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# Examination of Attitude-Behavior Discrepancy in Familism and its Relation to Symptoms of Depression among Latinos

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# EXAMINATION OF ATTITUDE-BEHAVIOR DISCREPANCY IN FAMILISM AND ITS RELATION TO SYMPTOMS OF DEPRESSION AMONG LATINOS

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# ABSTRACT

This research examines the discrepancy between attitudinal and behavioral familism and its relation to depressive symptoms. The overarching hypothesis was that discrepancy between family values and the actual experiences of those values influences psychological health. Previous research has primarily focused on self-report measures of familial attitudes, and not whether these values are actually experienced by the individual. To address this gap in the literature, this study developed a new behavioral familism scale. A total of 431 Latinos and non-Latino Whites from a large university in Florida participated in this study. Overall, the new behavioral familism scale demonstrated good psychometric properties. Test-retest reliability was established with a sample of 109 participants who completed the measures twice, two weeks apart. Test-retest reliability was high ($r$ = .85) and excellent (ICC = .92) for the total composite score. The internal consistency was examined with a sample of 323 participants. Results showed good internal consistency for the total composite score (Cronbach Alpha = .85). The convergent validity was evaluated with another measure of familism, as well as measures of perceived social support and family environment. Correlation analyses indicated significant positive relationships with all related measures in the expected direction. The divergent validity was evaluated with measures of social desirability and acculturation. Correlation analyses indicated non-significant and low relationships with both measures as expected. Polynomial regression and response surface analyses demonstrated that discrepancy between attitudinal and behavioral familism scores predicted symptoms of depression in a sample of 118 Latinos. Specifically, this study found that depressive symptoms increased as the discrepancy between the total composite scores of attitudinal and behavioral familism increased in either direction. Furthermore, the discrepancy

in the family interconnectedness subscale indicated that symptoms of depression increased when attitudinal family interconnectedness was higher than behavioral family interconnectedness, but not when the relationship was reversed. Discrepancies between attitudinal and behavioral familism total composite scores and subscales did not predict symptoms of anxiety. These findings highlight the importance of understanding the role that culturally specific variables, such as familism, play in the psychological health of Latinos.

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AFS Attitudinal Family Scale (Steidel & Contreras, 2003)

B-AFS Behavioral-Attitudinal Familism

B-FS Behavioral-Familism Scale

FS Familism Scale (Sabogal, Marín, Otero-Sabogal, VanOss Marín & Perez-Stable, 1987)

# CHAPTER ONE: INTRODUCTION AND LITERATURE REVIEW

Latinos represent the largest ethnic minority group in the United States. As a group, the Latino population is projected to increase more than twofold between 2014 (55 million; 17.4%) and 2060 (119 million; 28.6%) (Colby & Ortman, 2015). This demographic trend has resulted in increased attention to understanding the mental health needs of this population. Previous research indicates higher rates of mental health disparities among Latinos (Institute of Medicine, 2003; President's New Freedom Commission on Mental Health, 2003) and underscores the need to examine the effects of culture on the development, course and treatment of mental health (U.S. Departmemt of Health and Human Services, 2001). Despite research advances, little is known about the impact culture has on the risk and prevention of mental health disorders among Latinos. Given the importance of family in Latino culture, researchers have called attention to the need to study both the challenges and opportunities facing Latinos within the context of family interactions (Cauce & Domenech-Rodriguez, 2002).

Familism is the term used to describe a core cultural value that emphasizes strong and close family ties (Sabogal, Marin, Otero-Sabogal, VanOss Marin, & Perez-Stable, 1987), and has been associated with both good psychological health (Campos, Ullman, Aguilera, & Dunkel Schetter, 2014; German, Gonzales, & Dumka, 2008) and increased symptoms of anxiety and depression (Schwartz, 2007). A gap in the literature lies with the measurement of the construct itself, where few studies comprehensively assess key aspects of familism, such as the relationship between attitudinal and behavioral domains. That is, most studies focus on attitudinal familism values, disregarding whether the person is actually having these values met. Despite scholarly interest in familism, there has only been one attempt to develop a behavioral

familism measure. Comeau (2002) developed a behavioral familism measure based on frequency of family contact. Although this is a step forward in understanding behavioral familism, this behavioral familism measure does not assess people's actions in relation to their familism values. Thus, there is a need to develop a more comprehensive behavioral familism scale that could be used in conjunction with existing attitudinal measures in order to measure the two main dimensions of familism altogether. As such, the goal of this study is to bridge the gap in the understanding of the relationship between attitudinal values and the experience of familism among Latinos.

## Latino Mental Health

There is evidence that approximately 60% of Latinos meet lifetime diagnostic criteria for depressive, anxiety, or substance use disorders, whereas 30% meet 12-month criteria for similar disorders (Alegría, Mulvaney-Day, Woo, et al., 2007). However, research on racial-ethnic diversity found that the lifetime prevalence and risk for mood disorders, anxiety and for any psychiatric disorder among Latinos are lower compared to non-Latino Whites (Alegría et al., 2008; Breslau, Borges, Hagar, Tancredi, & Gilman, 2009) despite facing more severe socioeconomic and healthcare barriers (Turner & Lloyd, 2004). These findings suggest the existence of protective factors that might account for the reduced prevalence of mental health disorders among Latinos.

Although Latinos report lower prevalence of mental health disorders, those who become ill report more chronic disorders (Breslau et al., 2006; Breslau, Kendler, Su, Gaxiola-Aguilar, & Kessler, 2005; Himle, Baser, Taylor, Campbell, & Jackson, 2009) and higher rates of mental health comorbidities (Ortega, Feldman, Canino, Steinman, & Alegría, 2006). A recent study with

a sample of individuals with anxiety disorders showed worse psychological functioning among Latinos compared to non-Latino Whites (Moitra et al., 2014).

Furthermore, the underutilization of mental health services by Latinos represents a significant problem and has been a consistent theme in the literature (Alegría et al., 2014; Vega & Lopez, 2001). In the 1990s, research found that fewer than 1 in 11 Latinos with a mental disorder sought specialty mental health services, with rates even lower for Latino immigrants (Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999). Recent research also highlights underuse of treatment and receipt of poorer quality mental health services among Latinos (Harris, Edlund, & Larson, 2005; Institute of Medicine, 2003). Research examining mental health illness among suicide victims documented that, compared to non-Latino Whites and non-Latino Blacks, Latinos were less likely to have received a professional mental health diagnosis, or have been treated either currently or ever in their lives (Karch, Barker, & Strine, 2006). These findings suggest that there may be underlying factors that exacerbate the course, treatment, and recurrence of mental illness among Latinos.

In the past decade, research showed heterogeneity in prevalence patterns for mental disorders among Latinos. Although in the aggregate, Latinos have lower rates of mental health disorders, research documented increased prevalence of mental disorders as a function of years living in the United States and acculturation (Alegría, Sribney, Woo, Torres, & Guarnaccia, 2007; Ortega, Rosenheck, Alegria, & Desai, 2000; Vega, Sribney, Aguilar-Gaxiola, & Kolody, 2004). Further, findings from the National Latino and Asian American Study (NLAAS) demonstrated that U.S.-born Latinos are more at risk of any lifetime mental disorders than foreign born Latinos (Alegría et al., 2008). However, the protective effects of immigrant status varied by nativity, years living in the U.S., and age at immigration (Alegria et al., 2007).

Particularly, Puerto Ricans experienced higher risk of developing any mental illness than Mexicans, Cubans, and other Latino subgroups, and at a rate comparable to non-Latino White individuals. Additionally, higher rates of mental disorders were reported by U.S.-born, English-proficient, and third-generation Latinos (Alegría, Mulvaney-Day, Torres, et al., 2007).

In an effort to better understand what aspects of U.S. exposure are related to Latino mental health and account for variance among Latino subgroups, researchers have examined other social and cultural covariates: family cultural conflict, family cohesion, family support, family ties, and family conflict, amongst others. Taken together these cultural factors are referred to as familism. Familism may contribute to the understanding of Latino mental health as it has been found to capture the importance of close family ties and family support. Further, familism may be a potential indicator to understand the risk and protective factors associated with Latino mental health.

## Familism

Familism is a core cultural value among Latinos that emphasizes strong and close family ties. Familism was first defined as a universal concept referring to "strong in-group feelings, emphasis on family goals, common property, mutual support, and the desire to pursue the perpetuation of the family" (Bardis, 1959, p. 340). According to Sabogal et al. (1987), familism involves familial commitment, perceived support, emotional closeness, and viewing family as a referent. Recent cross-cultural studies have supported the universality and cultural variability of this concept (Nicholas, Stepick, & Stepick, 2008; Schwartz, 2007; Weine et al., 2006). Although familism is a value commonly found across groups of different cultural backgrounds, Latinos

typically report higher levels of familism compared to individuals from European, Asian and African American backgrounds (Campos et al., 2014; Sabogal et al., 1987). Further, Latinos tend to highly regard feelings of reciprocity, loyalty and solidarity among family members (Rivera, 2002). Table 1 summarizes definitions of Familism.

*Table 1*
*Definitions of Familism*

| | |
|---|---|
| Bardis (1959) | Refers to strong in-group feelings, emphasis on family goals, common property, mutual support, and the desire to pursue the perpetuation of the family. |
| Triandis, Marin, Betancourt, Lisansky, & Chang (1982) | Strong family ties (nuclear and extended) and feelings of loyalty, reciprocity and solidarity among family members |
| Marin (1993) | A cultural value emphasizing close family relationships that is known to be high among Latinos |
| Santiago-Rivera (2002) | Refers to having strong feelings of reciprocity, loyalty, and solidarity among family members |

Traditionally, familism has been conceptualized as an attitudinal construct. However, research has drawn attention to the existence of two dimensions of familism: attitudinal and behavioral (Calzada, Tamis-LeMonda, & Yoshikawa, 2013; Comeau, 2012; Keefe, 1984; Sabogal et al., 1987). Attitudinal familism refers to feelings of loyalty, solidarity, and reciprocity towards one's nuclear and extended families (Cauce & Domenech-Rodriguez 2002; Costes, 1995; Steidel, & Contreras, 2003; Marin, 1991), whereas behavioral familism refers to behaviors that are actually experienced in relation to these beliefs, such as helping with childrearing and caregiving.

Given that research has primarily focused on attitudinal familism (Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable, 1987; Villarreal et al., 2005), a gap in the literature lies with the measurement of the construct itself, where few studies have comprehensively assessed the behavioral domain of familism (Calzada et al., 2013). The current study seeks to fill this gap by measuring both, the attitudinal and the behavioral domains, simultaneously.

**Attitudinal Familism**

Attitudinal familism has been implicated in promoting both good psychological health and psychological distress. Several studies have found an association between familism and lower rates of substance abuse (Gil, Wagner, & Vega, 2000; Horton & Gil, 2008), lower rates of behavioral problems (German, Gonzales, & Dumka, 2009) and better psychological adjustment (Contreras, López, Rivera-Mosquera, Raymond-Smith, & Rothstein, 1999), while others have found a link between familism and greater distress (Schwartz, 2010) and psychological maladjustment (Rodriguez, Mira, Myers, Morris, & Cardoza, 2003).

Gamble and Modry-Mandell (2008) found that familism moderated the relationship between family relations, as measured by mother-child closeness and sibling-warmth, and emotional adjustment, indicating that mothers who reported high levels of familism have children who appeared to be functioning better in school. Another study found a significant correlation between family cohesion, (a proxy variable for familism) and lower psychological distress among a nationally representative sample of U.S. Latinos. However, when examining subgroups, this study found no association between family variables and psychological distress for Puerto Ricans (Rivera et al., 2008), highlighting the importance of understanding variance across Latino subgroups.

In another study examining familism and psychological health, social support, and stress among pregnant women, high familism was negatively correlated with stress and pregnancy anxiety among U.S.-born and foreign-born Latinas and European American women. Among this sample, Latinas scored higher on familism than European American women (Campos et al., 2008). This study suggests that familism may serve as a form of social support that may buffer Latinos from the development of anxiety and depressive symptoms. In fact, studies show that social support derived from relatives and friends reduces the risk of psychological distress, particularly depression (Rivera, 2007; Rodriguez et al., 2003; Vega, Kolody, Valle, & Weir, 1991). However, a recent study using a nationally representative sample of English- and Spanish-speaking Latinos found that the protective effect of patterns of familism is only present in the country of origin and lost rapidly after arrival in the U.S. (Alegria et al., 2007).

Although less documented, studies on attitudinal familism also point to the negative effects and weaker relationship between familism and psychological health. Schwartz et al (2010) measured familism using an attitudinal familism scale among a sample of college students and found that the overall family primacy factor was associated with both greater wellbeing and greater distress. Distress was measured in terms of symptoms of anxiety and depression. Further, a recent study found a weaker association between familism and psychological health. Campos, Ullman, Aguilera, and Dunkel Schetter (2014) found an indirect effect of attitudinal familism on better psychological health through greater closeness to family members and greater perceived social support in a sample of university students. Although research suggests that familism can function both as a protective and a risk factor, most empirical studies fail to adequately measure the main dimensions of familism (attitudinal and behavioral)

or the link between behavioral indicators of familism and psychological health (Calzada et al., 2013; Comeau, 2012).

**Behavioral Familism**

Behaviorally, familism has been observed in five tangible areas: financial support, shared daily activities, shared living, shared childrearing, and immigration support (Calzada et al., 2013). A recent qualitative study with Mexican and Dominican families living in the U.S. found that, along with the benefits of actual family support (e.g., shared childrearing), Latina mothers also struggled with the expectations and norms of familism, increasing a sense of distress (Calzada et al., 2013). As such, familism can be a source of risk and a protective factor for low-income, urban Latino families.

A review of the literature identified only one behavioral familism measure derived from the 2002 General Social Survey (GSS). This measure focuses on the frequency of contact with family members (Comeau, 2012). The frequency of in-person visits is measured by the number of interactions with nuclear family members, while frequency of contact, which could be by telephone, in-person, or by other means, is measured by the number of interactions with extended families. However, looking at the frequency of contact and limiting the type of interactions excludes other important behavioral aspects that are more reflective of the multiple ways in which immigrants maintain meaningful relationships with their relatives. For example, some immigrants may not be able to visit their relatives in person, depending on their legal status and economical resources, but they may have frequent telephone contact with their relatives residing in their country of origin. Further, frequency of contact does not adequately measure the quality of contact. That is, frequent contact prompted by family conflict or involving frequent

arguments would not be conducive to favorable mental health outcomes (Rivera et al., 2008). As such, there is a great need to expand the understanding of the behavioral dimension of familism and its relation to attitudinal familism. Although attitudes are perceived as precursors of behaviors, the link between attitudes and behaviors, as it relates to familism, has not been previously studied.

## Statement of Purpose

The literature review points to two key conclusions. First, familism may represent a source of strength or weakness of psychological health for Latinos. Second, our understanding of familism is limited by the gap in measurement development, which has focused traditionally on the attitudinal dimension of familism, disregarding the behavioral dimension. The development of a new measure of behavioral familism will be helpful to better understand the construct itself and how it is experienced by individuals. Additionally, it will allow the examination of the relationship between familism and psychological health and symptoms of distress. As such, the purpose of this study was to develop and establish the psychometric properties of a new self-report measure of behavioral familism and to test its relationship to attitudinal familism and psychological distress.

The first step in this study was to develop behavioral familism companion items for an existing attitudinal familism scale. Despite scholarly interest in familism, there are no existing scales that assess behavioral familism or quantify how familism is experienced by individuals. The second step in this study was to establish the reliability and validity of the new behavioral familism scale.

After developing and testing the psychometrics of the existing attitudinal familism scale and the new behavioral familism scale, the third step was to examine the discrepancy between attitudinal and behavioral familism scales and establish whether discrepancies predict symptoms of anxiety and depression. Research provides support for attitudinal familism as both a risk and protective factor for Latinos. However, the influence of discrepancies between attitudinal and behavioral familism has not been empirically studied.

# CHAPTER TWO: METHODOLOGY

## Participants

Two samples were drawn from a large university in the state of Florida. The first sample of 109 participants was recruited from an undergraduate psychology class. The measures described below were distributed and collected in class. The second sample of 323 participants was recruited from an online research participation system that allows university students to self-enroll in psychology studies. The demographics for both samples are described in the results section.

## Procedure

Participants in Sample 1 completed a paper-and-pencil survey, whereas participants in Sample 2 completed an online version of the same survey. Participants in Sample 1 were asked to complete the survey twice, two weeks apart, in order to examine the test-retest reliability of the behavioral familism scale. All participants provided informed consent and received research credits for their participation. Study procedures were reviewed and approved by the university's institutional Review Board. Appendix A displays the Institutional Review Board Approval letter pertaining to this study.

## Development of Behavioral Familism Scales

One of the most widely used familism scales is the Attitudinal Familism Scale (AFS; Steidel & Contreras, 2003). This scale measures individuals' ideal familism values while disregarding the behavioral dimension of familism or the actual experiences of familism. Given this measurement limitation, this study developed a compatible scale of behavioral familism to

address this issue. First, face and content validity were examined for each existing attitudinal scale through expert analysis consensus. Face validity is defined as the degree to which a test seems to measure what it purports to measure (DeVellis, 2016). Content validity examines the items against the content domain with expert judges (DeVellis, 2016). Expert analysis was conducted by three researchers, two of whom were bilingual (English-Spanish) and bicultural. For the purpose of this study, no modification was made to the AFS.

The original AFS quantifies individuals' ideal expectation of familism values. Behavioral companion items were developed by changing modal verbs (e.g. should, would) to auxiliary (e.g. have) or action (e.g. do, can) verbs. Overall content, direction of wording and Likert scale responses otherwise remained the same.

In this study, the corresponding scale to the AFS is termed Behavioral-Attitudinal Familism Scale (B-AFS). Appendix B shows the behavioral familism scale developed for this study.

## Measures

### Attitudinal and Behavioral Familism Measures

**Attitudinal Familism Scale (AFS; Steidel & Contreras, 2003).** The Attitudinal Familism Scale (AFS) is one of the most widely used self-report measures of attitudinal familism. The scale is composed of 18 items that assess four main components of attitudinal familism: familial support, familial interconnectedness, familial honor, and subjugation of self for family. Items are answered on a 10-point Likert-type scale ranging from 1 (strongly disagree) to 10 (strongly agree). This measure is intended to assess all aspects of attitudinal familism building on previous research (Bardis, 1959; Sabogal et al., 1987). Through a factor analysis,

Steidel and Contreras (2003) found the four factors accounted for 51.23% of the variance on a sample of 124 Latino adults. Cronbach's alphas were .83 for the overall scale, .72 for Familial Support, .69 for Familial Interconnectedness, .68 for Familial Honor, and .56 for Subjugation of Self for Family. The entire AFS was used in this study without edits.

**Behavioral-Attitudinal Familism Scale (B-AFS).** The B-AFS consists of 18 companion items developed from the original version of the Attitudinal Familism Scale (Steidel & Contreras, 2003). Items were answered in a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The internal consistency and test-retest reliability for this new instrument is reported in the results section.

### Convergent Validity Measures

**Familism Scale (FS; Sabogal et al., 1987).** The FS was utilized to establish the convergent validity for the AFS. The modified version used in this study consists of 12 items that measure three factors: Familial Obligations, Perceived Support from the Family, and Family as Referents. Items were answered in a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Sabogal et al. (1987) conducted a factor analysis with a sample of 452 Latinos compared to 227 non-Latino Whites and found that the three factors accounted for 48.4% of the variance. Cronbach's alphas were.76 for Familial Obligations, .70 for Perceived Support from the Family, and .64 for Family as Referents.

**Behavioral-Familism Scale (B-FS).** The B-FS was used to establish the convergent validity for the B-AFS. It consists of 12 companion items developed from the original version of the FS. Items were answered in a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Both the FS and B-FS are displayed in Appendix C. The psychometric

properties of these measures are reported in a monograph by Nicasio (2016) which is found in Appendix D.

**Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, Farley, 1988).** The MSPSS is a 12-item self-report scale that measures three sources of support: 1) Family, 2) Friends, and 3) Significant Other. Items were responded using a 7-point Likert scale from Very Strongly Disagree (1) to Very Strongly Agree (7). Zimet et al. (1988) reported high to adequate Cronbach's alpha scores for the total scale (.88) and the Family (.87), Friends (.85) and Significant Other subscales (.91).

**Family Environment Scale (FES; Moos & Moos, 1986).** The FES measures family social environment. The total scale consists of 90 items and is organized into three dimensions: relationships, personal growth, and system maintenance. The relationship dimension comprises three subscales (cohesion, expressiveness and conflict), each containing nine true-false items. In this study, two subscales were used: Family Cohesion and Family Conflict. Moos and Moos (1986) reported low to adequate Cronbach's alphas for the subscales, ranging from .61 to .78.

**Divergent Validity Measures**

**Marlowe-Crowne Social Desirability Scale – Short Form (MCSDS-SF); Zook & Sipps, 1985).** The MCSDS consists of 33 true-false items that measures social desirability response tendencies (Crowne & Marlow, 1960). The MCSDS-SF used in this study contains 13 true-false items. Zook and Sipps (1985) reported adequate Cronbach's alpha scores for the MCSDS short form (.74).

**Stephenson Multigroup Acculturation Scale** (SMAS; Stephenson, 2000), consists of 32 items assessing behavioral and attitudinal aspects of acculturation that can be applied across

ethnic groups. Items were responded using a four-point Likert-type scale where 1 = True, 2 = Partly True, 3 = Partly False, and 4 = False. The SMAS comprises two subscales: ethnic group identification (EGIS) and dominant group identification (DGIS). Stephenson (2000) reported high to adequate Cronbach's alphas for EGIS (.94) and DGIS (.75).

**Outcome Measures**

**Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996).** The BDI-II is a 21-item self-report inventory that measures depressive symptoms experienced in the past two weeks. Responses to each item ranged from 0 to 3 according to the severity of the statement. Previous studies have shown internal consistency scores of Cronbach's alpha ranging from .91 to .93 in college student samples (Beck et al., 1996; Dozois, Dobson, & Ahnberg, 1998). Further, a recent study using a sample of Latinos and non-Latino Whites evidenced adequate internal consistency for the BDI-II, reporting Cronbach's alphas ≥ .82 for both groups (Contreras et al., 2004).

**Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988; Beck & Steer, 1993).** The BAI is a 21-item self-report inventory that measures anxiety symptoms experienced in the past two weeks. Each item is rated on a 4-point scale ranging from 0 (Not at all) to 3 (Severely - I could barely stand it). Beck et al. (1988) reported a high Cronbach's alpha score for the total BAI scale (.92). Further, a recent study using a sample of Latinos and non-Latino Whites evidenced adequate internal consistency for the BAI reporting Cronbach's alphas ≥ .88 for both groups (Contreras et al., 2004).

**Demographic Questions**

Participants reported demographic information, which included race, ethnicity, age, gender, generational status, level of education, income, marital status, employment, and indicators of exposure to the U.S. culture (e.g. country of birth, years living in the U.S., language spoken at home). Table 2 displays the demographic characteristics by samples. Appendix E shows the demographic questionnaire used in this study.

**Data Quality Check Items**

There is considerable debate about the veracity of participants completing online surveys. Researchers often are concerned that online participants may be inattentive to instructions, respond randomly or otherwise distort their responses to items and therefore provide poor-quality data (Chandler, Mueller, & Paolacci, 2014). Recent research suggests the use of validity measures to identify questionable response behaviors (Smith, Roster, Golden, & Albaum, 2016a), such as lack of attention to instructions and items. Inattentiveness is identified when participants provide incorrect responses to obvious or preposterous questions requiring specific responses (e.g., Please answer "yes" to this question) or questions that require existing knowledge (e.g., "Obama is the first American President") (Smith, Roster, Golden, & Albaum, 2016b). To ensure quality of data, three indicators or validity response items were distributed throughout the survey. Therefore, the data from participants who answered one or more of the three validity response items incorrectly were excluded from analyses. The three response validity items were: *Obama was the first American President?* (Yes/No), *The 911 terrorist attacks happened in South America?* (Yes/No), and *How are you feeling today? Please ignore how you are feeling today and instead check only the "All of the above" choice.*

## Statistical Analyses

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 23 (IBM, 2015). Prior to analyses, data from each sample were inspected separately for data entry accuracy, missing values, outliers, and violation of assumptions of normality following the steps outlined by Tabachnick and Fidell (2013). In both samples, missing data ranged from 0 – 2.8% across all variables, except for immigrant generational status (0.9 – 4.6%) and income (3.1 - 9.2%). Participants' data with missing values were eliminated from analyses using listwise deletion.

### Demographic Characteristics

Differences between samples and racial/ethnic groups were computed when appropriate. Chi-square tests were used for categorical data and independent samples *t* tests were used for continuous variables.

### Test-retest Reliability Analyses

To examine whether the scales and subscales scores were consistent over time, participants in Sample 1 (Psychology Class) completed two pencil-and-paper questionnaires one week apart. Although Pearson's Product Moment Correlation coefficient [Pearson's (*r*)] is typically used to quantify test-retest reliability, researchers argue its limitation in detecting systematic errors inherent in the applied measurement (Vaz, Falkmer, Passmore, Parsons, & Andreou, 2013; Weir, 2005). Increasingly, Intraclass correlation coefficient (ICC) is often used in place of or in combination with Pearson's r to provide a more in-depth evaluation of the test-retest reliability. The ICC quantifies both the consistency in performance from test to retest

(within-subject change), and change in means (group level change) over time (Chicchetti, 1994; Lexell & Downham, 2005). As a result, the test-retest reliability was evaluated two ways: Pearson's Product Moment correlations and Intraclass correlation coefficients.

**Internal Consistency Reliability Analyses**

Cronbach's alpha coefficients were computed to estimate the internal consistency reliability of both the attitudinal and their corresponding behavioral familism scales using data from Sample 2 (Online Survey). Cronbach's alpha coefficients equal to or greater than .70 are typically considered acceptable (Nunally, 1978).

**Convergent Validity Analyses**

Convergent validity was examined using correlation analyses and when appropriate variables were transformed. First, convergent validity was evaluated between the attitudinal (AFS) and behavioral familism scales (B-AFS) using data from Sample 2. Convergent validity also was examined with the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, Farley, 1988) and the Family Environment Scale (FES; Moos & Moos, 1986). The MSPSS and FES have been used in previous studies to determine the convergent validity of familism scales.

**Divergent Validity Analyses**

Divergent validity was examined using correlation analyses and, when appropriate, variables were transformed. The divergent validity of the familism scales was examined using

the Marlowe-Crowne Social Desirability Scale – Short Form (MCSDS-SF; Zook & Sipps, 1985) and the Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000).

**Discrepancy Analyses**

Historically, discrepancy analysis has relied on the simple difference between two measures or indices. However, researchers have long noted that the traditional way of measuring discrepancies with difference scores suffer from methodological flaws (Cronbach & Furby, 1970; Edwards, 1994b; Tisak & Smith, 1994). The major concerns of simple difference scores include reduced reliability, ambiguity, confounded effects, untested constraints, and dimensional reduction (Cronbach & Furby, 1970; Edwards, 2001; Edwards, 1994a).

To circumvent methodological problems with simple difference scores, emerging methods have been proposed. Both, polynomial regression and response surface analyses mitigate the methodological problems with discrepancy scores and provide a critical view of the relationships between combined predictor variables and the outcome variable (Edwards, 2001; Edwards, 1994c; Tisak & Smith, 1994). For instance, polynomial regression sustains the conceptual integrity of the predictor variables and treats discrepancies as statements of hypotheses to be tested empirically (Edwards, 2001). Essentially, polynomial regression uses the component measures that constitute the difference and higher order-terms (i.e. squares and products of the squares) instead of just a simple difference. This approach allows a more comprehensive view of the relationships of an outcome variable with difference scores creating new opportunities for theory development (Edwards, 1994a). Moreover, response surface methodology allows for a three dimensional examination of the relationship between the combined predictor variables and an outcome variable. This is an extension to the two-

dimensional relationship evaluated through regression analyses. Therefore, response surface analyses provide more information about how the combinations of predictor variables may affect an outcome variable.

Further, recent empirical studies have elucidated the benefits of using polynomial regression and response surface modeling over traditional computations of difference scores. For example, a study examining the relationship between two sources of work support and affective commitment illustrated the confounding effect of discrepancy scores on each of the predictor variables as related to the outcome measure. Further, the independent effect of each predictor variable on the outcome variable would otherwise be obscured with traditional difference cores. Another study assessing body image dissatisfaction demonstrated data constrains imposed by the use of difference scores. For instance, the difference in the proportion of variance varied from 2.7% to 17.7% across the two measures. The study concluded that the use of discrepancy scores can result in inaccurate conclusions and mis-estimation of the magnitude of the relationship between the two predictors and the outcome variable (Cafri, van den Berg, & Brannick, 2010).

Following this polynomial regression and response surface analyses were used here to evaluate the overarching hypothesis that discrepancy between attitudinal and behavioral familism predict psychological distress. Data from Latinos in Sample 2 were used to examine the discrepancy between the familism scales and outcome variables as related to depression and anxiety. Discrepancy analyses were computed following the steps outlined by Shanock et al. (2010) and Edwards (2008) for polynomial regression and response surface analyses. First polynomial regression was computed using the equation:

$$Z = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2 + e$$

In this equation *Z* is the outcome variable (BAI or BDI-II), *X* is predictor 1 (AFS), and *Y* is predictor 2 (B-AFS). The resulting polynomial coefficients were used to examine the response surface pattern (Edwards, 1994) with regard to four surface tests: $a_1 = (b_1 + b_2)$ which measure the slope of the line of perfect agreement as related to *Z*, $a_2 = (b_3 + b_4 + b_5)$ which measures the curvature along the line of perfect agreement as related to Z, $a_3 = (b_1 - b_2)$ which measures the slope of the line of incongruence as related to *Z*, and $a_4 = (b_3 - b_4 + b_5)$ which measures the curvature of the line of incongruence as related to *Z*. The formulas to evaluate the significance of each surface value were computed using the Excel spreadsheet provided by Shanock et al. (2010). Last, response surface results were graphed using an Excel spreadsheet provided by Edwards (2015).

# CHAPTER THREE: RESULTS

## Demographic Characteristics

### Sample 1

Sample 1 was comprised of 109 participants (47 Latinos, 62 non-Latino Whites; 80 women, 28 men, one unknown; ages 18-28, $M$ = 21.34, $SD$ = 2.05) who were recruited in-person from an undergraduate psychology elective course. A total of 144 participants completed the paper-and-pencil version of the survey at time 1 and time 2. Of those participants, 22 (15.3%) mismatched cases were removed from analyses. Additionally, seven (4.9%) participants were removed from analyses because they incorrectly responded or missed at least one of the quality indicator items. Out of the remaining 115, six participants were removed because they were identified as univariate outliers with extremely low z scores (2.7%) or as multivariate outliers based on Mahalanobis distance criterion (1.3%). There were no significant differences between the retained and excluded participants in age ($p$ = .163), gender ($p$ = .826), race/ethnicity ($p$ = .150) or other study variables. As a result, 109 matched cases were retained for data analyses in sample 1. Figure 1 displays the flow chart for Sample 1.

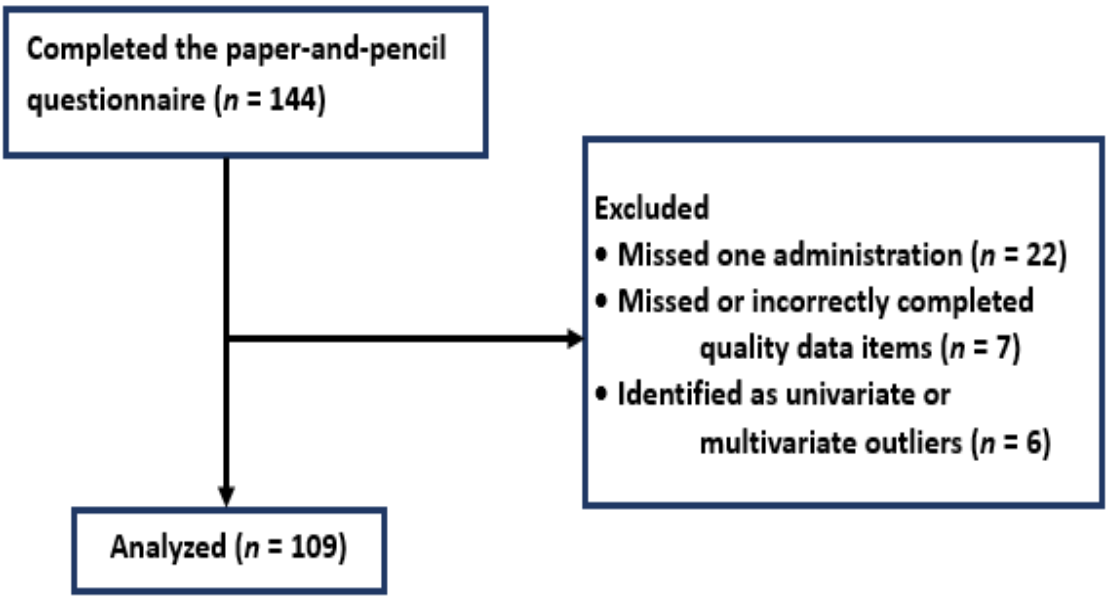


*Figure 1: Flow Chart for Sample 1*

**Sample 2**

Sample 2 was comprised of 323 participants (121 Latinos, 202 non-Latino Whites; 201 women, 115 men, seven unknown; ages 18-54, $M$ = 21.50, $SD$ = 5.98) who were recruited using a university online research system as part of an undergraduate General Psychology course serving all majors. A total of 349 participants completed the online survey. Of those participants, 11 (3.1%) were removed from analyses because they incorrectly responded or missed at least one of the quality indicator items. Out of the remaining 329, 15 participants were removed because they were identified as univariate outliers with extremely low z scores (1.7%) or as multivariate outliers based on Mahalanobis distance criterion (2.5%). There were no significant differences in the retained and excluded participants by age ($p$ = .752), gender ($p$ = 8.10) or any other study variable. As a result, 323 participants were retained for data analyses in Sample 2.

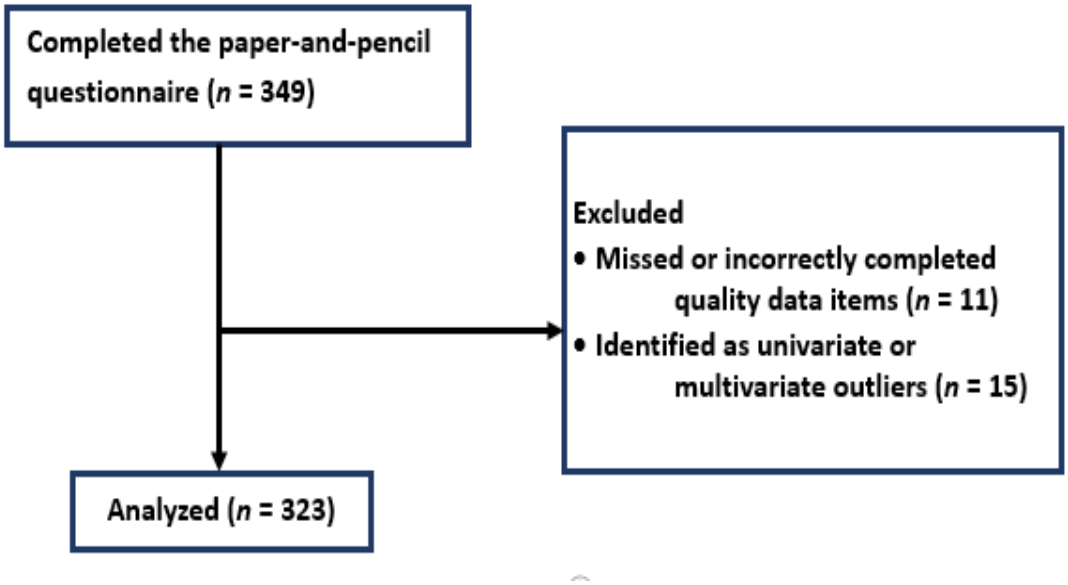


*Figure 2: Flow Chart Sample 2*

**Demographic Comparison between Latinos and Non-Latinos Whites within Samples 1-2**

A Kruskal-Wallis *H* test was computed to examine the difference between Latinos and non-Latino Whites by age. Results show no significant difference between Latinos and non-Latino Whites by age in Sample 1 ($\chi^2$ (1, $N$ = 108) = 0.380, $p$ = .535) or in Sample 2 ($\chi^2$ (1, $N$ = 323) = 0.308, $p$ = .579).

Chi-Square tests were computed separately to examine the difference between Latinos and non-Latino Whites within Samples 1 and 2. Results show no significant differences in either sample between Latinos and non-Latino Whites in their gender makeup, marital status, education and income. However, there were significant differences in employment between Latinos and non-Latino Whites within Sample 1 ($\chi^2$ (1, $N$ = 108) = 6.72, $p$ = .010). That is, Latinos were less likely to be unemployed (28.9%) than non-Latino (71.1%). There was no significant difference in employment between Latinos and non-Latino Whites in Sample 2.

There were significant differences between Latinos and non-Latino Whites by immigrant generational status within both samples ($\chi^2$ (3, $N$ = 108) = 45.55, $p$ < .001 and $\chi^2$ (3, $N$ = 308) = 129.65, $p$ = .000). Latinos were more likely to self-identify as first- and second-generation immigrant whereas non-Latino Whites were more likely to self-identify as third- and fourth-generation immigrant within each sample.

In both samples, there was a significant difference between Latinos and non-Latino Whites in terms of having been diagnosed with a mental health disorder ($\chi^2$ (1, N = 108) = 6.23, $p$ = .013 and $\chi^2$ (1, N = 315) = 10.49, $p$ = .001). In both Samples 1 and 2, Latinos (13.3% and 17.6%, respectively) were less likely to report that they had ever been diagnosed with a mental health condition compared to non-Latino Whites (86.7% and 82.4%, respectively).

*Table 2*
*Demographic Characteristics by Samples*

| Variables | Sample 1 ($N$ = 109) $n$ (%) | Sample 2 ($N$ = 323) $n$ (%) |
|---|---|---|
| Age (years) | | |
| 18-24 | 99 (90.8%) | 280 (86.7%) |
| 25-34 | 10 (9.2%) | 30 (9.3%) |
| 35-44 | | 6 (1.9%) |
| 45-54 | | 7 (2.2%) |
| Race/Ethnicity | | |
| Non-Latino Whites | 62 (56.9%) | 202 (62.5%) |
| Latinos | 47 (43.1%) | 121 (37.5%) |
| Gender | | |
| Female | 80 (73.4%) | 201 (60.7%) |
| Male | 28 (25.7%) | 115 (37.5%) |
| Don't know/missing | 1 (0.9%) | 7 (2.2%) |
| Generational Status* | | |
| First generation | 17 (15.6%) | 53 (16.4%) |
| Second generation | 32 (29.4%) | 86 (26.6%) |
| Third generation | 22 (20.2%) | 158 (48.9%) |
| Fourth generation | 37 (33.9%) | 11 (3.4%) |
| Don't know/missing | 1 (0.9%) | 15 (4.6%) |
| Education | | |
| HS graduate or GED | 2 (1.8%) | |
| Some College | 94 (86.2%) | 290 (89.8%) |
| College graduate | 12 (11%) | 24 (7.4%) |
| Master's degree or higher | 1 (0.9%) | 1 (0.3) |
| Don't know/missing | | 8 (2.5%) |
| Marital Status | | |
| Single/Never married | 104 (95.4%) | 288 (89.2%) |
| Married/Living with partner | 4 (3.7%) | 21 (6.5%) |
| Divorced/Separated | 1 (0.9%) | 6 (1.9%) |
| Don't know/missing | | 8 (2.5%) |
| Employment* | | |
| Yes | 64 (58.7%) | 150 (46.4%) |
| No | 45 (41.3%) | 165 (51.1%) |
| Don't know/missing | | 8 (2.5%) |
| Income | | |
| Less than $9,999 | 61 (56%) | 202 (62.5%) |
| $10,000 - $19,999 | 29 (26.6%) | 50 (15.5%) |
| $20,000 – 39,999 | 9 (8.3%) | 32 (9.9%) |
| $40,000 - $59,999 | | 14 (4.3%) |
| $60,000 - $79,999 | | 7 (2.2%) |
| $80,000 or more | | 8 (2.5%) |
| Don't know/missing | 10 (9.2%) | 10 (3.1%) |

*Note.* *Significant Racial/Ethnic difference within samples.

**Test-retest Reliability of the Attitudinal and Behavioral Familism Scales**

The test-retest reliability of the AFS (Steidel and Contreras, 2003) and its corresponding B-AFS was examined using Sample 1 for both racial/ethnic groups combined. Analyses were not performed by racial/ethnic group separately due to an insufficient number of Latinos in this sample. Participants completed the scales twice one week apart. Correlation analyses were conducted to examine the test-retest reliability between Time 1 and Time 2 administrations. The following qualitative indicators were used to describe the size of the correlation coefficients, as suggested by Evans (1996): very high (.80 to 1.00), high (.60 to .79), moderate (.40 to .59), low (.20 to .39), and very low (.00 to .19). Intraclass Coefficients were also computed to examine test-retest reliability. The following qualitative indicators were used to describe the intraclass coefficients (ICC) scores: excellent (.75 to 1.00), good (.60 to .74), fair (.40 to .59), and poor (less than .40) (Cichetti, 1994).

Table 3 shows the results of the test-retest reliability analyses for the AFS and the B-AFS. The correlation for the Total Composite Score of the AFS between Time 1 and Time 2 was high (.74). The correlations for all the AFS subscales were very high (.81) to high (.71). The ICC for the Total Composite Score of the AFS was excellent (ICC = .89, $r$ = .88, 95% CI [0.85, 0.92]). The ICC for all AFS subscales were excellent (ICC = .80, $r$ = .71, 95% IC [0.72, 0.86]) to .85 (ICC = 85, $r$ = .81, 95% IC [0.79, 0.89]).

The Cronbach's alpha coefficients for the Total Composite Score of the AFS and subscales were computed for both administrations. Cronbach's alpha coefficients for the Total Composite Score of the AFS were good for both Time 1 (.86) and Time 2 (.85). Cronbach's alpha coefficients for all of the AFS subscales were acceptable (.76) to poor (.56) at Time 1 and also acceptable (.76) to poor (.52) at Time 2.

The correlation for the Total Composite Score of the B-AFS scale between Time 1 and Time 2 was very high (.85). The ICC for the Total Composite Score of the corresponding B-AFS was excellent (ICC = .92, *r* = .85, 95% CI [0.88, 0.94]). The ICCs for all B-AFS subscales were excellent (ICC = .83, *r* =.71, 95% IC [0.75, 0.88]) to ICC = .87, *r* = .78, 95% IC [0.81, 0.91]).

The Cronbach's alpha coefficients for the Total Composite Score of the B-AFS and subscales were computed for both administrations. Cronbach's alpha coefficient for the Total Composite Score of the B-AFS was acceptable at Time 1 (.79) and good at Time 2 (.84). Cronbach's alpha coefficients for all of the B-AFS subscales were questionable (.64) to poor (.45) at Time 1 and acceptable (.76) to poor (.79) at Time 2.

*Table 3*
*Test-Retest Reliability for the AFS and the B-AFS*

| | Both Racial/Ethnic Groups Combined (*N* = 109) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Time 1 | | Time 2 | | | | |
| Scales | M (SD) | α | M (SD) | | *r* | ICC | 95% IC |
| AFS | | | | | | | |
| Family support | 6.87 (1.26) | .749 | 6.86 (1.19) | .734 | .81** | 0.85** | (0.79, 0.89) |
| Family interconnectedness | 8.00 (1.23) | .760 | 7.82 (1.28) | .761 | .75** | 0.83** | (0.76, 0.88) |
| Family honor | 4.52 (1.34) | .558 | 4.66 (1.43) | .610 | .71** | 0.81** | (0.73, 0.86) |
| Family Subjugation | 6.23 (1.76) | .564 | 6.00 (1.53) | .521 | .71** | 0.80** | (0.72, 0.86) |
| Total Composite Score | 6.55 (1.65) | .860 | 6.50 (1.02) | .847 | .88** | 0.89** | (0.85, 0.92) |
| B-AFS | | | | | | | |
| Family Support | 5.30 (1.59) | .567 | 5.72 (1.62) | .715 | .75** | 0.84** | (0.77, 0.89) |
| Family Interconnectedness | 8.05 (1.29) | .640 | 7.75 (1.34) | .765 | .74** | 0.83** | (0.76, 0.88) |
| Family Honor | 4.60 (1.74) | .454 | 4.74 (1.64) | .513 | .71** | 0.83** | (0.75, 0.88) |
| Family Subjugation | 6.44 (1.65) | .537 | 6.20 (1.53) | .492 | .78** | 0.87** | (0.81, 0.91) |
| Total Composite Score | 6.10 (1.18) | .787 | 6.15 (1.20) | .843 | .85** | 0.92** | (0.88, 0.94) |

*Note.* **$p < .01$; AFS = Attitudinal Familism Scale by Steidel & Contreras (2003); B-AFS = Behavioral Familism Scale developed after AFS.

Hereafter statistical analyses were conducted using Sample 2 (*n* = 323) only.

## Internal Consistency of the Attitudinal and Behavioral Familism Scales

The internal consistency reliability of the attitudinal familism scales and their corresponding behavioral familism scales were examined in Sample 2 with both racial/ethnic groups combined and separately. Cronbach's alpha coefficients were computed to test the internal consistency reliability of the AFS and its corresponding behavioral scale (B-AFS). The following qualitative indicators were used to describe Cronbach's alpha numerical scores: excellent (0.90 to 1.00), good (0.89 to 0.80), acceptable (0.79 to 0.70), questionable (0.69 to .60), poor (less than 0.59). Cronbach's alpha coefficients were also examined for item removal and in no case was a scale found to be significantly improved with this approach. Appendix F displays the skewness and kurtosis values for the AFS and B-FS.

### AFS and B-AFS with both Racial/Ethnic Groups Combined

Table 4 shows the means, standard deviations and Cronbach's alpha values for the AFS and the B-AFS for both racial/ethnic groups combined and separately. Cronbach's alpha coefficient for the Total Composite Score of the AFS was excellent (.90) and good (.85) for the Total Composite Score of the B-AFS. Cronbach's alpha coefficients for all of the AFS subscales were good (.84) to questionable (.65) and acceptable (.75) to poor (.55) for the B-FS subscales.

*Table 4*
*Means, Standard Deviations and Cronbach's Alpha Coefficients for the AFS and the B-AFS*

| Scales | Both Racial/Ethnic Groups Combined ($N$ = 323) | | |
|---|---|---|---|
| | # of items | M(SD) | α |
| AFS | | | |
| Family support | 6 | 6.82 (1.54) | .821 |
| Family interconnectedness | 5 | 7.90 (1.51) | .838 |
| Family honor | 4 | 4.62 (1.64) | .648 |
| Subjugation of self for family | 3 | 6.48 (1.97) | .723 |
| Total Composite Score | 18 | 6.58 (1.34) | .895 |
| | | | |
| B-AFS | | | |
| Family support | 6 | 5.43 (1.91) | .707 |
| Family interconnectedness | 5 | 7.87 (1.56) | .722 |
| Family honor | 4 | 4.52 (1.90) | .551 |
| Subjugation of self for family | 3 | 6.58 (1.79) | .554 |
| Total Composite Score | 18 | 6.10 (1.44) | .853 |

*Note.* AFS = Attitudinal Familism Scale by Steidel & Contreras (2003); B-AFS = Behavioral Familism Scale developed for this study.

**AFS and B-AFS by Racial/Ethnic Group.**

Table 5 shows the means, standard deviations and Cronbach's alpha values for the AFS and its corresponding B-AFS for both racial/ethnic groups separated. Cronbach's alpha coefficients for the Total Composite Score of the AFS were excellent (.91) for Latinos and good (.89) for non-Latino Whites. Cronbach's alpha coefficients for all of the AFS subscales among Latinos were questionable (.66) to good (.86). Cronbach's alpha coefficients for all of the FS subscales among non-Latinos Whites were good (.82) to questionable (.79), except for the Family Honor subscale, which was poor (.57).

Cronbach's alpha coefficients for the Total Composite Score of the B-AFS were good for both Latinos (.86) and non-Latino Whites (.84). Cronbach's alpha coefficients for all of the B-

AFS subscales among Latinos were acceptable (.75) to questionable (.65), except for the Subjugation of Self for Family subscale which was unacceptable (.46). Cronbach's alpha coefficients for all of the B-AFS subscales among non-Latinos Whites were acceptable (.71) to unacceptable (.43).

*Table 5*
*Means, Standard Deviations and Cronbach's Alpha Coefficients for the AFS and the B-AFS by Racial/Ethnic Groups*

| Scales | | Latinos | Non-Latinos Whites | Latinos | Non-Latinos Whites |
|---|---|---|---|---|---|
| | # of items | M(SD) | M (SD) | α | α |
| AFS | | | | | |
| Family support | 6 | 7.02 (1.62) | 6.71 (1.49) | .838 | .792 |
| Family interconnectedness | 5 | 7.93 (1.58) | 7.90 (1.48) | .858 | .819 |
| Family honor | 4 | 4.96 (1.73) | 4.42 (1.57) | .661 | .566 |
| Subjugation of self for family | 3 | 6.75 (1.89) | 6.32 (2.01) | .678 | .718 |
| Total Composite Score | 18 | 6.77 (1.39) | 6.47 (1.31) | .908 | .893 |
| B-AFS | | | | | |
| Family support | 6 | 6.08 (1.91) | 5.05 (1.81) | .717 | .673 |
| Family interconnectedness | 5 | 8.01 (1.59) | 7.79 (1.55) | .750 | .705 |
| Family honor | 4 | 5.07 (2.10) | 4.20 (1.71) | .649 | .428 |
| Subjugation of self for family | 3 | 6.77 (1.68) | 6.47 (1.86) | .458 | .598 |
| Total Composite Score | 18 | 6.50 (1.47) | 5.86 (1.38) | .860 | .839 |

*Note*. Latinos ($n$ = 121); non-Latino Whites ($n$ = 202); AFS = Attitudinal Familism Scale by Steidel & Contreras (2003); B-AFS = Behavioral Familism Scale developed for this study.

## Convergent Validity of the Attitudinal and Behavioral Familism Scales

Convergent validity, a type of construct validity, examines agreement between two measures that are considered to be theoretically related ((DeVellis, 2016). First, convergent validity was tested using correlation analyses between the FS and AFS, and B-FS and B-AFS. Subsequently, convergent validity was computed between AFS, B-AFS and measures of

perceived social support and family environment. Perceived social support was examined using the MSPSS (Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS measures participants' perceptions of social support from family, friends, and a significant other. Family environment was measured using two subscales of the FES (Moos & Moos, 1976). The convergent validity was computed with both racial/ethnic groups combined and separately. The following qualitative indicators were used to describe the size of the correlation coefficients: very high (.80 to 1.00), high (.60 to .79), moderate (.40 to .59), low (.20 to .39), and very low (.00 to .19), as suggested by Evans, (1996). Appendix G displays the means and standard deviations of the MSPSS and the FES subscales.

## Familism Scales

### Attitudinal and Behavioral Familism Scales.

Table 6 displays the correlations between the AFS, B-AFS, FS, and B-FS for both racial/ethnic groups combined. The correlations between the FS and the AFS and between the B-FS and the B-AFS were high positive: $r = .69$, $p < .01$ and $r = .67$, $p < .01$, respectively. Correlations with the FS were moderate positive for both the B-FS ($r = .56$, $p < .01$) and the B-AFS ($r = .53$, $p < .01$). However, the correlation with the AFS was high positive with B-AFS ($r = .34$, $p < .01$) and moderate positive with B-FS ($r = .49$, $p < .01$).

*Table 6*
*Correlations between the Total Composite Scores of the AFS, B-AFS, FS and B-FS*

| | Both Racial/Ethnic Groups Combined (*N* = 323) | | | |
|---|---|---|---|---|
| Scales | 1 | 2 | 3 | 4 |
| 1. AFS | -- | | | |
| 2. B-AFS | .71** | -- | | |
| 3. FS | .69** | .53** | -- | |
| 4. B-FS | .49** | .67** | .56** | -- |

*Note.* **$p < .01$; AFS = Attitudinal Familism Scale by Steidel & Contreras (2003); B-AFS = Behavioral Familism Scale developed for this study; FS = Familism Scale by Sabogal et al., (1987); B-FS = Behavioral Familism Scale developed for this study.

**Correlations between the Familism Scales by Racial/Ethnic Groups.**

Table 7 displays the correlations between FS, B-FS, AFS, and B-AFS for both racial/ethnic groups separately. The correlations between the FS and AFS were high positive for both Latinos ($r = .65$, $p < .01$) and non-Latino Whites ($r = .70$, $p < .01$). Similarly, the correlations between the B-FS and B-AFS were high positive for both Latinos ($r = .73$, $p < .01$) and non-Latino Whites ($r = .60$, $p < .01$). Correlations between the FS and the B-FS were high positive for Latinos ($r = .60$, $p < .01$) and moderate positive for non-Latino Whites ($r = .51$, $p = .01$). Correlations between the AFS and the B-FS were high positive for both Latinos ($r = .72$, $p < .01$) and non-Latino Whites ($r = .70$, $p = .01$).

*Table 7*
*Correlations between the Total Composite Scores of the AFS, B-AFS, FS, and B-FS by Racial/Ethnic Groups*

| | Latinos ($n$ =121) | | | | Non-Latinos Whites ($n$ = 202) | | | |
|---|---|---|---|---|---|---|---|---|
| Scales | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1. AFS | -- | | | | -- | | | |
| 2. B-AFS | .72** | -- | | | .70** | | | |
| 3. FS | .65** | .53** | -- | | .70** | .51** | | |
| 4. B-FS | .53** | .73** | .60** | -- | .44* | .60** | .51** | -- |

*Note*. **$p$ < .01; AFS = Attitudinal Familism Scale by Steidel & Contreras (2003); B-AFS = Behavioral Familism Scale developed for this study; FS = Familism Scale by Sabogal et al., (1987); B-FS = Behavioral Familism Scale developed for this study.

**Perceived Social Support**

Appendix G displays the means and standard deviations for the MSPSS with both racial/ethnic groups combined and separately. Correlations between the Total Composite Scores of the attitudinal and behavioral familism scales and the MSPSS were computed using both racial/ethnic groups combined and these are displayed in Table 8.

The correlation between the Total Composite Score of the AFS and the MSPSS total was low positive ($r$ = .36, $p$ < .01). Correlations between the Total Composite Score of the AFS and the MSPSS subscales were moderate positive ($r$ = .43, $p$ < .01) to low positive ($r$ = .24, $p$ < .01). Among all MSPSS subscales, the Family subscale had the highest correlation with AFS ($r$ = .43, $p$ < .01). The correlation between the Total Composite Score of the B-AFS and the MSPSS total was low positive ($r$ = .33, $p$ < .01). Correlations between the Total Composite Score of the B-AFS and the MSPSS subscales were moderate positive ($r$ = .40, $p$ < .01) to very low positive ($r$ = .17, $p$ = < .01). Similarly, among all MSPSS subscales, the Family subscale had the highest correlation with B-AFS ($r$ = .40, $p$ < .01).

*Table 8*
*Correlations between the Total Composite Scores from the Familism Scales and the MSPSS*

| | Both Racial/Ethnic Groups Combined ($N$ = 323) | | | |
|---|---|---|---|---|
| Scales | MSPSS Total | Family | Friends | Sig. Other |
| AFS | .36** | .43** | .22** | .24** |
| B-AFS | .32** | .40** | .17** | .22** |
| MSPSS Total | | .83** | .81** | .83** |
| Family | | | .49** | .53** |
| Friends | | | | .56** |
| Significant Other | | | | |

*Note.* **$p$ < .01; *$p$ < .05; MSPSS = Multidimensional Scale of Perceived Social Support (Zimet et al., 1988) ; AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

**Correlations between Familism Scales and the MSPSS for by Racial/Ethnic Groups.**

Table 9 displays the correlations between the Total Composite Scores of the familism scales and the MSPSS for both racial/ethnic groups separately. Correlations between the Total Composite Score of the AFS and the MSPSS total were low positive for both Latinos ($r$ = .35, $p$ < .01) and non-Latino Whites ($r$ = .39, $p$ < .01). Correlations between the Total Composite Score of the AFS and the MSPSS subscales were low positive for Latinos and ranged from $r$ = .38, p < .01 to $r$ = .23, $p$ < .01. Correlations between the Total Composite Score of the AFS and the MSPSS subscales were moderate positive ($r$ = .47, $p$ < .01) to low positive ($r$ = .22, $p$ = .01) for non-Latino Whites. Among all MSPSS subscales, the Family subscale had the highest correlation with Total Composite Score of the AFS for both Latinos ($r$ = .38, $p$ < .01) and non-Latino Whites ($r$ = .47, $p$ < .01).

Correlations between the Total Composite Score of the B-AFS and the MSPSS total were moderate positive for both Latinos ($r$ = .37, $p$ < .01) and non-Latino Whites ($r$ = .32, $p$ < .01).

Correlations between the Total Composite Score of the B-AFS and the MSPSS subscales were moderate positive ($r = .42$, $p < .01$) to low positive ($r = .21$, $p < .05$) for Latinos. Correlations between the Total Composite Score of the B-AFS and the MSPSS subscales were moderate positive ($r = .41$, $p < .01$) to very low positive ($r = .16$, $p = .05$) for non-Latino Whites. Among all MSPSS subscales, the Family subscale had the highest correlation with B-AFS for both Latinos ($r = .42$, $p < .01$) and non-Latino Whites ($r = .41$, $p < .01$).

*Table 9*
*Correlations between the Total Composite Scores of the AFS and B-AFS and the MSPSS by Racial/Ethnic Groups*

| | Latinos ($n$ = 121) | | | | Non-Latino Whites ($n$ = 202) | | | |
|---|---|---|---|---|---|---|---|---|
| Scales | MSPSS | Family | Friends | Sig. Other | MSPSS | Family | Friends | Sig. Other |
| AFS | .35** | .38** | .23** | .27** | .39** | .47** | .22** | .23** |
| B-AFS | .37** | .42** | .21* | .30** | .32** | .41** | .16* | .19** |
| MSPSS Total | | .84** | .85** | .83** | | .82** | .78** | .83** |
| Family | | | .60** | .53** | | | .42** | .52** |
| Friends | | | | .60** | | | | .54** |
| Sig. Other | | | | | | | | |

*Note.* **$p < .01$; *$p < .05$; MSPSS = Multidimensional Scale of Perceived Social Support (Zimet et al., 1988); AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

**Family Environment**

Appendix G displays the means and standard deviations for the FES Subscales with both racial/ethnic groups combined and separately. Correlations between the Total Composite Scores of the attitudinal and behavioral familism scales and FES subscales were computed using both racial/ethnic groups combined and these are displayed in Tables 10. The correlations between the Total Composite Score of the AFS and FES subscales were low positive for Cohesion ($r = .27$, $p$

< .01) and very low negative for Conflict ($r$ = -.18, $p$ < .01). Similarly, the correlations between the Total Composite Score of the B-AFS and FES subscales were low positive for Cohesion ($r$ = .28, $p$ < .01) and very low negative for Conflict ($r$ = -.12, $p$ .05).

*Table 10*
*Correlations between the Total Composite Scores from the Familism Scales and the FES Subscales*

| | Both Racial/Ethnic Groups Combined ($N$ = 323) | |
|---|---|---|
| Scales | FES Cohesion | FES Conflict |
| AFS | .27** | .18** |
| B-AFS | .28** | .12* |
| FES Cohesion | --- | .40** |
| FES Conflict | | --- |

*Note.* **$p$ < .01; *$p$ < .05; FES = Family Environment Scale (Moos & Moss, 1976); AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

## Correlations between the Familism Scales and the FES Subscales by Racial/Ethnic Groups

Table 11 displays the correlations between the Total Composite Score of the familism scales and the FES subscales for both racial/ethnic groups separately. The correlations between the Total Composite Score of the AFS and the FES Cohesion subscale were low positive for both Latinos ($r$ = .30, $p$ < .01) and non-Latinos Whites ($r$ = .26, $p$ < .01). Correlations between the Total Composite Score of the AFS and the FES Conflict were non-significant for Latinos and very low negative for non-Latino Whites ($r$ = -.14, $p$ < .05).

*Table 11*
*Correlations between the Total Composite Scores from the Familism Scales and the FES Subscales for Sample 2 by Racial/Ethnic Groups*

| | Latinos ($n$ = 121) | | Non-Latinos Whites ($n$ = 121) | |
|---|---|---|---|---|
| Scales | FES Cohesion | FES Conflict | FES Cohesion | FES Conflict |
| AFS | .27** | -.08 | -.26 | -.25** |
| B-AFS | .30** | -.12 | .26** | -.14* |
| FES Cohesion | --- | -.24** | --- | -.50 |
| FES Conflict | --- | --- | --- | --- |

*Note*. **$p$ < .01; *$p$ < .05; FES = Family Environment Scale (Moos & Moos, 1976); AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

## Divergent Validity of the Attitudinal and Behavioral Familism Scales

Divergent validity, also a type of construct validity, examines whether the relationship between two measures that are not theoretically related are truly not related (DeVellis, 2016). In this study, divergent validity was tested using correlation analyses between all scales of attitudinal and behavioral familism and measures of social desirability and acculturation. Social desirability was examined using the Marlowe-Crowe Social Desirability Scale (Zook & Sipps, 1985). The MCSDS is a widely used measure to examine social desirability bias. Acculturation was examined using the Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000). The SMAS consists of two scales: acculturation, which captures dominant society identification, and enculturation, which captures ethnic society identification.

The divergent validity using the MCSDS was computed with both racial/ethnic groups combined and separately. Given that acculturation is only relevant to the Latino group, correlations with the SMAS and the familism scales were computed only with Latinos ($n$ = 121). The qualitative indicators used in convergent validity were used to describe the correlation coefficients found for divergent validity.

**Social Desirability**

Appendix G displays the means and standard deviations for the MCSDS with both racial/ethnic groups combined and separated. Correlations between the Total Composite Score of the attitudinal and behavioral familism scales and the MCSDS were computed with both racial/ethnic groups combined. The correlations of the Total Composite Scores of both AFS and B-AFS with the MCSDS were very low positive ($r = .15$, $p < .01$) and ($r = .13$, $p < .05$), respectively.

**Correlations between the Familism Scales and the MCSDS by Racial/Ethnic Groups**

Table 12 displays the correlations between the Total Composite Scores of the familism scales and the MCSDS subscales for both racial/ethnic groups separately. The correlations between the Total Composite Score of the AFS and the MCSDS were non-significant for Latinos ($r = .09$, $p$ = n.s.) and very low positive for non-Latino Whites ($r = .19$, $p < .01$). Correlations between the Total Composite Score of the B-AFS and the MCSDS were non-significant for both Latinos ($r = .16$, $p$ = n.s.) and non-Latino Whites ($r = .11$, $p$ = n.s.).

*Table 12*
*Correlations between the Total Composite Scores of the AFS, B-FS and the MCSDS-SF*

| Scales | Both groups combined | Latinos | Non-Latino Whites |
|---|---|---|---|
| MCSDS-SF | -- | -- | -- |
| AFS | .15 | .09 | .19** |
| B-FS | .13 | .16 | .11 |

*Note.* *$p < .05$. **$p < .01$; MCSDS-SF= Marlowe-Crowe Social Desirability Scale – Short Form (Zook & Sipps, 1985); AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

**Acculturation**

Appendix I displays the means and standard deviations for the SMAS among Latino online participants ($n$ = 121). Correlations between the Total Composite Scores of the attitudinal and behavioral familism scales and the SMAS with Latinos are displayed in Table 13. The correlations with the Total Composite Scores of the attitudinal and behavioral familism scales and SMAS Acculturation were non-significant for Latinos. However, the correlations with the Total Composite Scores of the attitudinal and behavioral familism scales and SMAS Enculturation were low positive for both AFS ($r$ = .25, $p$ < .01) and B-AFS ($r$ = .31, $p$ < .01).

*Table 13*
*Correlations between the Total Composite Scores of the Familism Scales and SMAS among Latinos*

| Scales | SMAS Acculturation | SMAS Enculturation |
|---|---|---|
| AFS | .09 | .25** |
| B-FS | .17 | .31** |

Note. $n$ = 121; **$p$ < .01. *$p$ < .05; SMAS = Stephenson Multigroup Acculturation Scale (Stephenson, 2000); AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

**Discrepancy Analysis**

Discrepancy analyses were performed using polynomial regression and response surface analyses. The relationship between familism scales (AFS and B-AFS) and the outcome variables of depression and anxiety were examined using the Latino participants in Sample 2 only.

Table 14 displays the descriptive information about the occurrence of discrepancy between the Total Composite Scores of the AFS and the B-AFS. Results show that almost half (47.9%) of Latinos reported discrepant values between the Total Composite Scores of the AFS and B-AFS.

*Table 14*
*Frequencies and Means of the Levels of Agreement and Discrepancy between the Total Composite Scores of the AFS and B-AFS among Latinos*

| | | AFS and B-AFS | |
|---|---|---|---|
| Agreement Groups | Percentage | Mean AFS | Mean B-AFS |
| AFS more than B-AFS | 40.5 | 7.21 | 5.96 |
| In Agreement | 35.5 | 6.49 | 6.47 |
| AFS less than B-AFS | 24.0 | 6.43 | 7.48 |

*Note*. $n$ = 121; AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

Table 15 displays the descriptive information about the occurrence of discrepancy between the AFS subscales and the B-AFS subscales. Results show that more than half of Latinos reported discrepant values between all subscales except for Family Interconnectedness, which had lower, but still substantial discrepancy values (47.9%). According to Shanock et al. (2010) about 10% or more discrepancy values warrant further examination of the degree and direction of the discrepancy on an outcome variable.

*Table 15*
*Frequencies and Means of the Levels of Agreement and Discrepancy between the AFS and B-AFS among Latinos*

| Group Agreement | Percentage | Mean AFS | Mean B-AFS |
|---|---|---|---|
| | | Family Support | |
| AFS more than B-AFS | 59.5 | 7.31 | 5.34 |
| In Agreement | 21.5 | 6.85 | 6.85 |
| AFS less than B-AFS | 19.0 | 6.30 | 7.54 |
| | | Family Interconnectedness | |
| AFS more than B-AFS | 29.8 | 8.26 | 6.92 |
| In Agreement | 38.0 | 8.47 | 8.54 |
| AFS less than B-AFS | 32.2 | 6.97 | 8.39 |
| | | Family Honor | |
| AFS more than B-AFS | 36.4 | 5.35 | 3.94 |
| In Agreement | 25.6 | 4.60 | 4.60 |
| AFS less than B-AFS | 38.0 | 4.84 | 6.46 |
| | | Subjugation of Self for Family | |
| AFS more than B-AFS | 32.2 | 7.71 | 6.26 |
| In Agreement | 38.8 | 6.82 | 6.75 |
| AFS less than B-AFS | 28.9 | 5.60 | 7.37 |

*Note.* $n$ = 121; AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

**Polynomial Regression and Response Surface Analyses with the AFS and B-AFS**

Results of the polynomial regression analysis using the Total Composite Score of the AFS and the Total Composite Score of the B-AFS with the BDI-II were significant ($F(5, 113) = 2.50$, $p = .035$, $R^2 = .10$), but not significant with the BAI. Table 16 displays the results of the polynomial regression and response surface analyses for the Total Composite Score of the AFS and the Total Composite Score of the B-AFS with the BDI-II.

*Table 16*
*Results from the Polynomial Regression of the Total Composite Score of the AFS on the Total Composite Score of the B-FS with the BDI-II among Latinos*

| BDI-II | |
|---|---|
| Variable | *b* (se) |
| Constant | .76 (.07)** |
| AFS | .06 (.07) |
| B-AFS | .01 (.06) |
| AFS Squared | .03 (.02) |
| AFS x B-AFS | -.07 (.03)* |
| B-AFS Squared | .04 (.02) |
| $R^2$ | .10* |
| *Surface Tests* | |
| $a_1$ | .07 |
| $a_2$ | .00 |
| $a_3$ | .05 |
| $a_4$ | .13* |

*Note*. $n$ = 118; * $p < .05$; ** $p < .01$; AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

Figure 3 depicts the tridimensional relationship between the Total Composite Score of the AFS and the Total Composite Score of the B-AFS with the BDI-II. The surface analyses yielded one significant value. The significant value corresponds to how the degree of discrepancy between the Total Composite Score of the AFS and the Total Composite Score of the B-AFS relates to BDI-II. This relationship was positive and significant indicating a convex surface where the BDI-II scores would increase more sharply as the degree of discrepancy between the Total Composite Score of the AFS and the Total Composite Score of the B-AFS increases ($p$ = .041).

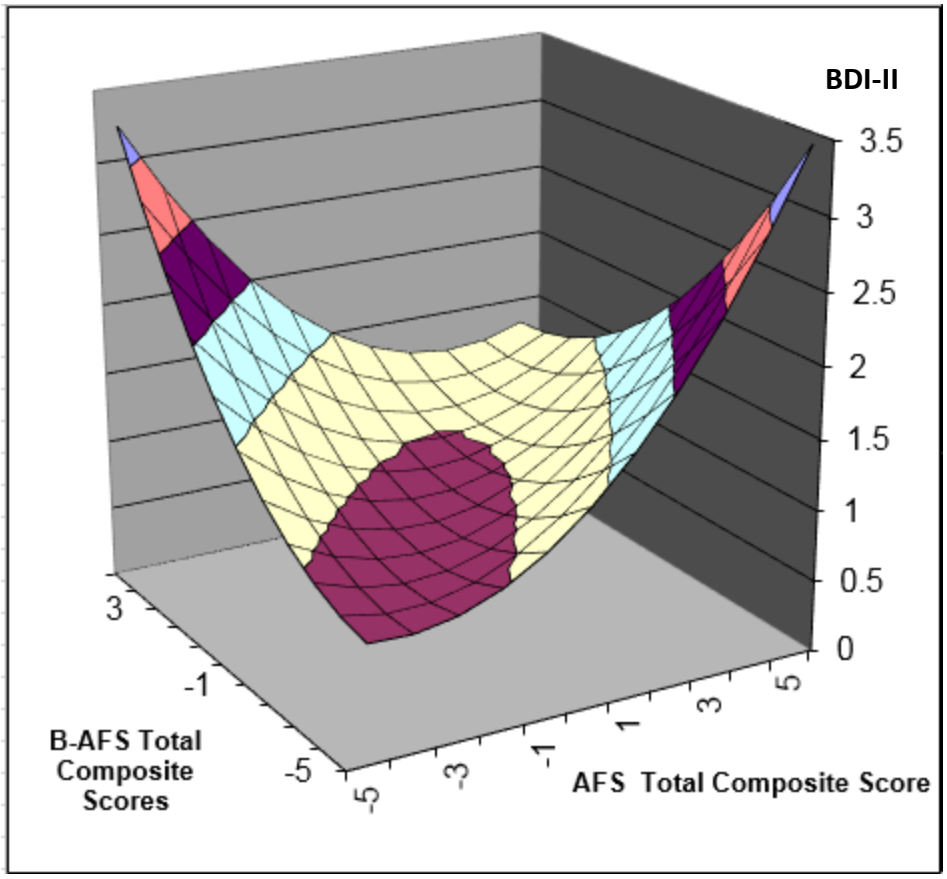


*Figure 3: Surface Graph of Total Composite Scores of AFS and B-AFS with BDI-II*

For the AFS and B-AFS subscales, there was a significant relationship between the AFS Family Interconnectedness and B-AFS Family Interconnectedness subscales with the BDI-II ($F(5, 113) = 3.68$, $p = .004$, $R^2 = .14$, but no significant relationship with the BAI. Results of the polynomial regression analyses were also not significant for the Family Support, Family Honor, and Subjugation of Self for Family subscales with the depression and anxiety outcome measures. Table 17 displays the results of the polynomial regression and response surface analyses for the AFS Family Interconnectedness and B-AFS Family Interconnectedness with the BDI-II.

*Table 17*
*Results from the Polynomial Regression of the AFS Family Interconnectedness subscale on the B-FS Family Interconnectedness with the BDI-II among Latinos*

| BDI-II | |
|---|---|
| Variable | *b* (se) |
| Constant | .96 (.06)** |
| AFS | .10 (.04)** |
| B-AFS | -.05 (.04) |
| AFS Squared | .03 (.02) |
| AFS x B-AFS | -.06 (.02)** |
| B-AFS Squared | -.00 (.02) |
| $R^2$ | .14** |
| *Surface Tests* | |
| $a_1$ | .05 |
| $a_2$ | -.03 |
| $a_3$ | .16* |
| $a_4$ | .08** |

*Note*. $n$ = 118; * $p < .05$; ** $p < .01$; AFS = Attitudinal Familism Scale (Steidel & Contreras, 2003); B-AFS = Behavioral Familism Scale developed for this study.

Figure 4 depicts the tridimensional relationship between the AFS Family Interconnectedness and the B-AFS Family Interconnectedness with the BDI-II. The response surface analyses yielded two significant values. One of the significant values corresponds to how the degree of discrepancy between the AFS Family Interconnectedness and the B-AFS Family Interconnectedness relate to BDI-II. This relationship was positive and significant indicating a convex surface where the BDI-II scores would increase more sharply as the degree of discrepancy between the AFS Family Interconnectedness and the B-AFS Family Interconnectedness increases ($p$ = .029). The other significant value corresponds to how the

direction of the discrepancy is related to the outcome. This relationship was positive and significant indicating that BDI-II is higher when the discrepancy is such that AFS Family Interconnectedness is higher than B-AFS Family Interconnectedness than vice versa. Figure 3 shows that at the right corner of the graph where AFS Family Interconnectedness is higher combined with low B-AFS Family Interconnectedness, BDI-II is relatively high, whereas the left corner where B-AFS Family Interconnectedness is high combined with low AFS Family Interconnectedness, BDI-II is relatively low.

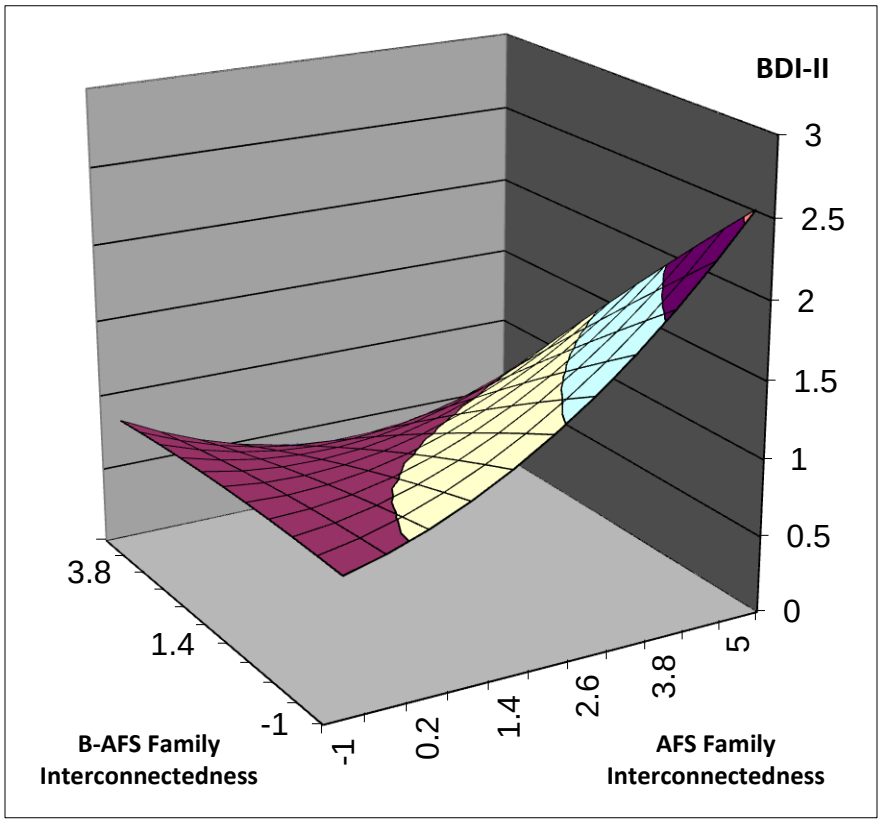


*Figure 4: Surface Graph of AFS Family Interconnectedness and the B-AFS Family Interconnectedness Subscales with BDI-II*

## Exploratory Analyses

Given the extant literature on perceived social support as a predictor of depression (Coyne & Downey, 1991; Oxman & Hull, 2001; Roohafza et al., 2014), analyses were conducted to explore this relationship among Latinos and non-Latino Whites. Regression analyses show that perceived social support as measured by MSPSS had a weak, but significant relationship to depression for non-Latino Whites ($F(1, 198) = 4.83$, $p = .029$, $R^2 = .02$), but not for Latinos.

Although not conclusive, these findings suggest that the culturally specific variable of familism is a stronger predictor of depression among Latinos than traditional measures of social support.

# CHAPTER FOUR: DISCUSSION

The purpose of this study was to examine the relation between familism, a presumed core cultural variable for many Latinos (Alvarez & Bean, 1976; Ferrari, 2002; Steidel & Contreras), and psychological distress (depression and anxiety). The extant literature points to limitations on existing familism measures, the main one being that most studies rely on attitudinal measures and do not assess behavioral familism or how individuals actually experience or engage in familism thereby constraining the understanding and effects of familism as a construct.

The main hypothesis was that psychological distress is created when the individual experiences a discrepancy between attitudinal and behavioral familism, or their expectations and experiences. Thus we postulate that when an individual's attitudes and behaviors track closely to one another, no dissonance is created. Thus if the value placed on familism is low, but the behavioral experience is also low, no distress is experienced (and vice versa). Conversely, if the value placed on familism is high, but the behavioral experience is low, psychological distress ensues (and vice versa). The challenge to testing this hypothesis is that most familism measures available only assess features of attitudinal familism (Esparza & Gonzalez, 2008; Gaines et al., 1997; Knight, 1998; Rodriguez, Mira, Paez, & Myers, 2007; Sabogal et al., 1987; Steidel & Contreras, 2003; Villarreal, Blozis, & Widaman, 2005). Therefore the first steps in this study were to develop and establish the psychometric appropriateness of a measure of behavioral familism. To our knowledge, there is only one documented effort to develop a behavioral measure focused on frequency of family contact using questions from the 2002 General Social Survey (GSS) data (Comeau, 2012). However, this effort does not encompass significant domains of familism.

Although the study of Comeau (2012) is an important step in understanding the behavioral dimension of familism, the present study developed a behavioral measure of familism drawing from an existing attitudinal familism measure (Steidel & Contreras, 2003) which captures more aspects of behavior than merely frequency of family contact. In line with the current concern on how to better study cultural variables and their relation with clinical outcomes (U.S. Departmemt of Health and Human Services, 2001), this study also examined how both attitudinal and behavioral familism relate to depression and anxiety among Latinos..

Previous research established the psychometric properties of the Attitudinal Familism Scale (AFS) developed by Steidel & Contreras (2003). Studies using AFS consistently report high internal consistency (Baumann, Kuhlberg, & Zayas, 2010; Campos et al., 2014). A rigorous examination of the psychometric properties of the B-AFS was undertaken as the first step in this study, because it is a newly developed measure of behavioral familism. Consistent with precious research, the B-AFS showed similar Cronbach's Alpha scores for the total composite scores and subscales. Aside from having equivalent Cronbach Alphas as in other studies, the low scores found in the Family Honor and Subjugation to Self for Family subscales could be attributed to the low number of items that constitute these scales. Additionally, it is possible that familism is not a unified construct and these items are not highly reliable for this study population, mainly emerging young adults. Further, these items may be more salient when a person is experiencing a family emergency or crisis. Nonetheless, the t B-AFS showed high internal consistency reliability. As a result, the B-AFS has the potential to extend the study of familism, how it is viewed, manifested and relates to other social and clinical variables.

The results of the test-retest reliability of the B-AFS showed excellent stability over time indicating that it has applicability to both Latinos and non-Latino Whites. This is relevant as

more research is needed to understand whether familism has social and clinical implications to all cultural groups or is unique to one or certain specific groups. The examination of the internal consistency of the B-AFS was also good for the overall sample and across racial/ethnic groups. These findings also lend support to the notion that the B-AFS is appropriate for use with Latinos and non-Latino Whites.

Convergent validity was examined using a comparable scale of behavioral familism. In this study the correlations between the B-AFS and the B-FS were significant and positive with one another. Additionally, convergent validity was examined with family support and family cohesion. The relation between the B-AFS and the Family Support subscale of the Multidimensional Scale of perceived Social Support (MSPSS) was significant and positive. The relation between the B-AFS and family cohesion as measured by the Family Environment Scale (Moos & Moos, 1976) also was significant and positive. These findings are in line with previous research that suggests that family support and family cohesion are integral parts of familism (Burgess and Locke, 1945; Sabogal et al., 1987; Steidel & Contreras, 2003). The correlations were positive, but not so high as to imply that the AFS and B-AFS measured the same constructs as the traditional measures of social support and family environment. These findings suggest that the B-AFS measures the behavioral familism construct adequately for both Latinos and non-Latino Whites.

The correlations between the Total Composite Score of the B-AFS and social desirability and acculturation provided evidence of adequate divergent validity. The relation between the Total Composite Score of the B-AFS and social desirability as measured by the MCSDS-SF was non-significant for Latinos and for both racial/ethnic groups combined. Although the correlation between the Total Composite Score of the B-AFS and the MCSDS-SF was significant, it was

low for non-Latino Whites. These findings suggest that participants did not merely respond in a socially desirable way whether they were Latino or non-Latino Whites. Additionally, the correlation between the Total Composite Scores of the AFS and B-AFS and acculturation were non-significant whereas the correlation between the Total Composite Score of the AFS and B-AFS and enculturation while significant were low. Together, these findings indicate that the Total Composite Score of the AFS and B-AFS are not merely measuring acculturation or enculturation among Latinos. These findings are also consistent with previous studies (Sabogal et al., 1987; Steidel & Contreras, 2003; Zea, Asner-Self, Birman, & Buki, 2003).

After establishing that the newly developed behavioral familism scale is reliable and valid, the discrepancy between attitudinal and behavioral familism was examined. Past research points to the potential correlation between familism and psychological distress (Schwartz, 2007). This study found that depressive symptoms increase as the discrepancy between the Total Composite Scores of the AFS and B-AFS increases in either direction. However, no relation between discrepancy scores for the AFS and B-AFS measures and anxiety was found. Although many Latinos appear to have high levels of attitudinal familism, it is possible that not being able to act on those values promote distress among Latinos. It is also possible that for Latinos with low levels of attitudinal familism the demands imposed on executing such values lead to symptoms of depression. Research on Latina adolescence and suicide attempts supports these findings. Baumann, Kuhlberg and Zayas (2010) found that difference scores on attitudinal familism where mothers scored higher than daughters predicted more externalizing behaviors. In contrast, mother-daughter mutuality was negatively related to both internalizing and externalizing behaviors. This is the first evidence, to our knowledge, that discrepancy values between attitudinal and behavioral familism predicts symptoms of depression among Latinos.

This study provides further evidence to understand the underlying mechanism by which familism impact psychological health.

Additionally, the findings indicate that across the components of familism, family interconnectedness is a predictor of depressive symptoms. Family interconnectedness refers to the belief that family members should maintain strong emotional bonds and be involved in each other's daily lives (Steidel & Contreras, 2003). The emotional and daily demands on familism when in disagreement with familism values may lead to symptoms of depression among Latinos. More specifically, findings demonstrated worse outcome for those with high levels of attitudinal familism and low levels of behavioral familism, but not vice versa. Interestingly, these findings indicate that having high familial values, but do not engaging in behaviors congruent with such values may lead to symptoms of depression. However, for those with low familial values engaging in behaviors or activities congruent with familial values has no impact on psychological distress. These findings suggest a complex interplay between the emotional and daily demands of familism among Latinos.

Clinical implications for these findings support the development of interventions for depression that address the optimum balance of values and practices of familism in cases where the family appears to be related to individuals' psychological distress. Interventions should be sensitive to both familism values and behaviors. Additionally, interventions should pay attention to the emotional and daily demands related to familism values and behaviors. Culturally sensitive interventions have shown promising results for improving depression among Latinos (Domenech-Rodriguez et al., 2008; Hinton et al., 2010). Additionally, an exploratory analysis conducted here suggests that a comprehensive assessment of familism may prove to be more useful than assessing perceived social support in predicting depressive symptoms among Latinos.

Future research should focus on understanding the underlying mechanisms by which Latinos developed psychopathology. Special interest should be paid to cultural variables that can serve as predictors, moderators, or mediators in the development and prevention of mental illnesses. Additionally, future research should examine the efficacy of culturally sensitive interventions that reduce depression among Latinos.

There are some limitations to this study. First, the use of a sample of emerging young adults limits the generalizability of the findings. Results may extend only to young highly educated Latinos living in the south-east of the United States. Second, sample size precluded further analyses with the Latino subgroup. Future research should include larger and representative samples of Latinos to examine variations within Latino subgroups (e.g. Puerto Ricans, Cubans) and the interplay of other socio-cultural variables. Third, the study did not test factor analysis of the newly developed scale. Future studies should focus on further examining the psychometric properties of the B-AFS. Further, the data collected was correlational in nature, and therefore causal relations between familism and outcome measures, such as symptoms of depression, cannot be drawn.

Future research should focus on translating the B-AFS into Spanish in order to involve monolingual Spanish-speaking participants in studies on familism. Past research suggests that monolingual Spanish-speaking Latinos tend to be first generation and report higher familism values. It is possible that familism values serve as protective factors, but the toll of immigration and lack of financial and social resources experienced by first generation immigrants may deter behavioral familism impacting their psychological health. With larger samples, future research may include moderating and mediating relationships along with discrepancy analyses. Future samples should include clinical samples (i.e. treatment seeking or in-treatment participants) and

better representation of Latinos subgroups. This study could be extended to examining and creating other behavioral familism scales and their relationship to psychological outcomes.

## Conclusion

The AFS and its new companion measure the B-AFS are useful instruments for measuring attitudinal and behavioral familism. The main advantage of administering both instruments simultaneously is the additional information provided on how individuals experience the ideals of familism in their lives. Further, by assessing both attitudinal and behavioral familism, researchers can study their relationship to clinical variables. Results suggest that discrepancy between attitudinal and behavioral familism predicts depression among young adult Latinos, but not anxiety.

# APPENDIX A: IRB APPROVAL LETTER

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

# Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
**FWA00000351, IRB00001138**

To: **Andel Nicasio** and Co-PI: **Jeffrey E. Cassisi**

Date: **December 18, 2015**

Dear Researcher:

On 12/18/2015, the IRB approved the following activity as human participant research that is exempt from regulation:

| | |
|---|---|
| Type of Review: | Exempt Determination |
| Project Title: | Understanding Family Interactions: The development of a familism scale |
| Investigator: | Andel Nicasio |
| IRB Number: | SBE-15-11777 |
| Funding Agency: | College of Sciences |
| Grant Title: | N/A |
| Research ID: | N/A |

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Joanne Muratori

Signature applied by Joanne Muratori on 12/18/2015 09:41:07 AM EST

IRB Manager

# APPENDIX B: THE NEW B-AFS

## Behavioral-Attitudinal Familism Scale (B-AFS)

The following statements are about family interactions. Using the 10-point Likert scale provided, please indicate, as honestly as possible, how much you agree or disagree with each of the following statements.

1. I ~~Children should always help~~ (have helped (or I am helping) ~~their~~ (my) parents with (the) support of my ~~younger~~ brothers and sisters, for example, help them with homework, help my parents taking care of the children, and so forth.

2. My family controlled ~~The family should control~~ the behavior of (my) children (who are or were) younger than 18.
3. (I) ~~A person should~~ cherish the time (I) spend with ~~his or her~~ (my) relatives.

4. (I) ~~A person should~~ live near ~~his or her~~ (my) parents and spend time with them on a regular basis.

5. I have supported (or I support) ~~A person should always support~~ the members of my extended family, for example, aunts, uncles, and in-laws, if (when) they (were or) are in need even if it (was) is a big sacrifice.

6. (I)~~A person should~~ rely on (my) ~~his or her~~ family if the need arises.

7. (I have felt or I feel) ~~A person should feel~~ ashamed (for) ~~if~~ something (I have done that) ~~he or she does~~ dishonored (my) ~~the~~ family name.

8. (I helped out or I am helping out) ~~Children should help out~~ around the house without expecting an allowance.

9. (I treat with) great respect my parents and grandparents ~~should be treated with great respect~~ regardless of their differences in views.

10. (I) ~~A person should~~ often do activities with (my) ~~his or her~~ immediate and extended families, for example, eat meals, play games, or go somewhere together.

11. (My) aging parents ~~should~~ live with (me or will live with me or with a) ~~their~~ relative.

12. (I) ~~A person should always be expected to~~ defend~~ed~~ (my) ~~his/her~~ family's honor no matter what the cost.

13. ~~Children younger than 18 should give~~ (I gave) almost all (my) ~~their~~ earnings to (my) ~~their~~ parents when I was younger than 18 years old.

14. (I lived or I am living) ~~Children should live~~ with ~~their~~ (my) parents (or under my parents care) until I got (get) ~~they~~ get married.

15. (I) ~~Children should~~ obey (my) ~~their~~ parents without question even if I ~~they~~ believe they are wrong.

16. (I have helped or I help my) ~~A person should help his or her~~ elderly parents in times of need, for example, helping financially or sharing a house.

17. (I am) ~~A person should be~~ a good person for the sake of ~~his or her~~ (my) family.

18. (I) ~~A person should~~ respect (my) ~~his or her older~~ brothers and sisters regardless of their differences in views.

# APPENDIX C: FS AND B-FS SCALES

**Behavioral-Familism Scale (B-FS)**

The following statements are about family interactions. Using the 5-point Likert scale provided, please indicate, as honestly as possible, how much you agree or disagree with each of the following statements.

1. (I have made (or I am making) ~~One should make~~ great sacrifices in order to guarantee a good education for my children.

2. I have helped (or I am helping) ~~One should help~~ economically with the support of ~~younger~~ (my) brothers and sisters.

3. I have helped (or I am helping) ~~I would help~~ within my means if a relative told me that she/he is in financial difficulty

4. (My) aging parents ~~should~~ live with (me or will live with me or with a) ~~their~~ relative~~s~~

5. (I have shared (or I am sharing my) ~~A person should share his/her~~ home with uncles, aunts or first cousins if they are in need.

6. When someone (from my family) has problems she/he can count on help from (me) ~~his/her relatives~~

7. (I) ~~One~~ can count on help from (my) ~~his/her~~ relatives to solve most problems

8. Much of what (I do is) ~~a son or daughter does should be done~~ to please (my) ~~the~~ parents

9. (I) ~~The family should~~ consult close relatives (uncles, aunts) concerning ~~its~~ important decisions.

10. (I have felt (or I feel) ~~One should be~~ embarrassed about the bad things done by (my) ~~his/her~~ brothers and sisters

11. (I lived or I will) ~~Children should~~ live in my ~~their~~ parents' house until (I) ~~they~~ get married

12. One of the most important goals in (my) life is to have children.

**Familism Scale (FS; Sabogal et al., 1987)**

The following statements are about family interactions. Using the 5-point Likert scale provided, please indicate, please indicate, as honestly as possible, how much you agree or disagree with each of the following statements. Items are answered in a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

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

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

3. I ~~should~~ (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 he/she ~~can~~ (should) count on help from his/her relatives.

8. When one has problems, one ~~can~~ (should) count on the help of relatives.

9. ~~One can count on help from his/her relatives to solve most problems~~.

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

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

14. One of the most important goals in life ~~is~~ (should be) to have children.

# APPENDIX D: PSYCHOMETRIC PROPERTIES OF THE B-FS

## Development of a Behavioral Familism Scale: A Manuscript Describing the Psychometric Properties of the FS and B-FS

### B-FS Scale Development

One of most widely used attitudinal familism scales is the Familism Scale (FS; Sabogal et al., 1987). This scale measures individuals' ideal familial values while disregarding the behavioral dimension of familism or individuals' actual experiences of familism. Given this measurement limitation, this study developed a behavioral scale compatible with the FS to address this issue. First, face and content validity were examined for each existing attitudinal scale through expert analysis consensus. Expert analysis was conducted by three researchers, two of whom were bilingual (English-Spanish) and bicultural. Minimal edits were deemed necessary to the original FS. These modifications included changes in modal verbs (e.g. should) to improve consistency across items and deletion of redundant items. Additionally, an alternate item was developed for college students to capture typical living arrangements of this population. The slightly edited FS included 12 items, instead of 14 items as the original scale. Appendix B displays the modified FS used in this study.

### Test-Retest Reliability

The test-retest reliability of the FS and its corresponding B-FS were examined using Sample 1 for both racial/ethnic groups combined. Analyses were not performed by racial/ethnic group separately due to insufficient number of Latinos in this sample. Participants completed the scales two times one week apart. Table C1 shows the results of the test-retest reliability between Time 1 and Time 2 administrations.

### Familism Scale

The correlation for the Total Composite Score of the FS between Time 1 and Time 2 was high (.74). The correlations for all the FS subscales were moderate, except for the Family as Source of Support, which was moderate (.47). The ICC for the Total Composite Score of the FS was excellent .85 (ICC = .85, *r* = .74, 95% CI [0.78, 0.89]. The ICCs for all FS subscales were excellent (ICC = .80, *r* = .67, 95% IC [0.71, 0.86] to ICC = .80, *r* = .66, 95% IC [0.71, 0.86]), except for the Family as a Source of Support subscale, which was good (ICC = .64, *r* = .47, 95% IC [0.47, 0.75]).

### Behavioral Familism Scale

The correlations for the Total Composite Score of the corresponding B-FS between Time 1 and Time 2 was very high (.80). The correlations for all the FS subscales were high and ranged from .68) to .75. The ICCs for the Total Composite Score of the B-FS was excellent (ICC = .88, *r* = .80, 95% CI [0.83, 0.92]). The ICCs for all B-FS subscales were excellent (ICC = .78, *r* = .68, 95% IC [0.68, 0.85]) to (ICC = .86, *r* = .75, 95% IC [0.79, 0.90]).

*Table C1*
*Test-Retest Reliability for the FS and the B-FS for Both Racial/Ethnic Groups Combined in Sample 2*

| | Time 1 | | Time 2 | | | | |
|---|---|---|---|---|---|---|---|
| Scales | M (SD) | α | M (SD) | α | *r* | ICC | 95% CI |
| FS | | | | | | | |
| Family obligations | 3.78 (0.44) | .554 | 3.73 (0.49) | .623 | .67** | 0.80** | (0.71, 0.86) |
| Family as source of support | 3.98 (0.67) | .875 | 3.88 (0.68) | .759 | .47** | 0.64** | (0.47, 0.75) |
| Family as referents | 2.59 (0.53) | .532 | 2.62 (0.54) | .554 | .66** | 0.80** | (0.71, 0.86) |
| Total Composite Score | 3.32 (0.37) | .677 | 3.29 (0.40) | .706 | .74** | 0.85** | (0.78, 0.89) |
| B-FS | | | | | | | |
| Family obligations | 2.49 (0.81) | .604 | 2.75 (0.83) | .714 | .68** | 0.78** | (0.68, 0.85) |
| Family as source of support | 4.11 (0.71) | .509 | 3.97 (0.73) | .680 | .71** | 0.82** | (0.74, 0.87) |
| Family as referents | 2.91 (0.61) | .333 | 2.87 (0.59) | .345 | .75** | 0.86** | (0.79, 0.90) |
| Total Composite Score | 2.94 (0.51) | .598 | 3.01 (0.53) | .691 | .80** | 0.88** | (0.83, 0.92) |

*Note*. **$p < .01$; n = 109; FS = Familism Scale by Sabogal et al., 1987; B-FS = Behavioral Familism Scale developed for this study.

## Internal Consistency

### Familism Scale (FS) and Behavioral Familism Scale

Table C2 shows skewness and Kurtosis and Table C3 the means, standard deviations and Cronbach's alpha values for the FS and its corresponding B-FS in Samples 2 for both racial/ethnic groups combined. Cronbach's alpha coefficients for the Total Composite Score of the FS and B-FS were acceptable (.77 and .71), respectively. Cronbach's alpha coefficients for all the FS subscales were acceptable (.78) to questionable (.66) and acceptable (.78) to poor (.49) for the B-FS.

*Table C2*
*Skewness and Kurtosis Values for the FS and B-FS among online participants (n = 323)*

| | Familism Scale | |
|---|---|---|
| Subscales & Total Composite Scores | Skewness (SE =.136) | Kurtosis (SE = .271) |
| FS | | |
| Family obligations | .109 | .075 |
| Family as source of support | -.278 | -.144 |
| Family as referents | -.075 | -.156 |
| Total Composite Score | 0.63 | .475 |
| | | |
| B-FS | | |
| Family Obligations | .089 | -.292 |
| Family as source of support | -.771 | .374 |
| Family referents | .137 | .030 |
| Total Composite Score | .070 | .300 |

*Note*. FS = Familism Scale by Sabogal et al., 1987; B-FS = Behavioral Familism Scale developed for this study.

*Table C3*
*Means, Standard Deviations and Cronbach's Alpha Coefficients for the FS and the B-FS for Both Racial/Ethnic Groups Combined*

| | Online Participants (*N* = 323) | | |
|---|---|---|---|
| Scales | | | |
| FS | # of items | M (SD) | α |
| Family obligations | 5 | 3.69 (0.58) | .715 |
| Family as source of support | 2 | 3.97 (0.67) | .777 |
| Family as referents | 5 | 2.75 (0.69) | .662 |
| Total Composite Score | 12 | 3.34 (0.49) | .768 |
| | | | |
| B-FS | | | |
| Family obligations | 5 | 2.62 (0.85) | .729 |
| Family as source of support | 2 | 4.05 (0.73) | .579 |
| Family referents | 5 | 3.00 (0.69) | .489 |
| Total Composite Score | 12 | 3.01 (0.56) | .706 |

*Note*. FS = Familism Scale by Sabogal et al., 1987; B-FS = Behavioral Familism Scale developed for this study.

### *FS and B-FS by Racial/Ethnic Group*

Table C4 shows the means, standard deviations and Cronbach's alpha values for the FS and its corresponding B-FS for both racial/ethnic groups separated. Cronbach's alpha coefficients for the Total Composite Score of the FS were acceptable for both Latinos (.76) and non-Latino Whites (.77). Cronbach's alpha coefficients for all of the FS subscales among Latinos were acceptable (.73 and .75), except for the Family as Referents subscale which was questionable (.67). Cronbach's alpha coefficients for all of the FS subscales among non-Latinos Whites were good (.84) to questionable (.68). Cronbach's alpha coefficients for the Total Composite Score of the B-FS were acceptable for Latinos (.75), but questionable for non-Latino Whites (.68). Cronbach's alpha coefficients for all of the B-FS subscales among Latinos were acceptable (.74) to questionable (.65). Cronbach's alpha coefficients for all of the B-FS subscales among non-Latinos Whites were acceptable (.70) to poor (.53).

*Table C4*
*Means, Standard Deviations and Cronbach's Alpha Coefficients for the FS and the B-FS for Both Racial/Ethnic Groups Separated (N = 323)*

| Scales | | Latinos | Non-Latinos Whites | Latinos | Non-Latino Whites |
|---|---|---|---|---|---|
| | # of items | M(SD) | M (SD) | α | α |
| FS | | | | | |
| Family obligations | 5 | 3.80 (0.60) | 3.63 (0.57) | .726 | .704 |
| Family as source of support | 2 | 3.93 (0.70) | 4.00 (0.66) | .746 | .836 |
| Family as referents | 5 | 2.86 (0.71) | 2.69 (0.68) | .665 | .667 |
| Total Composite Score | 12 | 3.42 (0.50) | 3.30 (0.49) | .757 | .771 |
| B-FS | | | | | |
| Family obligations | 5 | 2.89 (0.88) | 2.46 (0.80) | .737 | .699 |
| Family as source of support | 2 | 4.05 (0.78) | 4.06 (0.72) | .651 | .531 |
| Family referents | 5 | 3.14 (0.74) | 2.92 (0.66) | .650 | .534 |
| Total Composite Score | 12 | 3.19 (0.60) | 2.92 (0.753) | .745 | .683 |

*Note*. Latinos (*n* = 121); non-Latino Whites (*n* = 202); FS = Familism Scale by Sabogal et al., 1987; B-FS = Behavioral Familism Scale developed for this study.

## Convergent Validity of the FS and B-FS

### Perceived Social Support

Table C5 shows the correlations between the FS, B-FS and the MSPSS subscales for both racial/ethnic groups combined. The correlation between the FS and the MSPSS total was low positive ($r = .29$, $p < .01$). Correlations between the FS and the MSPSS subscales were low positive ($r = .34$, $p < .01$) to very low positive ($r = .15$, $p < .01$). Among all the MSPSS subscales, the Family subscale had the highest correlation with FS, ($r = .34$, $p < .01$). The correlation between the B-FS and the MSPSS total was very low positive ($r = .18$, $p < .01$). Correlations between the B-FS and the MSPSS subscales were low positive ($r = .22$, $p < .01$) to non-significant ($r = .08$, $p$ = n.s.). Similarly, among all MSPSS subscales, the Family subscale had the highest correlation with B-FS ($r = .22$, $p < .01$).

*Table C5*
*Correlations between the Familism Scales and the MSPSS for Both Racial/Ethnic Groups Combined (N = 323)*

| Scales | MSPSS | Family | Friends | Sig. Other |
|---|---|---|---|---|
| FS | .29** | .34** | .21** | .15** |
| B-FS | .18** | .22** | .11* | .08 |
| MSPSS Total | | .83** | .81** | .83** |
| Family | | | .49** | .53** |
| Friends | | | | .56** |
| Significant Other | | | | |

*Note.* **$p < .01$; *$p < .05$; MSPSS = Multidimensional Scale of Perceived Social Support (Zimet et al., 1988); FS = Familism Scale (Sabogal et al., 1987); B-FS = Behavioral-Familism Scale developed for this study.

### *Correlations between FS, B-FS and the MSPSS by Racial/Ethnic Groups*

Table C6 displays the correlations between the familism scales and the MSPSS for both racial/ethnic groups separately. The correlations between the FS and MSPSS total were low positive for both Latinos ($r$ = 30, $p$ < .01) and non-Latino Whites ($r$ = .29, $p$ < .01). Correlations between the FS and the MSPSS subscales were low positive ($r$ = .34, $p$ < .01) to non-significant ($r$ = .17, $p$ = n.s.) for Latinos. Correlations between the FS and the MSPSS subscales were low positive ($r$ = .35, $p$ < .01) to very low positive ($r$ = .14, $p$ = .05) for non-Latino Whites. Among all MSPSS subscales, the Family subscale had the highest correlation with FS for both Latinos ($r$ = .34, $p$ < .01) and non-Latino Whites ($r$ = .35, $p$ < .01).

The correlation between B-FS and the MSPSS total was non-significant for Latinos ($r$ = .15, $p$ = n.s.) and low positive for non-Latino Whites ($r$ = .22, $p$ < .01). Correlations between the B-FS and the MSPSS subscales were low positive ($r$ = .21, $p$ < .05) to non-significant ($r$ = .08, $p$ = n.s.) for Latinos. Correlations between the FS and the MSPSS subscales were low positive ($r$ = .24, $p$ < .01) to non-significant ($r$ = .11, $p$ = n.s.) for non-Latino Whites. Among all MSPSS subscales, the Family subscale had the highest correlation with B-FS for both Latinos ($r$ = .21, $p$ < .05) and non-Latino Whites ($r$ = .24, $p$ < .01).

*Table C6*
*Correlations between Familism Scales and the MSPSS for Both Racial/Ethnic Groups Separated*

| | Latinos ($n$ = 121) | | | | Non-Latino Whites ($n$ = 202) | | | |
|---|---|---|---|---|---|---|---|---|
| | MSPSS | Family | Friends | Sig. Other | MSPSS | Family | Friends | Sig. Other |
| FS | .30** | .34** | .25** | .17 | .29** | .35** | .20** | .14* |
| B-FS | .15 | .21* | .09 | .08 | .22** | .24** | .14* | .11 |
| MSPSS Total | --- | .84** | .85** | .83** | --- | .82** | .78** | .83** |
| Family | | --- | .60** | .53** | | --- | .42** | .52** |
| Friends | | | --- | .60** | | | --- | .54** |
| Sig. Other | | | | --- | | | | --- |

*Note*. **$p$ < .01; *$p$ < .05; MSPSS = Multidimensional Scale of Perceived Social Support (Zimet et al., 1988); FS = Familism Scale (Sabogal et al., 1987); B-FS = Behavioral-Familism Scale developed for this study.

**Family Environment**

Correlations between the attitudinal and behavioral familism scales and FES subscales were computed using both racial/ethnic groups combined and these are displayed in Table C7. The correlations between the FS and FES subscales were low positive for Cohesion ($r$ = .21, $p$ < .01) and non-significant for Conflict ($r$ = -.10, $p$ = n.s.) Correlations between the B-FS and FES subscales were very low positive for Cohesion ($r$ = .12, $p$ < .05) and non-significant for Conflict ($r$ = -.00, $p$ = n.s.).

*Table C7*
*Correlations between the FS, B-FS and the FES Subscales for Both Racial/Ethnic Groups Combined (N = 323)*

| Scales | FES Cohesion | FES Conflict |
|---|---|---|
| FS | .21** | -.10 |
| B-FS | .12* | -.00 |
| FES Cohesion | ---- | -.40** |
| FES Conflict | | --- |

*Note.* **$p$ < .01; *$p$ < .05;FES = Family Environment Scale (Moos & Moos, 1976); FS = Familism Scale (Sabogal et al., 1987); B-FS = Behavioral-Familism Scale developed for this study.

***Correlations between the FS, B-FS and the FES Subscales by Racial/Ethnic Groups***

Table C8 displays the correlations between the familism scales and the FES subscales for both racial/ethnic groups separately. The correlations between the FS and the FES Cohesion subscale were low positive for Latinos ($r$ = 27, $p$ < .01) and very low positive for non-Latino Whites ($r$ = .17, $p$ < .05). Correlations between the FS and the FES Conflict subscale were non-significant for both Latinos ($r$ = -.10, $p$ < .n.s) and non-Latinos Whites ($r$ = -.11, $p$ = n.s.). Correlations between the B-FS and the FES Cohesion subscale were non-significant for both

Latinos ($r$ = .13, $p$ = n.s.) and no Latinos Whites ($r$ = -.10, $p$ = n.s.). Similarly, the correlations between the B-FS and the FES Conflict subscale were non-significant for both Latinos ($r$ = .04, $p$ = n.s.) and non-Latinos Whites ($r$ = -.04, $p$ = n.s.).

*Table C8*
*Correlations between the Familism Scales and the FES Subscales for Both Racial/Ethnic Groups Separated*

| | Latinos ($n$ = 121) | | Non-Latinos Whites ($n$ = 202) | |
|---|---|---|---|---|
| Scales | FES Cohesion | FES Conflict | FES Cohesion | FES Conflict |
| FS | .27** | -.10 | .17* | -.11 |
| B-FS | .13 | .04 | .10 | -.04 |
| FES Cohesion | --- | -.24** | --- | -.50 |
| FES Conflict | --- | --- | --- | --- |

*Note.* $**p < .01$; $*p < .05$; FES = Family Environment Scale (Moos & Moos, 1976); FS = Familism Scale (Sabogal et al., 1987); B-FS = Behavioral-Familism Scale developed for this study.

## Divergent Validity of FS and B-FS

### Social Desirability

The correlations between the attitudinal and behavioral familism scales and the MCSDS were computed using both racial/ethnic groups combined. Among online participants, the correlations of both FS and B-FS with the MCSDS were non-significant ($r$ = .10, $p$ = n.s.) and ($r$ = .01, $p$ = n.s.), respectively.

#### *Correlations between the FS, B-FS and the MCSDS by Racial/Ethnic Groups*

Table C9 displays the correlations between the FS, B-FS and the MCSDS subscales for both racial/ethnic groups separately. Correlations between the FS and the MCSDS were non-significant for Latinos ($r$ = .00, $p$ = .n.s) and very low positive for non-Latino whites ($r$ = .16, $p$ <

.05). Correlations between the B-FS and the MCSDS were non-significant for both Latinos ($r$ = .01, $p$ = .n.s) and non-Latino whites ($r$ = -.00, $p$ = .n.s).

*Table C9*
*Correlations between the Familism Scales and the MCSDS-SF for Both Racial/Ethnic Groups Separated*

| | Latinos($n$ = 121) | Non-Latino Whites ($n$ = 202) |
|---|---|---|
| Scales | MCSDS | MCSDS |
| FS | .00 | .16* |
| B-FS | .01 | -.00 |

*Note.* *$p$ < .05. **$p$ < .01; MCSDS-SF = Marlowe-Crowe Social Desirability Scale(Zook & Sipps, 1985); FS = Familism Scale (Sabogal et al., 1987); B-FS = Behavioral-Familism Scale developed for this study.

**Acculturation**

Correlations between the attitudinal and behavioral familism scales and the SMAS with Latino online participants ($n$ = 121) are displayed in Table C10. The correlations between the FS, B-FS and SMAS Acculturation were non-significant for Latinos. However, the correlations between the FS, BFS and SMAS Enculturation were low positive and ranged from ($r$ = .25, $p$ < .01) to ($r$ = .36, $p$ < .01).

*Table C10*
*Correlations between the FS, B-FS and SMAS among Latinos (n = 121)*

| Scales | SMAS Acculturation | SMAS Enculturation |
|---|---|---|
| FS | -.00 | .36** |
| B-FS | .08 | .32** |

Note. **$p$ < .01. *$p$ < .05; SMAS = Stephenson Multigroup Acculturation Scale (Stephenson, 2000); FS = Familism Scale (Sabogal et al., 1987); B-FS = Behavioral-Familism Scale developed for this study.

# APPENDIX E: DEMOGRAPHIC QUESTIONNAIRE

## Demographic Questionnaire

**1.** What is your age? _____

**2.** Date of Birth: ____ /___ /_____
Mo Day Year

**3.** What is your gender?
- ❑ Male
- ❑ Female
- ❑ Other

**4.** What state do you <u>currently</u> live in? _____

**5.** Where were you born? _____

5. A. What was your country of residence until age 16? _____
*(Country were spent most of childhood until age 16)*

IF NOT U.S. BORN: Age when you moved to the U.S.: _____

***6.*** What is your ethnicity? (Please specify and select only one answer)
- ❑ Latino/Latino
  a. Brazilian
  b. Colombian
  c. Cuban
  d. Dominican
  e. Ecuadorian
  f.
  g. Mexican
  h. Puerto Rican
  i. Venezuelan
  j. Other. Please specify: _____
- ❑ Non-Latino/Non-Latino

**7.** What is your race?
- ❑ White
- ❑ Black/African American
- ❑ Asian American/Pacific Islander (e.g., Asian Indian, Chinese, Korean, Pakistani, Vietnamese, Thai, Native Hawaiian, Samoan)
- ❑ Native American/Alaskan Native
- ❑ Multiracial/multiethnic
- ❑ Other _____

**8.** What is your generetional status?

- ❑ 1st Generation *(You were born in Latino America or other country)*
- ❑ 2nd Generation *(You were born in U.S; either parent born in Latin America or other country)*
- ❑ 3rd Generation *(You were born in U.S., both parents born in U.S. and all grandparent born in Latin America or other country)*
- ❑ 4th Generation *(You and your parents were born in U.S. and at least one grandparent was born in Latin America or other country with remainder born in the U.S.)*
- ❑ 5th Generation *(You and your parents were born in the U.S. and all your grandparents were born in the U.S.)*

**9.** What is your marital status?

- ❑ Single (Never Married)
- ❑ Married/Living with partner
- ❑ Divorced/Separated
- ❑ Widowed

**10.** What is your highest level of education?

- ❑ Grammar school or middle school
- ❑ Some high school
- ❑ High school graduate or GED
- ❑ Post high school technical training
- ❑ Some college/university
- ❑ College graduate
- ❑ Master degree or higher

**11.** What languages do you currently speak fluently? *(Please select all that apply)*

- ❑ English
- ❑ Haitian Creole
- ❑ Portuguese
- ❑ Spanish
- ❑ Other(s) (please specify): _____

**12.** What language(s) do you spoken at home? _____

11.A. What languages did you speak fluently *before* age 16? *(Please select all that apply)*

- ❑ English
- ❑ Haitian Creole
- ❑ Portuguese
- ❑ Spanish
- ❑ Other(s) (please specify): _____

**13.** Are you currently employed?

- ❑ Yes

- ❑ No

13.A. If yes, are you currently employed full-time or part-time?

- ❑ Full-time
- ❑ Part-time

13.B. If no, are you a:

- ❑ Homemaker
- ❑ Student
- ❑ Retired
- ❑ Disabled
- ❑ Unemployed (Looking for job)

**14.** What is your annual household gross income?

- ❑ Less than $9,999
- ❑ $10,000-19,999
- ❑ $20,000-39,999
- ❑ $40,000-59,999
- ❑ $60,000-79,999
- ❑ $80,000 or more

**15.** Have you ever been diagnosed with a mental illness?

- ❑ Yes (go to 15A)
- ❑ No

15. A. If yes, which of the following mental illnesses have you been told that you have? (Check all that apply.)

- ❑ Depression
- ❑ Bipolar disorder
- ❑ Schizophrenia
- ❑ Borderline
- ❑ Anxiety disorder (Panic Disorder, Phobia, etc.)
- ❑ PTSD
- ❑ Substance abuse or dependency
- ❑ Other _____

# APPENDIX F: AFS AND B-AFS SKEWNESS AND KURTOSIS

**Skewness and Kurtosis Values for the AFS and B-AFS in Sample 2**

*Skewness and Kurtosis Values for the AFS and B-AFS in Sample 2* (*n* = 323)

| | Familism Scale | |
|---|---|---|
| Subscales & Total Composite Scores | Skewness (SE =.136) | Kurtosis (SE = .271) |
| AFS | | |
| Family support | -.088 | -.168 |
| Family interconnectedness | -.612 | -.267 |
| Family honor | .194 | .1683 |
| Subjugation of self for family | -.334 | -.130 |
| Total Composite Score | -.182 | -.087 |
| B-AFS | | |
| Family support | .274 | -.572 |
| Family interconnectedness | -.599 | -.283 |
| Family honor | .498 | -.131 |
| Subjugation of self for family | -.276 | -.227 |
| Total Composite Score | .060 | -.297 |

# APPENDIX G: DESCRIPTIVE STATISTICS FOR MSPSS, FES, MCSDS-SF

**Means and Standard Deviations for the MSPSS, FES and MCSDS-SF for Both Racial/Ethnic Groups Combined and Separated**

*Means and Standard Deviations for the MSPSS for both Racial/Ethnic Groups combined and separated (n =323)*

| | Sample 1 (*n*=323) | Latinos (*n*=121) | Non-Latino Whites (*n*=202) |
|---|---|---|---|
| Scales | M (SD) | M (SD) | M (SD) |
| MSPSS Total | 5.76 (0.94) | 5.71 (1.01) | 5.79 (0.90) |
| Family | 5.70 (1.18) | 5.67 (1.16) | 5.72 (1.20) |
| Friends | 5.77 (1.12) | 5.73 (1.13) | 5.80 (1.11) |
| Sig. Other | 5.81 (1.23) | 5.74 (1.28) | 5.85 (1.21) |

*Note.* MSPSS = Multidimensional Scale of Perceived Social Support (Zimet et al., 1988); M = Mean; SD = Standard Deviation; M and SD computed with raw values.

*Means and Standard Deviations for the FES for both Racial/Ethnic Groups Combined and Separated*

| | Sample 1 (*n*=323) | Latinos (*n*=121) | Non-Latino Whites (*n*=202) |
|---|---|---|---|
| Scales | M (SD) | M (SD) | M (SD) |
| FES Cohesion | 6.98 (1.98) | 7.10 (1.81) | 6.90 (1.90) |
| FES Conflict | 4.36 (2.29) | 4.50 (2.20) | 4.28 (2.35) |

*Note.* FES = Family Environment Scale(Moos& Moos, 1976); M = Mean; SD = Standard Deviation; Ms and SDs computed with raw values.

*Means and Standard Deviations for the MCSDS-SF for Both Racial/Ethnic Groups Combined and Separated*

| | Sample 1 (*n*=323) | Latinos (*n*=121) | Non-Latino Whites (*n*=202) |
|---|---|---|---|
| Scales | M (SD) | M (SD) | M (SD) |
| MC | 5.76 (0.94) | 5.71 (1.01) | 5.79 (0.90) |
| Family | 5.70 (1.18) | 5.67 (1.16) | 5.72 (1.20) |
| Friends | 5.77 (1.12) | 5.73 (1.13) | 5.80 (1.11) |
| Sig. Other | 5.81 (1.23) | 5.74 (1.28) | 5.85 (1.21) |

*Note.* MCSDS-SF = Marlowe-Crowne Social Desirability Scale – Short Form (Zook & Sipps, 1985); M = Mean; SD = Standard Deviation; Ms and SDs computed with raw values.

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