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THE RELATIONSHIP BETWEEN FAMILISM AND SOCIAL DISTANCING BEHAVIORS
DURING THE COVID-19 PANDEMIC

By

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M.S. University of Central Florida, 2016

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Psychology
in the College of Sciences
at the University of Central Florida
Orlando, Florida

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ABSTRACT

Transmission of Coronavirus 2019 (COVID-19) occurs efficiently and from symptomatic and asymptomatic individuals, therefore making it highly infectious. As such, social distancing is generally recommended to mitigate the speed of transmission and decrease incidence, hospitalization, and mortality rates. Consistent with other chronic medical conditions, COVID-19 is disproportionately affecting Hispanic/Latinx and black populations. One inherent cultural concept, *familism*, might also serve to inhibit adherence to social distancing guidelines. Thus, the current study contributes to the growing literature on COVID-19, specifically examining barriers underscoring health disparities. This study evaluated Attitudinal Familism (AFS) and Behavioral Familism (BFS) as predictors of adherence of social distancing. It also examined pandemic related adverse events as a predictor of anxiety and depressive symptoms, across varying familism levels. A national survey of 253 participants (Hispanic/Latinx = 117; Non-Hispanic/Latinx = 136) was conducted using social media and chain referral (snowball) sampling. Results of hierarchical linear multiple regressions revealed that higher levels of Attitudinal Familism and Behavioral Familism were significant predictors of greater contact with family members and increased use of protective behaviors in Hispanic/Latinx participants. Higher number of pandemic adverse events also significantly predicted a greater level of depression and anxiety across all subjects, however higher levels of Attitudinal and Behavioral Familism served as a protective factor decreasing the influence of these events on symptoms. The main results of this study support the hypothesis that higher levels of familism increase the risk of family contact. On the other hand, familism was also found to increase the likelihood of

using protective behaviors and to decrease the negative impact of pandemic adverse events on psychological functioning.

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LIST OF ABBREVIATIONS

Attitudinal and Behavioral Familism Questionnaire (ABFQ)

Attitudinal Familism Scale (AFS)

Behavioral Familism Scale (BFS)

Centers for Disease Control and Prevention (CDC)

Chronic obstructive pulmonary disease (COPD)

Coronavirus 2019 (COVID-19)

Family Contact (FC)

Generalized Anxiety Disorder – 2 Item Scale (GAD-2)

Gross Domestic Product (GDP)

Intensive care unit (ICU)

Internal Review Board (IRB)

Isolation from Community (IC)

Latino Adolescent Migration, Health, and Adaptation Project (LAMHA)

Mahalanobis distance (MD)

Mandatory quarantine status (MQS)

Middle East Respiratory Syndrome (MERS)

National Health and Nutrition Examination Survey (NHANES)

Pandemic Adverse Events Scale Score (PAES)

Patient Health Questionnaire (PHQ-9)

Physical Health Questionnaire – 2 Item Scale (PHQ-2)

Protected Health Information (PHI)

Protective Behaviors (PB)

Severe Acute Respiratory Syndrome (SARS)

Social Distance Scale, version 1 (SDS (v1))

Susceptible Infectious Recovered (SIR)

United Kingdom (U.K.).

United States (U.S.)

Validity Check Questions (VCheck)

Work from Home (WH)

World Health Organization (WHO)

CHAPTER ONE: LITERATURE REVIEW

Coronavirus 2019 (COVID-19)

The spread of Coronavirus 2019 (COVID-19) to the United States (U.S.) began in in early 2020 and is on track to be one of the greatest pandemics that society has faced in recent history since the 1918 influenza pandemic. It was declared a Public Health Emergency International Concern by the World Health Organization (WHO) shortly after initial reports of “pneumonia of unknown origin” was reported in Wuhan, China (Hu et al., 2020; Yang et al., 2020). Since then, the spread of COVID-19 was far reaching and more heavily observed in countries such as China, Italy, South Korea, and Iran before the peak reached the U.S. The first U.S. cases of COVID-19 were reported between January and February of 2020, thus prompting the start of community spread. As of November 5, 2020, the Centers for Disease Control and Prevention (CDC) reported 9,357,245 total positive cases of COVID-19 in the U.S. with a total of 231,988 COVID-19 related deaths reported (CDC, 2020).

According to the CDC, COVID-19 is thought to be primarily contracted person-to-person through the respiratory droplets of both symptomatic and asymptomatic carriers (April 2, 2020). The likelihood of exposure increases when individuals interact at close contact (less than approximately six feet or 2 meters) and respiratory droplets land in the mouths or noses or are inhaled into the lungs of people nearby. As such, COVID-19 spreads very easily and sustainably between people. Said another way, COVID-19 is currently thought to spread more efficiently than influenza, but not as efficiently as measles. COVID-19 can also be transferred by touching common surfaces contaminated with the virus, before touching the facial area.

An individual exposed to the virus may exhibit symptoms between two to 14 days, for those who are symptomatic, with a median of five to six days. At present, the CDC lists known symptoms such as fever/chills, cough, shortness of breath/difficulty breathing, muscle aches, headaches, new loss of taste or smell, sore throat, congestion/runny nose, nausea/vomiting, and diarrhea (CDC, 2020).

Several pre-disposing factors have been identified as risk factors, where the contraction of COVID-19 can manifest as more severe. Based on cohort studies, the CDC identifies older adults, male, and those with cancer, chronic kidney disease, chronic obstructive pulmonary disease (COPD), immunocompromised state, obesity, serious heart conditions, Sickle cell disease, and Type 2 diabetes mellitus as being at increased risk of severe illness of COVID-19 (CDC, 2020; Yang et al., 2020).

Given the efficiency of transmission, organizations such as the WHO and the CDC outline various public health and social measures aimed to reduce the speed of COVID-19 transmission. According to the WHO, public health and social measures are measures set forth at an individual, community, local, national, and international level implemented to assist in reducing transmission, identifying and isolating cases, contact tracing and quarantining, social and physical distancing, and developing vaccines and treatments (WHO, 2020). In addition to social distancing, the CDC recommends additional self-protective behaviors, such as wearing face masks, washing hands frequently and thoroughly, and replacing communication with others via virtual mediums (CDC, 2020).

Impact of Social Distancing

On an individual level, social distancing has been repeatedly emphasized since the start of the pandemic. The overarching goal of social distancing is to reduce the speed of COVID-19 transmission to avoid overtaxing the health care infrastructure. While the extant body of literature regarding the efficacy of social distancing for COVID-19 is currently ongoing, studies of the influenza spread exists and can serve as foundational support for the implementation of social distancing. More specifically, modeling studies examined the efficacy of social distancing behaviors during the influenza spread and estimated that workplace social distancing yielded a median reduction of 23% in the cumulative H1N1 influenza attack rate in the general population in 2009 (Ahmed et al., 2018). Therefore, the impacts of social distancing warrant a closer examination, particularly when considering the trajectory of other countries more hesitant and/or inconsistent with social distancing policies, such as China and Italy at the start of the spread.

In March, Ferguson and colleagues (2020) presented one of the first transmission models with efforts to support and guide responses to the current outbreak, specifically targeted for the U.S. and the United Kingdom (U.K.). Their model highlights that there are two feasible methods of responding to COVID-19: 1) suppression, and 2) mitigation, also known as “flattening the curve”. Suppression was defined as efforts to eliminate and reduce human-to-human transmission or to reverse epidemic growth indefinitely. Suppression can be likened to “curing” and “eradicating” the disease. Whereas, mitigation, or “flattening the curve”, relies on non-pharmaceutical interventions (and vaccines and drugs, if available) with goals of simply slowing transmission completely, to reduce the health impact of the epidemic (not necessarily aiming for elimination of cases). Based on their transmission models, Ferguson et al. (2020) predicted that

with an absence of any control measures, including changes in individual behavior, there would be a peak in mortality (daily deaths) occurring only after 3 months of the pandemic and that approximately 81% of Great Britain and the U.S. would be infected over the course of the pandemic.

Further, for an uncontrolled epidemic, Ferguson et al. (2020) also predicted that critical care bed capacity would be exceeded as early as the second week in April, 2020, with an intensive care unit (ICU) care bed demand over 30 times greater than the maximum supply in both countries. However, with the implementation of various mitigation strategies, such as quarantining cases and social distancing, Ferguson et al.'s (2020) model depicts projected efficacy in terms of a drastic decline in ICU bed demand. Given predictions of their transmission models, the authors recommend the implementation of multiple interventions, such as population-wide social distancing, home isolation, and school and university closures, to flatten the curve.

In addition to reducing transmission rates of COVID-19, several secondary effects of social distancing are crucial to consider. Furthermore, recent studies examining economic and death costs of the pandemic agree that social distancing facilitates long-term benefits (Greenstone & Nigam, 2020; Thunström et al., 2020). While social distancing has the capacity to save lives, it could also impose significant economic costs on society. Indeed, Goldman Sachs presented economic forecasts in March of 2020, predicting a U.S. Gross Domestic Product (GDP) decline by 6.2% this year due to the combined effects of mortality, morbidity, associated productivity impacts, and social distancing (Goldman Sachs, 2020).

Thunström et al. (2020) examined the benefits of social distancing. Their model focused on the prevention of overwhelming the health care system, as an indicator of decreased mortality rates. Using a standard Susceptible Infectious Recovered (SIR) framework, the authors compared mortality rates and COVID-19 spread with versus without social distancing. Benefits of using a SIR model includes the ability to track the numbers of susceptible, infected, and recovered individuals over the course of an infectious disease (Hethcote, 2000; Kermack et al., 1927). Results of their comparison model (with versus without social distancing) concluded that social distancing measures sufficient enough to decrease the average contact rate among individuals by 38% can reduce the peak infection rate by more than half, therefore avoiding exhaustion of the health care system. Overall, Thunström et al. (2020) support health and cost benefits of social distancing.

Similarly, Greenstone and Nigam (2020) developed a method to monetize the impact of social distancing, based on a simulation model of the COVID-19 impact in the U.S. proposed by (Ferguson et al., 2020). With their method, Greenstone and Nigam (2020) simulated models projecting that moderate forms of social distancing can reduce fatalities by 1.76 million within 6 months, with economic benefits of \$7.9 trillion. Both models generated by Greenstone and Nigam (2020) and Thunström et al. (2020) build upon Ferguson et al.'s (2020) heavily cited models by including the potential of health care resource exhaustion into their cost analysis.

While several prediction models support the implementation of mitigation and corresponding social distancing and self-protection behaviors, few methodologically sound studies have yet to examine and publish the efficacy. A preliminary investigation conducted by (VoPham et al., 2020) examined patterns of de-identified smartphone GPS data nationwide to

estimate county-level social distancing. Defined constructs included measurement of 1) change in average distance traveled (per device), 2) change in non-essential venue visitation (e.g., hair salons), and 3) the probability that two users were in close proximity (i.e., spatial distance of ≤ 50 m and temporal distance of ≤ 60 minutes). The GPS data was provided by Unacast, allowing a comparison of activity pre-COVID-19 versus during COVID-19 stay-at-home orders in 3,054 counties across the U.S. Results of their examination revealed that 45 states (including Washington D.C.) implemented stay-at-home guidelines, which were associated with a 35% increase in social distancing. Furthermore, increased social distancing behaviors were associated with a 29% reduction in COVID-19 incidence...and a 35% reduction in COVID-19 mortality. Thus, VoPham et al. (2020) concluded that stay-at-home policies to enforce social distancing were impactful in reducing the spread of disease.

Further, one study specifically examined quantifiable differences in transmission rates across areas with varying social distancing policies (McGrail et al., 2020). Across 134 countries, personal mobility data and COVID-19 transmission data were examined. Researchers specifically used the 14 days prior to the implementation of social distancing measures and compared data collected for 21 days following social distancing measures. McGrail et al. (2020) found that nations with regional or national social distancing policies exhibited significantly larger reductions in individual mobility. Results also yielded a strong correlation between the decrease in mobility and the decrease in COVID-19 spreading, among those nations. This is one of the first known studies specifically comparing the change in COVID-19 spread across areas, and specifically illustrates the efficacy of social distancing. The results of their study are in line with conclusions from past outbreaks, such as H1N1 and Spanish Flu (Ahmed et al., 2018).

In sum, the discussed studies highlight benefits associated with social distancing. Most importantly, the role of stay-at-home measures to enforce social distancing has played a crucial role in decreasing the rate of transmission and subsequent mortality (VoPham et al., 2020). Moreover, simulation models support the implementation of social distancing to decrease the projected costs of mortalities associated with exhausted health care systems (Greenstone & Nigam, 2020; Thunström et al., 2020). Taken together, social distancing and self-protective behaviors have the potential to inhibit the spread of infection. While adherence to such guidelines is paramount to delaying the spread and effects of COVID-19, it is inconsistently practiced at an individual level across the U.S. (Coroiu et al., 2020), placing more community and family members at high risk of exposure to the disease.

Mental Health Impact of Social Distancing

While several physical health and cost benefits of social distancing are discussed, sequela of quarantine on mental health must also be considered. In response to the current and past viral outbreaks, some governments implemented more extreme policies than social distancing in efforts to better contain transmission. Protective behaviors included strict government lockdowns, domestic and international travel restrictions, and mandatory mass quarantine. Studies from previous outbreaks, such as the Severe Acute Respiratory Syndrome (SARS) in 2003 demonstrated effects of mandatory quarantining (Liu et al., 2012; Wu et al., 2009). More specifically, that is was positively associated with acute stress disorder, depression, alcohol dependency, and post-quarantine mental distress among medical staff during and after the peak of the SARS outbreak (Bai et al., 2004; Liu et al., 2012; Wu et al., 2009). Among the general population, one study

reported preliminary results demonstrating an increase in posttraumatic stress symptoms during pandemics (Sprang & Silman, 2013). Given the isolating nature of quarantining and socially distancing, individuals may feel emotionally separated, frustration from the loss of freedom, distress from the uncertainty of the disease status, distress from the perception of threat, distress from perceived stigma of contracting and transmitting the disease, and grief of their previous routines. Therefore, a review of the impact of quarantine and social distancing on psychological well-being is warranted.

Brooks et al. (2020) reviewed 3,166 papers and generated conclusions from 24 papers reporting on the psychological impact of quarantine resulting from various outbreaks, such as SARS, Ebola, the 2009 and 2010 H1N1 influenza pandemics, Middle East Respiratory Syndrome (MERS), and equine influenza. Although most studies included in this review report on acute distress experienced during quarantine periods, Wu et al. (2009) found that being quarantined during the SARS outbreak in China was a predictor of posttraumatic stress symptoms in hospital employees even 3 years later. Additionally, Liu et al. (2012) compared severity of depressive symptoms among hospital staff 3 years following quarantine from the SARS outbreak in China. They found that 9% of their sample of hospital staff endorsed high depressive symptoms. Group differences were also observed, where among those endorsing high depressive symptoms, approximately 60% had been quarantined. In comparison, of those who endorsed low depressive symptoms, only 15% had been quarantined.

Specific to the current pandemic, Xin et al. (2020) conducted a cross-sectional online survey among 24,378 COVID-negative students of 26 universities in 16 Chinese

cities during February 1–10, 2020. Researchers sought to examine the associations between mandatory quarantine status (MQS) and negative cognitive responses related to COVID-19. More specifically, researchers focused on perceived discrimination because of COVID-19 and perceived risk of COVID-19 infection as potential mediators of negative mental health status (defined as emotional distress because of COVID-19, depressive symptoms, and self-harm/suicidal ideation). Following their analyses, the authors report significant and positive associations between MQS and emotional distress, with medium effect sizes (Cohen's $d = 0.46$). Xin et al. (2020) also report significant associations between MQS and probable depression and self-harm/suicidal ideation, as measured by the validated Chinese version of the nine-item Patient Health Questionnaire (PHQ-9; (Wang et al., 2014). Furthermore, the authors identified the construct of perceived discrimination as moderately and positively associated with increase emotional distress within their sample.

In conclusion, the prevalence of probable moderate to severe depression, self-harm/suicidal ideation, and emotional distress because of COVID-19 was significantly higher amongst university students who were quarantined, as compared to those who were not. Based on their results, negative cognitions related to perceived discrimination appears to be a moderate driving factor in the reports heightened emotional distress. Of note, Xin et al. (2020) compared physical health status between groups, which did not function as a significant confound. Said another way, being at higher health risk did not significantly contribute to group differences in heightened psychological symptoms.

Another study investigated the threat of COVID-19 on emotional state during quarantine (Pérez-Fuentes et al., 2020). Data were collected from 1,043 participants from the general population in Spain, during the first week of confinement, March 18 to 23, 2020. Using the Brief Illness Perception Questionnaire, Affective Balance Scale, and Mood Evaluation Scale, Pérez-Fuentes and colleagues assessed the perception of threat from the disease, positive and negative affect, and mood.

Results from preliminary analyses revealed that perceived threat from the disease was positively correlated with negative moods, such as sadness, depression, anxiety, and anger/hostility. Perceived threat was also negatively correlated with positive affect, indicating that those experiencing higher levels of threat were less likely to report positive affect. When further examining group differences between participants expressing more positive affect versus those expressing more negative affect, the researchers found participants with more negative affect also endorsed a higher mean score in perceived susceptibility to disease (Cohen's $d = .87$). Mediation models also support that the perception of threat has a direct positive effect on negative moods. Therefore, analyses conducted by Pérez-Fuentes et al. (2020) support that factors such as perceived threat and perceived susceptibility mediate the presence of negative mood during quarantine.

In addition, a recent cross-sectional study conducted by Marroquín et al. (2020), investigated implications for mental health as result of social distancing via online surveys. Data were collected across two times points, February (pre-national stay-at-home orders) and March of 2020 (post-national-stay-at-home orders). Researchers

compared symptoms of anxiety, depression, intrusive thoughts, sleep disturbances, and acute stress across groups of for those who endorsed living in an area with stay-at-home-orders and those who did not. Comparison of mental health indicators were also examined across individuals who engaged in personal distancing behaviors versus individuals who engaged in fewer personal distancing behaviors. Results from their study concluded that governmental stay-at-home orders was associated with more symptoms of depression, GAD, acute stress, and insomnia. Further, practicing more personal social distancing behaviors was also associated with more depressive symptoms, higher generalized anxiety symptoms, acute stress, and intrusive thoughts (Marroquín et al., 2020).

In sum, it is evident that social isolation and quarantine not only provide positive physical health benefits, but contrastingly, also contribute to various negative mental health concerns. The negative mental health impact of isolation has been demonstrated across various international and historical public health outbreaks. Additionally, the literature summarizes mediating factors, such as perceived discrimination (Pérez-Fuentes et al., 2020; Xin et al., 2020), susceptibility (Pérez-Fuentes et al., 2020), risk of transmission (Xin et al., 2020), threat (Pérez-Fuentes et al., 2020), and social isolation (Marroquín et al., 2020), in exacerbating negative moods (Pérez-Fuentes et al., 2020), emotional distress, probable depression and self-harm/suicidal ideation (Marroquín et al., 2020; Xin et al., 2020). Because of this, strategies designed to contain infection transmission should include continuous monitoring of risks and benefits to society.

Another methodology used to assess emotional reactions of populations affected by distressful events uses autobiographical narratives. First introduced by Bruner (1987), reviewing the content and structure of narratives has been shown to provide insight to an individual's process of attributing meaning to events. Further, current literature on autobiographical narrative analyses support that having higher use of internal state language is positively associated with outcomes in adults (Bohanek & Fivush, 2010). More specifically, individuals expressing more cognitive processing words (i.e., "think" and "understand") and emotion words during stressful events show higher levels of physical and psychological well-being (Pennebaker, 1997; Pennebaker & Chung, 2007). Moreover, Graci and colleagues (2018) concluded that the expression of certain narrative structures indicate positive processing and is associated with higher support seeking, positive self-event connections, and negative self-event connections (Graci et al., 2018). Contrastingly, negative processing of distressing events is related to higher event distress (Graci et al., 2018; McAdams et al., 2001; Waters et al., 2013). Indisputably, the COVID-19 pandemic has been distressful event societally.

Diversity Considerations: Health Disparities

Health disparities is a concept describing the differences that exist among specific population groups in the U.S. in the attainment of full health potential, as measured by disproportionate differences in incidence, prevalence, mortality, burden of disease, and other adverse health conditions (National Institute of Health, 2014). When examining potential disparities, dimensions often assessed include racial or ethnic groups, gender, sexual orientation, age, disability status, socioeconomic status, and geographic location.

While each dimension of intersectionality is unique and poises inherent differences from one group to the next, the examination of health disparities often focus and report on community and systemic barriers that are avoidable and unjust (Graham, 2004). Racial and ethnic disparities continue to persist, despite recent efforts to increase awareness and improve health care access in the U.S. Subsequently, health disparities based on race and ethnic background are reflected in the incidence and prevalence of chronic disease and premature death compared to the rates of whites (Moore et al., 2020).

The incidence of obesity, for example, disproportionately affects racial and ethnic minorities and has many associated chronic diseases and debilitating conditions. Broadly speaking, blacks and other minority populations have higher prevalence of chronic medical conditions (Assari, 2017; Assari et al., 2015; Jackson et al., 2010). The National Health and Nutrition Examination Survey (NHANES) found that Hispanic and non-Hispanic black adults, aged 20 and over, were most likely to have obesity in 2015-2016 (NHANES). In their sample, 46.9 % Hispanic and 47.5% of non-Hispanic black participants had a body mass index ≥ 30 , as compared to 38.2% of white, non-Hispanic participants. Results of the NHANES study also found a higher incidence rate of diabetes among Hispanic (21.5%) and non-Hispanic black (19.65%) adults, compared to white, non-Hispanic responders (13.0%). Since the CDC identified that having a chronic medical condition increases the risk of COVID-19 symptom severity, a review of health disparities presenting during the current pandemic is warranted (NHANES, 2017).

Health Disparities and COVID-19

Emerging data supports that the current pandemic is affecting different racial/ethnic groups at disproportionate rates (Aubrey, 2020; Garg, 2020; Stokes, 2020). In June 2020, the CDC disclosed that 33.8% of COVID-19 cases were Latinx and 21.8% were of black Americans, though these ethnic and racial minority groups represent only 18% and 13% of the U.S. population, respectively (CDC, 2020). One reason for the increased prevalence might be contributed to the report by the Reuters/Ipsos poll (Tamman, 2020) concluding that Latinx individuals are more likely to encounter people with COVID-19 compared to their white counterparts. In many cities of the U.S., non-Hispanic blacks, and Hispanics or Latinx are over twice as likely as non-Hispanic whites to die from COVID-19 (Selden & Berdahl, 2020). Furthermore, the CDC also reported that age adjusted black and Hispanic COVID-19 hospitalization rate were 4.5 and 3.5 times more than whites, as of May 30, 2020 One of which, includes New York City.

There are stark racial disparities in the prevalence rate of COVID-19 in the New York City region. More specifically, according to census data, New York City is 32.1% white, 29.1% Latino, 24.3% black, and 13.9% Asian. A review of the five New York City zip codes with the highest coronavirus rates shows a significant overrepresentation of Latinos (45.8%) and Asians (23.4%), and a significant underrepresentation of whites (21.2%) and blacks (8%) (Kendi, 2020). Age-adjusted confirmed COVID-19 deaths were 236 and 220 per 100,000 for Latinx and black Americans, respectively, compared to 110 COVID-19 deaths per 100,000 for whites (Tai et al., 2020).

Taken together, drastic disparities in chronic medical conditions existed across racial and ethnic groups prior to the COVID-19 pandemic, placing them at risk of more severe COVID-19 symptoms. Concomitantly, the U.S. is observing disproportionate COVID-19 cases among the very same minority groups, further magnifying the gravity of the disparity. Therefore, the stark contrast in prevalence and mortality rates across racial and ethnic minorities underscore the structural inequality with respect to income, health, health care, employment, and living conditions (Selden & Berdahl, 2020).

Social Determinants of COVID-19 Health Disparities

Extant literature posits that several social determinants and social factors contribute to increased risk of health disparities. Examples of social determinants of health include social, economic, and environmental circumstances in which someone is born and live. Often social determinants are influenced by health and economic policies, distribution of power, and resource allocation associated with income (Abbott & Elliott, 2017; Bell et al., 2010, Healthy People 2020). Specific examples of social factors include poverty, minimal education, and lack of opportunity (Braveman et al., 2011; Braveman & Gottlieb, 2014).

A prominent social determinant central to COVID-19 includes employment circumstances. Prior to this year, black employees were less likely to have the privilege of working from home (Rix, 2015) and, during the current pandemic, black and Hispanic workers are more likely to maintain employment in environments that have higher risk of exposure to infectious diseases (Selden & Berdahl, 2020). Minority groups also represent a disproportionate percentage of workers in essential industries that remained open

during quarantine, such as public transportation, food service industry, and retail industry (Selden & Berdahl, 2020; Tai et al., 2020). In addition, 55% of retail and food service industry workers denied having access to paid sick leave (Schneider & Harknett, 2020). Being more economically vulnerable, the lack of paid sick leave serves as a barrier to taking time off if feeling questionably ill and mitigating potential transmission to co-workers. In effect, there is an economic and ethical dilemma posed as risk to others, and their family members and/or co-habitants increases.

Living conditions and household compositions are also social determinants potentially mediating health disparities, specifically during the current pandemic. Among racial and ethnic minorities, household compositions tend to differ from whites in that household size tends to be greater and are more likely to be multigenerational (Selden & Berdahl, 2020; Tai et al., 2020). Furthermore, a review of data from the Medical Expenditure Panel Survey found that among Hispanic adults at high risk of severe illness, 64.5% lived in households with at least one worker who was unable to work from home versus 46.6% whites (Selden & Berdahl, 2020). Taken together, these findings highlight the racial disparities in job characteristics and household composition within the U.S., which indisputably contribute to the disproportionate impact of COVID-19 on minority communities. Other psychosocial variables inherent to minority populations, namely the Latinx population, might also render social distancing challenging. One such concept, previously supported, is *familism*, or *familismo*.

Familism

Familism is a cultural value emphasizing strong family bonds, defined by feelings of loyalty, reciprocity, and solidarity toward one's nuclear and extended families (Losada et al., 2010; Nicasio et al., 2019; Sabogal et al., 1987) and includes specific constructs such as family cohesion, family support, and family obligations (Sabogal et al., 1987). Familism is typically measured by self-report scales assessing social norms, personal attitudes, and behaviors (Sabogal et al., 1987). It is also considered a family-related construct commonly observed in collectivist cultures, prioritizing family over self, such as Latino and Asian cultures (e.g., Abdou et al., 2010; Fuligni, Tseng, & Lam, 1999; Schwartz et al., 2010; Yeh & Bedford, 2003).

While the current literature yields inconsistent conclusions, some studies hypothesize that having high familism is a protective factor against mental health illness (Stein et al., 2019; Zeiders et al., 2013). Moreover, some studies support that high familism has a positive impact on mental health, specifically depression, among Latinx emerging youth (Stein et al., 2019; Zeiders et al., 2013). Contrastingly, some studies concluded that higher familism values were associated with increased symptoms of depression in adolescents, young adults, and caregivers (Losada et al., 2010; Schwartz et al., 2010; Zeiders et al., 2013). One explanation for the inconclusive results might relate to the level of mental health stigma experienced. According to Mercado et al. (2020), experiencing stigma can be particularly distressing to individuals from collectivistic cultures, such as identifying as Hispanic/Latinx.

To better understand the relationship between familism and psychological health, Campos, Ullman, Aguilera, and Schetter (2014) investigated data from a university sample of Latino, European, and Asian men and women in the U.S. Researchers collected data measuring familism, closeness to family members, general perceived social support, and psychological health (defined as perceived stress, general mental health, and depressive symptoms). Results of their structural equation multiple-group model yielded direct effects of familism on closeness to family members and perceived social support. Campos et al. (2014) also found an indirect effect of familism on better psychological health via greater closeness to family members and perceived social support, across all cultural backgrounds. One limitation of this study regards the inability to determine the direction of the effects due to the cross-sectional nature of the study. Thus, it is unclear if familism leads to having a better family relationship and better psychological health, or vis versa.

In a study examining the mental health effects of migration among Latino immigrant parents, Ornelas and Perreira (2011) also investigated whether social support and familism protect against the development of depressive symptoms. Data derived from interviews conducted through the Latino Adolescent Migration, Health, and Adaptation Project (LAMHA) and included 281 first-generation Latino youth and their parents in North Carolina. Results of their study concluded that high levels of family supportiveness, among Mexican American families, is particularly protective during crises and psychological distress (Ornelas & Perreira, 2011).

While health disparities are apparent in chronic medical conditions, differences are also observed for mental health prevalence rates and mental health utilization (Lagomasino et al., 2005; Larkey et al., 2001; Perez & Cruess, 2011; Sheppard et al., 2008). Studies examining the effects of family factors and mental health support that features of familism are associated with several mental health indices (Perez & Cruess, 2011). Furthermore, experiencing stigma can be particularly distressing to individuals from collectivistic cultures, such as identifying as Hispanic/Latinx (Mercado et al., 2020). Moreover, cultural stigma can lead to the reduction of seeking professional mental health help and informal help, resulting from feelings of shame and fear embarrassing their family (Keeler et al., 2013; Uebelacker et al., 2012).

Taken together, benefits of higher familism is supported in the literature. More specifically, studies conducted by Campos et al. (2014) and Ornelas and Perriera (2011) highlight family support as a driving mechanism of being a protective factor. Given that Latinos consistently endorsed higher levels of familism, compared to other cultural groups (Campos et al., 2014), the current pandemic guidelines aiming to inhibit transmission of COVID-19 are in direct contradiction to cultural practices and could serve as detrimental during such unprecedented times. Moreover, Hispanic and Latinx individuals may be experiencing an ethical and moral dilemma while expectations to manage a family balance remains high, particularly if feeling uncertain of their health status.

Social Distancing and Familism

In summary, while social distancing is regarded as one of the most effective interventions in inhibiting the spread of transmission, according to the CDC, there are inherent cultural characteristics making adherence difficult among racial and ethnic minorities. While differences in job characteristics and health care access contribute to the disparate risk of exposure, cultural factors such as household composition might contribute to further transmission of COVID-19 among Hispanic and Latinx families specifically. For example, the Reuters/Ipsos poll conducted in March of 2020 showed that about 16% of Latinos were either infected, had contact with someone infected, or knew someone infected with their extended social network, compared to about 9% of whites. Taken together, not only are Hispanic and Latinx employees more likely to be at risk of exposure, the lack of paid-sick leave (Schneider & Harknett, 2020) and cultural values might also be inhibitive to engaging in social distancing and self-protective behaviors.

These findings underscore the disparate likelihood of COVID-19 transmission based on socio-economic variables, alone. Moreover, it could be hypothesized that cultural values, such as familism, could also contribute to the disproportionate rates at which COVID-19 spreads among the Hispanic and Latinx families. Those with high familism may also feel as though fulfilling family obligations may not be neglected, thus potentially facilitating transmission amongst family members, perhaps leading to the decision to continue working and fulfilling family obligations.

Purpose of the Current Study

Research examining impacts of the current pandemic are quickly evolving. Consequently, there are no known studies specifically examining the role of familism as a determinant of engaging in social distancing and self-protective behaviors. Thus, the primary aim of this study was to determine whether level of familism is a predictor of adherence to social distancing and self-protective behavior guidelines. It was hypothesized that individuals who score higher on the familism scale will have lower adherence to social distancing guidelines. It was also hypothesized that ethnicity would moderate the relationship between familism and adherence to social distancing and self-protective behaviors. That is, the relationship between familism and social distancing in individuals self-identifying as Hispanic/Latinx would be stronger than those identifying as Non-Hispanic/Latinx.

The secondary aims of the study were to determine whether the number of pandemic adverse events individuals experience is a predictor of depressive and anxiety symptoms. It was hypothesized that participants who endorsed experiencing more pandemic adverse events would experience higher levels of self-reported depressive and anxiety symptoms. It was also hypothesized that familism would moderate the relationship between the number of pandemic adverse events and these indicators of psychological well-being.

Several lines of research suggest that an individual's process of attributing meaning to distressful events improves coping and resolution outcomes (Graci et al., 2018; McAdams & McLean, 2013; Park & Blumberg, 2002). Thus, the tertiary aims of

this study examined whether there were significant differences of emotion words, cognition words, and coping strategies between varying levels of Attitudinal and Behavioral familism. It was hypothesized that, those with higher levels of Attitudinal and Behavioral familism would reflect more adaptive attributions of the pandemic, measured by the number of emotion words, cognition words, and coping strategies in their narratives.

CHAPTER TWO: RESEARCH DESIGN AND METHODOLOGY

Participants

This study included participants recruited from community settings, nationally and internationally. Participants were recruited through social media platforms and through the partnership of three local organizations in New York City, NY. Additionally, this study recruited participants by snowball sampling. Snowball sampling, or chain referral sampling, yields a study sample through referrals made among respondents who share the information to others they know, who possess some characteristics that are the research interest (Biernacki et al., 1981).

To enhance the reach of the snowball sampling, the flyers and survey were provided in English and Spanish (Appendix B and C) across all recruitment platforms. The Spanish version of the survey was translated and verified by a different third-party, native-Spanish speaker, prior to being made available. Eligibility criteria required participants to be over the age of 18 and have the ability to complete an online questionnaire in English or Spanish. The University of Central Florida Internal Review Board (IRB) approved the study as an exempt study (Appendix A) since no Protected Health Information (PHI) was collected.

Procedure

The study flyers included a link which took participants to the online survey measures and stored their responses (Qualtrics, 333 W. River Park Drive Provo, UT

84604 USA). The survey took between 10-15 minutes to complete. Respondents were encouraged to share the link to anyone they wished.

Measures

Pandemic Adverse Events Scale

The Pandemic Adverse Events Scale is described in a recent exploratory factor analysis study conducted by Prachthauser et al. (2020). During March and April 2020, the authors generated a list of 6 yes/no questions reflecting the major events an individual could be exposed to in the context of the pandemic. They include questions about unemployment, death of a friend or family member, use of COVID-19 testing, and barriers to health care (Appendix D for English and E for Spanish).

COVID-19 Impact Questions

A qualitative questionnaire to assess the impact of COVID-19 was developed during March and April of 2020 for the current study. Twelve items were generated to assess use of COVID-19 tests, test results, impact of testing on social distancing behaviors, number of familiar associates diagnosed with COVID-19, number of deaths of familiar associates from COVID-19, fear of COVID-19, employment changes, effect on relationships, and coping skills developed since the pandemic.

Participants were also asked 3-free text questions to reflect on their current experience and provide autobiographical narratives. Questions were selected specifically to gain information on the affect the current pandemic has had on their family relationships, friendships, and the utilization of coping strategies. Questions were framed in such a way where participants could

disclose positive and/or negative effects of the pandemic (Appendix F for English and G for Spanish).

In scoring autobiographical narratives, 20% of the samples were used to establish interrater reliability. Coding schemes used for this study include an analysis of positive affect and negative affect (Grysmann et al., 2016), thoughts and evaluations of the event (Grysmann et al., 2016; Pasupathi & Wainryb, 2010), the frequency count of positive, negative, and neutral coping strategies disclosed by the respondent. Cohen's Kappa for positive and negative emotion words were .52 and .77, which are considered *moderate* and *substantial agreement*, respectively. Cohen's kappa for cognition words was .63, which is also considered *substantial agreement*. Regarding coping strategies, Cohen's kappa for positive, negative, and neutral strategies were .89, .90, and 1.0, respectively, and are considered *almost perfect agreement*.

Social Distance Scale, version 1 (SDS (v1))

The SDS (v1) is a 14-item scale is a brief self-report screening measure of adherence to social distancing and self-protective behaviors in pandemic situations; (Prachthauser et al., 2020). The scale consists of four subscales: 1) Isolation from Community (IC), 2) Work from Home (WH), 3) Family Contact (FC) and, 4) Protective Behaviors (PB). More specifically, items assess multiple areas of social and physical distancing and protective behaviors, such as wearing a mask, shopping in public, participating in small or large group activities, working outside of the home, using technology for social contact, physically interacting with family members of varying ages, visiting nursing homes, utilizing public transportation, and attending religious and/or funeral services in person. Lower scores indicate lower adherence or engagement

with healthy behaviors and practices. The scale demonstrates acceptable internal consistency for all the four subscales with Cronbach's Alpha of .72, .67, .66, and .59 for IC, WH, FC, and PB, respectively. Additionally, there was good 1-week test-retest reliability, ranging from .66 to .80 for all subscales (Appendix H for English and I for Spanish).

Physical Health Questionnaire – 2 Item Scale (PHQ-2)

The PHQ-2 assess the frequency of depressed mood and anhedonia over the past two weeks (Kroenke, Spitzer, & Williams, 2003). It was adapted from the PHQ-9 and is used as a “first-step” screener in health care settings. Items are presented on a 4-point Likert scale where 0 indicates the absence of the symptom and 3 indicates experiencing the symptom *nearly every day*. Kroenke et al. (2003) found that the PHQ-2 has an overall sensitivity of 83% and specificity of 90% when using a cut point of 3 for major depression. Test-retest reliability in a research sample was good, $r = 0.79$, and internal consistency was $\alpha = 0.83$ (Staples, et al., 2019). Staples et al. (2019) also found that the PHQ-9 and PHQ-2 correlated well, $\alpha = 0.85$.

Generalized Anxiety Disorder – 2 Item Scale (GAD-2)

The GAD-2 is a brief screening tool for generalized anxiety disorder, adapted from the GAD-7 (Kroenke et al., 2007). Items are presented on a 4-point Likert scale where 0 indicates the absence of the symptom and 3 indicates experiencing the symptom *nearly every day*. Studies conducted by Plummer et al. (2016) support that the GAD-2 has good sensitivity of 76% and specificity of 81% using a cut-off score of ≥ 3 . Test-retest

reliability in a research sample was good, $r = 0.81$, with internal consistency of $\alpha = 0.81$ (Staples, et al., 2019). Furthermore, Staples et al. (2019) also found that the GAD-7 and GAD-2 correlated well, $\alpha = 0.88$.

Attitudinal and Behavioral Familism Questionnaire (ABFQ)

The ABFQ is a measure of family attitudes and behaviors consistent with the construct of familism. The scale was recently revised and updated by Nicasio et al. (2018), where family attitudes and behaviors are assessed separately. Subscales assessed in the Attitudinal Familism Scale (AFS) items include: Familial Support, Familial Interconnectedness, Familial Honor, and Subjugation of Self for Family. Behavioral Familism Scale (BFS) items assessed the frequency in which participants act on their attitudes. For example, “I have helped or I help my elderly parents in times of need; for example, helping financially or sharing a house.” Items are assessed on a 10-Likert scale with response options ranging from 1 (strongly disagree) to 10 (strongly agree). Psychometric analyses support that the revised scale as good psychometric properties in terms of internal consistency (Cronbach’s alpha = .87) and high 2-week test–retest reliability ($r = .86$). The Cronbach’s alphas for the Overall Total AFS score was .90 and .84 for the Overall Total BFS score.

Demographic Questionnaire

Participants were responded to a demographic questionnaire (Appendix J for English and K for Spanish). This form included age, gender, race, ethnicity, education,

marital status, household characteristics, employment, health and safety, area of residence, and self-reported quality of life information.

Validity Check Questions (VCheck)

Three questions were included to assess participants' pattern of responses. More specifically, validity check questions identified participants who responded in a random or careless manner. Questions were interspersed throughout the survey and participants were removed if they inaccurately responded to more than one validity check question. The use of VCheck items in psychological testing was established with the Minnesota Multiphasic Personality Inventory and the Millon Clinical Multiaxial Inventory and has been used widely in survey research since (Berinsky et al., 2014; Groth-Marnat & Wright, 2016).

Analyses

Descriptive Statistics

This dataset was reviewed for random, inconsistent, and incomplete responding. Participants with three or more item non-responses were eliminated per measurement scale. Four data points were removed after assessing the BFS because more than three items were not completed. Then, individuals who answered more than one validity check question incorrectly was removed from the dataset. Of the remaining data, multivariate outliers were detected using the Mahalanobis distance (MD), in which the distance of each case to the centroid of all cases is calculated. Using $p < .001$ criterion and the degrees of freedom for each independent variable, cases with values below .001 were considered an outlier (Tabachnik & Fidell, 2013). The MD was calculated for the independent variables: Attitudinal Familism Scale, Behavioral Familism

Scale, and the four SDS subscales (IC, WH, FC, and PB). Based on probability of MD, no outliers were removed for either familism subscale, or for the SDS subscales. The resulting N used for the following analyses was 253 (Hispanic/Latinx = 117; Non-Hispanic/Latinx = 136).

The mean age for participants identifying as Hispanic/Latinx was 39.43 (SD = 12.91), whereas the mean age identifying as Non-Hispanic/Latinx was 34.27 (SD = 12.65). Results of an independent samples *t*-test yielded no significant differences among ethnicity based on age. A chi-square test of independence was performed to examine the relation between ethnicity and additional demographic variables, such as gender, education level, employment status, and marital status. The results of the chi-squared analyses were not significant across ethnicity groups (Table 1).

Upon further examination of ethnicity and race, among respondents identifying as Non-Hispanic/Latinx, 77.94% identified their race as White/Caucasian, 13.97% identified as Asian, 2.21% identified as black or African American, 1.47% identified as Native Hawaiian or Pacific Islander, and 6.62% identified as multi-racial. A similar examination for respondents identifying as Hispanic/Latinx was also conducted (Figure 1). Qualtrics automatically reports location data for respondents in terms of longitude and latitude, which was used to generate a heat map displaying the distribution of responses. Most of the data was derived from respondents in North America (Figure 2), although <10 responses were from Europe, West Asia, East Asia, and Australia.

Table 1: Participant Demographics

Variables	Hispanic/Latinx (N=117)		Non- Hispanic/Latinx (N=136)		Chi square tests of independence (df)
	N	%	N	%	
Gender					$\chi^2(2) = 3.27$ $p = 0.20$
Female	85	72.65	109	80.3	
Male	32	27.35	26	18.98	
Non-Binary	0	0.00	1	0.70	
Education Level					$\chi^2(5) = 6.89$ $p = 0.23$
High school graduate or GED (14 years of education)	9	7.70	2	1.47	
Post high school technical training	2	1.71	3	2.21	
Some college	15	12.82	16	11.76	
College graduate	36	30.76	44	32.35	
Master's degree	36	30.76	41	30.15	
MD, Ph.D. or equivalent	19	16.24	30	22.06	
Employment Status					$\chi^2(2) = 0.18$ $p = 0.67$
Full-time	72	61.54	80	58.82	
Part-time	17	14.53	21	15.44	
Unemployed	28	23.93	34	25.00	
Marital Status					$\chi^2(3) = 3.48$ $p = 0.32$
Single (never married)	37	31.62	53	38.97	
Married/Living with Partner	63	53.85	73	53.68	
Divorced/Separated	15	12.82	10	7.35	
Widowed	1	0.85	0	0.00	

Note: Percentages may not equal 100 because of rounding error.

Racial Identity Among Hispanic/Latinx Respondents

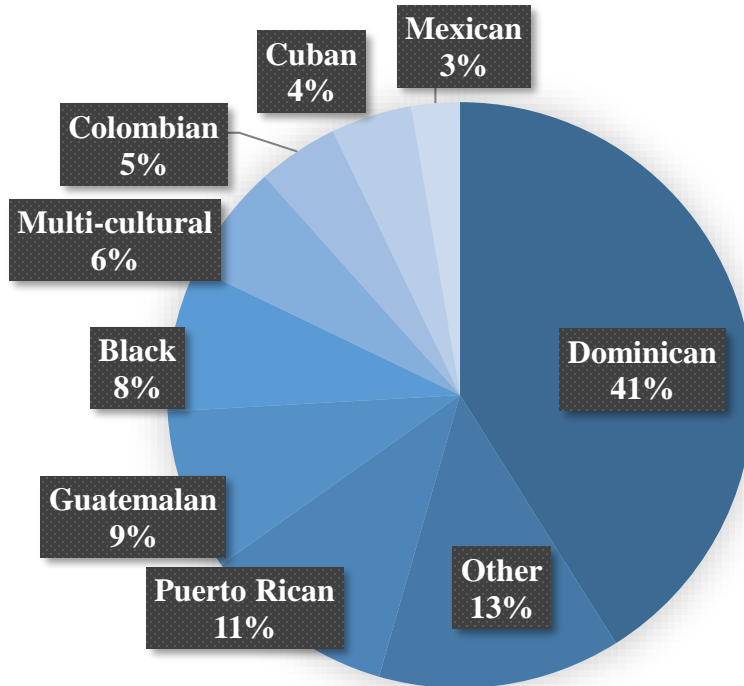


Figure 1: Racial Breakdown of Hispanic/Latinx Respondents

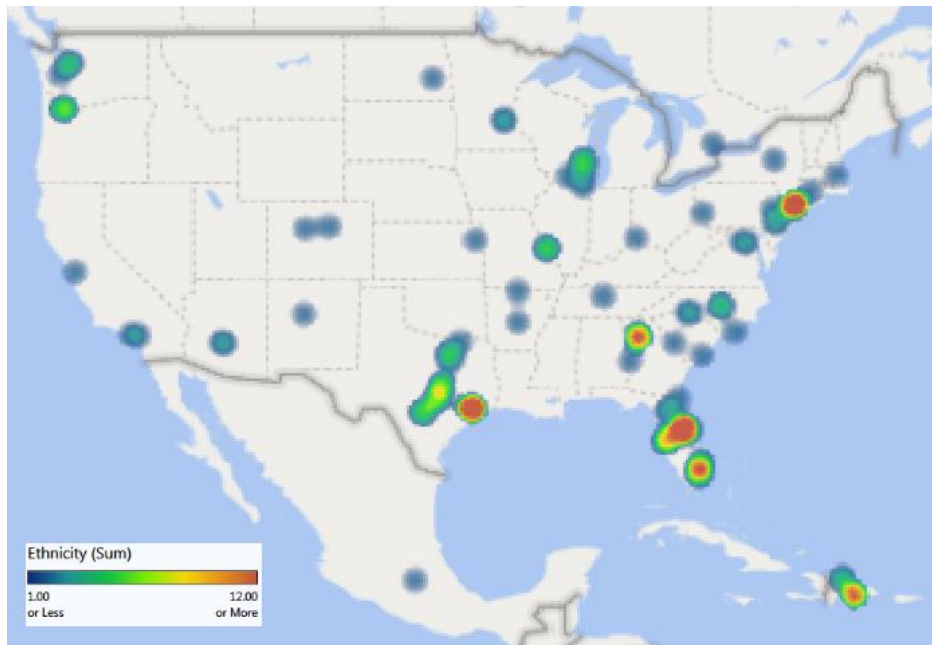


Figure 2: Heat Map of Distribution of Respondents in North America

Prior to analyses, Attitudinal Familism Scale (AFS), Behavioral Familism Scale (BFS), and each subscale of the SDS were examined using IBM SPSS programs to evaluate skewness, normality, linearity, and homoscedasticity of residuals. The distribution for the AFS total subscale score was normal with acceptable skewness (-.531) and kurtosis (.273). Similarly, the distribution for the BFS total subscale score was normal with acceptable skewness (-.564) and kurtosis (.297). The distribution for the IC and WH total subscale scores were normal with acceptable skewness (-.439 and -.536, respectively) and kurtosis (-.153 and -.757, respectively). However, FC and PB subscales were negatively skewed (-2.35 and -1.71, respectively) and kurtosis was 8.20 and 4.20, respectively. All other variables reflected a normal distribution and did not require removal of outliers.

Regarding mental health status, an independent samples *t*-test was conducted to compare group means on the PHQ-2 and GAD-2 (Table 2). Respondents identifying as Non-Hispanic/Latinx ($M = 2.19$, $SD = 1.76$) indicated significantly higher scores on the GAD-2, $t(251) = -2.10$, $p = .04$, than those who identify as Hispanic/Latinx ($M = 1.73$, $SD = 1.75$).

Table 2: Results of *t*-tests and Dependent Variables by Ethnicity

	Hispanic/Latinx (n = 117)		Non-Hispanic/Latinx (n = 136)		95% CI for Mean Difference	<i>t</i>	df
	<i>M</i>	SD	<i>M</i>	SD			
Familism							
AFS	63.88	12.06	54.67	11.05	12.07, .35	6.34**	251
BFS	62.32	13.36	53.58	13.45	12.09, 5.38	5.13**	247
PHQ-2	1.70	1.56	1.81	1.60	-.0, .28	-.54	251
GAD-2	1.73	1.75	2.19	1.76	-.90, -.03	-2.1*	251
SDS Subscales							
IC	10.93	2.71	10.88	2.52	.70, -.59	.172	251
WH	7.46	3.45	8.34	3.66	.01, -1.76	-1.95	251
FC	14.13	2.10	14.02	2.45	.68, -.46	.367	251
PB	10.48	1.50	10.17	1.78	.72, -.10	1.48	251
PAES	1.69	1.31	1.13	1.10	.26, .86	3.85**	251

** $p < .01$

* $p < .05$

Note. AFS = Attitudinal Familism Scale, BFS = Behavioral Familism Scale, PHQ-2 = Patient Health Questionnaire – 2 item Scale, GAD-2 = Generalized Anxiety Disorder – 2 Item Scale, SDS = Social Distancing Scale (v1), IC = Isolation from Community subscale, WH = Work from Home subscale, FC = Family Contact subscale, PB = Protective Behaviors subscale, PAES = Pandemic Adverse Event Scale. Cut-off points for the PHQ-2 and GAD-2 are ≥ 3 .

Prior to conducting regression analyses to examine predictive abilities, an independent samples *t*-test was conducted to compare group means on Attitudinal and Behavioral familism (Figure 3). Participants who identified as Hispanic/Latinx ($M = 63.88$, $SD = 12.06$) demonstrated significantly higher AFS scores than those who identified as Non-Hispanic/Latinx ($M = 54.67$, $SD = 11.05$), $t(251) = 6.34$, $p < .001$. Likewise, participants who identified as Hispanic/Latinx ($M = 62.32$, $SD = 13.36$) demonstrated significantly higher BFS scores than those who identified as Non-Hispanic/Latinx ($M = 53.58$, $SD = 13.45$), $t(247) = 5.13$, $p < .001$ (Table 2).

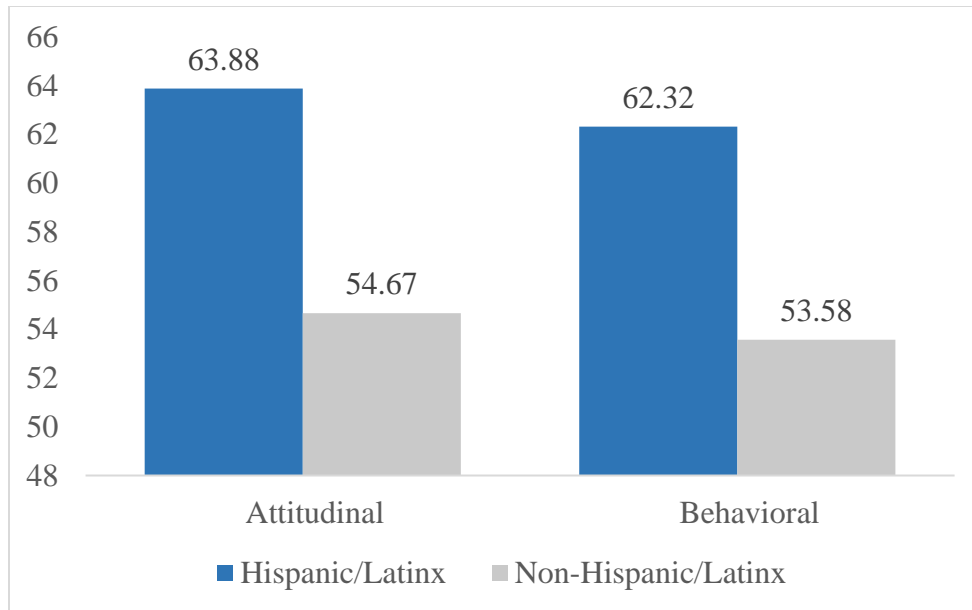


Figure 3: Degree of Familism by Ethnicity

Of the respondents who identify as Hispanic/Latinx, 66 completed the survey in English and 51 completed it in Spanish (Table 3). Among those who identify as Hispanic/Latinx, an independent *t*-test was conducted to compare group means on AFS and BFS based on survey language. Hispanic/Latinx participants who completed the survey in Spanish ($M = 70.12$, $SD = 10.25$) demonstrated significantly higher AFS scores than Hispanic/Latinx participants who completed the survey in English ($M = 67.27$, $SD = 12.19$), $t(113) = 5.59$, $p < .001$. Likewise, participants who identified as Hispanic/Latinx ($M = 62.32$, $SD = 13.36$) demonstrated significantly higher BFS scores than those who identified as Non-Hispanic/Latinx ($M = 53.58$, $SD = 13.45$), $t(247) = 5.13$, $p < .001$.

Likewise, Hispanic/Latinx participants who completed the survey in Spanish ($M = 67.27$, $SD = 12.19$) demonstrated significantly higher BFS scores than Hispanic/Latinx participants who completed the survey in English ($M = 58.14$, $SD = 13.10$), $t(113) = 3.83$, $p < .001$.

Significant difference on the PAES were also observed when comparing Hispanic/Latinx participants who completed the survey in Spanish ($M = 2.08$, $SD = 1.44$), versus those who completed the survey in English ($M = 1.38$, $SD = 1.13$), $t(113) = 2.93$, $p < .001$ (Table 3).

Table 3: Results of *t*-tests and Dependent Variables by Language Among Hispanic/Latinx Participants

	Spanish (n = 51)		English (n = 66)		95% CI for Mean Difference	<i>t</i>	df
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Familism							
AFS	70.12	10.25	58.78	11.22	7.32, 15.35	5.59**	113
BFS	67.27	12.19	58.14	13.10	4.41, 13.86	3.83**	113
PHQ-2	1.49	1.51	1.89	1.59	-0.98,	-1.37	113
GAD-2	1.43	1.40	2.00	1.97	-1.22,	-1.74	113
SDS Subscales							
IC	11.12	2.62	10.80	2.82	-0.70, 1.34	0.62	113
WH	7.45	3.12	7.59	3.67	-1.42, 1.14	-0.22	113
FC	13.92	2.70	14.28	1.50	-1.15, 0.43	-0.90	113
PB	10.76	1.49	10.23	1.50	-0.03, 1.09	1.89	113
PAES	2.08	1.44	1.38	1.13	0.23, 1.18	2.93**	113

* $p < .05$

** $p < .01$

Note. AFS = Attitudinal Familism Scale, BFS = Behavioral Familism Scale, PHQ-2 = Patient Health Questionnaire – 2 item Scale, GAD-2 = Generalized Anxiety Disorder – 2 Item Scale, SDS = Social Distancing Scale (v1), IC = Isolation from Community subscale, WH = Work from Home subscale, FC = Family Contact subscale, PB = Protective Behaviors subscale, PAES = Pandemic Adverse Event Scale. Cut-off points for the PHQ-2 and GAD-2 are ≥ 3 .

Primary Analyses: Familism and Adherence to Social Distancing

Using the framework set forth by Baron and Kenny (1986), hierarchical linear multiple regressions were employed using SPSS Version 27 (IBM, 2020) to examine the predictive strength of continuous variables. Hierarchical linear multiple regression allows independent variables, individually or as a block, to enter the equation in an order, driven by theory. At each

step, the correlation of an independent variable with the dependent variable is calculated and evaluated, where R^2 represents the incremental change variance accounted for with the addition of the predictor variables (Tabachnick et al., 2007). Unless otherwise noted, an alpha level of .05 was used.

Attitudinal Familism and Adherence to Social Distancing

Hierarchical linear multiple regressions were conducted to evaluate the predictive strength of Attitudinal Familism (AFS) on adherence to social distancing and self-protective behaviors. Table 3 displays the unstandardized regression coefficients (B), standardized beta weights (β), R^2 , ΔR^2 , and ΔF after entry of independent variables for AFS (Table 4).

A multiple linear regression was calculated to assess AFS as a predictor of adherence to social distancing, as measured by the Isolation from Home (IC) subscale of the Social Distancing Scale, version 1 (SDS (v1)). Alone, AFS accounted for .04% of the variance, $R^2 = .004$; $F(1, 252) = .98$, $p = .32$. In step 2, a dichotomized variable of ethnicity was added. Together, the variables AFS and ethnicity accounted for .06% of the variance, $R^2 = .006$; $F(1, 251) = .49$, $p = .49$, which was not significant. A two-way interaction between AFS and ethnicity was entered into the model and accounted for 1.6% of the variance, $R^2 = .016$; $F(1, 250) = 2.70$, $p = .10$, which was also not statistically significant.

AFS was then evaluated as a predictor of the Work from Home (WH) subscale of the SDS (v1). In step 1, AFS was entered in the first block and accounted for 2.2% of the variance, $R^2 = .022$; $F(1, 252) = 5.60$, $p = .02$ (Figure 4). This indicates that AFS is a significant predictor of WH and that the adjusted R^2 indicates that approximately 2% of the variability in adherence to WH measures is predicted by Attitudinal Familism. In step 2, a dichotomized ethnicity variable was added to the model. Together, AFS and WH accounted for 2.4% of the variance, $R^2 = .024$; $F(1, 251) = .69$, $p = .41$. While AFS and ethnicity combined was not a significant predictor, the addition of ethnicity was significant to the model, $R = .156$; $F(2, 251) = 3.14$, $p = .05$. Finally, a two-way interaction between AFS and ethnicity was entered into the model. The interaction term accounted for 2.9% of the variance, $R^2 = .029$; $F(1, 250) = 1.30$, $p = .26$, which was not statistically significant.

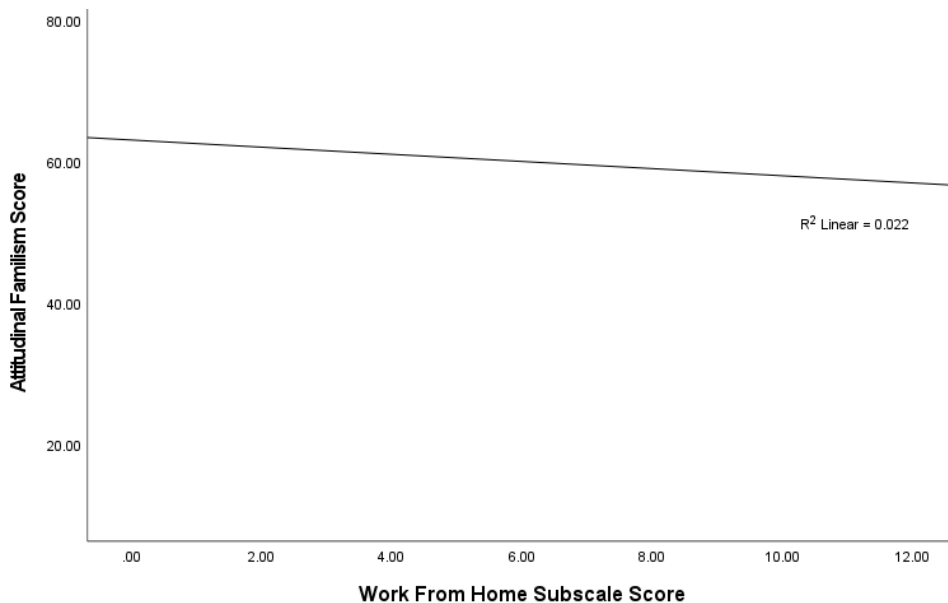


Figure 4: Attitudinal Familism Scale by Social Distancing Work From Home Subscale

AFS was then evaluated as a predictor of the Family Contact (FC) subscale of the SDS (v1). In step 1, AFS was entered and accounted for 1.7% of the variance, $R^2 = .017$; $F(1, 252) = 4.33$, $p = .04$. This indicates that AFS is a significant predictor of FC and that the adjusted R^2 indicates that approximately 2% of the variability in adherence to FC measures is predicted by Attitudinal Familism (Figure 5). In step 2, a dichotomized ethnicity variable was added to the model. Together, AFS and ethnicity accounted for 2.1% of the variance, $R^2 = .021$; $F(1, 251) = 3.14$, $p = .08$, which was not significant. When combined with AFS, however, the regression model significantly predicted FC scores, $F(2, 251) = 3.75$, $p = .03$. While AFS contributed significantly to the model ($B = -.02$, $p = .04$), ethnicity did not ($B = -.54$, $p = .08$). As AFS increases by one unit, FC scores decrease by $-.02$ units. In the third step, a two-way interaction between AFS and ethnicity was entered into the model. The interaction term accounted for 3.9% of the variance, $R^2 = .039$; $F(1, 250) = 2.56$, $p = .11$, which was not statistically significant.

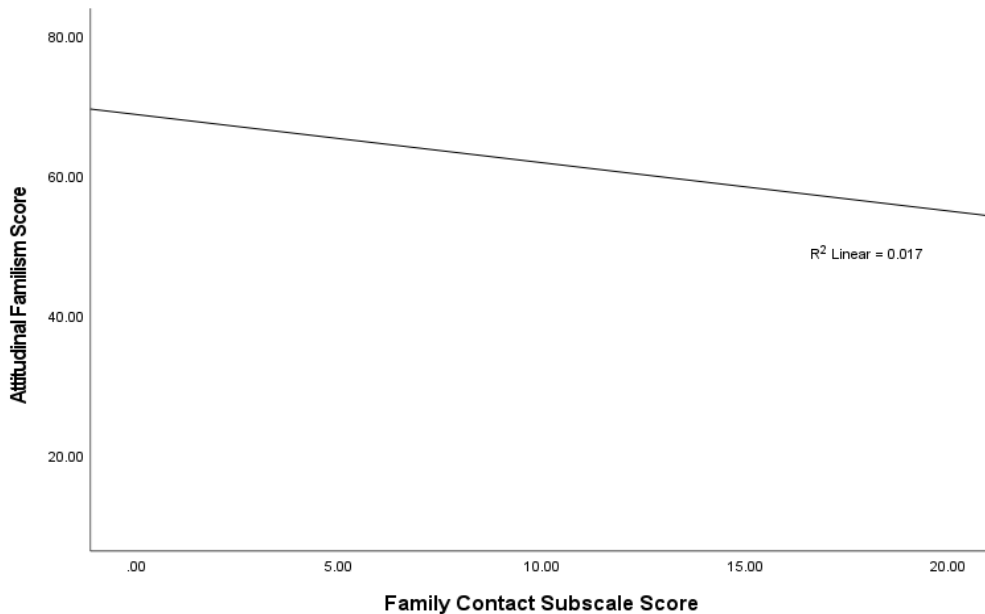


Figure 5: Attitudinal Familism Scale by Social Distancing Family Contact Subscale

Lastly, AFS was evaluated as a predictor of the Protective Behaviors (PB) subscale of the SDS (v1). In step 1, AFS was entered in the first block and accounted for 1.4% of the variance, $R^2 = .014$; $F(1, 252) = 3.46$, $p = .06$. In step 2, a dichotomized ethnicity variable was added to the model. Together, AFS and PB accounted for 1.8% of the variance, $R^2 = .018$; $F(1, 251) = 1.02$, $p = .31$, which was not a significant addition. A two-way interaction between AFS and ethnicity was entered into the model and accounted for 4.2% of the variance, $R^2 = .042$; $F(1, 250) = 6.46$, $p = .01$. Results indicate that AFS interacted with ethnicity in predicting adherence to personal protective behaviors. The interaction is depicted in Figure 6, which demonstrates that higher level of AFS significantly predicts higher use of personal protective behaviors, among participants identifying as Hispanic/Latinx.

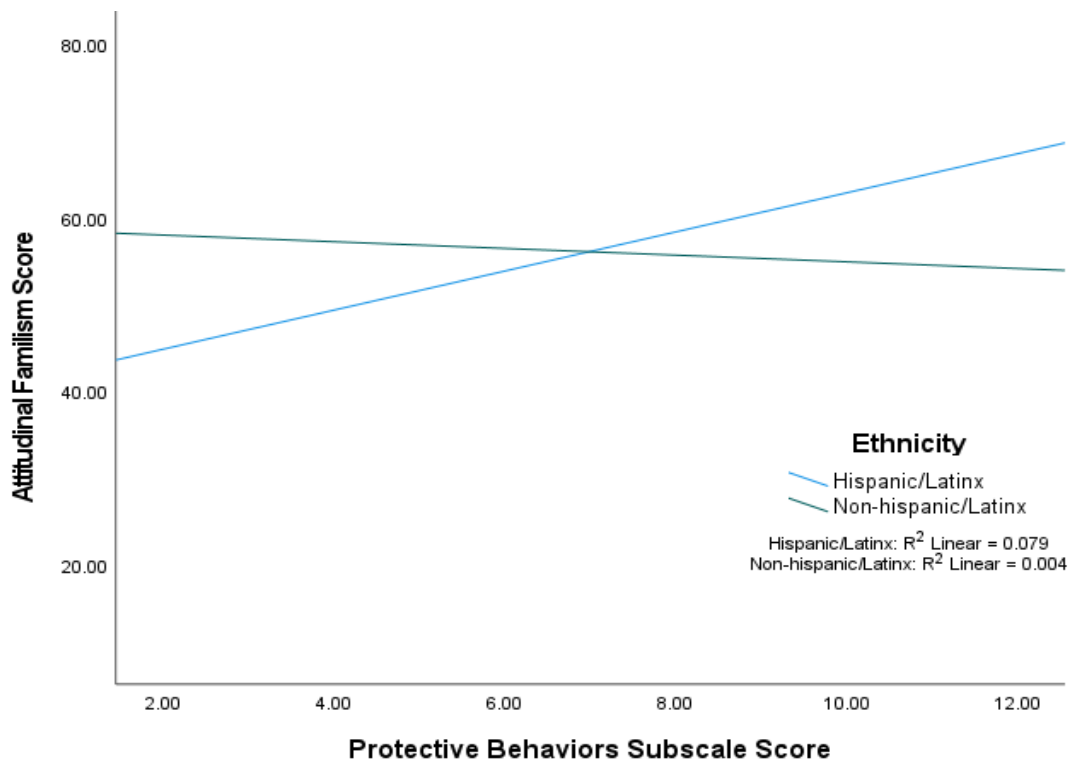


Figure 6: Attitudinal Familism Scale by Social Distancing Protective Behaviors Subscale

Table 4: Attitudinal Familism Scale by Adherence to Social Distancing

Step and variables	B	β	R^2	ΔR^2	ΔF
SDS IC					
Step 1			0.004	0.004	0.98(1,252)
AFS	-0.21	.16			
Step 2			0.006	0.002	.49(1,251)
Ethnicity	-0.12	.18			
Step 3			0.016	0.011	2.70(1,250)
AFS X Ethnicity	-0.29	.18			
SDS WH					
Step 1			0.024	0.024	3.14(2,251)*
AFS	-0.46	-1.5			
Step 2			0.024	0.003	.69(1,251)
Ethnicity	0.20	.06			
Step 3			0.029	0.005	1.30(1,250)
AFS X Ethnicity	-0.28	-.07			
SDS FC					
Step 1			0.017	0.017	4.33(1,252)*
AFS	-0.30	-.13			
Step 2			0.029	0.012	3.14(1,251)
Ethnicity	-0.27	-.12			
Step 3			0.039	0.01	2.56(1,250)
AFS X Ethnicity	-0.25	-.10			
SDS PB					
Step 1			0.014	0.014	3.46(1,252)
AFS	0.19	.12			
Step 2			0.018	0.004	1.02(1,251)
Ethnicity	-0.11	-.07			
Step 3			0.042	0.025	6.46(1,250)*
AFS X Ethnicity	-0.28	-.16			

* $p < .05$

Note. SDS = Social Distancing Scale (v1), AFS = Attitudinal Familism Scale, IC = Isolation from Community subscale, WH = Work from Home subscale, FC = Family Contact subscale, PB = Protective Behaviors subscale.

Behavioral Familism and Adherence to Social Distancing

Hierarchical linear multiple regressions were also conducted to evaluate the predictive strength of Behavioral Familism (BFS) on adherence to social distancing and self-protective

behaviors. Table 4 displays the unstandardized regression coefficients (B), standardized beta weights (β), R^2 , ΔR^2 , and ΔF after entry of independent variables for BFS.

In step 1, BFS was entered into the first block to predict adherence to social distancing, as measured by the IC subscale of the SDS (v1). Alone, BFS accounted for .1% of the variance, $R^2 = .00$; $F(1, 248) = .17$, $p = .69$. In step 2, a dichotomized variable of ethnicity was added. Together, the variables BFS and ethnicity accounted for .1% of the variance, $R^2 = .001$; $F(1, 247) = .02$, $p = .88$, which was not a significant addition. A two-way interaction between BFS and ethnicity was entered into the model and, also, accounted for .1% of the variance, $R^2 = .001$; $F(1, 246) = .03$, $p = .86$. Together, the interaction term was not statistically significant.

BFS was then evaluated as a predictor of the WH subscale of the SDS (v1). In step 1, BFS was entered in the first block and accounted for 1.5% of the variance, $R^2 = .015$; $F(1, 248) = 3.77$, $p = .05$. This indicates that BFS is a significant predictor of WH (Figure 7). The adjusted R^2 indicates that 1.5% of the variability in adherence to WH measures is predicted by BFS. In step 2, a dichotomized ethnicity variable was added to the model. Together, BFS and ethnicity accounted for 2.0% of the variance, $R^2 = .02$; $F(1, 247) = 1.16$, $p = .28$, which was not a significant addition. Finally, a two-way interaction between BFS and ethnicity was entered into the model. The interaction term accounted for 2.1% of the variance, $R^2 = .021$; $F(1, 246) = .26$, $p = .61$, which was not statistically significant.

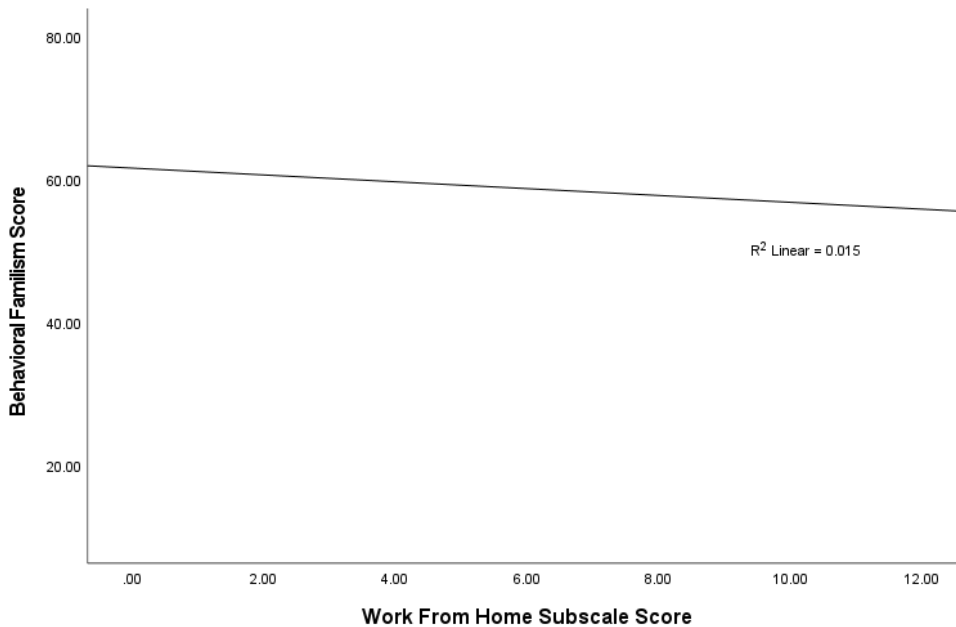


Figure 7: Behavioral Familism by Work From Home Subscale

BFS was then evaluated as a predictor of the FC subscale of the SDS (v1). In step 1, BFS was entered in the first block and accounted for 3.8% of the variance, $R^2 = .038$; $F(1, 248) = 9.85$, $p = .002$. This indicates that BFS is a significant predictor of FC (Figure 8). The adjusted R^2 indicates that approximately 4% of the variability in adherence to FC measures is predicted by BFS. In step 2, a dichotomized ethnicity variable was added to the model. When taken together, the regression model was significant, $F(2, 247) = 7.00$, $p = .001$. Together, BFS and ethnicity accounted for 5.4% of the variance, $R^2 = .054$; $F(1, 247) = 4.02$, $p = .05$. This indicates that ethnicity was a significant enhancing moderator between BFS and FC. In the third step, a two-way interaction between BFS and ethnicity was entered into the model. The interaction term accounted for 5.8% of the variance, $R^2 = .058$; $F(1, 246) = 1.02$, $p = .31$, which was not statistically significant.

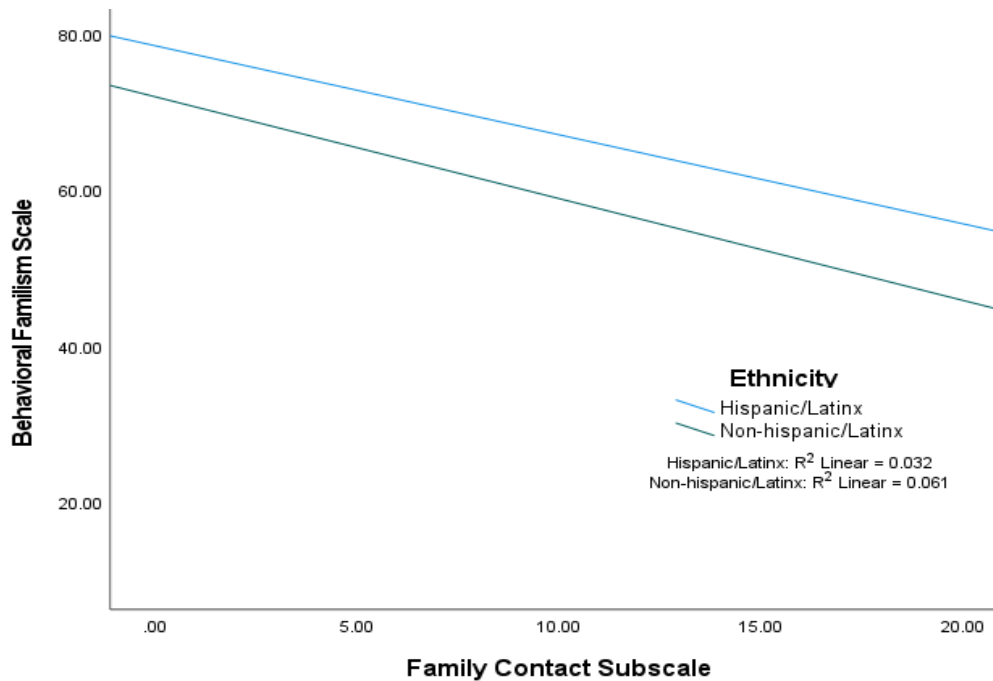


Figure 8: Behavioral Familism by Family Contact Subscale

Lastly, BFS was evaluated as a predictor of the PB subscale of the SDS (v1). In step 1, BFS was entered in the first block and accounted for 1.8% of the variance, $R^2 = .018$; $F(1, 248) = 4.61$, $p = .03$, which supports that BFS is a significant predictor of PB. The adjusted R^2 indicates that approximately 2% of the variability in adherence to PB measures is predicted by Behavioral Familism. In step 2, a dichotomized ethnicity variable was added to the model. Together, BFS and PB accounted for 2.3% of the variance, $R^2 = .023$; $F(1, 247) = 1.17$, $p = .28$, which was not a significant addition. A two-way interaction between BFS and ethnicity was entered into the model and accounted for 3.6% of the variance, $R^2 = .036$; $F(1, 246) = 3.37$, $p = .07$, which was not statistically significant. While not statistically significant, Figure 9 demonstrates that having higher level of BFS predicts higher use of personal protective behaviors.

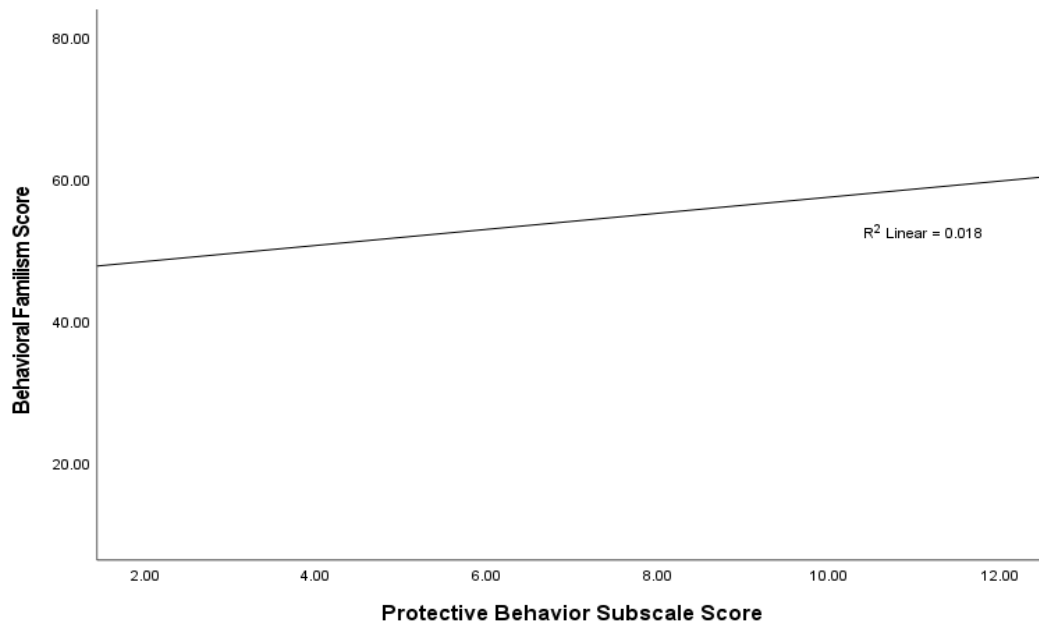


Figure 9: Behavioral Familism by Protective Behaviors Subscale

Table 5: Behavioral Familism Scale by Adherence to Social Distancing

Step and variables	B	β	R^2	ΔR^2	ΔF
SDS IC					
Step 1			0.001	0.001	.17(1,248)
BFS	0.07	.026			
Step 2			0.001	0	.024(1,247)
Ethnicity	-0.03	-.010			
Step 3			0.001	0	.031(1,246)
BFS X Ethnicity	-0.031	-.011			
SDS WH					
Step 1			0.02	0.02	3.77(1,248)*
BFS	-0.48	-.122			
Step 2			0.02	0.005	1.16(1,247)
Ethnicity	0.255	.073			
Step 3			0.21	0.01	.26(1,246)
BFS X Ethnicity	-0.122	-.032			
SDS FC					
Step 1			0.04	0.04	9.85(1,248)*
BFS	-0.46	-.195			
Step 2			0.054	0.015	4.02(1,247)*
Ethnicity	-0.304	-.130			
Step 3			0.058	0.004	1.02(1, 246)
BFS X Ethnicity	-0.155	-.063			
SDS PB					
Step 1			0.018	0.018	4.61(1,248)*
BFS	0.23	.135			
Step 2			0.023	0.005	1.17(1,247)
Ethnicity	-0.119	-.071			
Step 3			0.036	0.013	3.37(1,246)
BFS X Ethnicity	-0.204	-.115			

* $p < .05$

Note. SDS = Social Distancing Scale (v1), AFS = Attitudinal Familism Scale, BFS = Behavioral Familism Scale, IC = Isolation from Community subscale, WH = Work from Home subscale, FC = Family Contact subscale, PB = Protective Behaviors subscale.

Secondary Analyses: Pandemic Adverse Impact Scale and Psychological Distress

Pandemic Adverse Events Scale and the PHQ-2

Hierarchical multiple linear regressions were conducted to evaluate the predictive strength of the number of adverse events experienced during the current pandemic on mental health, as measured by the PHQ-2 and GAD-2. Also, AFS and BFS will separately be evaluated as moderators of the relationships.

In the first regression, Pandemic Adverse Events Scale (PAES) total score was entered as a predictor for PHQ-2 scores. Alone, PAES accounted for 8.3% of the variance, $R^2 = .083$; $F(1, 252) = 22.71, p = .001$ (Figure 10). This indicates that PAES is a significant predictor of PHQ-2 scores. In step 2, AFS was added and accounted for 10.0% of the variance, $R^2 = .10$; $F(1, 251) = 4.84, p = .03$. Results support that AFS significantly moderates the relationship between PAES and PHQ-2. There was also a significant effect of AFS on the number of experienced adverse effects, $F(2, 251) = 13.95, p < .001$. Finally, a two-way interaction between PAES and AFS was entered into the model. The interaction term accounted for 10.1% of the variance, $R^2 = .101$; $F(1, 250) = .14, p = .71$, which was not significant (Table 6).

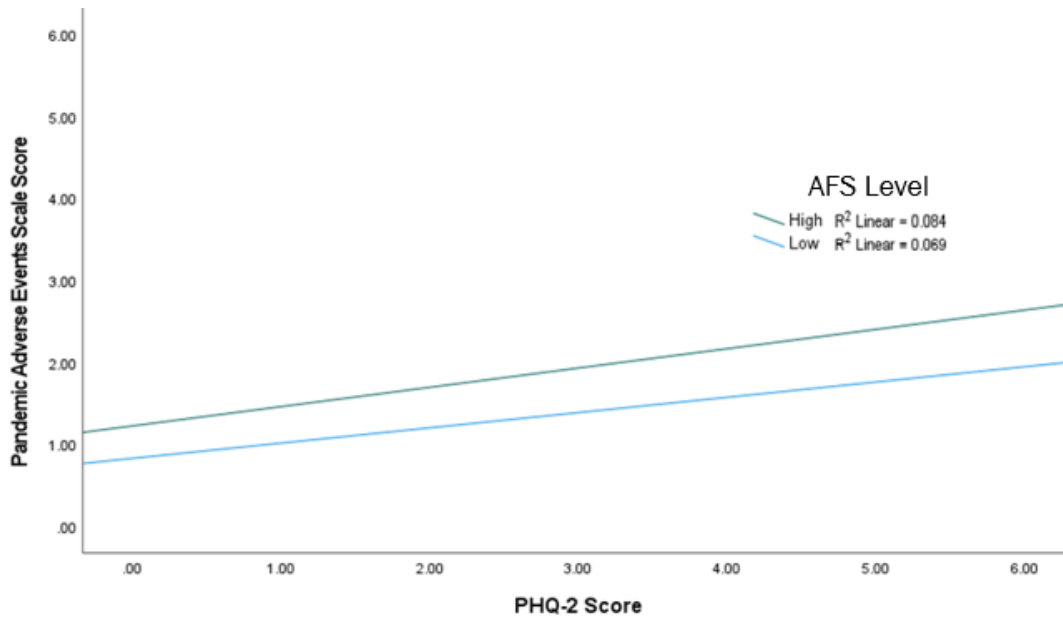


Figure 10: Pandemic Adverse Events Scale and AFS Predicts PHQ-2 Scores

Table 6: Pandemic Adverse Events Scale and AFS Predicts PHQ-2 Scores

Step and variables	B	β	R^2	ΔR^2	ΔF
Step 1			0.083	0.083	22.71(1,252)**
PAES	0.37	0.29			
Step 2			0.100	0.017	4.84(2,251)*
PAES	0.40	0.31			
AFS	-0.02	-0.13			
Step 3			0.100	0.000	.14(1,250)
PAES X AFS	0.00	0.01			

** $p < .001$

* $p < .05$

Note. AFS = Attitudinal Familism Scale, BFS = Behavioral Familism Scale, PAES = Pandemic Adverse Event Scale.

When BFS was entered into the model in step 2, PAES and BFS accounted for 8.9% of the variance on the PHQ-2, $R^2 = .89$; $F(1, 247) = 3.55$, $p = .06$. A two-way interaction term between PAES and BFS was entered into the model in step 3. The interaction term accounted for 9.9% of the variance, $R^2 = .99$; $F(1, 247) = .69$, $p = .41$, which was not significant (Table 7).

Table 7: Pandemic Adverse Events Scale Predicts PHQ-2 Scores with no Moderation Effect of BFS

Step and variables	B	β	R^2	ΔR^2	ΔF
Step 1			0.083	0.083	22.48(1,248)**
PAES	0.34	0.08			
Step 2			0.960	0.013	3.55(1,247)
PAES	0.40	0.08			
BFS	-0.13	0.01			
Step 3			0.099	0.003	.686(1,246)
PAES X BFS	0.00	0.01			

** $p < .001$

* $p < .05$

Note. AFS = Attitudinal Familism Scale, BFS = Behavioral Familism Scale, PAES = Pandemic Adverse Event Scale, PHQ-2 = Patient Health Questionnaire-2 Item Scale.

Pandemic Adverse Events Scale and the GAD-2

In the first regression, PAES total score was entered as a predictor for GAD-2 scores. Alone, PAES accounted for 2.0% of the variance, $R^2 = .020$; $F(1, 252) = 5.10$, $p = .025$. This indicates that PAES is a significant predictor of GAD-2 scores (Figure 11). In step 2, AFS was added and accounted for 6.2% of the variance, $R^2 = .62$; $F(1, 251) = 11.27$, $p = .001$. Results support that AFS significantly moderates the relationship between PAES and GAD-2. There was also a significant effect of AFS on the number of experienced adverse effects, $F(2,251) = 8.29$, $p < .001$. Finally, a two-way interaction between PAES and AFS was entered into the model. The

interaction term accounted for 6.2% of the variance, $R^2 = .62$; $F(1, 250) = .09$, $p = .76$, which was not significant (Table 8).

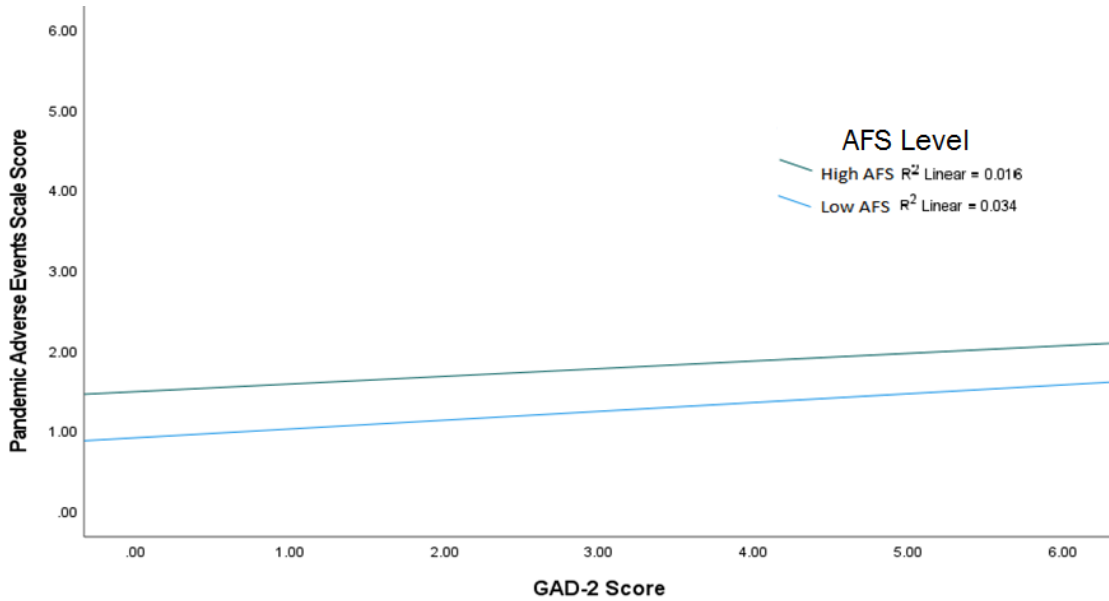


Figure 11: Pandemic Adverse Events Scale and AFS Predicts GAD-2 Scores

Table 8: Pandemic Adverse Events Scale and AFS Predicts GAD-2 Scores

Step and variables	B	β	R^2	ΔR^2	ΔF
Step 1			0.02	0.02	5.09(1,252)*
PAES	0.202	0.089			
Step 2			0.062	0.042	11.27(1,251)**
PAES	0.263	0.089			
AFS	-0.03	0.009			
Step 3			0.062	0.00	.09(1,250)
PAES X AFS	-0.002	0.006			

** $p < .001$

* $p < .05$

Note. AFS = Attitudinal Familism Scale, PAES = Pandemic Adverse Event Scale, GAD-2 = Generalized Anxiety Disorder – 2 Item.

When BFS was entered into the model in step 2, PAES and BFS accounted for 1.7% of the variance, $R^2 = .017$; $F(1, 248) = 4.21$, $p = .04$. Results support that BFS significantly moderates the relationship between PAES and GAD-2. A two-way interaction term between

PAES and BFS was entered into the model in step 3. The interaction term accounted for 3.0% of the variance, $R^2 = .03$; $F(1, 246) = .95$, $p = .33$, which was not significant (Table 9).

Table 9: Pandemic Adverse Events Scale Predicts GAD-2 Scores with no Moderation Effect of BFS

Step and variables	B	β	R^2	ΔR^2	ΔF
Step 1			0.017	0.017	4.21(1,248)*
PAES	0.185	0.09			
Step 2			0.026	0.009	2.38(1,247)
PAES	0.21	0.092			
BFS	-0.012	0.008			
Step 3			0.03	0.95	.95(1,246)
PAES X BFS	-0.006	0.006			

** $p < .001$

* $p < .05$

Note. BFS = Behavioral Familism Scale, PAES = Pandemic Adverse Event Scale, GAD-2 = Generalized Anxiety Disorder – 2 Item

Tertiary Analyses: Pandemic Adverse Events and Emotion Intensity and Coping Strategies Across Familism

Autobiographical narratives were coded to examine levels of emotion and coping strategies described by respondents. The number of emotion and cognition words per narrative were identified using an adapted list from Zaman et al., (2004) (Appendix L) and group means are depicted in Table 10.

Table 10: Frequency Count of Emotion Words and Coping Strategies

	Hispanic/Latinx (n = 49)		Non-Hispanic/Latinx (n = 49)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total Positive Emotions Words	0.92	1.99	0.80	1.22
Total Negative Emotions Words	1.98	2.13	1.71	1.66
Total Cognition Words	0.69	1.12	0.49	1.53
Total Positive Coping Strategies	2.78	1.67	2.79	1.79
Total Negative Coping Strategies	0.16	0.62	0.36	0.79
Total Neutral Coping Strategies	0.04	0.20	0.11	0.31

A multivariate analysis of variance (MANOVA) examined the associations between the DVs: 1) positive emotion, 2) negative emotions, 3) cognition words, 4) positive coping strategies, 5) negative coping strategies, and 6) neutral coping strategies and IVs: 1) ethnicity, 2) AFS, and 3) BFS. The independent variables were calculated using the AFS and BFS scores. Participants were divided using a medium split to dichotomize the variables, representing low and high levels of familism. These were labeled AFS Group and BFS Group. Among the narratives completed in English, 50 responses per ethnic group were randomly selected for coding and analyses.

When examining the associations of ethnicity and AFS Group, the assumption of covariance was violated, $p = .000$. Thus, Pillai's Trace was referenced in evaluating significance. Results of the MANOVA yielded no significant main effect for ethnicity or AFS Group. There was no significant interaction of ethnicity and AFS Group for any of the dependent variables (Table 11).

Table 11: Multivariate Analysis of Variance Comparing Ethnicity, Attitudinal Familism Group, and Emotion Intensity and Coping Strategies

Dependent Variable(s)	Observed Power	<i>F</i>	<i>p</i>	df	Error df
Ethnicity					
Total Positive Emotions Words	0.06	0.10	0.75	1	88
Total Negative Emotions Words	0.09	0.38	0.54	1	88
Total Cognition Words	0.11	0.48	0.49	1	88
Total Positive Coping Strategies	0.05	0.01	0.93	1	88
Total Negative Coping Strategies	0.27	1.82	0.18	1	88
Total Neutral Coping Strategies	0.26	1.40	0.24	1	88
AFS Group					
Total Positive Emotions Words	0.05	0.04	0.84	1	88
Total Negative Emotions Words	0.16	0.90	0.35	1	88
Total Cognition Words	0.17	1.01	0.32	1	88
Total Positive Coping Strategies	0.23	1.86	0.18	1	88
Total Negative Coping Strategies	0.05	0.02	0.89	1	88
Total Neutral Coping Strategies	0.22	1.40	0.24	1	88
Ethnicity X AFS Group					
Total Positive Emotions Words	0.37	2.32	0.13	1	88
Total Negative Emotions Words	0.06	0.05	0.83	1	88
Total Cognition Words	0.23	1.48	0.23	1	88
Total Positive Coping Strategies	0.07	0.19	0.66	1	88
Total Negative Coping Strategies	0.31	2.19	0.14	1	88
Total Neutral Coping Strategies	0.20	1.25	0.27	1	88

* $p < .05$

Note. AFS = Attitudinal Familism Scale

When examining associations of ethnicity and BFS Group, the assumption of covariance was also violated, $p = .000$. Pillai's Trace was also used to evaluate significance. Results of the MANOVA yielded no main effect for ethnicity or BFS Group. Additionally, results revealed no significant interaction of ethnicity and BFS Group across all dependent variables (Table 12). Review of Tables 11 and 12 reveals that these analyses were underpowered.

Table 12: Multivariate Analysis of Variance Comparing Ethnicity, Behavioral Familism Group, and Emotion Intensity and Coping Strategies

Dependent Variable(s)	Observed Power	<i>F</i>	<i>p</i>	df	Error df
Ethnicity					
Total Positive Emotions Words	0.05	0.01	0.90	1	86
Total Negative Emotions Words	0.06	0.15	0.70	1	86
Total Cognition Words	0.08	0.27	0.61	1	86
Total Positive Coping Strategies	0.10	0.45	0.50	1	86
Total Negative Coping Strategies	0.28	1.95	0.17	1	86
Total Neutral Coping Strategies	0.46	3.51	0.06	1	86
BFS Group					
Total Positive Emotions Words	0.37	2.74	0.10	1	86
Total Negative Emotions Words	0.19	1.17	0.28	1	86
Total Cognition Words	0.34	2.42	0.12	1	86
Total Positive Coping Strategies	0.05	0.00	0.98	1	86
Total Negative Coping Strategies	0.08	0.22	0.64	1	86
Total Neutral Coping Strategies	0.24	1.64	0.20	1	86
Ethnicity x AFS					
Total Positive Emotions Words	0.14	0.76	0.39	1	86
Total Negative Emotions Words	0.07	0.18	0.67	1	86
Total Cognition Words	0.05	0.01	0.91	1	86
Total Positive Coping Strategies	0.44	3.33	0.07	1	86
Total Negative Coping Strategies	0.07	0.15	0.70	1	86
Total Neutral Coping Strategies	0.64	5.43	0.06	1	86

* $p < .05$

Note. BFS = Behavioral Familism Scale

CHAPTER THREE: DISCUSSION

Adherence to social distancing is regarded as one of the most effective interventions in inhibiting the spread of transmission. However, inherent cultural characteristics, such as familism, might serve as a barrier therefore, placing family and community members at increased risk of contracting COVID-19. There are consistent reports that the current pandemic is affecting different racial/ethnic groups at disproportionate rates (Aubrey, 2020; Garg, 2020; Stokes, 2020). In June 2020, the CDC disclosed that 33.8% of COVID-19 cases were Latinx and 21.8% were of black Americans, though these ethnic and racial minority groups represent only 18% and 13% of the U.S. population, respectively (CDC, 2020). To answer this question, the present study examined the level of Attitudinal and Behavioral familism as a predictor of adherence of social distancing recommendations. Additionally, the current study evaluated ethnicity as a moderator in the relationship between familism and psychological and emotional effects of COVID-19. This study extends upon the existing literature by identifying cultural aspects that inhibit adherence to social distancing and moderate the psychological effects of the COVID-19 pandemic.

Summary and Interpretation of Results

Primary Analyses: Familism and Adherence to Social Distancing

This study utilizes a new measure of adherence to prevention strategies during pandemics the Social Distancing Scale (v1). This scale has four indices or subscales reflecting: 1) Isolation from Community (IC), 2) Work from Home (WH), 3) Family Contact (FC) and, 4) Protective Behaviors (PB) (Prachthauser et al., 2020). The study presented here is the first application of

this new measure in a pandemic context. One of the interesting findings is that the subscales of this measure demonstrated different relationships with other constructs and varied populations. The subscale scores did not always move in the same direction. This suggests that there is no ubiquitous “Social Distance” factor, and that aspects of social distancing and self-protective behaviors behave somewhat independently. This study supports the earlier factor analysis work by Pracht et al (2020), supporting that these behaviors are separate constructs. For example, individuals may score in an adherent direction on one scale but in a risky direction on another scale. Furthermore, the study presented here suggests that Familism is useful in explaining why these differences may be observed.

Levels of Attitudinal and Behavioral familism were significant variables influencing adherence to aspects of social distancing and protective behaviors. Specifically, results of this study revealed that across all participants, the AFS subscale significantly predicted scores on the WH and FC subscales. That is, having lower attitudes of familism indicates higher ability to limit contact with at-risk family members (i.e., refraining from attending family gatherings at home, visiting elderly family members, or visiting family members with serious health conditions).

Analyses also revealed a significant interaction between AFS and ethnicity in predicting PB. This indicates having higher level of AFS significantly predicted higher use of personal protective behaviors, particularly among participants identifying as Hispanic/Latinx. This suggests that while having higher attitudes of familism indicates more difficulties limiting family contact, it also predicted an increased likelihood to engage in self-protective behaviors, such as wearing a mask, physically distancing more than 6 ft. outside of the home, and frequently washing hands. This finding highlights that attitudinal familism as a potential protective factor.

Similarly, the BFS subscale was significant predictor of scores on the WH and FC, across all participants. As such, having lower behavioral familism indicates higher ability to limit contact with at-risk family members. Analyses also revealed a significant interaction between BFS and ethnicity in predicting FC. For Hispanic/Latinx participants, behaving in a way supportive of strong family connectedness and family obligations was a barrier to limiting contact with at-risk family members (i.e., refraining from attending family gatherings at home, visiting elderly family members, and/or visiting family members with serious health conditions).

Additionally, analyses revealed that BFS significantly predicted use of PB. While the interaction between BFS and ethnicity trended towards significance, findings support that having higher level of BFS significantly predicted higher use of personal protective behaviors, across all participants.

While AFS and BFS predicted more family contact and use of personal protective behaviors, the finding that they were both predictors of the WH is perplexing. Intuitively, it might be expected that working from home would be associated with higher values of familism since home is where the family is located. The results of this study suggest this may be an overly simplistic assumption. One explanation might be related to personal control, where FC and PB represent constructs of more personal control. Whereas individuals have little personal control over their work environment. Therefore, AFS and BFS might be serving as external factors that cannot be avoided, consequently, leading individuals with high familism to redouble their efforts to areas they, presumably, have more control over, such as implementing more personal protective behaviors.

Secondary and Tertiary Analyses: Pandemic Adverse Impact on Psychological and Emotional Functioning

Analyses revealed that the number of pandemic adverse events experienced significantly predicted increased depressive and anxiety symptoms, as measured by the PHQ-2 and GAD-2, across all participants. However, AFS moderated both relationships between the number of pandemic adverse events and depressive, and anxiety symptoms. Specifically, higher levels of Attitudinal Familism served as a protective factor decreasing the influence of these events on symptoms. Results are consistent with the previously discussed findings Ornelas & Perreira (2011) in that familism can be considered protective of psychological effects during crises and distress.

Tertiary analyses examined the associations between the use of emotion words, cognition words, and the number of coping strategies used during the current pandemic and the subscales of familism. Counter to extant literature, results of this study did not produce significant findings. The lack in significant findings likely reflects that analyses were underpowered. Thus, caution is urged in interpreting the results displayed in Tables 11 and 12.

Implications

This study demonstrates the role of family connectedness, support, and obligation impact on personal use of prevention strategies to reduce and mitigate the spread of the infection. Implications of this study includes that the consideration of family values is imperative when assessing potential barriers to health disparities. This can further inform clinical providers in the way they assess and counsel patients with a lens of inclusivity. Standardized screening protocols

across populations are therefore warranted, to encourage the universal use of prevention strategies, specifically given the disparate impact of COVID-19 across populations.

Furthermore, the extant familism literature primarily focuses on the measurement of Attitudinal Familism and studies typically inadequately measure how those values are experienced by the individual (Behavioral Familism) (Nicasio et al., 2019). The evidence supporting the benefits of familism on psychological effects is inconclusive. The variability in assessing Behavioral Familism across studies is hypothesized to be one explanation for the inconsistent findings. Results of this study highlight the differential impact of Attitudinal and Behavioral familism on the use of protective behaviors. Therefore, implications of the current study support benefits in assessing the two fundamental dimensions (attitudinal and behavioral) of familism separately. In doing so, assessment of familism can target the strength of one's values of family connectedness, while also measuring how much individuals are able to act on those values.

Limitations, Ethical Considerations, and Future Directions

This study is not without limitations. One limitation of the study includes that approximately half of the Hispanic/Latinx subsample completed the study in Spanish (n = 51 vs. n = 64 in English). Though the survey was translated and verified by an independent, native Spanish speaker, there are inherent differences in how questions might be interpreted. Further, dialectical differences across Hispanic and Latinx regions are also present, even among those who speak and prefer Spanish. Furthermore, language preference is thought to reflect level of assimilation and acculturation. Specifically, indicators of acculturation and assimilation, such as

length of residence, are associated with several negative health consequences (i.e., higher rates of substance use/abuse) (Marín & Posner, 1995; Zamboanga et al., 2006), higher infant mortality rates (Becerra et al., 1991), and more problematic diets (Dixon et al., 2000; Keyes et al., 2012). This study did not explicitly include items assessing levels of assimilation, which is a limitation of the study. However, in this study, preferred language might be considered a proxy for assessing assimilation. Thus, an examination of the differences in familism, SDS subscales, and psychological effects across survey language revealed no significant differences in aspects of social distancing and protective behaviors and pandemic adverse events. An extension of this research might include a confirmatory factor analysis to assess the parallel strength across the language versions of these questionnaires is warranted.

Another limitation regards the type of sampling used to recruit participants. While there are several benefits for utilizing snowball sampling, criticisms include difficulty in determining the possible sampling biases, verifying the eligibility of potential respondents, controlling the types of referral chains, and estimating the number of cases in any chain (Biernacki & Waldorf, 1981). One way this study mitigated some of these limitations was by including validity check questions and by removing outliers. In doing so, researchers were able to identify respondents who carelessly completed the survey and data points that exceeded the Mahalanobis distance from the mean of each scale score.

Given that participants were recruited primarily through use of personal and social networks, inclusive of social media applications and professional affiliations, it is of ethical and moral value to also share results of this study using the same methods. Participants completed the study voluntarily, which reflects their support for public health and pro-social behaviors. As

such, disseminating the results directly back to the sources might be seen as appreciation for participation and serve as helpful to respondents, as described in community-driven models of recruitment and retention (Wyatt et al., 2003).

Family income warrants consideration, especially due to the implications of socioeconomic status on health disparities. However, questions inquiring about income brackets were intentionally omitted to mitigate potential deterrents to completing the survey. More specifically, given that participants willingly completed the survey with no compensation offered. While specific questions ascertaining information of income were excluded, a proxy measures regarding employment status was included and results yielded no significant differences across ethnicity.

Future studies can further examine familism as predictor of emotional reactions and the implementation of coping skills during the current pandemic. In this study, Attitudinal and Behavioral Familism served as a protective factor mitigating depressive and anxiety symptoms. Future studies evaluating autobiographical narratives with coding schemes strongly associated with psychological effects, such as elaboration, (Graci et al., 2018; McAdams et al., 2001; Park & Blumberg, 2002) is warranted.

CHAPTER FOUR: CONCLUSION

In summary, this is the first published study known to use the Social Distance Scale (v1) and to specifically examine attitudinal and behavioral familism as a predictor of adherence to social distancing. Overall, findings indicate that Attitudinal Familism and Behavioral Familism interacted with aspects of social distancing in crucial ways. More specifically, having higher levels of Attitudinal Familism and Behavioral Familism predicted more difficulties limiting contact with family members and increased use of protective behaviors in Hispanic/Latinx participants. Experiencing higher number of pandemic adverse events also predicted a greater level of depression and anxiety across all subjects, however, higher levels of Attitudinal and Behavioral familism served as a protective factor, thereby decreasing the influence of these events on depressive and anxiety symptoms.

Taken together, these findings enhance the current literature on COVID-19 and underscores the role of social determinants, such as familism, on health and mental health disparities. Moreover, these results provide one explanation for the why COVID-19 is disproportionately affecting Hispanic/Latinx community. Findings underscore potential cognitive dissonance of having different Attitudinal and Behavioral familism values. While having higher familism leads to more difficulties with limiting family contact, risks might be counterbalanced by the benefits of increased use of personal protective behaviors and decreased anxiety and depressive symptoms.

APPENDIX A: IRB EXEMPTION APPROVAL LETTER



UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138, IRB00012110
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

July 17, 2020

Dear Thien-An Le:

On 7/17/2020, the IRB determined the following submission to be human subjects research that is exempt from regulation:

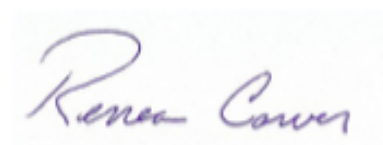
Type of Review:	Initial Study, Category 2(i)
Title:	The Relationship Between Social Distancing and Cultural Factors in Different Ethnic Groups
Investigator:	Thien-An Le
IRB ID:	STUDY00001882
Funding:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • HRP-251- FORM - Faculty Advisor Scientific-Scholarly Review fillable form.pdf, Category: Faculty Research Approval; • Explanation of Research - 7.17.2020.pdf, Category: Consent Form; • Explanation of Research - Spanish, Category: Consent Form; • Le_ irb_HRP-255-FORM-Request for Exemption - 6.30.2020 revisions.docx, Category: IRB Protocol; • Measures - English, Category: Survey / Questionnaire; • Measures - Spanish, Category: Survey / Questionnaire; • Recruitment email flyer - 7.17.2020.docx, Category: Recruitment Materials; • Recruitment Email Flyer Spanish.docx, Category: Recruitment Materials;

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 submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

A handwritten signature in purple ink that reads "Renea Carver". The signature is written in a cursive style.

Renea Carver
Designated Reviewer

APPENDIX B: RECRUITMENT E-MAIL (ENGLISH)



Hello!

The Health Psychology Lab at the University of Central Florida (UCF) understands that this is a challenging time for many, as we face this current pandemic. We also hope everyone is safe and well.

We are looking for participants for an online study to better understand the impact on individuals during this pandemic, in different regions of the country. We would greatly appreciate about 15-20 minutes of your time to complete this study.

**You must be 18 years of age or older to take part in this research study.
Participants must be able to read in English or Spanish.**

To participate, please click this link: [Start here \(Empieza aqui\)](http://ucf.qualtrics.com/jfe/form/SV_5BVd4eTPyv8139j)
http://ucf.qualtrics.com/jfe/form/SV_5BVd4eTPyv8139j

No personal identifying information will be collected during this study. Participation is confidential and voluntary, which means you may withdraw or stop the survey at any time.

Please feel free to forward this message to potential participants or listserves.

Thank you for your contribution!

This study is supported by a partnership between the UCF and Dr. Miguel Hernandez representing The Dominican Medical Association and Global Psychiatric Services PC. It is also supported by the partnership between UCF and Rosita Romero, MSW, representing the Dominican Women's Development Center (DWDC).

Investigator(s): Thien-An Le, M.S. and Jeffrey Cassisi, Ph.D.

Co-Investigator: Anel Nicasio, Ph.D.

Sub-Investigator: Miguel Hernández, M.D.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, please contact: Thien-An Le, M.S., Graduate Student, The Health Psychology Lab, College of Sciences at An.Le@knights.ucf.edu or Jeffrey Cassisi, Ph.D., Faculty Supervisor, The Health Psychology Lab, College of Sciences at Jeffrey.Cassisi@ucf.edu.

IRB contact about your rights in this study or to report a complaint: If you have questions about your rights as a research participant, or have concerns about the conduct of this study, please contact Institutional Review Board (IRB), University of Central Florida, Office of Research, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901, or email irb@ucf.edu.

APPENDIX C: RECRUITMENT E-MAIL (SPANISH)



¡Saludos!

El Laboratorio de Psicología de la Salud de la Universidad de Florida Central (UCF) entiende que este es un momento difícil para todos, ya que nos enfrentamos a esta pandemia actual. Esperamos que todos estén sanos y a salvo.

Estamos buscando participantes para un estudio en línea que nos lleve a comprender mejor el impacto que esta pandemia ha tenido en las personas, en diferentes regiones del país. Apreciaríamos enormemente nos conceda 15-20 minutos de su tiempo para completar este estudio.

Para participar en este estudio de investigación debe tener 18 años de edad o más. Participantes deben de saber leer en inglés o español.

Para participar, haga clic en este enlace: [Start here \(Empieza aqui\)](#)

http://ucf.qualtrics.com/jfe/form/SV_5BVd4eTPyv8139j

No se recopilará información de identificación personal durante este estudio. La participación es confidencial y voluntaria, lo que significa que puede terminar o detener la encuesta en cualquier momento.

No dude en enviar este mensaje a posibles participantes o grupos electrónicos.

¡Gracias por tu contribución!

Este estudio está respaldado por una asociación entre la UCF y el Dr. Miguel Hernández, quien representa a la Asociación Médica Dominicana y a la clínica de Servicios Psiquiátricos Globales, PC. También está respaldado por la asociación entre la UCF y Rosita Romero, MSW, quien representa al Centro de Desarrollo de la Mujer Dominicana (DWDC).

Investigador(es): Thien-An Le, M.S.

Co-investigadora: Jeffrey Cassisi, Ph.D. y Andel V. Nicasio, Ph.D.

Sub-investigador: Miguel Hernández, M.D.

Para preguntas sobre el estudio o reportar un problema: si tiene preguntas, inquietudes o quejas, comuníquese con: Thien-An Le, MS, Estudiante Graduada en el Laboratorio de Psicología de Salud, Facultad de Ciencias (An.Le@knights.ucf.edu) o Jeffrey Cassisi, Ph.D., Profesor Supervisor, Laboratorio de Psicología de Salud, Facultad de Ciencias (Jeffrey.Cassisi@ucf.edu).

Para saber más sobre sus derechos como participante de la investigación o si tiene inquietudes sobre la realización de este estudio, comuníquese con la **Junta de Revisión Institucional (IRB)** de la Universidad de Florida Central, Oficina de Investigaciones, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 o por teléfono al (407) 823-2901, o envíe un correo electrónico a irb@ucf.edu.

APPENDIX D: PANDEMIC ADVERSE EVENTS SCALE (ENGLISH)

Pandemic Adverse Events Scale **Please make all ratings for the PAST MONTH**

PA1 Have one (or more members) in your household become (or remained) unemployed the past month:

- Yes (1)
- No (2)

PA2 Have there been any days the past month that you didn't know where your next meal was coming from, or you involuntarily ate less than you needed?

- Yes (1)
- No (2)

PA3 Have you had a close friend or family member passed away in the past month?

- Yes (1)
- No (2)

PA4 Have you been tested for COVID-19?

- Yes (1)
- No (2)

PA5 Have there been barriers for your receiving health care the past month?

- Yes (1)
- No (2)

PA6 Have there been barriers to obtaining the medicines you need the past month?

- Yes (1)
- No (2)

APPENDIX E: PANDEMIC ADVERSE EVENTS SCALE (SPANISH)

PA0 Escala de Eventos Adversos de la Pandemia. **Por favor conteste todas las oraciones en base al MES PASADO**

PA1 Uno (o más miembros) en su hogar quedó (o permaneció) desempleado el mes pasado:

- Sí (1)
- No (2)

PA2 ¿Ha habido algún día en el mes pasado en el que no sabía de dónde vendría su próxima comida, o involuntariamente comió menos de lo que necesitaba?

- Sí (1)
- No (2)

PA3s ¿Ha fallecido un familiar o un amigo cercano en el último mes?

- Sí (1)
- No (2)

PA4s ¿Le han hecho la prueba de COVID-19?

- Sí (1)
- No (2)

PA5s ¿Ha habido barreras para usted recibir atención médica el mes pasado?

- Sí (1)
- No (2)

PA6s ¿Ha habido barreras para obtener los medicamentos que necesita el mes pasado?

- Sí (1)
- No (2)

APPENDIX F: COVID-19 IMPACT QUESTIONS (ENGLISH)

CV1 If you have been tested for COVID-19, did you test positive?

- Yes (1)
- No (2)
- I haven't been told the results (3)
- Not applicable (0)

CV2 If you have been tested for COVID-19, did you have to pay out of pocket to get tested?

- Yes (1)
- No (2)
- Not applicable (0)

CV3 If you have been tested for COVID-19, did being tested change your social distancing behaviors?

- Yes (1)
- No (2)
- Not applicable (0)

CV4 If you have **NOT** been tested for COVID-19, do you think you had COVID-19, but were not tested?

- Yes (1)
- No (2)
- I was tested (0)

CV5 How many people do you know were diagnosed with COVID-19?

CV6 How many people do you know have died from COVID-19?

CV7 How scared are you of getting COVID-19?

- Not at all (1)
- A little (2)
- Somewhat (3)
- Quite (4)
- A lot (5)

CV8 How scared are you of dying from COVID-19?

- Not at all (1)
- A little (2)
- Somewhat (3)
- Quite (4)
- A lot (5)

CV9 Have you experienced employment changes since the start of the pandemic (such as reduced hours, furlough, or unemployment)?

- Yes (1)
- No (2)

C(V1)0 Describe in detail how the COVID-19 pandemic has affected your family relationships, both positively and negatively.

C(V1)1 Describe in detail how the COVID-19 pandemic has affected your friendships, both positively and negatively.

C(V1)2 Describe in detail how you have dealt with increased stress due to the lockdown. Give specific examples of coping strategies that you've used, such as exercising, counseling, working, etc. Give as much detail as possible.

APPENDIX G: COVID-19 IMPACT QUESTIONS (SPANISH)

C(V1)s Si le hicieron la prueba de COVID-19, ¿dio positivo?

- Sí (1)
- No (2)
- No me han dicho los resultados (3)
- No aplicable (0)

CV2s Si le hicieron la prueba de COVID-19, ¿tuvo que pagar de su bolsillo para hacerse la prueba?

- Sí (1)
- No (2)
- No aplicable (0)

CV3s Si le hicieron la prueba de COVID-19, ¿el hecho de hacerse la prueba cambió su comportamiento sobre el distanciamiento social?

- Sí (1)
- No (2)
- No aplicable (0)

CV4s Si NO se le hizo la prueba de COVID-19, ¿cree que tenía COVID-19, pero no se hizo la prueba?

- Sí (1)
- No (2)
- No aplicable (0)

CV5s ¿Cuántas personas conoce usted que fueron diagnosticadas con COVID-19?

CV6s ¿Cuántas personas conoce usted que han muerto por COVID-19?

CV7s ¿Qué tan asustado/a está usted de contagiarse con el COVID-19?

- Nada (1)
- Un poco (2)
- Algo (3)
- Bastante (4)
- Mucho (5)

CV8s ¿Qué tan asustado/a está usted de morir a causa del COVID-19?

- Nada (1)
- Un poco (2)
- Algo (3)
- Bastante (4)
- Mucho (5)

CV9s ¿Ha experimentado cambios de empleo desde el comienzo de la pandemia, tales como reducción en sus horas de trabajo, licencia o desempleo?

- Sí (1)
- No (2)

C(V1)0s Describa en detalle como la pandemia del COVID-19 ha afectado sus relaciones familiares, de manera positiva y negativa.

C(V1)1s Describa en detalle como la pandemia del COVID-19 ha afectado sus relaciones con amigos/as, de manera positiva y negativa.

C(V1)2s Describa en detalle cómo ha manejado el aumento del estrés durante la cuarentena. Provea ejemplos específicos de las estrategias que ha usado, como hacer ejercicios, tomar consejería, trabajar. Provea la mayor cantidad de detalles posible.

APPENDIX H: SOCIAL DISTANCING SCALE (v1), (ENGLISH)

Social Distance Scale ((v1), English)¹

Check the one alternative the best describes your activities THE PAST MONTH

SD1. During the past month, I have stayed at least 6 feet away from other people when outside of my home:

- Never (0)
- Rarely (1)
- Sometimes (2)
- Often (3)
- Always (4)

SD2. During the past month, I have gone to small social gatherings with less than 10 people in public places, such as public parks or restaurants:

- Never (4)
- Once a week or less (3)
- 2-3 times a week (2)
- 4-6 times a week (1)
- Daily (0)

SD3. During the past month, I have gone to small social gatherings with less than 10 people in private places, such as my friend's home:

- Never (4)
- Once a week or less (3)
- 2-3 times a week (2)
- 4-6 times a week (1)
- Daily (0)

SD7. During the past month, I have worked/studied from home:

- Never (0)
- Rarely (1)
- Sometimes (2)
- Often (3)
- Always (4)

¹ Reprinting instructions: The numbers in parentheses are the item scale to be used for scoring and should not appear on questionnaire or survey form that the respondent completes.

SD9. During the past month, I have left my home to purchase gas, work, medicine, and groceries:

- Never (4)
- Once a week or less (3)
- 2-3 times a week (2)
- 4-6 times a week (1)
- Daily (0)

SD12. During the past month, we have had small gatherings of family members at my place, or a relative's home:

- Never (4)
- Once a week or less (3)
- 2-3 times a week (2)
- 4-6 times a week (1)
- Daily (0)

SD13. During the past month, I have been required to go to my place of employment, worksite, or school (away from home):

- Never (4)
- Once a week or less (3)
- 2-3 times a week (2)
- 4-6 times a week (1)
- Daily (0)

SD14. During the past month, I have been able to stay at least 6 feet away from other people when at my place of employment, worksite, or school:

- Never (0)
- Rarely (1)
- Sometimes (2)
- Often (3)
- Always, or I do not leave home for these activities (4)

SD15. During the past month, I have worn a face mask when I am in public, at my worksite, or school:

- Never (0)
- Rarely (1)
- Sometimes (2)
- Often (3)
- Always (4)

SD17. During the past month, when I am away from home, I have used hand sanitizer or washed my hands after I have touched objects such as doorknobs, computer keyboards, computer mice etc.:

- Never (0)
- Rarely (1)
- Sometimes (2)
- Often (3)
- Always (4)

PIS4. I have been physically distant from others living outside of my home this past month:

- Always (4)
- Most of the time (3)
- About half the time (2)
- Sometimes (1)
- Never (0)

PIS7. I have visited my elderly family members (who are 65 and up) this past month:

- Daily (0)
- 4-6 times a week (1)
- 2-3 times a week (2)
- Once a week (3)
- Never (4)

PIS9. I have visited with family members (64 and below) living outside of my home this past month:

- Daily (0)
- 4-6 times a week (1)
- 2-3 times a week (2)
- Once a week (3)
- Never (4)

PIS10. I have visited my family members who have serious health conditions this past month:

- Daily (0)
- 4-6 times a week (1)
- 2-3 times a week (2)
- Once a week (3)
- Never (4)

Scoring Instructions

Isolation from Community (IC, four items) Sum Items: SD2, SD3, SD9, PIS4

Work from Home (WH, three items) Sum Items: SD7, SD13, SD14

Family Contact (FC, four items) Sum Items: SD12, PIS7, PIS9, PIS10

Protective Behaviors (PB, three items) Sum Items: SD1, SD15, SD17

APPENDIX I: SOCIAL DISTANCING SCALE (v1), (SPANISH)

Grupo de Preguntas Iniciales de Distancia Social (v1, Español)

Marque la alternativa que mejor describe sus actividades DURANTE EL MES PASADO:

SD1s. Durante el mes pasado, me he mantenido al menos a 6 pies de distancia de otras personas cuando estoy fuera de mi casa:

- Nunca (0)
- Raramente (1)
- A veces (2)
- A menudo (3)
- Siempre (4)

SD2s. Durante el mes pasado, asistí a pequeñas reuniones sociales con menos de 10 personas en lugares públicos, como parques públicos o restaurantes:

- Nunca (4)
- Una vez a la semana o menos (3)
- 2–3 veces a la semana (2)
- 4–6 veces por semana (1)
- Diario (0)

SD3s. Durante el mes pasado, asistí a pequeñas reuniones sociales con menos de 10 personas en lugares privados, como la casa de mi amigo/a:

- Nunca (4)
- Una vez a la semana o menos (3)
- 2–3 veces a la semana (2)
- 4–6 veces por semana (1)
- Diario (0)

SD7s. Durante el mes pasado, he trabajado/estudiado desde casa:

- Nunca (0)
- Raramente (1)
- A veces (2)
- A menudo (3)
- Siempre (4)

SD9s. Durante el mes pasado, salí de mi casa para trabajar y para comprar gasolina, medicinas y comida:

- Nunca (4)
- Una vez a la semana o menos (3)
- 2–3 veces a la semana (2)
- 4–6 veces por semana (1)
- Diario (0)

SD12s. Durante el mes pasado, hemos tenido pequeñas reuniones de familiares en mi casa o en la casa de un pariente:

- Nunca (4)
- Una vez a la semana o menos (3)
- 2–3 veces a la semana (2)
- 4–6 veces por semana (1)
- Diario (0)

SD13s. Durante el mes pasado, se me solicitó que fuera a mi lugar de trabajo o escuela (fuera de casa):

- Nunca (4)
- Una vez a la semana o menos (3)
- 2–3 veces a la semana (2)
- 4–6 veces por semana (1)
- Diario (0)

SD14s. Durante el mes pasado, pude mantenerme al menos a 6 pies de distancia de otras personas en mi lugar de trabajo o escuela:

- Nunca (0)
- Raramente (1)
- A veces (2)
- A menudo (3)
- Siempre, o no salgo de casa para estas actividades (4)

SD15s. Durante el mes pasado, he usado una máscara de protección cuando estoy en público, en mi lugar de trabajo o en la escuela:

- Nunca (0)
- Raramente (1)
- A veces (2)
- A menudo (3)
- Siempre (4)

SD17s. Durante el mes pasado, cuando estoy fuera de casa, he usado desinfectante para manos o me lavé las manos después de tocar objetos como puños de puertas, teclados de computadora, ratones, etc.

- Nunca (4)
- Raramente (3)
- A veces (2)
- A menudo (1)
- Siempre (0)

PIS4s. En el mes pasado, he estado físicamente distante de otras personas que viven fuera de mi casa:

- Siempre (4)
- La mayor parte del tiempo (3)
- Más o menos la mitad del tiempo (2)
- A veces (1)
- Nunca (0)

PIS7s. En el mes pasado, he visitado a mis familiares mayores (que tienen 65 años o más):

- Diario (0)
- 4–6 veces por semana (1)
- 2–3 veces a la semana (2)
- Una vez a la semana (3)
- Nunca (4)

PIS9s. En el mes pasado, he visitado a miembros de mi familia (de 64 años o menos) que viven fuera de mi casa:

- Diario (0)
- 4–6 veces por semana (1)
- 2–3 veces a la semana (2)
- Una vez a la semana (3)
- Nunca (4)

PIS10s. En el mes pasado, he visitado a los miembros de mi familia que tienen problemas de salud graves:

- Diario (0)
- 4–6 veces por semana (1)
- 2–3 veces a la semana (2)
- Una vez a la semana (3)
- Nunca (4)

APPENDIX J: DEMOGRAPHICS QUESTIONNAIRE (ENGLISH)

DQ1 What is your age?

DQ3 What is your gender?

- Male (1)
- Female (2)
- Other (3)

DQ4 What is your Ethnicity?

- Hispanic/Latino (2)
- Non-Hispanic/Non-Latino (1)

Display This Question:

If What is your Ethnicity? = Hispanic/Latino

DQ4a If you indicated Hispanic/Latino, which culture do you identify with?

- Cuban (1)
- Mexican (2)
- Puerto Rican (3)
- Mixed (4)
- Other (5)

DQ5 What is your Race?

- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian (4)
- Native Hawaiian or Pacific Islander (5)
- Other (6)

DQ19 Immigration Generation?

- 1st generation (you were born in another country before you moved to the US) (1)
- 2nd generation (You are born in the US, your parents were born in another country) (2)
- 3rd generation (You and your parents were born in the US, your grandparents were born abroad) (3)
- Not applicable (0)

DQ6 What is your Marital Status?

- Single (never married) (1)
- Married/Living with Partner (2)
- Divorced/Separated (3)
- Widowed (4)

DQ7 What is your highest level of education?

- Grammar school or middle school (0-8 years of education) (1)
- Some high school (9-11 years of education) (2)
- High school graduate or GED (14 years of education) (3)
- Post high school technical training (4)
- Some college (5)
- College graduate (6)
- Masters degree (7)
- MD, PhD or equivalent (8)

V3 For this item, please select or mark "No"

- Yes (1)
- No (0)

DQ8 Are you currently employed?

- Yes (1)
- No (2)

Display This Question:

If Are you currently employed? = Yes

DQ8a If yes, are you currently employed full-time or part-time?

- Full-Time (1)
- Part-Time (2)

Display This Question:

If Are you currently employed? = Yes

DQ8b If yes, do you feel protected or safe when working?

- Yes (1)
- No (2)

Display This Question:

If Are you currently employed? = No

DQ8c If no, are you a

- Homemaker (1)
- Student (2)
- Retired (3)
- Disabled (4)
- Unemployed and looking for a job (5)

DQ9 Have one or more members in your home become (or remained) unemployed the past month?

- Yes (1)
- No (2)

DQ10 How often do you rely on government assistance or donations for your basic needs (like for housing, food, or electric bills)?

- Not at all (1)
- A little (4)
- Somewhat (5)
- Quite (6)
- A lot (7)

DQ11 Have there been any days the past month that you didn't know where your next meal was coming from, or you involuntarily ate less than you needed?

- Yes (1)
- No (2)

DQ12 What languages do you currently speak fluently? (Please select all that apply)

- English (1)
- Spanish (2)
- other (3)

DQ13 What language is spoken at home?

DQ14 Including yourself, how many people have lived in your household the past month?

DQ15 Has a doctor told you that you have any of the following conditions? Select all that apply

- Chronic lung disease or moderate to severe asthma (1)
- Serious heart condition (4)
- Immunocompromised (such as receiving treatment for cancer, smoking, bone marrow or organ transplant, immune deficiencies, poorly controlled HIV or AIDS, and prolonged use of corticosteroids and other immune weakening medications) (5)
- Severe obesity (body mass index [BMI] of 40 or higher) (6)
- Diabetes (7)
- Chronic kidney disease undergoing dialysis (8)
- Liver disease (9)

DQ16 In general, how would you rate your quality of life?

- Excellent (1)
- Very Good (4)
- Good (5)
- Fair (6)
- Poor (7)

DQ17 What is your city & country? _____

DQ18 What is your zipcode? _____

DQ18 How did you hear about this survey? Select all that apply

- by DWDC (Dominican Women's Development Center) (1)
- by the Dominican Medical Association (5)
- It was shared with me by my primary doctor or another doctor (6)
- It was shared with me by a friend or relative (7)
- Someone that I don't know shared it with me (8)

APPENDIX K: DEMOGRAPHICS QUESTIONNAIRE (SPANISH)

Mostrar esta pregunta:

DQ1 ¿Cuántos años tiene? _____

DQ3 Género

Hombre (1)

Mujer (2)

Otro. Por favor especifique: (3) _____

DQ4¿Cuál es su origen étnico?

Hispano(a) / Latino(a)

No Hispano(a) / Latino(a)

DQ4a Ethnicidad

Colombiano/a (1)

Cubano/a (2)

Dominicana/o (3)

Ecuatoriano/a (4)

Guatemanteco/a (5)

Mexicano/a (6)

Puerto Riqueño/a (7)

Salvadoreño/a (8)

Venezolano/a (9)

Mixto. Por favor especifique: (10) _____

Otro. Por favor especifique: (11) _____

DQ19 Tipo de generación?

1ra. Generación (usted nació en otro país antes de mudarse a los Estados Unidos)) (1)

2da. Generación (usted nació en los Estados Unidos, sus padres (mamá y/o papá) nacieron en otro país) (2)

3ra. Generación (usted y sus padres nacieron en los Estados Unidos, sus abuelos (abuela/o) nacieron en otro país) (3)

No aplica (0)

DQ5 Por favor indique su raza

Blanco/a (1)

Negro / Afro-Americano (2)

Asiático/ De las Islas del Pacífico (3)

Indio Americano/ Nativo de Alaska (4)

Múltiples razas (5)

Por favor especifique: (6) _____

DQ6 Estado Civil

Soltero/a (Nunca casado) (1)

Casado/a o Viviendo con pareja (2)

- o Divorciado/a o Separado/a (3)
- o Viudo/a (4)

DQ7 Nivel de educación más alto que completó

- o 0-8 años de educación (1)
- o 9-11 años de educación (2)
- o 14 años o certificado equivalente al bachillerato (3)
- o Escuela o entrenamiento técnico o vocacional (4)
- o Algunos años de la universidad (5)
- o Licenciatura o 4 años de universidad (6)
- o Maestría o nivel más alto de educación (7)

V3 Para esta pregunta, seleccione o marque "No"

- o Sí (1)
- o No (0)

DQ8 ¿Usted esta empleado actualmente?

- o si (1)
- o No (2)

If si Is Selected, Then Skip To Si su respuesta es si, esta empleado ...If No Is Selected, Then Skip To Si su respuesta es no, es usted:

DQ8a Si su respuesta es si, esta empleado tiempo completo o medio tiempo?

- Tiempo completo (1)
- Medio tiempo (2)

DQ8b En caso afirmativo, ¿se siente protegido/a o seguro/a cuando trabaja?

- o Sí (1)
- o No (2)

DQ8c Si su respuesta es no, es usted:

- o Ama(o) de casa (1)
- o Estudiante (2)
- o Retirado(a) (3)
- o Deshabilitado (a) (4)
- o Desempleado(a) / buscando trabajo (5)

DQ9 ¿Uno o más miembros de su hogar quedaron (o permanecieron) desempleados el mes pasado?

- o Sí (1)
- o No (2)

DQ10 ¿Con qué frecuencia depende de la asistencia del gobierno o donaciones para sus necesidades básicas (como vivienda, alimentos o facturas de electricidad)?

- Nada (1)
- Un poco (4)
- Algo (5)
- Bastante (6)
- Mucho (7)

DQ11 ¿Ha habido algún día el mes pasado en el que no sabía de dónde vendría su próxima comida, o involuntariamente comió menos de lo que necesitaba?

- Sí (1)
- No (2)

DQ12 ¿Qué otros idiomas habla con fluidez actualmente? Por favor seleccione todos los que apliquen

- Inglés (1)
- Portugues (2)
- Español (3)
- Otro(s). Por favor especifique: (4) _____

DQ13 ¿Qué idioma(s) habla usted en su casa? _____

DQ14 Incluyéndose usted, ¿cuántas personas han vivido en su hogar en el mes pasado?

DQ15 ¿Le ha dicho un médico que tiene alguna de las siguientes condiciones? Seleccione todas las que correspondan

- Enfermedad pulmonar crónica o asma moderada a severa (1)
- Enfermedad cardíaca grave (4)
- Inmunocomprometidos (como recibir tratamiento para cáncer, tabaquismo, trasplante de médula ósea u órganos, deficiencias inmunes, VIH o SIDA mal controlados y uso prolongado de corticoesteroides y otros medicamentos para el debilitamiento inmune) (5)
- Obesidad severa (índice de masa corporal [IMC] de 40 o más) (6)
- Diabetes (7)
- Enfermedad renal crónica sometida a diálisis (8)
- Enfermedad hepática (9)

DQ16 En general, ¿cómo calificaría su calidad de vida?

- Excelente (1)
- Muy buena (4)
- Buena (5)
- No tan Buena (6)
- Mala o Pobre (7)

DQ17 ¿Cuál es su ciudad y país o código postal? _____

DQ18 ¿Cuál es su código postal? _____

- DQ18 ¿Cómo se enteró de esta encuesta? Seleccione todas las que correspondan
- o por DWDC (Centro de Desarrollo de la Mujer Dominicana) (1)
 - o por la Asociación Médica Dominicana (5)
 - o Me lo compartió mi médico de cabecera u otro médico (6)
 - o Fue compartido conmigo por un amigo o familiar (7)
 - o Alguien que no conozco lo compartió conmigo (8)

APPENDIX L: NARRATIVE CODING SCHEME

Examples of emotion words

Negative emotion words

	General emotion words	Specific emotion words
Implied emotions	<ol style="list-style-type: none"> 1) Awful 2) Bad 3) Bothered/disturbed 4) Concerned 5) Didn't like 6) Difficult/tough/challenging/complicated & synonyms 7) Disgust 8) Distressed 9) Gross 10) Hard 11) Horrible 12) Leery/doubtful 13) Messed up 14) Miss 15) Preoccupied 16) Strained 17) Stress/stressed* (except not on #3) 18) Terrible 19) Uncomfortable 20) Unsettling 21) Wasn't happy 22) Weird 	<ol style="list-style-type: none"> 1) Afraid 2) Ashamed 3) Embarrassed 4) Fear 5) Frightened 6) Frustrated 7) Furious 8) Guilty 9) Humiliated 10) Jealousy/envy 11) Lonely/isolated 12) Mad / Angry 13) Nervous 14) Panic/panicky 15) Sad 16) Scared/scary 17) Shocked 18) Sorry 19) Terrified 20) Unnerving 21) Upset 22) Worry/Worried 23) Cried/crying 24) Freaking out 25) Screamed 26) Yelled

Positive emotion words

	General emotion words	Specific emotion words
Implied emotions	1) Amazed 2) Appreciate 3) Awesome 4) Better 5) Calm/calm down 6) Comfortable 7) Didn't cry 8) Eager/enthusiastic 9) Enjoyed 10) Favorite 11) Fortunate 12) Fun/funny 13) Grateful 14) Great 15) Hope 16) Like 17) Optimistic 18) Peaceful 19) Relieved 20) Resilient 21) (felt/feel) Stronger 22) (felt/feel) Safe 23) Supported 24) Wasn't sad	1) Excited 2) Happy/glad 3) Hilarious 4) Love 5) Proud 6) Laughed/laughing/laugh 7) Smiling 8)

- When a negative emotion is negated, it is POSITIVE and GENERAL and IMPLIED, e.g., Wasn't sad, Didn't cry
- When a positive emotion is negated, it is NEGATIVE and GENERAL and IMPLIED, e.g., Wasn't happy, Didn't like
- She was **bad**; He was **good**; It was a **bad** school – NOT EMOTION WORDS, but are descriptions or characteristics.
- She felt **bad**; He felt **good** – EMOTION WORDS.
- She was **bothering** her; She **made fun** of her; She **teased** her – NOT EMOTION WORDS.
- She was **bothered by it**; She had **fun** – EMOTION WORDS.
- Back-to-back emotion words – COUNTED ONLY ONCE
- She worked **hard** – NOT AN EMOTION WORD
- It was **hard** for her – EMOTION
- He told me how to get **better** – NOT EMOTION
- She felt **better** – EMOTION

**Because the word “stress” is included in the narrative prompt for #3, it was not counted as part of the coding.

2) Cognitive States:

1. Cognitive states

- *Explicit mention of the cognitive states of people or animals (e.g., She **thinks**; The snake **knew**; He **doesn't know**).*
- *Explicit thoughts about the occurrences within the narrative (e.g., I think he was sad; He thinks he was sad; I think that was stupid)*
- *Incomplete thoughts do not count as cognitive states, e.g. “I think that...” – NOT INTERNAL STATE*
- *Commenting on the vagueness of memory does not count as a cognitive state, e.g. I think he said that; I don't remember exactly; I don't know what happened – NOT INTERNAL STATE*
- *Examples of cognitive states: He **thought** it was good; I **guess** that was a big deal for them; I'm **sure** he liked it; She **knew** it was right; They **wanted** my dad to help; He **figured** that's what it was; She **said to herself** “they're having fun”; My grandmother was **wondering** who ate it; She **believed** it was right; They **decided** it would be fun*
- *“I guess” is NOT coded as internal state, unless it is an interpretation, evaluation or extension of the events in the narrative, e.g., I guess she said it was blue – NOT INTERNAL STATE; I guess it was peer pressure – INTERNAL STATE*
- *ALL cognitive states are either*
 - A.** State of **narrator** (e.g., I think that I am doing ok)
 - B.** State of **other** (e.g., They wanted to see their friends)

- 1) Analyze
- 2) Assess
- 3) Believes
- 4) Consider
- 5) Conscientious
- 6) Decided
- 7) Figured
- 8) Focused
- 9) Interest
- 10) Know
- 11) Mindful
- 12) Not sure/uncertain
- 13) Ponder
- 14) Sure/certain
- 15) Think/thought
- 16) Wanted
- 17) Wonder

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