.18**	-.18**	-.18**
Stress x ISEL	-.01	-.00	-.01
Income	-.55*	-.57*	-.53*
Gender	.33	.31	.30
Age	-.13	-.14	-.16

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	18.30**	18.28**	18.39**
Perceived Stress	.41**	.40**	.40**
Familism	.04	.16	.06
Stress x Fam	-.01	.01	.01
ISEL	-.16**	-.16**	-.15**
Stress x ISEL	.00	-.00	.00
Income	-.42*	-.42*	-.42*
Gender	-.04	-.06	-.10
Age	.04	.05	.00

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	30.99**	31.25**	31.24**
Perceived Stress	-.14**	-.14**	-.13**
Familism	.25**	.04	-.07
Stress x Fam	.00	.01	.00
ISEL	.15**	.15**	.15**
Stress x ISEL	-.01**	-.01**	-.01**
Income	.42*	.31†	.26
Gender	-.01	-.07	-.04
Age	-.28*	-.28*	-.24†

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	52.09**	51.85**	51.84**
Perceived Stress	-.15*	-.15*	-.14*
Familism	-.13	.13	-.14
Stress x Fam	.01	.01	.01
ISEL	-.03	-.03	-.03
Stress x ISEL	.01	.01	.01
Income	1.02*	1.11*	.99*
Gender	.74	.79	.86
Age	-1.53**	-1.52**	-1.44**

Model 3
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	-1.28	-2.20	3.79
Perceived Stress	1.18	1.22†	.62
ISEL	.03	.07	-.10
Stress x ISEL	-.02	-.02	-.01
Familism	.22	.56	.04
Stress x Fam	-.02	-.05	-.00
ISEL x Fam	-.01	-.01	-.00
Stress x ISEL x Fam	.00	.00	.00
Gender	.34	.31	.30
Income	-.56*	-.57*	-.53*
Age	-.14	-.14	-.16

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	36.33*	46.91**	17.31*
Perceived Stress	-.72	-.56	.84†
ISEL	-.24	-.36	.67*
Stress x ISEL	.02	.00	-.04*
Familism	-.46	-1.97†	.40
Stress x Fam	.04	.07	-.04
ISEL x Fam	.02	.06†	-.02
Stress x ISEL x Fam	-.00	-.00	.00
Gender	.01	-.04	-.04
Income	.42*	.29†	.29
Age	-.28*	-.27*	-.24†

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	2.93	23.21†	24.63*
Perceived Stress	1.26	-.06	-.06
ISEL	.23	-.42	-.40
Stress x ISEL	-.03	.01	.01
Familism	.51	-.59	-.49
Stress x Fam	-.03	.04	.03
ISEL x Fam	-.02	.02	.01
Stress x ISEL x Fam	.00	-.00	-.00
Gender	-.04	-.05	-.08
Income	-.43*	-.43*	-.43
Age	.04	.05	.00

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	57.63	50.87	48.48*
Perceived Stress	-.10	-.21	-.13
ISEL	.08	.07	.30
Stress x ISEL	-.01	.00	-.00
Familism	.02	.64	.57
Stress x Fam	-.01	-.01	-.01
ISEL x Fam	-.01	-.02	-.03
Stress x ISEL x Fam	.00	.00	.00
Gender	.74	.78	.80
Income	1.02*	1.12*	.99
Age	-1.53**	-1.53**	-1.44**

Cuban

Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	9.17**	9.04**	9.10**
Perceived Stress	.59**	.59**	.59**
Familism	.04	.10	-.01
Stress x Fam	.02*	.01	-.00
ISEL	-.15**	-.15**	-.14**
Stress x ISEL	-.01*	-.01*	-.01*
Income	-.46*	-.44*	-.44*
Gender	-.91*	-.89*	-.88*
Age	.14	.17	.15

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	18.74**	18.58**	18.84**
Perceived Stress	.47**	.47**	.47**
Familism	.09†	.24*	.08*
Stress x Fam	.01	.00	-.00
ISEL	-.14**	-.14**	-.13**
Stress x ISEL	-.01**	-.01**	-.01**
Income	-.30†	-.29†	-.24
Gender	-.63*	-.64*	-.70*
Age	-.01	.05	-.04

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	32.67**	32.71**	32.87**
Perceived Stress	-.15**	-.14**	-.14**
Familism	.38**	.24*	.00
Stress x Fam	-.01*	-.02†	.01
ISEL	.11**	.13**	.14**
Stress x ISEL	.00	.00	.00
Income	.32*	.25†	.20
Gender	.12	.07	.08
Age	-.36*	-.32*	-.35*

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	53.57**	53.74**	53.80**
Perceived Stress	-.17*	-.17*	-.17*
Familism	.18	.00	.05
Stress x Fam	-.03†	-.01	.00
ISEL	-.05	-.04	-.04
Stress x ISEL	.01†	.01	.01
Income	1.58*	1.51*	1.53*
Gender	1.13	1.08	1.04
Age	-2.31*	-2.32**	-2.34**

Model 3
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	18.55	16.22	-7.75
Perceived Stress	.48	.52	1.32*
ISEL	-.30	-.45	.28
Stress x ISEL	-.03	-.01	-.03
Familism	-.66	-1.20	.53
Stress x Fam	.01	.02	-.03
ISEL x Fam	.01	.03	-.02
Stress x ISEL x Fam	.00	.00	.00
Gender	-.90*	-.86*	-.89*
Income	-.43*	-.44*	-.43*
Age	.13	.15	.16

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	20.18	21.58*	34.84**
Perceived Stress	-.32	.07	-.46
ISEL	-.05	.25	.05
Stress x ISEL	.02	.00	.01
Familism	.46	.83	-.21
Stress x Fam	.01	-.02	.02
ISEL x Fam	.01	-.01	.00
Stress x ISEL x Fam	-.00	.00	-.00
Gender	.11	.06	.09
Income	.31*	.25†	.20
Age	-.35*	-.32*	-.35*

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	-5.57	9.91	.65
Perceived Stress	1.88*	1.08*	1.40**
ISEL	.68	.02	.33
Stress x ISEL	-.06*	-.03†	-.03*
Familism	.68	.20	.64
Stress x Fam	-.04	-.03	-.04†
ISEL x Fam	-.03	-.00	-.02
Stress x ISEL x Fam	.00*	.00	.00†
Gender	-.61*	-.63*	-.72*
Income	-.31†	-.30†	-.23
Age	-.00	.04	-.04

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	107.49*	90.27**	37.68†
Perceived Stress	-3.21	-2.13†	-.07
ISEL	-2.48†	-1.31	.51
Stress x ISEL	.15*	.08†	.00
Familism	-1.76	-2.51	1.26
Stress x Fam	.11	.15	-.02
ISEL x Fam	.09	.10	-.04
Stress x ISEL x Fam	-.01†	-.01†	.00
Gender	1.08	1.12	1.06
Income	1.63*	1.55**	1.58**
Age	-2.29*	-2.30**	-2.31**

Mexican

Model 2
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	7.27**	7.24**	7.30**
Perceived Stress	.52**	.52**	.52**
Familism	.03	.07	.01
Stress x Fam	-.00	-.01	-.00
ISEL	-.11**	-.11**	-.10**
Stress x ISEL	-.01**	-.01*	-.01*
Income	-.23*	-.23*	-.22
Gender	.14	.13	.12
Age	.13†	.14*	.12†

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	18.05**	18.03**	18.14**
Perceived Stress	.47**	.47**	.47**
Familism	.07*	.10*	.10**
Stress x Fam	-.00	-.01*	.00
ISEL	-.15*	-.15**	-.13**
Stress x ISEL	-.01**	-.01**	-.01**
Income	-.33**	-.34**	-.29**
Gender	.03	.04	-.10
Age	.07	.08	.01

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	30.47**	30.47**	30.51**
Perceived Stress	-.19**	-.19**	-.18**
Familism	.12**	.12*	-.17**
Stress x Fam	-.00	.00	.01*
ISEL	.16**	.16**	.15**
Stress x ISEL	-.00	-.00	.00
Income	.60**	.59**	.47**
Gender	-.54**	-.54**	-.29†
Age	-.21**	-.21**	-.15*

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	51.78**	51.77**	51.84**
Perceived Stress	-.15**	-.15**	-.15**
Familism	.05	.07	-.00
Stress x Fam	.00	-.01	-.01
ISEL	.02	.02	.02
Stress x ISEL	.01	.01	.01†
Income	1.07**	1.07**	1.05**
Gender	.41	.41	.44
Age	-1.52**	-1.51**	-1.52**

Model 3
Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	-4.45	-.38	-1.64
Perceived Stress	.82†	.63†	.71*
ISEL	.08	-.09	.01
Stress x ISEL	-.01	.00	-.00
Familism	.17	.01	.07
Stress x Fam	-.00	.01	.00
ISEL x Fam	-.00	.01	-.00
Stress x ISEL x Fam	.00	-.00	-.00
Gender	.14	.14	.12
Income	-.23*	-.23*	-.23*
Age	.13†	.14†	.12†

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	25.95**	32.57**	36.33**
Perceived Stress	-.04	-.18	-.29
ISEL	.15	.01	.07
Stress x ISEL	-.01	-.00	-.00
Familism	.12	-.32	-.42†
Stress x Fam	-.01	.00	.00
ISEL x Fam	.00	.01	.00
Stress x ISEL x Fam	.00	.00	.00
Gender	-.54**	-.53**	-.30†
Income	.60**	.59**	.48**
Age	-.21**	-.20*	-.14*

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	19.07*	15.54*	7.12†
Perceived Stress	.02	.37	.70*
ISEL	-.37	-.29	.08
Stress x ISEL	.02	.01	-.01
Familism	-.27	-.26	.31
Stress x Fam	.03	.02	-.00
ISEL x Fam	.01	.02	-.01
Stress x ISEL x Fam	-.00†	-.00	.00
Gender	.03	.04	-.09
Income	-.33*	-.34*	-.29*
Age	.07	.08	.01

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	52.49*	66.09**	58.53**
Perceived Stress	-.74	-1.36†	-.33
ISEL	-.04	-.56	-.06
Stress x ISEL	.02	.05*	-.00
Familism	.09	-.89	-.14
Stress x Fam	.02	.10	-.00
ISEL x Fam	-.00	.04	-.00
Stress x ISEL x Fam	-.00	-.00†	.00
Gender	.42	.41	.43
Income	1.08**	1.08**	1.06**
Age	-1.52**	-1.52**	-1.52**

Puerto Rican

Model 2
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	8.61**	8.62**	8.65**
Perceived Stress	.49**	.49**	.49**
Familism	.10†	.05	.02†
Stress x Fam	.01	-.00	.00
ISEL	-.19**	-.18**	-.18**
Stress x ISEL	-.01†	-.01†	-.01†
Income	-.02	-.03	-.02
Gender	-.34	-.34	-.38
Age	.16	.16	.15

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	19.41**	19.41**	19.48**
Perceived Stress	.46**	.46**	.46**
Familism	.05	.06	.04
Stress x Fam	-.01	-.00	-.00
ISEL	-.18**	-.18**	-.17**
Stress x ISEL	-.01**	-.01**	-.01**
Income	-.22†	-.23†	-.21
Gender	-.34	-.35	-.39
Age	-.08	-.08	-.11

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	30.76**	30.83**	30.95**
Perceived Stress	-.15**	-.15**	-.16**
Familism	.28**	.11†	-.04
Stress x Fam	-.01†	-.01	.02*
ISEL	.19**	.19**	.20**
Stress x ISEL	.01**	.01**	.01**
Income	.49**	.48**	.43**
Gender	-.34	-.43	-.39
Age	-.15	-.15	-.15

Physical Symptoms

	Familial Obligations	Familial Support	Familial Referents
Constant	48.17**	48.21**	47.66**
Perceived Stress	-.19*	-.19*	-.17*
Familism	-.08	-.32†	-.07
Stress x Fam	-.01	-.00	-.05*
ISEL	-.01	-.01	-.01
Stress x ISEL	-.02*	-.02*	-.02*
Income	1.98**	1.95**	1.98**
Gender	1.22	1.33†	1.42†
Age	-2.57**	-2.58**	-2.46**

Model 3
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	10.04	6.61	.39
Perceived Stress	.30	.72†	.79*
ISEL	-.33	-.19	-.03
Stress x ISEL	-.00	-.01	-.01
Familism	-.26	-.30	.18
Stress x Fam	.01	-.01	-.01
ISEL x Fam	.01	.01	-.01
Stress x ISEL x Fam	-.00	.00	.00
Gender	-.35	-.33	-.38
Income	-.02	-.03	-.02
Age	.16	.17	.15

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	31.08*	32.85**	35.58*
Perceived Stress	-.25	-.42	-.52*
ISEL	-.32	-.12	.11
Stress x ISEL	.01	.02	.00
Familism	.02	-.11	-.24
Stress x Fam	-.00	.01	.01
ISEL x Fam	.01	.02	.02
Stress x ISEL x Fam	-.00	-.00	-.00
Gender	-.36	-.42	-.38
Income	.50*	.48**	.43**
Age	-.15	-.15	-.16

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	-7.31	-9.03	5.50
Perceived Stress	1.41*	1.13**	1.14**
ISEL	.59	.13	.21
Stress x ISEL	-.03	-.03*	-.03*
Familism	.78†	.28	.42
Stress x Fam	-.03	-.04	-.03†
ISEL x Fam	-.02	-.01	-.01
Stress x ISEL x Fam	.00	.00	.00†
Gender	-.33	-.34	-.38
Income	-.23†	-.22†	-.21†
Age	-.08	-.07	-.11

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	40.48	28.94	-2.49
Perceived Stress	-.02	.70	2.08*
ISEL	.51	.88	1.53*
Stress x ISEL	-.01	-.03	-.05*
Familism	.14	1.31	2.79*
Stress x Fam	.01	-.04	-.11*
ISEL x Fam	-.01	-.05	-.08*
Stress x ISEL x Fam	-.00	.00	.00
Gender	1.25	1.29†	1.42†
Income	1.98**	1.93**	1.92**
Age	-2.57**	-2.60**	-2.44**

South American

Model 2
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	7.93**	8.06**	7.97**
Perceived Stress	.58**	.58**	.59**
Familism	.02	.00	.06
Stress x Fam	.01	.02	.01
ISEL	-.14**	-.14**	-.14**
Stress x ISEL	-.01†	-.01†	-.01†
Income	-.10	-.14	-.10
Gender	-.22	-.28	-.32
Age	-.11	-.11	-.12

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	17.96**	18.02**	18.04**
Perceived Stress	.40**	.40**	.40**
Familism	.02	-.08	.10†
Stress x Fam	.02†	.02	.01
ISEL	-.27**	-.27**	-.27**
Stress x ISEL	-.02**	-.02**	-.02**
Income	-.15	-.17	-.13
Gender	.30	.27	.29
Age	-.22	-.22	-.26

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	32.76**	32.82**	32.73**
Perceived Stress	-.18**	-.18**	-.18**
Familism	.23*	.04	-.07
Stress x Fam	-.02†	-.03†	.01
ISEL	.16**	.16**	.16**
Stress x ISEL	.00	.00	.00
Income	.26	.26	.20
Gender	-1.11*	-1.26*	-1.43**
Age	-.39*	-.39*	-.31†

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	53.83**	53.62**	53.97**
Perceived Stress	.02	.02	.01
Familism	-.02	.53†	.09
Stress x Fam	-.01	-.04	-.01
ISEL	-.09	-.12	-.09
Stress x ISEL	.02†	.02†	.02
Income	.70	.69	.74
Gender	.36	.64	.41
Age	-1.72**	-1.68**	-1.80**

Model 3
Depression

	Familial Obligations	Familial Support	Familial Referents
Constant	7.13	-9.62	-3.75
Perceived Stress	.70	2.51*	1.35*
ISEL	-.23	.61	.21
Stress x ISEL	-.01	-.10*	-.04*
Familism	-.31	.72	.20
Stress x Fam	.01	-.14†	-.03
ISEL x Fam	.01	-.05	-.01
Stress x ISEL x Fam	.00	.01*	.00
Gender	-.21	-.30	-.28
Income	-.11	-.09	-.08
Age	-.11	-.14	-.13

Self-esteem

	Familial Obligations	Familial Support	Familial Referents
Constant	20.40	32.45*	38.19**
Perceived Stress	.46	.32	-.54
ISEL	.08	-.06	.05
Stress x ISEL	-.01	-.01	.01
Familism	.46	-.08	-.43
Stress x Fam	-.03	-.04	.02
ISEL x Fam	.00	.02	.01
Stress x ISEL x Fam	.00	.00	-.00
Gender	-1.10*	-1.25*	-1.44**
Income	.26	.26	.20
Age	-.39*	-.40*	-.31†

Anxiety

	Familial Obligations	Familial Support	Familial Referents
Constant	24.11	14.87	12.34†
Perceived Stress	.30	1.11	1.07*
ISEL	-.18	.13	.02
Stress x ISEL	-.02	-.04	-.03*
Familism	-.52	-.23	-.07
Stress x Fam	.03	-.01	-.01
ISEL x Fam	.01	-.01	.00
Stress x ISEL x Fam	-.00	.00	.00
Gender	.31	.27	.31
Income	-.16	-.16	-.12
Age	-.22	-.23	-.27

Physical Health

	Familial Obligations	Familial Support	Familial Referents
Constant	44.96	104.55**	75.62**
Perceived Stress	-1.00	-2.91	-1.04
ISEL	.09	-2.57*	-.94
Stress x ISEL	.06	.14†	.04
Familism	.73	-3.51	-.84
Stress x Fam	.02	.21	.04
ISEL x Fam	-.02	.18†	.04
Stress x ISEL x Fam	-.00	-.01	-.00
Gender	.35	.72	.40
Income	.72	.60	.74
Age	-1.70*	-1.67**	-1.80**