AFRO-CARIBBEAN MOTHER-ADULT DAUGHTER RELATIONSHIPS AND ITS ASSOCIATION TO ACCULTURATION, TRANSNATIONAL BEHAVIOR, GENERATIONAL STATUS, RISK COMMUNICATION, AND RISK BEHAVIOR

by

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(Under the Direction of J. Maria Bermudez)

ABSTRACT

Acculturation level is a predictor of risk outcomes for immigrant families. Parent-child relationships have been shown to mediate the relationship between acculturation and risk outcomes, but few studies have observed how these concepts differ between first and second-generation Afro-Caribbean women. The following two manuscripts investigate the effect of familial factors and assimilation processes on Afro-Caribbean immigrants’ risk health behaviors and protective factors. Manuscript one addresses the Mother Adult Daughter Measure (MAD) to determine the generalizability of mother-daughter relationships between first and second-generation Afro-Caribbean women. The goal of this study was to determine 1) if the MAD subscales are invariant across generational status, 2) If the MAD subscales can be accounted for by one common underlying higher order construct called Mother Adult Daughter Relationship Quality, and 3) if the higher order factor was also invariant across generational
status. Results suggest that MAD subscales (interdependence, trust in hierarchy, and connectedness), as well as the higher order structure of Mother Adult Daughter Relationship Quality, may apply to and may operate similarly across first and second-generation Caribbean women. Manuscript two tested associations between daughters’ acculturation, transnational behavior, risk behavior and protective outcomes. Only indirect associations were significant for all models. Results indicate that transnational behavior was associated with positive mother-daughter relationships and lower reports of risk behavior for first and second-generation Afro-Caribbean women. Daughters’ report of high acculturation was associated with daughters’ report of lower risk behavior in the more parsimonious model (model that includes first and second-generation women) and in the first generation model. Also, acculturation predicted decreased connectedness and reports of increased interdependence to mother for second-generation daughters. Chapter four will provide a summary of the two manuscripts, theoretical considerations, and clinical implications for research and clinical work with this population.

INDEX WORDS: Acculturation, Immigrant Paradox, Afro-Caribbean families, Mother – Daughter Relationships, Mother Adult Daughter Measure Invariance Testing
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AFRO-CARIBBEAN MOTHER-ADULT DAUGHTER RELATIONSHIPS AND ITS ASSOCIATION TO RISK COMMUNICATION AND RISK BEHAVIOR

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CHAPTER 1
INTRODUCTION AND LITERATURE REVIEW

There are limited empirical studies that examine the experiences of Black immigrant individuals and their families living in the United States (U.S.). The health needs of Black immigrant people are a public health concern largely due to inadequate intervention and prevention programming for this population. A primary concern is that the little research that exists investigates Black people as a homogeneous group and fails to address both between and within group variations in this population (Thomas, 2012). With the recent increase in the number of Black immigrant families in the U.S., it is imperative for scholars and practitioners to recognize, acknowledge, and address cultural and ethnic differences among Black people (Capps, Fix & McCabe, 2012; McCabe, 2011). The current study addresses this gap in research by investigating the effect of familial factors and assimilation processes on Afro-Caribbean immigrants’ risk health behaviors and subsequent protective factors.

Afro-Caribbean people are the largest group among immigrants of African descent in the U.S. (Thomas, 2012; Logan, 2012; McCabe, 2011). Despite their large number, little is known about their physical and mental health practices when living in the U.S. (Saint-Jean, Dévieux, Malow, Tammara, & Carney, 2011; Jackson, Forsythe-Brown, & Govia, 2007). This oversight occurs partly because Afro-Caribbean people not only live in proximity to African-Americans, but unlike Afro-Latinos or some Black people from Africa, they easily blend in with the African-American population because English is their primary language (Thomas, 2012; Foner, 2009; McCabe, 2011). Further, despite similar values of filial piety and
collectivism, which have been identified as protective factors against risk outcomes for Latino (Schwartz, 2007) and Asian families, limited research has explored the role of family interactions on the health and wellbeing of the Afro-Caribbean population.

Studies have shown that the family system is among the most influential factors that ameliorate substance use and sexual risk behaviors, among immigrant youth (Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011; Santisteban & Mena, 2009; Szapocznik, Prado, Burlew, Williams, & Santisteban, 2007). Within immigrant populations, mothers and daughters have the strongest bond compared to other dyads within the family system (Rittenour, Colaner, & Odenweller, 2014). The mother-daughter relationship is an important aspect of healthy development of daughters and serves as a predictive factor of positive well-being, quality of life, and plays an important role in women’s self-definition (Onayli & Erdur-Baker, 2013; Reynolds, 2005). Having a strong understanding of this particular family dyad and how it functions is crucial for practitioners to implement appropriate prevention and intervention strategies for Afro-Caribbean women living in the U.S. (Onayli & Erdur-Baker, 2013).

The topic of risk behavior among Afro-Caribbean women should be understood within various contexts. First, traditional gender and cultural stigmas related to sex and drugs inhibit these women from explicitly discussing these issues in formal and informal settings (Shimeles, Husbands, Tharao, Adrien, & Pierre-Pierre, 2011). Second, like other immigrants, they are likely to underutilize available health and social service agencies (Hutchinson, 2012; Shimeles et al., 2011). Third, these women are more vulnerable to Human Immunodeficiency Virus (HIV) and other sexually transmitted infections (STIs) due to high prevalence of such issues in the Caribbean region (National Institute on Drug Abuse, 2012; United Nations Program on AIDS, 2013). Approximately, 53% of all people with HIV in the Caribbean are women. This is
the highest rate of HIV infection reported among women in the Americas (United Nations Program on AIDS, 2013). Fourth, upon migration, these women are at an increased risk of poor health due to disproportionately higher health barriers for non-Hispanic Black women (Center for Disease Control, 2005). Acculturation stress and other immigration-related issues, such as transnationalism, can exacerbate these issues.

Acculturation describes the mechanisms of immigrant adaptation (integration, separation, marginalization, and assimilation) to a host country (Berry, 1997). The processes occur when immigrants’ native cultural traditions interact with the norms of the host country. However, emerging research on the immigrant paradox has cast some doubt over extant suggestions of the acculturation process. The immigrant paradox states that first generation immigrants have better health outcomes than their second-generation peers, and acculturation is a contributing factor of this disparity (Sam, Vedder, Liebkind, Neto, & Virta, 2008). The processes of acculturation, specifically assimilation, are not as straightforward for transnational families. Afro-Caribbean immigrants tend to be more transnational in nature when compared to other Black immigrants living in the U.S. primarily due to the close proximity between the U.S. and the Caribbean (Thomas, 2012; Foner, 2009).

The construct of transnational behavior is used in the current study to represent daughters’ adherence to the Afro-Caribbean culture. Adherence to culture refers to embracing and remaining close to cultural beliefs and being actively involved in traditions (Ma et al., 2014). Adherence to individuals’ native culture has been demonstrated as a protective factor against sexual risk (Hall et al., 2000; Hall et al., 2005) and substance use (Choi, Harachi, Gillmore, & Catalano, 2006; Nasim et al., 2007) among immigrant populations. Transnational behaviors help immigrant families remain connected to their cultures, as well as to maintain
interactions with family members left behind. This cross-border behavior can disrupt assimilation processes, and in turn, creates a need for a closer look at acculturation and immigrant paradox outcomes when looking at this population.

The current study builds on existing literature on Afro-Caribbean families residing in the U.S. by examining the effects of acculturation, immigration, and transnationalism on the following: 1) mother-daughter relationship, 2) daughters’ report of her risk behavior and, 3) daughter’s communication about risk with her mother. Findings from this study will be used to create a culturally appropriate conceptual model for explaining risk behaviors in Black immigrant communities. Such a model will inform future research and intervention among Afro-Caribbean immigrants. The following section will review demographic factors associated with Afro-Caribbean families living in the U.S., provide an overview of Afro-Caribbean families, introduce the concept of the immigrant paradox and acculturation, and outline the two manuscripts that were developed from the current study.

**Demographics**

The English-speaking Caribbean region is made up of many islands like Barbados, Jamaica, Trinidad and Tobago and inland countries like Guyana, which is located in South America (Figure 1.1). A history of slavery and indentured servitude in these countries created a diverse population of people that includes descendants from Africa, Asia, East India and Portugal. The current study focuses on the Afro-Caribbean population, which refers to the Black people from the Caribbean region.

Compared to other immigrant groups in the U.S., Caribbean immigrants are less likely to be new arrivals and more likely to have family already living in the host country. This is largely due to their extended history of migration to the U.S., which dates, back as early as the
19th century (Hine-St. Hilaire, 2006). The Immigration and Nationality Act of 1965 helped to create favorable conditions for Caribbean individuals to migrate to the U.S. This change in immigration legislation was beneficial to immigrant families because it encouraged U.S. citizens and permanent residents to bring family members from their native countries (Thomas, 2012). The legislation also increased the rates of migration into the U.S. For example, between 1990-2000, nearly 25% of the growth of the Black population in the U.S. was due to African and Caribbean people (Logan, 2007). According to McCabe (2011) the Caribbean-born population made up 39.8% of all immigrants residing in Florida (4 out of 10), and 24.1% of all immigrants residing in New York in 2009. Additionally, more than one in ten immigrants in Connecticut (17.2%), Massachusetts (14.5%), New Jersey (14.4%), and Pennsylvania (11.2%) were also born in the Caribbean (McCabe, 2011). Currently, the foreign-born population from the Caribbean account for nine percent of the total immigrant population residing in the U.S. (McCabe, 2011).

**Afro-Caribbean Families**

The influx of Afro-Caribbean immigrants to the U.S. has created a need for family scholars to have a better understanding of the Afro-Caribbean family structure. Understanding family structure is important for understanding how a family functions. In general, collectivism continues to be salient among Caribbean families. For example, family members often put the interests of the family unit before their own because of obligation and loyalty to the family (Oyserman, Coon, & Kemmelmeier, 2002). The following section will give an overview of how motherhood, extended family and parenting are influenced by Afro-Caribbean culture.
**Matrifocality.** Caribbean families are matrifocal in nature. Unlike matriarchal families, which place women at the head of the household, a matrifocal culture places emphasis on women’s role of motherhood as the foundation of familial relationships (Reynolds, 2005). This type of structure exists with or without the presence of a father figure. Fathers are typically marginalized from the daily running of the household although they still maintain a paternal role (Staples, 1972). This arrangement makes mothers the glue that keeps the family united and functional (Reynolds, 2005). Similar to other cultures, Caribbean mothers tend to be kin-keepers, which makes them a valuable part of the family system (Chamberlain, 2000). Matrifocal families are not only dependent on mothers’ abilities and capabilities but are also highly reliant on the support of extended family members (Safa, 2005).

**Extended Family.** Extended family arrangements are more common among Black immigrants than U.S. natives (Thomas, 2012). It is especially important given that extended family members often support each other by exchanging economic resources and by engaging in family activities such as childcare (Chamberlain, 2003; McAdoo et al., 2012). The extended family dynamic can often be disrupted during the immigration process because limited resources may not allow them to migrate as a family unit (Antrobus & Deere, 1990; Chioneso, 2008). This interruption can add strain to the family unit. Additionally, the strain on the family can be exacerbated by a lack of finances necessary to migrate to the host country. According to Safa (2005), reciprocities with extended family can provide financial and emotional support for mothers in matrifocal families. The Immigration and Nationality Act of 1965 was pivotal among Caribbean people because it allowed for the eventual migration of the whole family unit, thus preserving their cultural practices rooted in collectivism, essential for family survival and well-being (Chamberlain, 2003).
Reduced interactions with extended families can force Caribbean immigrant families to adapt nuclear family patterns (Muruthi et al., 2016). For example, limited access to extended family support can change traditional Afro-Caribbean expectations for extended family members to assist with childcare (Chioneso, 2008; Muruthi et al., 2016), thus, many Afro-Caribbean immigrants in the U.S. rely on their spouses for formal services for childcare due to the unavailability of extended family resources (Muruthi et al., 2016).

**Parenting.** Most immigrant families often maintain traditional parenting values and practices from their country of origin (Stromquist & Monkman, 2000; Chamberlain, 2003). Strict parenting is typical and often preferred form of parenting for most Afro-Caribbean parents (Baptiste, Hardy & Lewis, 1997). Such parenting behaviors are best described as authoritarian parenting style. This practice allows for little negotiation or give and take with children regarding rules and harsh discipline (e.g., corporal punishment) is often a primary means of asserting authority and control (Brown & Johnson, 2008; Baumrind, 1991). In the U.S., parents often implement more authoritative and permissive parenting styles and more child-centered parenting practices, which may be disconcerting to Caribbean families (Muruthi et al., 2016; Brown & Johnson, 2008; Baptiste, Hardy & Lewis, 1997; Roopnarine & Brown, 1997).

Findings from existing empirical studies have expressed the difficulties that Afro-Caribbean families may face when negotiating their parenting styles (Brown & Johnson, 2008; Baptiste, Hardy & Lewis, 1997; Roopnarine & Brown, 1997). For example, Jamaican parents reported that Caribbean parents across social classes defended the use of corporal punishment as an appropriate and necessary form of discipline (e.g., Brown & Johnson, 2008). For Caribbean parents, the use of corporal punishment appears to be common but faces criticism
once it is used in the U.S. (Baptiste, Hardy & Lewis, 1997; Roopnarine & Brown, 1997). This conflict in cultural expectations regarding parenting is a common reason for discontentment among these parents. Specifically, Afro-Caribbean immigrant parents frequently complain about the loss of power over their children and are confused about how to raise their children properly without the use of corporal punishment (Baptiste, 1990; Evans & Davies, 1997).

Afro-Caribbean parents also report a sense of dissonance and relational strain with their children when living in the U.S. (Telzer, Yuen, Gonzales, & Fuligni, 2016). This dissonance is called acculturation gap. This gap occurs when parents and children are assimilating to the host country at different rates (usually slower for the parental figure) (Telzer, Yuen, Gonzales, & Fuligni, 2016; Ayers, 2016). The acculturation gap can create a breakdown in family cohesion for the parent and child (Kia-Keating, Capous, Juang, & Bacio, 2016) and this reduction in family cohesion has been linked to increased deviant behavior and higher vulnerability to risk outcomes (Kia-Keating, Capous, Juang, & Bacio, 2016). It is important for family researchers to understand the underlying assumptions embedded in acculturation and the immigration paradox and how these frameworks affect Afro-Caribbean families.

**Theoretical Framework**

Despite the significance of assimilation theory in the study of culture and immigration, there have been few theorists who have accounted for these assimilation processes in studies of Black immigrants (Kivisto, 2001). This theoretical lapse has been largely due to scholars not recognizing within-group differences among homogenous immigrant groups (Ampofo, 2008). Further theoretical concerns arise when analyzing possible variability between first and second-generation immigrants (Di Cosmo et al., 2011; Le & Stockdale, 2011). Given this gap in the literature, this study draws from both the immigrant paradox perspective and the
acculturation theory to better understand the complexity of these processes among Afro-Caribbean immigrant families living in the U.S.

**Acculturation**

Acculturation framework describes the degree to which people adapt to a host culture both socially and psychologically (Berry, 1997; Berry 2005). It is used in literature to imply the contextual and individual level processes that occur as individuals assimilate into a new culture (Berry, 2005). It assumes that all individuals live in pluralistic societies where various cultures exist, thus promoting cultural exchange between minority and majority groups (Berry, 1997; Berry 2005).

Complicating this process is that dominant and subordinate cultural groups can either reject or accept the implied cultural exchanges (Berry, 1997). With regard to immigrant people, there is a continuous process of negotiation between cultural maintenance of native culture or contact and participation in the new cultures of host societies (Berry, 1997). Four categories of acculturation emerge from these processes: *assimilation*, whereby individuals abandon their native culture and take on the norms of the dominant culture; *integration*, accepting customs of the host culture while preserving one’s own culture; *separation*, maintaining their own culture and rejecting the host culture; and lastly *marginalization*, the rejection of native culture and host culture (Berry, 2005). These categories of acculturation are not merely by choice, but also depend on the acceptance or rejection by the host culture. For example, integration requires that the right of all groups to live as culturally different people be accepted and respected by both integrating groups (Berry, 1997; Berry, 2009).

Some scholars observe that immigrants also face the dilemma of maintaining their cultural heritage and traditions and/or forming new relationships within their host societies
According to Berry (1997), a “fit” can be realized when an immigrant group’s efforts to assimilate or integrate are acknowledged and accepted by dominant groups in their host nations. Marginalization and segregation of immigrants can occur if this “fit” is not achieved. For example, Caribbean families are often faced with the dilemma of choosing between their traditional values and newly integrated cultural practices in the U.S. They respond by either adopting the new practices needed for integration or assimilation into U.S. culture or separate themselves, creating new exclusive cultural enclaves (Chaney, 2010). Patterns of conflict can emerge, resulting in acculturative stress or psychopathology. These stressors might induce mental health problems, feelings of marginalization and cause heightened psychosomatic symptoms (Berry, Kim, Minde & Mok, 1987).

The bidirectional nature of acculturation has received little attention in the literature. Not only does acculturation affect behaviors of new immigrant groups but it also influences cultural practices of a host society (Berry, 1997). When the dominant group enforces certain forms of cultural practices, it constrains the choices available for non-dominant groups and individuals, thus limiting the choices on how to acculturate (Berry, 1997). Such limitations might force immigrant groups to either lean toward assimilation or marginalization.

Unfortunately, for immigrants of African descent, in addition to facing similar obstacles as Black people in the U.S., social demographic factors such as foreign culture, race, class, and gender amplify the problems of integration and assimilation (Nicol, 1971). Tenets of the immigrant paradox help explain risks and protective factors association with assimilation and acculturation.
The Immigrant Paradox

The immigrant paradox phenomenon asserts that as immigrants become more assimilated to their host country, they are more susceptible to risk outcomes (Di Cosmo et al., 2011; Le & Stockdale, 2011). It is called a paradox because acculturation, which has been widely researched (Berry, 1997; Berry, 2005; Berry, 2009; Berry, Phinney, Sam & Vedder, 2006), asserts that the longer immigrants are in the host country, the more assimilated they become, and the better their health outcomes (Sam, Vedder, Liebkind, Neto, & Virta, 2008). According to Sam and colleagues (2008), although new immigrants may experience more economic hardship than their counterparts who are already established in the host country, they have better academic achievement and psychological well-being than their non-immigrant counterparts.

A common explanation of the immigrant paradox is the theory of migrant health selectivity (Teruya and Bazargan-Hejazi, 2013; Lu, 2008; Jass & Massey, 2004). This theory states that the majority of people who have the ability to migrate to the U.S. are already healthy and have a high probability of faring well in the host country. According to Teruya and Bazargan-Hejazi (2013), the sick are more likely to migrate out of a host country and conversely, healthy people more likely to migrate in the country. This theory is compounded when considering immigrant acculturation levels and its impact on health outcomes. In a study comparing physical health symptoms and acculturation level by Bauer and colleagues (2012), Asian participants reported fewer symptoms than U.S. born Whites, but less acculturated
Latino and Asian participants report fewer symptoms than their more acculturated counterparts. This study shows how the immigrant health selectivity was still an influence in this study but followed acculturation patterns of the immigrant paradox across immigrant groups.

The immigrant paradox also predicts risk behavior outcomes for the first generation and later generation immigrants. For example, findings in a study of first generation Latino immigrants from adolescence through emerging adulthood, Guarini and colleagues (2011) revealed low levels of sexual risk and substance use behaviors in first generation immigrants in comparison to their second and third generation peers. In contrast, third generation Latinos had the highest level of risk among other peer cohorts. Similarly, in another study, U.S. born youths from immigrant families were found to more likely engage in driving under the influence of alcohol when compared to their first generation peers (Maldonado-Molina, Reingle, Jennings, & Prado, 2011). Both studies tested the immigrant paradox and provided support to the immigrant paradox assumptions of increased risk in later generations, even after controlling for demographic variables.

Although the immigrant paradox is evident in many studies, it is variable to change and is different when looking across races, ethnicities, and subgroups (Teruya & Bazargan-Hejazi, 2013). When considering Caribbean immigrants, Jackson and colleagues (2007) found that first-generation Afro-Caribbean adolescents are at lower risk of engaging in sexual activity, violence, and substance use than those Afro-Caribbean adolescents born in the United States. Later generations, however, were found more likely to utilize mental health resources and social services than first and second-generation immigrants (Jackson et al., 2007). This demonstrated that protective factors may be more available for later generations than for first
generation immigrants, which contradicts assumptions of the immigrant paradox. The following research studies will examine how the immigrant paradox and acculturation affect the Afro-Caribbean mother-daughter relationship, and daughters’ risk and protective outcomes.

**Overview of Studies**

This dissertation constitutes two related studies that address familial factors and assimilation processes related to Afro-Caribbean immigrants and how this affects their risk behaviors and protective outcomes. Both studies hinge on the effects of Afro-Caribbean mother-daughter relationships on the daughters’ risk outcomes. Each study offers a unique methodological or theoretical contribution to the literature on Black immigrant family interactions and their impacts on risk outcomes.

The first manuscript, *An Evaluation of the Mother Adult Daughter (MAD) Relationship Measure: A Preliminary Study*, examines the MAD measure and generalizability of the MAD measure across first and second-generation of Afro-Caribbean mothers and their daughters. This measure was initially created to examine the mother-daughter relationship in a more collectivistic way (Rastogi, 2002). The following hypothesis are examined: 1) MAD subscales work with Afro-Caribbean women; 2) MAD subscales are generalizable across generational status; 3) MAD subscales can be accounted for by one common underlying higher order construct called mother-adult daughter relationship quality (Figure 1.2), and; 4) the higher order factor is generalizable across generational status.

The following set of hierarchically structured levels were used: (a) configural invariance, (b) first-order factor loadings, (c) second-order factor loadings, (d) intercepts of measured variables, (e) intercepts of first-order factors (Chen, Sousa, & West, 2005).
The second manuscript, *Acculturation, Transnationality, Mother-Adult Daughter Relationships, Risk Communication, and Risk Behavior: Generational Status and Transnational Behavior as a Moderator and Mother-Adult Daughter Relationship as a Mediator* (Figure 1.3), examines daughter’s acculturation report as a predictor of her risk outcomes and her risk communication with her mother. Parent-child relationships have been shown to mediate these associations (Bui, 2013; Marsiglia, Nagoshi, Parsai, Booth, & Castro, 2014), but few studies have observed how these concepts differ between first and second-generation Afro-Caribbean women. Also, adherence to native cultural practices has been shown as a possible buffer of the negative effects of acculturation on parent-child relationships (Choi, Harachi, Gillmore, & Catalano, 2006; Nasim et al., 2007). Transnational behavior is an example of cultural adherence in the Afro-Caribbean population (Thomas, 2012; Foner, 2009; McAdoo, Younge & Getahun, 2012), and is used in the model as a moderator of the association between acculturation and the parent-child relationship. Structural equation modeling was used to test all associations.

It is expected that daughter’s acculturation, transnational behavior, and relationship with her mother will each have associations with her risk behavior and mothers’ risk communication. For manuscript two it is hypothesized that: 1) More acculturated daughters will have more risk and less communication with mother; 2) More acculturated daughters will have negative relationships with mother; 3) Transnational behavior will be associated with positive mother-daughter relationships more communication and lower risk behaviors; 4) Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationship; 5) More acculturated daughters will have fewer risk outcomes and more communication with mother via positive relationships with their mother; 6) More acculturated
first and second-generation daughters will have more risk and less communication with mother; 7) More acculturated first and second-generation daughters will have negative relationships with mother; 8) More acculturated first and second-generation daughters will have fewer risk outcomes and more communication with mother via positive relationships with their mother; 9) Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationships for first and second-generation women.

Conclusion

Family cohesion is shown to serve as a protective factor against risk for first and second-generation adolescents in the U.S. (Bronfrenbrenner, 1986; Chioneso, 2008). Unlike western culture in which individual development is promoted, there is a strong reliance on and sense of obligation toward family members among immigrant collectivistic cultures (van Geel & Vedder, 2011). In the Caribbean culture, the mother-daughter relationship is especially salient. This study specifically looks at daughters because their communication with their mothers can influence risks such as HIV, sexually transmitted infections, teen pregnancy, and alcohol abuse, among others. These risks are also higher for Black women living in the U.S. when compared to other groups (Center for Disease Control, 2005). Given these risks, there is a strong and compelling need to specifically examine risk and protective factors among Afro-Caribbean women. The following two chapters of this dissertation represent separate manuscripts related to the studies above. Each chapter includes a review of the literature, methods, results, and discussion pertaining to the respective study. Chapter four provides a summary of the two manuscripts, theoretical considerations, and clinical implications for research and clinical work with this population.
Figure 1.1. Map of the Caribbean Region.
Figure 1.2. Hypothesized Second-Order Factor Model of the Mother-Adult Daughter Measure of Caribbean Mother-Adult Daughter Relationships.
Figure 1.3. Three-Way Interaction Model of Mother-Daughter Relationships, Transnational Behavior, and Generational Status on Risk Communication and Behavior.
CHAPTER 2

AFRO-CARIBBEAN ADULT DAUGHTERS’ PERCEPTIONS OF THE MOTHER-DAUGHTER RELATIONSHIP: VALIDATION OF A HIERARCHAL STRUCTURE OF THE MOTHER ADULT-DAUGHTER (MAD) MEASURE

1 Muruthi, B.A., Bermudez, J.M., Oshri, A., Gale, J. & Lewis, D. To be submitted to Journal of Family Process
Abstract

The Mother Adult Daughter Measure (MAD) was used to determine the generalizability of mother-daughter relationships between first and second-generation Afro-Caribbean women. The sample is comprised of reports from 186 Daughters born in the U.S. and 156 born in the Caribbean (n= 342). Participants completed the subscales of interdependence, trust in hierarchy, and connectedness that comprised the MAD measure. Confirmatory factor analysis indicated that the scoring algorithm for the subscales fit the data well. The following hypothesis are examined: 1) MAD subscales work with Afro-Caribbean women; 2) MAD subscales are generalizable across generational status; 3) MAD subscales can be accounted for by one common underlying higher order construct called mother-adult daughter relationship quality (Figure 2.1), and; 4) the higher order factor is generalizable across generational status. The Chen, Sousa, and West (2005) method of higher order invariance testing was used following a set of hierarchically structured levels: (a) configural invariance, (b) first-order factor loadings, (c) second-order factor loadings, (d) intercepts of measured variables, and (e) intercepts of first-order factors. No significant or noteworthy differences emerged in any of these analysis, suggesting that MAD subscales (interdependence, trust in hierarchy, and connectedness), as well as, the higher order structure of Mother Adult Daughter Relationship Quality may be applicable to and may operate similarly across generational status within groups. A discussion about culturally sensitive research implications will be provided.
Introduction

Scholars have suggested that family interactions and support can be a source of protective factor for individuals. For example, positive mother-daughter relationships have been associated with the healthy development of daughters (Onayli & Erdur-Baker, 2013). Such interactions are even more important for immigrant populations who have collectivistic values and rely heavily on family support (Thomas, 2012; Chamberlain, 2003). In a Collectivistic culture the obligation to the family system takes priority over an individuals’ personal goals (Triandis, 1995). However, a majority of studies on mother-daughter relationships among immigrants often employ individualistic perspectives of attachment to the parent-child dyad (Schwartz & Walper, 2007). Thus, there is a shortage of culturally responsive measures of parent-child interactions that account for complex socio-cultural nuances of collectivistic parent-child relationships (Onayli & Erdur-Baker, 2013; Rastogi, 2002). Rastogi’s (2002) Mother Adult Daughter (MAD) aims to fill this gap. This preliminary study seeks to investigate the generalizability of the MAD measure between first and second-generation Afro-Caribbean women as a step towards application in future studies.

The MAD measure was developed to capture immigrant collectivistic values in a measure of mother-daughter relationships (Rastogi, 2002). This self-report measure consists of three subscales: connectedness, interdependence, and trust in hierarchy. The MAD measure was also designed for use across different ethnic groups (Rastogi, 2002), but to this author’s knowledge, it has not been tested across generational status within an ethnic group.
This study was done to determine if: (1) the MAD can measure interactions in Afro-Caribbean Mother-daughter dyads; (2) if the MAD subscales are generalizable across first and second-generation status; (3) if the MAD subscales can be accounted for by one common underlying higher order construct called Mother Adult Daughter Relationship Quality; and (4) the higher order factor also generalizable across generational status.

Evaluating the generalizability of mother-daughter relationships across generational status is important to capture nuances that may exist among measures within immigrant groups. For example, because of acculturation processes, second-generation immigrants may hold different values and place different meanings on constructs than their first-generation peers (Teruya and Bazargan-Hejazi, 2013). Also, the immigrant paradox dictates that first-generation immigrants and their second-generation counterparts often have different health and protective outcomes (Di Cosmo et al., 2011; Le & Stockdale, 2011). Family support such as positive parent-child relationships can act as a buffer against adverse outcomes, yet few studies have tested the validity of these family measures across generational status.

**Literature Review**

**Mother Adult Daughter Measure**

The Mother and Adult Daughter (MAD) Questionnaire was developed by Rastogi (1999) to measure various aspects of the mother-adult daughter relationships in ethnically diverse groups. The scale has been tested internationally (Onyali & Erdur-Baker, 2013) and between various ethnic groups (Rastogi, 2002), yet to date it has not been used to test differences within an ethnic group. The instrument consists of three subscales: connectedness, interdependence, and trust in hierarchy.
These measures aim to capture collectivistic interpretations of the mother-daughter relationships. The following section will explore these three subscales more in depth.

**Interdependence.** Interdependence refers to the mutual give and take of advice that exists between the parent and child (Rastogi, 2002). This reciprocity happens when mother and daughters have a positive relationship. However, daughters may or may not solicit the advice but mothers expect the advice to be followed (Rastogi 2002; Nadeem & Romo, 2008). In one study, Spanish-speaking mothers who sent more interdependent messages to their daughters about their pregnancy had more positive family relationships (Nadeem & Romo, 2008). Additionally, there was a positive association between the prevalence of interdependent messages and the daughters’ self-reported perceptions of social support and open communication in their relationships with their mothers. Conversely, interdependence goes against U.S. norms of healthy attachment, which could present a challenge for immigrant families in the U.S.

Western norms of attachment between parent and child and positive child development emphasize a balance between the child’s closeness to their parents and their autonomy (Liddle & Schwartz, 2002). Attachment literature suggests that as a child approaches adolescence, they continue towards a path of independence away from the family values and practices (Trad, 1995; Schwartz & Walper, 2007). This independence is based on an individualist family model which describes the construction of self as unique and distinct, favoring personal goals and focusing on the individual's needs and rights (Vieira, Martins, Lordelo, 2013; Li & Kerpelman, 2007). For example, a study about daughters’ career decision-making indicated that daughter’s ability to separate her feelings from her parents’ feelings, as well as the ability to express disagreement with parents, suggests healthy aspects of the daughter’s individuation (Li &
Kerpelman, 2007). This way of thinking contrasts interdependent notions that promote collectivist ideals of adolescents’ reliance on parents and other family members, through adulthood.

Caribbean families interactions are informed by collectivist values, and interdependence is promoted in the parent-child relationship. For example, a study found that independent decision-making by the child was not as relevant to positive parenting in Caribbean families (Griffith & Grolnick, 2014). Caribbean parents expect children’s conformity and overall respect through adulthood (Baptiste, Hardy & Lewis, 1997; Brown & Johnson, 2008). Compared to native-born counterparts, immigrant children are least likely to contradict their parents openly and they experience the least pressure to be autonomous (Fuligni, 1998).

**Connectedness.** Connectedness is the bond that is created between an individual and their family system (Barber & Schluterman, 2008). According to Pinquart and Silbereisen (2002), the more autonomous children feel, the more connected they feel to their family system, yet, autonomy does not account for collectivist ideas of family unity and togetherness. According to Lezin and colleagues (2004), measuring connectedness is contingent upon contextual factors, which makes it difficult to generalize across a population. Calling for ways of incorporating collectivism when measuring this construct, Hardaway and Fuligin (2006) incorporated elements of collectivism in their measure of connectedness by using multiple measures of family relationships and daily behavior. Synonymous with collectivism, subscales included measures for the obligation to provide assistance to the family, respect for family, and family identity.
All adolescents in the study had a sense of obligation to their families, but Mexican and Chinese children displayed more behavioral meanings (e.g., spending time with family) of connectedness for their families, which is consistent with collectivism in Asian and Mexican culture.

**Trust in hierarchy.** Often in collectivist cultures, there is an expectation of family loyalty, family obligation, and respect for elders (Stein and Polo, 2014). Rastogi (2002), calls this respect for elders, trust in hierarchy, which refers to older family members being the custodians of knowledge and their wisdom and experiences being valued (Onayli & Erdur-Baker, 2013). When children have trust in hierarchy in a collectivist family structure they adhere to behavioral demands made by parents (Rastogi, 2002). Trust in hierarchy is an integral component of family practices such as filial piety and familismo (Rastogi, 2002; Usita & Du Bois, 2005).

Limited research has explored trust in hierarchy in immigrant families. Wampler and Rastogi (1999), found that high income and established Asian Indian American adult daughters still deferred to their mothers’ opinions in decision making. However, conflicting health outcomes have been reported for children who have shown high levels of trust in Hierarchy in their families. For example, Stein and Polo (2014) found that when immigrant parents commanded levels of obedience from their children, they are more likely to report greater levels of depressive symptoms. Conversely, Polo and Lopez (2009) found that higher obedience among children was associated with lower depression, fewer internalized problems, and was not related to social anxiety or loneliness. More research is needed to determine the complexities of trust in hierarchy in the parent-child relationship.
The Present Study

Second-order models are most typically applicable in research contexts in which measurement instruments assess several related constructs, each of which is measured by multiple items (Chen, Sousa & West 2005). According to Chen and colleagues (2005), the second-order model represents the hypothesis that these seemingly distinct, but related constructs can be accounted for by one or more common underlying higher order constructs. To ensure that the unit of the scale is the same, both the first-order factor loadings and second-order factor loadings must be generalizable across groups.

The intention of this study is to test the Mother-Adult Daughter Measure (Figure 2.2), to see if it is applicable to measuring Caribbean adult daughters report of their relationship with their mothers. It is hypothesized that: 1) MAD subscales work with Afro-Caribbean women; 2) MAD subscales are generalizable across generational status; 3) MAD subscales can be accounted for by one common underlying higher order construct called mother-adult daughter relationship quality (Figure 2.1), and; 4) the higher order factor is generalizable across generational status.

Method

Participants

Participants in the present study were 285 women who identify themselves as being of Afro-Caribbean descent ($M = 30.10$, $SD = 10.260$, 76.9% between the ages of 18-35). Data were gathered via an online and paper survey. More than half (65.3%) of the participants had some form of degree beyond high school (22.9% some college, 12.1% associates degree, 27.1% bachelors degree, 15.3% advanced degree). Regarding race, 79.3% were Black, 6.6% Hispanic, .3% were Asian and 12.4% identified themselves as other. Daughters born in the
U.S. (129 participants) comprised of 53.7% of the sample, 45% (156), were born in the Caribbean. The most common countries of origin for participants were, Jamaica (15.6%), Saint Vincent and Grenadines (11.2%), Haiti (9.1%), and many participants identified with more than one country (16.1%). When reporting socioeconomic status, 36% reported income below $20,000; 40% between $20,001 and $60,000; 15.6% between $60,000 and $100,000; 3.5% between $100,001 and $140,000; 1.2% between $140,001 and $180,000; and .6% over $180,001. The majority of women reported living in a Caribbean neighborhood (53%). Twenty-one percent lived in an African-American neighborhood, 13.3% in a White neighborhood, 1.4% in an African neighborhood, and 9.5% in a diverse neighborhood.

Measures

**Generational status.** One categorical question was used to measure the generational status of all women in the study. Participants are asked to select one of the following answers: 1) I was born in the Caribbean (first generation), 2) I was born in the U.S. but my mother was born in the Caribbean (second-generation), 3) I was born in the U.S and my mother was born in the U.S. but my grandparents were born in the Caribbean (third generation), and 4) I was born in the U.S., my mother was born in the U.S., my grandparents were born in the U.S, but my great grandparents were born in the Caribbean (fourth generation). There was also space provided to write in an alternative choice.

**Mother-Adult Daughter Questionnaire (MAD).** The Mother and Adult Daughter measure (Rastogi, 2002) was used to measure various aspects of the mother - adult daughter relationship. The instrument consists of 25 items with 3 subscales. Eight of the items are multiple choices, and 17 of them are 5 point Likert-type scale. Nine items of the scale are aimed to measure the “connectedness” (sample item, ‘I can share my intimate secrets with my
mother’), 3 items aimed to measure the “interdependence” (sample item, ‘I often depend on my mother for advice’), and 6 items aimed to measure the “trust in hierarchy” (sample item, ‘Sometimes I will give in to my mother out of my respect for her’). The possible score range is 18 to 90. The “connectedness” subscale ranged from 9 to 45 for closeness, higher scores indicating greater closeness. The Cronbach’s alpha value for the connectedness subscale was, $\alpha = .915$. Scores of the “Interdependency” subscale ranged from 3 to 15 with higher scores reflecting greater dependency. The value of Cronbach's alpha for dependency was, $\alpha = .853$. Finally, scores of the “trust in hierarchy” subscale ranged from 6 to 30, with higher scores pointing to greater trust in hierarchy. The Cronbach’s alpha value was, $\alpha = .909$ for trust in hierarchy.

**Analysis Plan**

Analyses were conducted in three phases, 1) a confirmatory factor analysis was conducted to determine if the structure of the MAD measure is consistent when using the measure with Afro–Caribbean women; 2) invariance testing was then conducted on the first-order factors to determine generalizability of the measure between first and second-generation women; 3) the MAD structure was then tested to determine the existence of a second-order factor called Mother-Daughter relationship quality; and 4) the second-order factor was then tested to determine generalizability between first and second-generation Caribbean women.

Structural Equation Modeling (SEM) was used to analyze the data using MPlus 6.0. Model fit to follow criteria outlined by Hu and Bentler (1999). The comparative fit index (CFI), for which values greater than .90 reflect adequate fit (Kline, 2006) and values greater than .95 represent excellent fit (Tomarken & Waller, 2005), and the root mean square error of approximation (RMSEA), for which values less than .08 represent adequate fit (Quintana &
Maxwell, 1999) and values less than .05 represent excellent fit (Hancock & Freeman, 2001) were used to evaluate model fit. For invariance testing the null hypothesis of invariance across groups is expected to be statistically rejected, at least one of the following two criteria had to be met: \( \Delta \chi^2 \) significant at \( p < .05 \) (Byrne, 2001), or \( \Delta \text{CFI} > .01 \) (Cheung & Rensvold, 2002).

**Results**

Descriptive statistics (table 2.3) and bivariate correlations (table 2.1) of the study variables are presented. The MAD measure items were highly correlated across subscales.

**Normality and Missing data**

Non-normality of the Mother Adult Daughter Measure was considered. The values were selected between –2.0 and +3.5. According to Lei and Lomax, 2005, most researchers tend to categorize the absolute values of skewness and kurtosis less than 1.0 as slight non-normality; the values between 1.0 and about 2.3 as moderate non-normality; and the values beyond 2.3 as severe non-normality. The author evaluated the connectedness, interdependence and trust in hierarchy subscales that make up the MAD measure. Absolute skewness for the connectedness variables is below 1.0, but the values for two of the measures were above 2.3 and demonstrated severe non-normality (5.915 and 8.407 respectively). The interdependence measure demonstrated slight non-normality with skewness and kurtosis below 1.0. Lastly, the skewness of the trust in hierarchy measure was moderate (below 2.3), and kurtosis for the measure showed slight non-normality. As a result of non-normality, the robust maximum likelihood (MLR) estimator was used. MLR can adjust for standard errors and model fit to account for non-normality (Satorra and Bentler, 2010).
Confirmatory Factor Analysis

The original three subscales: connectedness, trust in hierarchy, and interdependence were developed by Rastogi (2002). To examine the factors structure a confirmatory factor analysis (CFA) was conducted (Table 2.2). The resulting model indicated an adequate fit, $\Delta \chi^2 (122) = 354.174, p < .001$, CFI = 0.938, RMSEA = 0.083 (90% CI = .073 to .093).

Standardized factor pattern coefficients in the connectedness model were .60 or higher (see Table 2.1) with two exceptions: 1) “If my mother ever needs anything, I help in whatever way I can even if it means making huge sacrifices”, and “My mother will always love me regardless of what I do”. Standardized factor pattern coefficients in the trust in hierarchy model were .70 or higher (see Figure 1) with one exception “Sometimes I will give in to my mother out of my respect for her.” All standardized factor pattern coefficients in the interdependence model were above .75. After low coefficients were removed, there was improvement in the resulting model fit, $\Delta \chi^2 (77) = 201.167, p < .001$, CFI = 0.963, RMSEA = 0.076 (90% CI = .063 to .089).

Second-order CFA

In comparison to first-order models with correlated factors, second-order factor models can provide a more parsimonious and interpretable model when researchers hypothesize that higher order factors underlie their data (Chen, Sousa, West 2005). The factor structure of an 18-item Mother Adult Daughter measurement was examined. It was hypothesized that there was a second-order factor structure for the Mother-Adult Daughter measurement, with connectedness, trust in hierarchy, and interdependence as the lower order factors, and relationship quality as the higher order factor (Figure 1.2.). This model exhibited inadequate fit to the data $\Delta \chi^2 (80) = 510.983, p < .001$, CFI = 0.873, RMSEA = 0.139 (90% CI = .128 to .151). Modification indices suggested allowing error terms to covary because of method
effects. The modified model had an adequate fit to the data $\Delta \chi^2 (75) = 260.077, p < .001$, CFI = 0.945, RMSEA - 0.094 (90% CI = .082 to .107) with all factor loadings being significant ($p < .05$) and above .640. In this model, all first-order factors loaded strongly onto the second-order factors (ranged from .673 to .901).

**First-order Invariance Testing**

A first-order invariance test was done to see the generalizability of the connectedness, interdependence, and trust in hierarchy subscales when used with first and second-generation Caribbean immigrants (Table 2.4). Following Little (1997), the constrained model and the unconstrained model were compared by using differences in CFI, and the chi-square statistics. Current standards in the field maintain a significant chi-square difference (Byrne, 2001), or a difference in CFI values of .01 or greater (Cheung & Rensvold, 2002) between the constrained model and the unconstrained model as indicating a meaningful difference in model fit across groups. The configural model (baseline model), then metric model (weak invariance) and lastly the scalar model (strong invariance) were consecutively tested.

**Baseline Model.** The configural model was initially tested. The first item’s loading was fixed to 1 and the factor mean was fixed to 0 for identification in each group. As shown in Table 2.4, the configural model had good fit, $\Delta \chi^2 (167) = 371.479, p < .001$, CFI = 0.940, RMSEA - 0.094 (90% CI = 0.082 to 0.107) and thus a series of model constraints were applied in successive models to examine potential decreases in fit resulting from measurement invariance.

**Metric Model.** Equality of the unstandardized item factor loadings across groups was then examined in a metric invariance model in which the factor variance was fixed to 1 in the first generation but was freely estimated in the second-generation; the factor means were fixed
to 0 in both groups. All factor loadings were constrained to be equal across groups; all
intercepts and residual variances were still permitted to vary across groups. The metric
invariance model fit well (Table 2.4) and did not result in a significant decrease in fit relative to
the configural model $\Delta \chi^2 (182) = 398.449, p < .001$, CFI = 0.937, RMSEA = 0.094 (90% CI = 0.074 to 0.098). The modification indices suggested no points of localized strain among the
constrained loadings. The fact that metric invariance (i.e., “weak invariance”) held indicates
that the items were related to the latent factor equivalently across groups, or more simply, that
the same latent factor was being measured in each group.

**Scalar Model.** Item intercepts across groups were then examined in the scalar model.
The factor variance and mean were fixed to 1 and 0, respectively, for identification in the first
generation, but the factor variance and mean were then estimated in the second-generation. All
factor loadings and item intercepts were constrained to be equal across groups; all residual
variances were still permitted to differ across group. The scalar invariance model fit well (Table
2.4) and did not result in a significant decrease in fit relative to the metric invariance model,
$\Delta \chi^2 (167) = 371.479, p < .001$, CFI = RMSEA = 0.088 (90% CI = 0.076 to 0.100). The factor
that partial scalar invariance (i.e., “strong invariance”) held indicates that both groups have the
same expected item response at the same absolute level of the trait, or more simply, that the
observed differences in item means between groups are due to factor mean differences only.

**Second-Order Structure of the Hypothesized MAD Model**

**Configural Invariance (Model 0).** A baseline model was obtained individually for
first and second-generation women (Figure 2.3). These models were combined to create a
configural model (M0), which will serve as the baseline model for the subsequent tests. Both
models in each group maintained the same structure and different estimates were allowed for
the corresponding parameters of each model in the different groups. As can be seen from Table 2.5 the \( \chi^2 \) statistic was 424.292 (df = 164), \( p < .001 \), RMSEA was .109, CFI was .922. These results indicated an adequate fit of the model to the data.

**Invariance of first-order factor loadings (Model 1).** In this level of testing for factorial invariance, constraints were put on the first-order factor loadings for the first generation group and the second-generation group. This level of invariance was nested within Model 0. As can be seen from Table 2.5, the chi-square difference test was significant, \( \chi^2 (\Delta df = 12) = 30.937 \). Examination of the modification indices suggested a point of localized strain such that model fit would be significantly improved by allowing the intercept for TrustH_5 (“I feel I can use my mother’s wisdom as a resource when making decisions.”) to differ between groups. Item TrustH_5 was allowed to differ between groups, the chi-square difference test was not significant, \( \chi^2 (\Delta df = 11) = 7.044 \). These results indicated that the first-order factor loadings were invariant across first generation and second-generation (Table 2.5).

**Invariance of second-order factor loadings (Model 2).** Constraints were placed on the first and second-order factor loadings in both the first and second-generation group. The chi-square difference test was not significant, \( \chi^2 (\Delta df = 2) = .99, ns. \) These results indicated that the second-order factor loadings were invariant across the working and nonworking groups (Table 2.5).

**Invariance of intercepts of measured variables (Model 3).** This model has invariant first-order factor loadings, second-order factor loadings, and item intercepts. This was done to detect potential differences in the intercepts of the measured variables between groups when only the first-order factors are involved.
The chi-square difference test was not significant, $\chi^2(\Delta df = 14) = 17.674$. These results indicated that the second-order factor loadings were invariant across the working and nonworking groups (Table 2.5).

**Invariance of intercepts of first-order latent factors (Model 4).** Model four has invariant first-order factor loadings, second-order factor loadings, item intercepts, and first-order factor intercepts. This condition was required to detect potential differences in the intercepts of the measured variables between groups when only the first-order factors were involved. The chi-square difference test between Model 4 and Model 3 was significant, $\chi^2(\Delta df = 1) = 1.369$. There was no difference between the working and nonworking groups on the intercepts of the measured variables (Table 2.5).

**Invariance of disturbances of first-order factors (Model 5).** In model 5 first-order factor loadings, second-order factor loadings, item intercepts, first-order factor intercepts and first-order factor disturbances were invariant. I was unable to determine the chi-square difference test between Models 4 and 5 because of a negative difference in degrees of freedom ($\Delta df = -1$). Given that there was no substantial difference in CFI (.923 vs. .917), I concluded that there was no appreciable difference in the intercepts of the first-order factors across the two groups (Table 2.5).

**Invariance of residual variance of observed variables (Model 6).** In testing all first- and second-order factor loadings, the intercepts of the measured variables and the first-order factors, disturbances of the first-order factors, and residual variances of the measured variables were constrained. The chi-square difference test between Model 7 and Model 6 was significant, $\chi^2(\Delta df = 19) = 46.431, p < .001$, indicating a significant difference between the working and nonworking group on the residual variance of the observed variables.
Once again, there was no substantial difference in CFI (.909 vs. .917), it was concluded that there was no appreciable difference in the residual variances of the measured variables (Table 2.5).

**Discussion**

The Mother Adult Daughter Measure (MAD) was explored to determine its generalizability to first and second-generation Afro-Caribbean women by testing four specific hypotheses: The following hypothesis were examined: 1) MAD subscales work with Afro-Caribbean women; 2) MAD subscales are generalizable across generational status; 3) MAD subscales can be accounted for by one common underlying higher order construct called mother-adult daughter relationship quality (Figure 2.1), and; 4) the higher order factor is generalizable across generational status.

The MAD measure was able to measure daughter’s report of her relationship with her mother. Invariance testing provided evidence for the cross-cultural replicability of the MAD subscales of connectedness, interdependence, and trust in hierarchy with Afro-Caribbean women, as well as demonstrating factor invariance according to generational status on the first-order factors (Figure 2.3). The higher order factor called relationship quality that was developed from the subscales connectedness, interdependence, and trust in hierarchy was also found to be generalizable among first and second-generation women (Figure 2.3). These findings raise important questions about collectivistic measures of family relationships and the similar ways that these relationships are perceived between immigrants of different generational status, and brings into question the ways that these relationships are defined. Specifically, although interdependence, connectedness and trust in hierarchy are measured as different concepts, they are more closely associated than previously believed.
Given that this is the first study fully validating a higher order factor of the MAD measure within group and across generational status, one should be cautious about drawing substantial conclusions from it, and further research is required. Most notably, our samples only included a relatively small sample of women in the first and second-generation group, and also included women from different countries in the Caribbean. These limitations show limited, but important first steps in the assessment of this measure. Also, potential bias may be introduced by asking adult participants to retrospectively report experiences that are from their childhood (Schwarz, 1999).

**Conclusion**

Overall, this study has provided supporting evidence for the higher order factor structure of mother-daughter relationship quality, as well as demonstrating measurement invariance across generational status. Future research should investigate the question of the replicability of the higher order factor structure of relationship quality by using a nationally representative dataset of Afro-Caribbean women and also seeking generalizability for not only generational status but also across.
Figure 2.2. Structure for the MAD measure.

Figure 2.1. Hypothesized Second-Order Structure of the MAD Measure for First-Generation and Second-Generation Daughters.
Table 2.1

**Bivariate Correlation Between Mother Adult Daughter (MAD) Subscales (N = 285).**

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</tbody>
</table>

*Note:* *p < .05. **p < .01. Connect = connectedness; Trust = trust in hierarchy; Inter = interdependence
TABLE 2.2

Factor Pattern Coefficients for Confirmatory Factor Analysis of Mother Adult Daughter Measure.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>Question</th>
<th>λ (SE)</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectedness</td>
<td>1</td>
<td>I can share my intimate secrets with my mother.</td>
<td>.77 (.03)</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>My mother can share her intimate secrets with me.</td>
<td>.65 (.04)</td>
<td>.42</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>I can share my personal feelings with my mother.</td>
<td>.88 (.02)</td>
<td>.77</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>My mother can share her personal feelings with me.</td>
<td>.72 (.03)</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>I can share my opinions and values with my mother.</td>
<td>.78 (.03)</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>My mother can share her opinions and values with me.</td>
<td>.69 (.03)</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>If my mother ever needs anything, I help in whatever way I can even if it means making huge sacrifices.</td>
<td>.55 (.04)</td>
<td>.30</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>My mother will always love me regardless of what I do</td>
<td>.54 (.05)</td>
<td>.30</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>I consider my mother and I to be...</td>
<td>.75 (.03)</td>
<td>.57</td>
</tr>
<tr>
<td>Trust in Hierarchy</td>
<td>1</td>
<td>My mother always knows best.</td>
<td>.82 (.02)</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>My mother always knows what is good for me.</td>
<td>.76 (.03)</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>I do what my mother suggests because it takes away the hassle of having to figure it out for myself.</td>
<td>.75 (.03)</td>
<td>.57</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>I always trust my mother’s judgment.</td>
<td>.87 (.02)</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>I feel I can use my mother’s wisdom as a resource when making decisions.</td>
<td>.79 (.03)</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Sometimes I will give in to my mother out of my respect for her.</td>
<td>.58 (.04)</td>
<td>.34</td>
</tr>
<tr>
<td>Interdependence</td>
<td>1</td>
<td>If I ever need any kind of help, I do not hesitate to ask my mother for advice.</td>
<td>.86 (.02)</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>I often depend on my mother for advice.</td>
<td>.79 (.02)</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>I feel the need to consult my mother when making a hard decision.</td>
<td>.75 (.03)</td>
<td>.56</td>
</tr>
</tbody>
</table>

Note. Model fit Δχ² (122) = 354.174, p < .001, CFI = 0.938, RMSEA - 0.083 (90% CI = .073 to .093)
TABLE 2.3

Descriptive Statistics and Internal Consistency Estimates for Study Variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Range</th>
<th>Possible Range</th>
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<tr>
<td>Interdependence</td>
<td>11.560</td>
<td>3.520</td>
<td>.853</td>
<td>3-15</td>
<td>3-15</td>
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<tr>
<td>Connectedness</td>
<td>35.000</td>
<td>8.720</td>
<td>.909</td>
<td>4-45</td>
<td>4-45</td>
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<tr>
<td>Trust in Hierarchy</td>
<td>22.200</td>
<td>5.800</td>
<td>.902</td>
<td>6-30</td>
<td>6-30</td>
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Table 2.4

First-order factor Invariance of Mother Adult Daughter Measures.

<table>
<thead>
<tr>
<th>Models</th>
<th>Model Comparison</th>
<th>χ²</th>
<th>df</th>
<th>Δχ²</th>
<th>Δdf</th>
<th>CFI</th>
<th>RMSEA (90%) CI</th>
<th>SRMR</th>
<th>ΔCFI</th>
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</thead>
<tbody>
<tr>
<td>Configural invariance</td>
<td>Model 1</td>
<td>371.479</td>
<td>167</td>
<td>-</td>
<td>-</td>
<td>.940</td>
<td>.095 (.082 - .108)</td>
<td>.071</td>
<td>-</td>
</tr>
<tr>
<td>Metric invariance</td>
<td>Model 2 vs. Model 1</td>
<td>398.449</td>
<td>182</td>
<td>26.97</td>
<td>15</td>
<td>.937</td>
<td>.094 (.082 - .107)</td>
<td>.081</td>
<td>.003</td>
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<tr>
<td>Scalar invariance</td>
<td>Model 3 vs. Model 1</td>
<td>423.373</td>
<td>199</td>
<td>51.894</td>
<td>32</td>
<td>.935</td>
<td>.092 (.079 - .104)</td>
<td>.102</td>
<td>.005</td>
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</table>

Note. RMSEA = root mean squared error of approximation; CFI = Comparative fit index; N = 285; 156 vs.129.
### Table 2.5

**Summary of Fit Statistics for Testing Measurement Invariance of Second-Order Factor Model of MAD Measure.**

<table>
<thead>
<tr>
<th>Models</th>
<th>$\chi^2$</th>
<th>df</th>
<th>Comparison</th>
<th>$\Delta \chi^2$</th>
<th>$\Delta df$</th>
<th>CFI</th>
<th>$\Delta$CFI</th>
<th>RMSEA(90%CI)</th>
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</thead>
<tbody>
<tr>
<td>Model 0. Configural model</td>
<td>424.292</td>
<td>164</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.922</td>
<td>-</td>
<td>.109 (.096-.121)</td>
</tr>
<tr>
<td>Model 1. First-order factor loadings invariant</td>
<td>455.229</td>
<td>176</td>
<td>M1 - M0</td>
<td>30.937</td>
<td>12</td>
<td>.917</td>
<td>-.005</td>
<td>.109 (.096-.121)</td>
</tr>
<tr>
<td>Model 1. First-order factor loadings invariant partial</td>
<td>431.336</td>
<td>175</td>
<td>M1-M0</td>
<td>7.044</td>
<td>11</td>
<td>.924</td>
<td>.002</td>
<td>.104 (.092-.117)</td>
</tr>
<tr>
<td>Model 2. Invariance of first and second-order factor loadings</td>
<td>432.326</td>
<td>177</td>
<td>M2 - M1</td>
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<td>2</td>
<td>.924</td>
<td>.000</td>
<td>.104 (.091-.116)</td>
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<tr>
<td>Model 3. Invariant first order factor loadings, second order factor loadings, item intercepts</td>
<td>450.263</td>
<td>191</td>
<td>M3 - M2</td>
<td>17.674</td>
<td>14</td>
<td>.923</td>
<td>-.001</td>
<td>.100 (.088-.112)</td>
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<tr>
<td>Model 4. Invariant first order factor loadings, second order factor loadings, item intercepts, and first order factor intercepts</td>
<td>451.632</td>
<td>192</td>
<td>M4 - M3</td>
<td>1.369</td>
<td>1</td>
<td>.923</td>
<td>.000</td>
<td>.100 (.088-.112)</td>
</tr>
</tbody>
</table>

*Note.* RMSEA = root mean squared error of approximation; CFI = Comparative fit index; N = 285; First-Generation=156 vs. Second-Generation=129.
Figure 2.3. Results of the Second-Order MAD Factor Model.
CHAPTER 3

ACCULTURATION, MOTHER-ADULT DAUGHTER RELATIONSHIPS, RISK COMMUNICATION, AND RISK BEHAVIOR: GENERATIONAL STATUS AS A MODERATOR OF MOTHER-ADULT DAUGHTER RELATIONSHIP AS A MEDIATOR

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2 Muruthi, B.A., Bermudez, J.M., Oshri, A., Lewis, D., & Gale, J. To be submitted to *Journal of Family Relations*
Abstract

Acculturation level is a predictor of risk outcomes for immigrant youth. Parent-child relationships have been shown to mediate these associations, but few studies have observed how these concepts differ between first and second-generation Afro-Caribbean women. In this study of 285 Afro-Caribbean daughters, 129 were born in the U.S. (45.3%), and 156 were born in the Caribbean (54.7%). Structural equation modeling was used to test associations between daughters’ acculturation, generational status, transnational behavior, risk behavior and protective outcomes. These associations were expected to be partly indirect via daughter’s perceptions of her relationship with her mother (Connectedness, Trust in Hierarchy, and Interdependence). Results indicate that transnational behavior was associated with positive mother-daughter relationships and lower reports of risk behavior for first and second-generation Afro-Caribbean women. Daughters’ report of high acculturation was associated with daughters’ report of lower risk behavior in the more parsimonious model (the model that includes first and second-generation women) and in the first generation model. Acculturation did predict decreased connectedness and reports of increased interdependence to the mothers for second-generation daughters.
Introduction

Afro-Caribbean people make up the largest population of immigrants of African descent in the U.S. (Logan, 2007), yet little is known about their health outcomes and practices (Saint-Jean, Dévieux, Malow, Tammara, & Carney, 2011). Research on this population is often done in comparison to their African-American counterparts, thus underscoring a true understanding of their unique experiences as Black immigrants in the U.S. (Saint-Jean, Dévieux, Malow, Tammara, & Carney, 2011). The family unit often impacts immigrant health outcomes and practices. For example, the family system has been proven to be the most influential factor at ameliorating risk behaviors, including substance use and sexual risk, among immigrant youth (Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011; Santisteban & Mena, 2009; Szapocznik, Prado, Burlew, Williams, & Santisteban, 2007). However, limited studies on family protective factors account for cultural processes within the family unit. It is important for research to specify and test the ways in which cultural and family factors interact to minimize risk for problematic youth outcomes (Hurwich-Reiss & Gudiño, 2015). This study will take a closer look at mother-daughter relationships among Afro-Caribbean families living in the U.S.

Studies on mother-daughter relationships and their effects on daughters’ well-being often focuses on young children and adolescents but rarely on adult daughter outcomes (Onayli & Erdur-Baker, 2013) or their retrospective reports of their relationships with their parents. Daughters’ positive perceptions of their relationship quality, closeness, communication, and satisfaction in their relationship with their mother are examples of protective factors against daughters’ future precocious events (Merten & Henry, 2011). Mothers’ level of interaction with their daughters has also been proven to affect their self-identity and to predict daughters’
behavior in their social environments (Onayli & Erdur-Baker, 2013). Also, few studies address parenting relationships and how they might vary among immigrant generational groups (Palacios, Guttmannova, & Chase-Lansdale, 2008).

The immigrant paradox had been used in research to explain the difference in risk outcome trajectories for first generation immigrants when compared to their later generation peers. According to this assumption, first generation immigrants have better health outcomes and lower risk behaviors than their second and third generation peers. What is less clear is how parent-child relationship quality differs among the first and later generation children and how relationship quality relates to children’s risk behaviors and protective factors. Further, little is known about the exact pathways between acculturation, parent-child relationships, and risk behavior and communication about risk among Afro-Caribbean immigrants. This information is especially crucial because parent-child relationships and communications about risky behaviors may significantly differ between U.S. and foreign-born immigrants (Maldonado-Molina, Reingle, Jennings, & Prado, 2010; Sam, Vedder, Liebkind, Neto, & Virta, 2008). To this end, some researchers have proposed an increased understanding of how demographic characteristics, such as generational status, may affect the experience of Black immigrant women and their risk outcomes (e.g., Hurwich-Reiss & Gudiño, 2015).

Generational status is a predictor of family cohesion (Chang, Natsuaki & Chen, 2013; Lee & Liu, 2001), family engagement (Chappin and Brook, 2001) and other components of child well-being among immigrants. One explanation given for the outcomes related to the immigrant paradox for the first generation immigrants is their low acculturation in the receiving country. Lower acculturation has been linked to better outcomes in immigrant families while more acculturation has been linked to riskier behaviors (Abraído-Lanza, Chao,
& Flórez, 2005). Nevertheless, there is conflicting evidence on the interactions between the attributes of mother-daughter relationships and health behavior within family research, especially among minority populations such as Afro-Caribbean immigrants (Griffith & Grolnick, 2014).

The purpose of this study is to investigate cultural factors that may increase or decrease Afro-Caribbean immigrants’ vulnerability to risk behavior and the role of parent–child relationships as a protective factor of those behaviors. Specifically, this study considers the influence of acculturation, transnational behavior, and the immigrant paradox on communication about risk and risk outcomes between first and second-generation Afro-Caribbean women. It is hypothesized that: 1) More acculturated daughters will have more risk and less communication with mother; 2) More acculturated daughters will have negative relationships with mother; 3) Transnational behavior will be associated with positive mother-daughter relationships more communication and lower risk behaviors; 4) Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationship; 5) More acculturated daughters will have less risk outcomes and more communication with mother via positive relationships with their mother; 6) More acculturated first and second-generation daughters will have more risk and less communication with mother; 7) More acculturated first and second-generation daughters will have negative relationships with mother; 8) More acculturated first and second-generation daughters will have less risk outcomes and more communication with mother via positive relationships with their mother;
9) Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationships for first and second-generation women. Findings from this study are used to propose a culturally relevant conceptual model for understanding risk behaviors within Black immigrant communities.

**Literature Review**

Previous scholarship has noted that mother-daughter relationships are consequential when it comes to the positive developmental trajectories of daughters’ well-being. The influence of mothers has shown to have a positive effect on adolescents’ decision-making about their sexual behavior (Romo, Bravo, Cruz, Rios, & Kouyoumdjian, 2010). Also, research on mother-daughter dyads shows that higher quality of relationship with mothers mediated the relationship between daughters’ reported support and her lower drug use scores (Niyonsenga et al., 2012; Moore & Chase-Lansdale, 2001). A mother's positive relationship with her daughter has also been shown to have a protective influence on her daughter's heavy drinking behaviors (Niyonsenga et al., 2010). Indeed, healthier and functional relationships may increase daughter's commitment to her relationships with her mother, thereby reducing her probability of risk behavior (Niyonsenga et al., 2010).

**Acculturation, Risk Outcomes and Protective Factors**

Acculturation describes the degree to which people adapt to a host culture both socially and psychologically (Berry, 1997; Berry 2005). It is used in literature to imply the contextual and individual level processes that occur as individuals assimilate into a new culture (Berry, 2005). Acculturation has been linked to high-risk behavior (Abraído-Lanza, Chao, & Flórez, 2005) and is one reason for family conflict in immigrant families (Jones, Pezzi, Rodriguez-Lainz, & Whittle, 2016; Schinke, Schwinn, Hopkins, & Wahlstrom, 2016). Children typically
acculturate more rapidly than adults and intergenerational conflict can emerge when parents acculturate at a slower pace (Schofield, Parke, Kim, & Coltrane, 2008). The difference in acculturation rates between immigrant generations, referred to as the acculturation gap (Ayers, 2016; Telzer, Yuen, Gonzales, & Fuligni, 2016), can be a risk factor for deviant behaviors. Positive parent–child relationships can reduce the adverse effects of the acculturation gap on individual behaviors (Bui, 2013; Marsiglia, Nagoshi, Parsai, Booth, & Castro, 2014). According to Nelson and colleagues (2015), children with immigrant parents will experience more variability in their levels of conflict with their parents because of differences in acculturation, when compared to those with non-immigrant parents.

The effect of the acculturation gap on the parent-child relationship quality can also be a predictor of the decreased communication in parent-child dyads. Decreased communication is often more pronounced among immigrant families than non-immigrant families (Baolian Qin, 2006). Immigrant Caribbean parents are also less likely to openly acknowledge substance use and other risk behaviors observed among their children (Marlow, Wardle & Waller, 2009). This struggle to communicate clearly can be a barrier to effective communication about drug use and reproductive choices because Afro-Caribbean mothers are often the primary source of information for their daughters (Muruthi et al., 2016; Marlow, Wardle & Waller, 2009).

It has been noted that many Afro-Caribbean mothers rarely communicate with their daughters about risk behaviors because of the fear that their daughters will perceive their efforts as permission to engage in the behaviors (Romo, Bravo, Cruz, Rios, & Kouyoumdjian, 2010). According to one study, Caribbean girls reported that negative parental reactions and physical abuse might occur if they discussed risk behavior topics with their mothers (Hutchinson et al., 2012). Another study on the Human Papilloma Virus (HPV) vaccine
showed that ethnic minority women were concerned about giving their children the vaccine at the recommended age of thirteen, citing that this age was too young (Marlow, Wardle and Waller, 2009). Specifically, Caribbean mothers in the study reported that giving the vaccine to their girls at a younger age may encourage them to have sex earlier and that it would increase their probability to contract other sexually transmitted diseases not curable by the HPV vaccine. These findings highlight the complexities that may arise when daughters and their mothers communicate about sexually related behaviors.

**Generational Status, Parent-Child Relationships Risk Outcomes and Protective Factors**

Family cohesion can be a protective factor against risk for first generation children (Chang, Natsuaki & Chen, 2013), yet little work has explored this phenomenon while accounting for the assumption of the immigrant paradox. The central assumption addressed here is that first generation individuals have better health and behavior outcomes than their second-generation counterparts. If first generation immigrants have fewer risk outcomes when compared to second-generation peers, then it would be expected that their family relationships would provide stronger buffering effects to adverse experiences. For example, in a study of familialism among Latino immigrants, family cohesion was highest among first generation immigrant children when compared to both their second and third generation counterparts (Fox, Entringer, Buss, DeHaene, & Wadhwa, 2015). Similar findings were found among first generation Asian children (Chang, Natsuaki, & Chen, 2013; Lee & Liu, 2001).

There have been mixed findings of the effects of parent-child relationships across different immigrant generations. According to Fuligni (1998), generational status did not have a significant effect on reported conflict nor feelings of solidarity between adolescents and their parents. However, the same study revealed that later generations were more likely to disagree
with their parents openly and had earlier expectations for autonomy than did earlier
generations. Conversely, Chappin and Brook (2001) found that first generation Black and
Puerto Rican adolescent immigrants who reported strong bonds with their parents were less
likely to abuse substances and maternal warmth was negatively associated with substance use.
These mixed findings underline the need for more nuanced understandings of family cohesion
and its relationship with risk behaviors among immigrants with varying generational status.

**Transnational Behavior as a Buffer of Acculturation effects**

Transnationality is a concept that refers to the maintenance of multiple social identities
with attributes from both the receiving and sending nations (Schiller, Basch, & Blanc, 1995).
Given the proximity of the Caribbean region to North and South America, Afro-Caribbean
immigrants have easier access to their native lands than most immigrants (Saint-Jean et al.,
2011). Therefore, it is common for them to maintain strong ties with their family of origin and
other social networks in their native nations (Gouthourne & Solomos, 2004). Afro-Caribbean
parents often send their children to spend summers and other school breaks in their parents’
native country (Baptiste, Hardy & Lewis, 1997; Waters, 2001; Reynolds, 2011), a move that is
grounded toward the creation and maintenance of transnational ties with their relatives, as well as
to strengthen children’s cultural awareness (Hine-St. Hilaire, 2006).

These transnational activities increase the bonds between family in the native and host
countries (Reynolds 2006a; 2006b) and serve as a protective factor that moderates the effects
of acculturation on the parent-child relationship (Hawkins, Catalano, Miller, 1992; Saint-Jean
et al., 2011). Adhering to cultural norms of the native country has been proven to decrease
exposure to risk behavior in the receiving country. For example, higher levels of Latino
cultural orientation were related to greater sexual self-efficacy and fewer sexual partners for
female adolescents and greater condom use self-efficacy for both males and females (Ma et al., 2014). Similarly, when looking at Afro-centrism and African-American youth, youth with higher Afrocentric beliefs started consuming alcohol at a later age than their counterparts. Thus, Afrocentrism delayed alcohol onset among African-American youth (Nasim et al., 2007).

**Enclave Membership, Risk and Protective Factors**

It is important to consider enclave membership when looking at acculturation, transnational behavior, generational status, and risk and protective outcomes. Research suggests that many adults settling in ethnically concentrated areas may not acculturate much at all (Schwartz, Pantin, Sullivan, Prado, & Szapocznik, 2006; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Immigrants can live in their host society without interacting with, or acquiring the practices, values, or identifications of the receiving country (Schwartz, et al., 2006). This orientation can promote strong family bonds as second-generation children remain oriented to their cultural heritage (e.g., Unger, Ritt-Olson, Soto, & Baezconde-Garbanati, 2009). For example, Mexican Americans who live in proximity to high-density Mexican immigrant areas report more favorable health outcomes than those who live in areas with fewer immigrants (Eschbach, Ostir, Patel, Markides, & Goodwin, 2004). Conversely, living in an enclave can also promote a lack of access to social services and increase exposure to poverty (Wakefield & Poland, 2005). This present study uses living in a Caribbean enclave as a control variable for risk behavior and communication about risk with mothers.
Current Study

The purpose of this study is to consider the influence of acculturation, transnational behavior, and the immigrant paradox on communication about risk and risk outcomes between first and second-generation Afro-Caribbean women. It is hypothesized that: 1) More acculturated daughters will have more risk and less communication with mother; 2) More acculturated daughters will have negative relationships with mother; 3) Transnational behavior will be associated with positive mother-daughter relationships more communication and lower risk behaviors; 4) Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationship; 5) More acculturated daughters will have less risk outcomes and more communication with mother via positive relationships with their mother; 6) More acculturated first and second-generation daughters will have more risk and less communication with mother; 7) More acculturated first and second-generation daughters will have negative relationships with mother; 8) More acculturated first and second-generation daughters will have less risk outcomes and more communication with mother via positive relationships with their mother; 9) Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationships for first and second-generation women.

Method

Participants

Participants in the present study were 285 women who identify themselves as being of Afro-Caribbean descent ($M = 30.10$, $SD = 10.260$, 76.9% between the ages of 18-35). Data was gathered via an online and paper survey. More than half (65.3%) of the participants had some form of degree beyond high school (22.9% some college, 12.1% associates degree, 27.1% bachelors degree, 15.3% advanced degree). In terms of race, 79.3% were Black, 6.6%
Hispanic, .3% were Asian and 12.4% identified themselves as other. Daughters born in the U.S. (129 participants) comprised of 54.7% of the sample, 45.3% (156), were born in the Caribbean. The most common countries of origin for participants were Jamaica (15.6%), Saint Vincent and Grenadines (11.2%), Haiti (9.1%), and many participants identified with more than one country (16.1%). When reporting socioeconomic status, 36% reported income below $20,000; 40% between $20,001 and $60,000; 15.6% between $60,000 and $100,000; 3.5% between $100,001 and $140,000; 1.2% between $140,001 and $180,000; and .6% over $180,001. The majority of women reported living in a Caribbean neighborhood (53%). Twenty-one percent lived in an African-American neighborhood, 13.3% in a White neighborhood, 1.4% in an African neighborhood, and 9.5% in a diverse neighborhood.

**Procedure**

Upon receiving approval from the University Institutional Review Board (Appendix B), a snowball sampling procedure was used, as participants are asked to refer any friends to the study who meet the criteria for participation. Surveys were filled out either online (Qualtrics) or on paper. Each participant was asked to sign a consent form and was given the opportunity to stop participation anytime throughout the research process. Each person was given an ID number to protect their identity.

**Measures**

**Generational status.** One categorical question was used to measure the generational status of all women in the study. Participants were asked to select one of the following answers: 1) I was born in the Caribbean (first-generation), 2) I was born in the U.S. but my mother was born in the Caribbean (second-generation), 3) I was born in the U.S and my mother was born in the U.S. but my grandparents were born in the Caribbean (third-generation), and 4)
I was born in the U.S., my mother was born in the U.S., my grandparents were born in the U.S., but my great grandparents were born in the Caribbean (fourth-generation). There was also space provided to write in an alternative choice. Only the first and second-generation categories were used for this study.

**Acculturation Rating Scale for Caribbean Americans (ARSCA).** The ARSCA is based on the Acculturation Rating Scale for Mexican Americans II (ARSMA-II) which measures immigrants’ orientation to their culture of origin and their orientation towards the host Anglo American culture (Cuellar, Arnold, and Maldonado, 1995). There are two subscales of this measure: Anglo Orientation Scale (AOS) and Mexican Orientation Scale (MOS). This scale was modified by Booth (2010) to fit the Caribbean population. The MOS was adjusted for the Afro-Caribbean immigrant group and is identified in this study as the Caribbean Orientation Scale (COS).

The Anglo Orientation Scale (AOS) measures the extent to which immigrants acquire new identity in the host American culture ($\alpha = .838$). Examples of this 13-item scale include: 1) My family cooks American foods and 2) I like to identify myself as an American. The Caribbean Orientation Scale (COS) measures the degree to which Caribbean immigrants adhere to the culture of origin or exhibit resistance or acceptance of the host Anglo American culture ($\alpha = .818$). Examples of this 17 item scale include 1) I speak Patois/Creole/Spanish and 2) I enjoy listening to Caribbean music. Since Caribbean immigrants also have the option of identifying as African-American the following questions were also added by the author: 1) I associate with African-American people, 2) My friends while I was growing up were African-American, and 3) My friends now are African-American.
**Mother-Adult Daughter Questionnaire (MAD).** Adult Daughter questionnaire (MAD) measures the adult daughter’s perception of connectedness ($\alpha = .915$), interdependence ($\alpha = .853$), and trust in hierarchy ($\alpha = .909$) in her relationship with her mother (Rastogi, 2002). Given that expectations and norms of intergenerational relationships vary across cultures, the MAD measure attempts to capture these differences in the daughter-mother relationship. An example of the items in the scale include, 1) I always trust my mother’s judgment and 2) Sometimes I will give in to my mother out of my respect for her.

**Cumulative Risk Communication Scale.** The cumulative risk communication scale is a thirty-one item scale that includes the Parent – Child Communication About Sex Scale (Somers & Canivez, 2003), and 10 drug communication items adapted form the Targeted Parent-Child Communication about Alcohol Scale (TPCCA) (Miller-Day & Kam, 2010). Twelve categorical items (1 = no, 2 = yes) were accumulated to make a continuous scale of sex risk behavior ($\alpha = .997$). Question examples include “Have you ever have sex without a condom”, “Have you ever had an STD”, and “Are you worried that you might get HIV in the future”. TPCCA adapted example items include “….Has given me rules to obey about drinking alcohol.” adapted to “….Has given me rules to obey about using drugs.” The stem “How much do you agree with the following about your mother?” was used to answer all items ($\alpha = .947$).

**Cumulative Risk behavior.** Question examples include “Have you ever have sex without a condom”, “Have you ever had an STD”, and “Are you worried that you might get HIV in the future”. One question was also used to determine marijuana use, “During your life, how many times have you used marijuana?”. 
**Transnationalism.** One question was used to measure transnational behavior, “My contact with the Caribbean has been…”. Participants are asked to select an answer from the continuous scale (1 = not at all to 5 = extremely often).

**Demographics.** The ethnic make-up of the neighborhood that women were raised was used as a covariate in the model in order to detect residents in a Caribbean enclave. One question was used “The population of the neighborhood that I grew up in was mostly… Participants are asked to select one of the following answers: Caribbean, African-American, African, Caucasian or other.

**Analysis Plan**

Structural Equation Modeling (SEM) was used to analyze data using MPlus 7.2 (Muthén & Muthén, 1998–2014). Model fit will follow criteria outlined by Hu and Bentler (1999). Structural equation modeling was used to examine the indirect associations between Acculturation and risk behaviors/communication about risk via mother-daughter relationships (connectedness, trust in hierarchy, and interdependence) as well as the moderating influence of transnational behavior on the associations between Acculturation and mother-daughter relationships between first and second-generation Caribbean women. Indirect links were assessed with the product-of-coefficients (β*α) approach (Fritz & MacKinnon, 2007). Conditional indirect effects were assessed using a procedure described by Preacher et al. (2007) and moderated mediation pathways were assessed by the conditional indirect approach.
Results

Correlations

Descriptive statistics (Table 3.1) and bivariate correlations (Table 3.2.) are presented. Living in a Caribbean enclave was negatively correlated with transnational behavior ($r = -0.21$, $p < .01$) and positively correlated with daughters acculturation ($r = 0.33$, $p < .01$) and her risk behavior ($r = 0.13$, $p < .05$). Risk Communication was positively correlated with transnational behavior ($r = 0.18$, $p < .01$). Risk behavior was negatively correlated with transnational behavior ($r = -0.37$, $p < .01$).

Transnational Behavior, Acculturation, Mother-Daughter Relationships, Risk Outcomes and Protective Factors

A structural equation model (SEM) was used to examine the association between acculturation and risk (substance use, sex risk) and protective factors (communication about sex and substances) via mother-daughter relationships (interdependence, trust in hierarchy, and connectedness) (Figure 3.4 and Figure 3.5). Living in a Caribbean enclave was included as a covariate. Model fit was very good: $\chi^2(162) = 452.27$, $p < .01$; CFI = .916; RMSEA = .082; SRMR = .060 (Hu & Bentler, 1999). Living in a Caribbean enclave was linked to high-risk behavior for Caribbean women ($\beta = 0.12$; $p < .05$). Below are the results for each hypothesis.

**H1: More acculturated daughters will have more risk and less communication with their mother.** High acculturation was associated with lower reports of daughters’ risk behavior ($\beta = .22$; $p < .01$).

**H2: More acculturated daughters will have lower relationship quality with their mother.** Acculturation was associated with more connectedness ($\beta = .19$; $p < .01$) and interdependence ($\beta = .28$; $p < .05$) with mother, but was not associated with daughters’ trust in hierarchy.
H3: Transnational behavior will be associated with positive mother-daughter relationships more communication and lower risk behaviors. Reports of frequent transnational behavior was associated with more interdependence ($\beta = .28; p < .01$), trust in hierarchy ($\beta = .31; p < .01$), and connectedness ($\beta = .29; p < .01$) with mother. Transnational behavior was also associated with lower reports of risk behavior ($\beta = -.35; p < .05$) and higher reports of communication with mother about risk ($\beta = .13; p < .05$).

H4: Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationship. In order to test the interaction between acculturation and transnational behavior on mother-daughter relationships, the conditional indirect approach was used (Preacher et al., 2007). The interaction of transnational behavior and acculturation was not associated with mother-daughter relationships. Thus transnational behavior did not buffer the effects of acculturation on the mother-daughter relationship.

H5: More acculturated daughters will have less risk outcomes and more communication with mother via positive relationships with their mother. The product-of-coefficients ($\alpha*\beta$) approach (Fritz & MacKinnon, 2007) was used to test the indirect paths from acculturation to each risk communication and behavior outcomes via mother-daughter relationships (connectedness, interdependence, and trust in hierarchy) for Caribbean daughters. No indirect associations were found in the model.

Transnational Behavior, Acculturation, Mother-Daughter Relationships, Risk Outcomes Protective Factors and Generational Status

A multiple-group SEM was used to examine the association between acculturation, risk behavior and protective factors (communication about risk) via mother-daughter relationships and how these associations differ across first and second-generation Afro-Caribbean women.
Living in a Caribbean enclave was included as a covariate. Model fit was very good: $\chi^2(341) = 582.570, p < .01$; CFI = .932; RMSEA = .073; SRMR = .067 (Hu & Bentler, 1999). Living in an enclave was not associated with risk behavior or risk communication for first or second-generation women.

**H6: More acculturated first and second-generation daughters will have more risk and less communication with mother.** In the first generation acculturation had an association with decreased risk outcomes ($\beta = .24; p < .05$), but no association with the mother-daughter relationships or risk communication.

**H7: More acculturated first and second-generation daughters will have negative relationships with mother.** Reports of frequent transnational behavior was associated with more interdependence ($\beta = .28; p < .01$), trust in hierarchy ($\beta = .28; p < .01$), and connectedness ($\beta = .28; p < .01$) with mothers for first generation daughters. Similar findings were shown for second-generation daughters for interdependence ($\beta = .23; p < .05$) and trust in hierarchy ($\beta = .26; p < .05$), but not for connectedness ($\beta = .24; p < .05$). For second-generation women acculturation was associated with more connectedness ($\beta = .36; p < .01$) and, interdependence ($\beta = .25; p < .01$), but not associated with trust in hierarchy ($\beta = .14; p = \text{n.s.}$) in the mother-daughter relationships.

**H8: More acculturated first and second-generation daughters will have fewer risk outcomes and more communication with mother via positive relationships with their mother.** Indirect associations were tested across generational status. First and second-generation daughters’ report of their relationship with her mother (connectedness, trust in hierarchy, and interdependence) was used a mediator of acculturation and risk behavior and
risk communication outcomes. No indirect associations were found in either model. Conditional indirect effects were also tested for first and second-generation women.

**H9: Transnational behavior will buffer the negative effect of acculturation on the mother-daughter relationships for first and second-generation women.** Chi-square difference tests revealed that the path from transnational behavior to trust in hierarchy ($\Delta \chi^2 = .275; \Delta df=1$), connectedness ($\Delta \chi^2 = .244; \Delta df=1$), and interdependence ($\Delta \chi^2 = .441; \Delta df=1$) were moderated by generational status, with similar associations for first and second-generation women. Generational status also moderated the relationship between transnational behavior and risk behavior, where second-generation women reported less risk behavior with increased transnational behavior. Chi-square difference tests also reveal that generational status moderates the path between acculturation and Connectedness ($\Delta \chi^2 = 5.56; \Delta df=1$) and interdependence ($\Delta \chi^2 = 4.86; \Delta df=1$) with stronger associations for second-generation women.

**Discussion**

The purpose of the current study was to determine 1) daughter’s acculturation report as a predictor of her risk outcomes and her risk communication with her mother, and 2) how generational status changes these associations. Parent-child relationships have been shown to mediate these associations (Abraido-Lanza, Chao, & Flórez, 2005). Transnational Behavior is used as a moderator of acculturation effects on the mother-daughter-relationship. Generational status is also used as a moderator of the overall model to test the immigrant paradox hypothesis. Living in an enclave was used as a control variable for all models. Results from the models provide insight into the interplay between acculturation, transnational behavior, generational status, relationship with mother, and daughters’ risk outcomes and risk communication.
Transnational behavior is used in the study to demonstrate an example of cultural adherence in Afro-Caribbean families (Thomas, 2012; Foner, 2009; McAdoo, Younge & Getahun, 2012). Research has alluded that cultural adherence has a buffering effect on negative aspects of acculturation on the parent-child relationship (Hall et al., 2000; Hall et al., 2005; Choi, Harachi, Gillmore, & Catalano, 2006; Nasim et al., 2007). Transnational behavior did not buffer the effect of acculturation on the mother-daughter relationship as expected, but was associated with positive parent-child relationships, parent-child communication about risk, and decreased risk behavior for first and second-generation Afro-Caribbean daughters. This could be explained by the positive effects of acculturation on parent-child relationships, and risk behaviors in this study.

High levels of acculturation has been associated to increased risk behavior in immigrant youth (Sam, Vedder, Liebkind, Neto, & Virta, 2008), yet unexpectedly, results show that higher acculturation scores predicted lower instances of risk behavior in the more parsimonious model (model that includes first and second-generation women) and in the first generation model. Research has found that Black immigrants assimilate at slower rates into mainstream society because of discrimination (Allen et al., 2013). Similar finding have been found in Asian (Luck and Wilson, 2010), and Latino (Bermudez et al., 2012) families. These experiences related to discrimination and the marginalization of this population can affect the acculturation processes (Jung, Hecht, & Wadsworth, 2007), which may account for the unique findings in the current study. Acculturation measures do not currently account for racial experiences such as oppression and discrimination that may be a part of the acculturation process for some immigrant groups of color.
Acculturation has also been associated negative interaction in the parent-child relationship (Bui, 2013; Marsiglia, Nagoshi, Parsai, Booth, & Castro, 2014). As predicted, this negative relationship was found among second-generation women. As they became more acculturated women reported being less connected to their mothers. These findings are consistent with the preceding literature. Interdependence refers to the mutual give and take of advice that exists between the parent and child (Rastogi, 2002; Nadeem & Romo, 2008). This shows evidence of cultural adherence in the mother-daughter relationship in more acculturated second-generation daughters.

Conclusion

The present findings may be preliminary in light of several limitations. First, the sample sizes within the first and second-generation groups were small. Small sample sizes not only increase the difficulty of obtaining statistical significance but also reduce the precision with which effect sizes can be reliably estimated (Kline, 2004). Second, the present sample generalized Afro-Caribbean people as one culture and the Caribbean constitutes many countries that have varied cultural traditions and attributes. Future work should look at measures and their generalizability across countries. Third, the cross-sectional study design is the second limitation. All variables in the study should not be interpreted as implying causality, and the direction of associations, depend on testing in longitudinal studies. Lastly, retrospective reporting, which refers to women relying on memory to report experiences from childhood, must be considered when looking at these findings.

The current study shows that cultural adherence and acculturation was associated with positive parent-child relationship, in first and second-generation Afro-Caribbean immigrant women. Current results expand the understanding of assimilation process, and cultural
adherence on the mother-daughter relationship in this population. Overall, future research is needed to expand ideas of acculturation and the parent-child relationship to include experiences that are specific to Black immigrant populations.
Figure 3.1. Hypothesis: The Indirect Role of Mother-Daughter Relationships and Moderating Role of Transnational Behavior and Generational Status (between groups).
Table 3.1

_Means, Standard Deviations, for Measures by Generational Status (N = 285)._  

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*Note. M = mean; SD = Standard Deviation; N = 285; First-Generation = 156, Second-Generation = 129.*
Table 3.2


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Note. *p<.05 **p<.01
Table 3.3

Parameter Estimates of Direct and Indirect Effects (N= 285 women).

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Note. Model fit was very good: $\chi^2 (341) = 582.570$, $p < .01$; CFI = .932; RMSEA = .073; SRMR = .067; * $p < .05$. ** $p < .01$. 
Figure 3.2. Hypothesized Model of Acculturation, Transnational Behavior, Risk Communication, Risk Behavior and Mother-Daughter Relationships.
Figure 3.3. Indirect Role of Mother-Daughter Relationships and Moderating Role of Transnational Behavior with Afro-Caribbean Women.

Note. Enclave was used as a covariate. Covariates and non-significant pathways removed for clarity.
Model Fit was good: $\chi^2 (162) = 452.27$, p< .01; CFI = .916; RMSEA = .082; SRMR = .060 ; * p < .05, ** p < .01.
Figure 3.4. Indirect Role of Mother-Daughter Relationships and Moderating Role of Transnational Behavior and Generational status.

*Note. Enclave was used as a covariate. Covariates and non-significant pathways removed for clarity. Model Fit was good: $\chi^2 (341) = 582.570, p < .01$; CFI = .932; RMSEA = .073; SRMR = .067; * $p < .05$. ** $p < .01$. 
Figure 3.5. First-Generation indirect role of Mother-Daughter Relationships and Moderating Role of Transnational Behavior and Generational Status.

*Note:* Enclave was used as a covariate. Covariates and non-significant pathways removed for clarity.

Model Fit was good: $\chi^2 (341) = 582.570, p < .01$; CFI = .932; RMSEA = .073; SRMR = .067; * $p < .05$. ** $p < .01$. 
Figure 3.6. Second Generation Indirect Role of Mother-Daughter Relationships and Moderating Role of Transnational Behavior and Generational status.

Note: Enclave was used as a covariate. Covariates and non-significant pathways removed for clarity
Model Fit was good: $\chi^2 (341) = 582.570, p < .01; \text{CFI} = .932; \text{RMSEA} = .073; \text{SRMR} = .067; * p < .05. ** p < .01.
CHAPTER 4

DISCUSSION AND CONCLUSION

The aim of this study was to investigate familial factors, specifically those associated with aspects of assimilation processes and their impacts on risk behaviors and protective outcomes among English speaking Afro-Caribbean immigrants. Findings indicate that acculturation and transnational behaviors are associated with positive behavioral outcomes for first and second-generation Afro-Caribbean women. Likewise, mother-daughter relationships continue to be an important relationship for scholars to examine.

Manuscript one tested the Mother Adult Daughter Measure (MAD) with Afro-Caribbean women. The subscales of the measure (connectedness, trust in hierarchy, and interdependence) were tested for generalizability between first and second-generation women. I hypothesized that these subscales would form the higher order factor structure, Mother-Daughter Relationship Quality, and that this higher order factor would also be generalizable across generational status. First, findings from this analysis revealed that the first-order subscales (connectedness, trust in hierarchy, and interdependence) were reliable and generalizable across first and second-generation women. Second, the first-order subscales also made up the higher order structure, Mother-Daughter Relationship Quality. Third, further tests confirmed and supported that the higher order structure can be generalizable across first and second-generation Afro-Caribbean women.
Results from this manuscript highlight the importance of testing measures of family interactions not only cross-culturally but also within cultures.

Manuscript number two investigated the predictive role of daughters’ acculturation on their risk outcomes and risky behavior. Mother-daughter relationships were tested as a possible mediator of this interaction while generational status and transnational behavior were tested as moderators. Results indicated that acculturation was a protective factor against risk behavior for first generation women. High levels of acculturation were associated with decreased reports of risk behavior for this sample. These findings contradict previous research that predicted increased risk behavior in this population as they become more acculturated in the U.S. (Abraído-Lanza, Chao, & Flórez, 2005; Ayers, 2016; Telzer, Yuen, Gonzales, & Fuligni, 2016). Conversely, synonymous with previous research (Dillon, De La Rosa & Ibanez, 2013; Nelson et al., 2015), acculturation was negatively associated with connectedness in the mother-daughter relationship for second-generation women, but also predicted an increase in daughters’ interdependence scores. This finding is interesting because interdependence is traditionally associated with more collectivist tradition of relying heavily on the mother, yet is unexpectedly associated with daughters’ report of being more acculturated. Therefore, these findings demonstrate that being more acculturated is associated with increased cultural adherence among second-generation Afro-Caribbean women. Findings also demonstrated that transnational behavior was associated with positive mother-daughter relationships and lower reports of risk behavior for first and second-generation Afro-Caribbean women.
Theoretical Considerations

For this study, acculturation and the immigrant paradox are used to provide culturally relevant theoretical frameworks for investigating risk and protective outcomes for immigrant families (Di Cosmo et al., 2011; Le & Stockdale, 2011; Berry, 1997; Berry 2005). Below, I will discuss how results from this study may be interpreted from the above mentioned theories. Specifically, I will discuss how acculturation, cultural adherence, and the immigrant paradox are related to risk and protective outcomes for Afro-Caribbean women. Also, I will discuss how these data contradict the immigrant paradox hypothesis found in other studies.

Acculturation framework describes the degree to which people adapt to a host culture both socially and psychologically (Berry, 1997; Berry 2005). Berry (2005), developed four categories of acculturation that can emerge from these processes: 1) assimilation, whereby individuals abandon their native culture and take on the norms of the dominant culture; 2) integration, accepting customs of the host culture while preserving one’s own culture; 3) separation, maintaining their own culture and rejecting the host culture; and lastly 4) marginalization, the rejection of native culture and host culture. Yet, in the literature acculturation is used to imply the contextual and individual level processes that occur as individuals assimilate into a new culture. In the present study this definition of acculturation is linked to the immigrant paradox phenomenon. According to the immigrant paradox, as immigrants become more assimilated they are faced with decreased risk and health outcomes as they become more like their U.S. peers. This is particularly disconcerting when we consider Black immigrants who are
assimilating to a country where the African-American population is already experiencing increased health disparity (Center for Disease Control, 2005).

Researchers assert that the acculturation process can be more complex for Black immigrants (Seaton, Caldwell, Sellers, & Jackson, 2008; Allen et al., 2013), and therefore may contradict the negative effects of the immigrant paradox on this population. This contradiction becomes evident in the current study where we found that first and second-generation immigrants who reported less risk behaviors also reported being more acculturated to the U.S.. The challenges of immigration (e.g. language barrier, legal status, financial strain) can intersect with products of racial marginalization (e.g. racial profiling) making it harder for this group to assimilate or integrate into the U.S. (Mathews & Mahoney, 2005). According to Allen and colleagues (2013), risk behavior for Black immigrants can often be lower than their African-American peers because of a partial integration into the host culture. Their partial integration can be exacerbated by feelings of discrimination felt by Black immigrant youth in the U.S. (Seaton, Caldwell, Sellers, & Jackson, 2008; Allen et al., 2013).

Discrimination and marginalization experiences can promote increased adherence to ones culture. Adherence to culture refers to embracing and remaining close to cultural beliefs and being actively involved in traditions (Ma et al., 2014). In the current study, transnational behavior was used as an indicator of daughters’ cultural adherence. Transnational behavior in this study was related to increased connectedness, interdependence, and trust in hierarchy with mothers for first and second-generation women as well as decreased risk behaviors for daughters’. From these findings we can assert that increased connection with a country of origin can counteract the negative
effects of acculturation that are assumed by the immigrant paradox. Transnational behaviors help immigrant families remain connected to their cultures, as well as maintain cohesion with family members remaining in the country of origin.

As mentioned above, transnational behaviors and acculturation were shown to promote positive outcomes for Afro-Caribbean women in the current study. Although not tested, this suggests that women may be demonstrating evidence of being more integrated to the U.S. More research is needed to better understand how the four components of acculturation accurately depict and affect Black immigrants.

**Clinical Consideration for Marriage and Family Therapists**

Protective factors are crucial components of resiliency in Caribbean immigrant families because they buffer the negative effects (such as stress and adversity) of the immigration process (Sladkova & Bond, 2011). This study may help clinicians better understand the centralized role of mothers within Caribbean families and how this role pertains to cultural adherence and collectivist practices. Specifically, I advocate for more culturally informed assessments and interventions of these families in clinical settings.

**Cultural Adherence**

Adherence to culture refers to being actively involved and embracing the traditions of ones native country (Ma et al., 2014). This closeness has been shown to protect immigrants from risk behaviors (Hall et al., 2000; Hall et al., 2005; Choi, Harachi, Gillmore, & Catalano, 2006; Nasim et al., 2007). Cultural adherence in this study was measured by daughters’ report of her transnational behavior, which refers to their contact with their country of origin. Clinicians should be aware that transnational individuals generally visit their native nations frequently and thus continue to practice native cultural
beliefs and behaviors (Thomas, 2012; Foner, 2009). These transnational behaviors have three main effects on acculturation processes in host nations. First, continuously engaging in transnational practices slows down the process of acculturation into host nations. Second, their tendency to hold on to native culture practices informs socio-cultural beliefs, values and practices in host societies. And third, the dynamic nature of such cultural practices influences immigrants’ perceptions and experiences of race, gender and class, among other social variables.

It is important for therapists to be mindful that a clear understanding of transnational families has not been developed, and marriage and family therapists only have a baseline understanding of how these types of immigrant families are effected by distance (Falicov, 2007). Also, it is important for therapists not to have a tainted perspective of families that exist across borders. For example, when an immigrant parent lives outside of the primary home, a therapist might perceived them to be a “broken home” and not having a legitimate family form and structure (Baptiste, Hardy, Lewis, 1997). However, the findings in this study suggest alternatively that family cohesion is present, even in a transnational context. Additionally, the effects of transnationalism and cultural adherence and their effects on the acculturation processes in host nations needs to be better understood in a clinical context, especially when doing family therapy.

Therapists may be unaware of the many ways in which immigrant families may cope with living in a transnational context. For example, research indicates immigrants preserve elements of their native culture as a form of continuity as well as a coping mechanism within a foreign culture (McAdoo, Younge & Getahun, 2012). In fact, most first generation Caribbean immigrants maintain close affiliations with their native nations
because they hope to return after launching their children (Muruthi et al, 2016).

Clinicians’ may have the initial instinct to help their clients adjust to the host country, however, what may be more appropriate, is to help them makes sense of their transnationalism. To identify your client’s transnational experiences you may ask: 1) How does your transnational behavior represent a transition in your life?, 2) Is your transnational state a new family form?, or 3) Is your transnational experience a temporary or a permanent situation?. Other forms of inquiry would be to help clients understand how their transnationalism negatively or positively affects them and their family outcomes.

Cultural identity is also carried forward within Caribbean immigrant families through intergenerational interactions. Caribbean parents acknowledge the importance intergenerational transmission of culture as manifested by their insistence of cultural adherence by their American-born children (Baptiste, Hardy & Lewis, 1997). For example, many second-generation Caribbean children are required by their parents to spend summers and other school breaks in their parents’ native country (Waters, 2001); a move that is geared toward the creation and maintenance of ties with their relatives as well as to strengthen children’s cultural awareness (Hine-St. Hilaire, 2006). Therefore, the value Caribbean immigrants place on transmission of culture is an important consideration for clinicians.

According to family therapists McGoldrick, Giordano, & Garcia-Preto (2005), therapists should incorporate culture into clinical theory and practice. They assert that without these considerations, clients who are not from the dominant culture will feel lost, displaced, or mystified (Kelly, Boyd-Franklin, 2009). These authors, and many others in
the field of marriage and family therapy (Kelly, Boyd-Franklin, 2009; McGoldrick, Giordano, & Garcia-Preto 2005; Tervalon & Murray-García, 1998) call for an incorporation of cultural competence in our work in order to address the nuances and differences of those who fall outside the scope of our Eurocentric theories. Understanding family orientation among Afro-Caribbean families is also essential to working with them in family therapy.

**Collectivism and Matrifocality**

Marriage and family therapists should be especially aware of the significant and central role mothers have within Afro-Caribbean families. Matrifocality places a high level of importance on the mother-daughter relationship in this population (Reynolds, 2005; Staples, 1972; Safa, 2005). Matrifocality refers to women being a central part of the Caribbean household despite this orientation being embedding in an overarching patriarchal social structure. Women are the kin-keepers and are central to the maintenance of tradition in this culture. The mother-daughter unit within the family system is important, because mothers expect daughters to eventually take on the matrifocal roles expected by the culture. Therapists should be aware that these cultural expectations are liable to change when Caribbean immigrants are in the U.S., yet mothers still expect daughters to adhere to these matrifocal cultural norms.

An extension of matrifocality can be seen in the increased monitoring of daughters’ behavior in the U.S. According to Rumbaut and Portes (2001), when in the U.S., there can be increased family conflict when parents try to control their daughter's behavior. For example, girls are expected to help around the household more than their male counterparts (Brown & Johnson, 2008), and are also expected to take on the mother
role with younger children when needed (Lopez, 2002). Family therapists may come in contact with mother-daughter dyads where daughters are more assimilated and adopt the American ideals of independence and self-sufficiency, but come into conflict with their parents by not meeting parental expectations. An explanation for this conflict may be gleaned from research suggesting that Afro-Caribbean children are more likely to reject traditional expectations as they become more acculturated to the host society (Telzer, Yuen, Gonzales, & Fuligni, 2016; Ayers, 2016). This rejection can decrease connectedness between parent and child, leading to increased risk behavior for the child (Kia-Keating, Capous, Juang, & Bacio, 2016; Telzer, Yuen, Gonzales, & Fuligni, 2016; Ayers, 2016). The current study found that alternatively, higher acculturation to U.S. was associated with decreased connectedness with mother, but interestingly enough higher acculturation was positively associated with daughters’ interdependence with her mother. These findings show that although acculturated, daughters still adhered to collectivist values imposed by their culture.

These data can inform family therapists in several ways. If a mother and child attend therapy and they do not seem to be connected, it may seem that they do not have a cohesive relationship. Although it may seem that way, these data show that they are still connected in a more collectivistic manner. Therapists should be cautioned not to jump to conclusions about family dynamics that seem conflictual. These relationships may be more complex than they seem during the initial assessment. Additionally, gaining a more nuanced understanding of matrifocality can be salient for therapists working specifically with Afro-Caribbean mothers and daughters. Matrifocality places a high level of importance on the mother-daughter relationship in this population (Reynolds, 2005;
Staples, 1972; Safa, 2005). Matrifocality refers to the women being a central part of the Caribbean household despite this orientation being embedding in an overarching patriarchal social structure. Women are the kin-keepers and are central to the maintenance of tradition in this culture. The mother-daughter unit within the family system is important because mothers expect daughters to eventually take on the matrifocal roles expected by the culture. These cultural expectations are liable to change when Caribbean immigrants are in the U.S., yet mothers still expect daughters to adhere to these matrifocal cultural norms.

Therapists should also be open to better understanding interdependence and how it is tied to collectivist ideas of loyalty and obligation to the family. This interconnectedness could be a response to the matrifocal nature of Afro-Caribbean families. Clinically, interdependence may look like enmeshment, which has been labeled as an unhealthy element of the family system, however in collectivistic cultures, it can be a normal part of family functioning. Clinicians should be open to understanding collectivistic family orientation like matrifocality and to be more open to understanding healthy functioning from this lens without making overarching assumptions about a family.

In conclusion, when working with immigrant families, ethnicity and culture are powerful lenses through which individuals construct notions of family (Bryant, Lincoln, Taylor & Jackson, 2008). Considering the matrifocal nature of Afro-Caribbean families and the value placed on cultural adherence, it is important for family therapists to consider these dynamics when working with these families. Immigrants face a number of problems, including stress related to acculturation, change, loss, and trauma (Hugo,
It is important not to only consider the type of problems experienced by people in this cultural group, but also their values and the contexts in which they interpret their cultural experiences (Brice-Baker, 1994).

**The Assimilation Process**

This study focused on mother-daughter relationships and how their cultural adherence and communication about high-risk behavior affects the adult daughter’s wellbeing. These data are especially important for family therapists given that communication is so central to healthy and problematic family relationships. When considering the relationships of immigrant families and the acculturation gap between parents and their children, the communication between them may create greater strain.

The effect of the acculturation gap on the parent-child relationship quality can be a predictor of the decreased communication in parent-child dyads. Decreased communication can often be more pronounced among immigrant families than in non-immigrant families (Baolian Qin, 2006). According to Baolian Qin (2006). The acculturation gap between adolescents and their families is exacerbated by growing conflict and the lack of meaningful interactions, exchanges, and communication about personal concerns between parents and their children. This conflict can cause children to rebel against their parents or to become defiant against any notion of their native culture as they try to fit into American norms. Parents out of confusion or desperation may seek therapy in order to better understand their children during this assimilation process (Baptiste, Hardy, Lewis, 1997). Although these data refer to children and adolescents’ experiences with their parents, similar processes may be observed with adult children, especially given that their relationship patterns may not greatly change over time.
Thorough clinical assessments would include questions about how assimilation has affected parents and their children, and how this has influenced their relationship both positively and negatively.

Another important area of assessment relates to identifying the varying degrees to which family members assimilate into mainstream culture (Baptiste, 1990). By identifying this process, therapists can help family members understand their needs and the degree to which their stress is exacerbated by the migration experience (Baptiste, Hardy, Lewis, 1997). As previously noted, the immigrant paradox is a paradox because many immigrants come to the U. S. for a better way of life, and it is surprising that their health outcomes worsen the longer they are in the States. In this study, contrary to the immigrant paradox, first and second-generation Afro-Caribbean women who were more acculturated had less risk behavior and possibly better health outcomes. Contrary to other studies, the assimilation process was not linked to stress. What is important to glean from these data is that therapists should carefully assess each client individually and to carefully self-examine their own biases and assumptions about what is normative or pathological about assimilation and acculturation processes and outcomes.

Varying degrees of assimilation can also affect family members’ self-perception which can affect their relationships. For example, negative perceptions of ethnic identity, racial discrimination, and marginalization, have been listed as critical factors for affecting subjective well-being, life satisfaction, and overall life success in studies of Black immigrants living in the U.S. (Ali & Toner, 2001; Kasinitz et al., 2008). Because of similarities with racial and socioeconomic status, Afro-Caribbean immigrants mix easily within African-American communities, despite their unique cultural practices (Blau,
This blending poses a new challenge for Afro-Caribbean immigrants due to Black people’s experience, oppression and marginalization in the U.S (Kasinitz, Battle & Miyares, 2001). Clinically, therapists should be aware of this invisibility factor and should not assume that every Black client is African-American. They not only experience the stressors of racism, discrimination, and marginalization for being a Black person in the U.S., they may also experience the additional stressors compounded by the immigrant experience and the assimilation process. Being sensitive to varying degrees of assimilation among family members and acknowledging that some family members may experience more prejudice than others, are important aspects of being a culturally informed and sensitive couple and family therapist.

**Conclusion**

In summary, this study addressed the gaps in Black immigrant research by investigating the effect of familial factors and assimilation processes on Afro-Caribbean immigrants’ risk health behaviors and subsequent protective factors. Given the complexity of this topic, I addressed these concerns in two separate manuscripts. The goal of manuscript one was to test a culturally appropriate measure (Mother Adult Daughter measure) of family interactions within and between Afro-Caribbean mothers and their daughters. It was found that the MAD measure not only measured Afro-Caribbean daughters’ reports of their relationships with their mothers, but it was determined that this measure is also generalizable with first and second-generation women. The second manuscript addressed the predictive power of daughters’ acculturation on their risk outcomes as well as their communication about risk with their mothers. The findings demonstrated that for this sample, transnational behavior and
acculturation were associated with positive mother-daughter relationships and lower reports of risk behavior for Afro-Caribbean women. It is my hope that these findings will have implications for the work conducted by family scholars, family therapists, policy makers, and others working with Afro-Caribbean families.
REFERENCES


Byrne, B. M. (2001). Structural equation modeling with AMOS, EQS, and LISREL: Comparative approaches to testing for the factorial validity of a measuring instrument. *International journal of testing, 1*(1), 55-86.


<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acculturation Rating Scale</td>
<td>I speak Patois/Creole/Spanish</td>
<td>1=Not at all</td>
</tr>
<tr>
<td>for Caribbean Americans</td>
<td>I enjoy speaking Patois/Creole/Spanish</td>
<td>2=Very little</td>
</tr>
<tr>
<td></td>
<td>I associate with Caribbean people</td>
<td>3=Very often</td>
</tr>
<tr>
<td></td>
<td>I enjoy listening to Caribbean music</td>
<td>4=Extremely often</td>
</tr>
<tr>
<td></td>
<td>My contact with the Caribbean has been</td>
<td>99=missing</td>
</tr>
<tr>
<td></td>
<td>My father identifies or identified himself as Caribbean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My mother identifies or identified herself as Caribbean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My friends, while I was growing were of Caribbean origin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My family cooks Caribbean foods</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My friends now are of Caribbean origin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I like to identify myself as Caribbean American</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My thinking is done in Patois/Creole/Spanish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I enjoy reading books about the Caribbean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I write (e.g., letters) in Patois/Creole/Spanish</td>
<td></td>
</tr>
<tr>
<td>American Orientation Scale</td>
<td>I speak English</td>
<td>1=Very</td>
</tr>
<tr>
<td></td>
<td>I enjoy speaking English</td>
<td>False</td>
</tr>
<tr>
<td></td>
<td>I associate with White people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I enjoy listening to American music</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My contact with the U.S.A. has been</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My friends while I was growing were White</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My family cooks American foods</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My friends now are White</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I like to identify myself as an American</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I like to identify myself as other_______explain.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My thinking is done in English</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I enjoy reading books about U.S.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I write (e.g., letters) in English</td>
<td></td>
</tr>
<tr>
<td>Additional</td>
<td>I associate with African-American people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My friends while I was growing were African-American</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My friends now are African-American</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I like to identify myself as African-American</td>
<td></td>
</tr>
</tbody>
</table>

| Mother                      | 1=Very                                  |
| Adult                       | False                                   |
Daughter
(Rastogi, 2002)

Connectedness

I can share my intimate secrets with my mother.
My mother can share her intimate secrets with me.
I can share my personal feelings with my mother.
My mother can share her personal feelings with me.
I can share my opinions and values with my mother.
My mother can share her opinions and values with me.
If my mother ever needs anything, I help in whatever way I can even if it means making huge sacrifices.
My mother will always love me regardless of what I do.
I consider my mother / mother figure and I to be:

1=Very close
2=Close
3=Somewhat close
4=Not very close
5=Not close at all
-99=missing

Interdependence

If I ever need any kind of help, I do not hesitate to ask my mother for advice.
I often depend on my mother for advice.
I feel the need to consult my mother when making a hard decision.

My mother always knows best.
My mother always knows what is good for me.
I do what my mother suggests because it takes away the hassle of having to figure it out for myself.
I always trust my mother’s judgment.
I feel I can use my mother’s wisdom as a resource when making decisions.
Sometimes I will give in to my mother out of my respect for her.

Communication About Sex

Did your mother/ mother figure ever talk to you about:

1=never
2
3=A few times
4
5=A lot of times

Sexual reproductive system (“where babies come from”) 
Fathers part in Conception
Menstruation (periods)
Wet dreams / nocturnal emissions
Masturbation
Dating relationships
Petting (feeling up)
Sexual intercourse
Birth control in general
Her personal use of birth control
Consequences of teen pregnancy (other than AIDS)
Sexually Transmitted disease
Love and /or marriage
Whether premarital sex is right or wrong
Abortion
Prostitution
Homosexuality
AIDS
Sexual Abuse
Rape

<table>
<thead>
<tr>
<th>Communication About Drugs</th>
<th>How much do you agree with the following about your mother? My mother:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapted from Parent-Child Communication on about Alcohol Scale (TPCCA)</td>
<td>1=Disagree</td>
</tr>
<tr>
<td>(Miller-Day &amp; Kam, 2010)</td>
<td>A lot</td>
</tr>
<tr>
<td>...Has not directly talked with me about drug use, but has given hints that I should not use.</td>
<td>2</td>
</tr>
<tr>
<td>...Has lectured me or given me a speech about drug use.</td>
<td>3</td>
</tr>
<tr>
<td>...Has warned me about the dangers of using drugs.</td>
<td>4</td>
</tr>
<tr>
<td>...Has talked to me about how to handle offers of drugs.</td>
<td>5=Agree A lot</td>
</tr>
<tr>
<td>...Has given me rules to obey about using drugs.</td>
<td></td>
</tr>
<tr>
<td>...Will make a comment about how using drugs is bad if a character on TV is using drugs or high.</td>
<td></td>
</tr>
<tr>
<td>...Tells me stories of people who use drugs or have been high.</td>
<td></td>
</tr>
<tr>
<td>...Tells me he or she would be disappointed in me if I use drugs.</td>
<td></td>
</tr>
<tr>
<td>...Shows me information on the web, TV, or in the news about the dangers of using drugs.</td>
<td></td>
</tr>
<tr>
<td>...Asks about my thoughts and opinions about using drugs.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex Risk</th>
<th>1=yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever have sex without a condom</td>
<td>-99=no</td>
</tr>
<tr>
<td>Use alcohol or drugs during sex</td>
<td></td>
</tr>
<tr>
<td>Ever had an STD</td>
<td></td>
</tr>
<tr>
<td>Worried that I might already have HIV</td>
<td></td>
</tr>
<tr>
<td>Worried that I might get HIV in the future</td>
<td></td>
</tr>
<tr>
<td>Could use condoms if upset</td>
<td></td>
</tr>
<tr>
<td>Could use condoms even if intoxicated</td>
<td></td>
</tr>
<tr>
<td>Could talk to partner about safe sex</td>
<td></td>
</tr>
</tbody>
</table>

| Substance Use | |
|--------------||
| Ever have sex without a condom | |
| Use alcohol or drugs during sex | |
| Ever had an STD | |
| Worried that I might already have HIV | |
| Worried that I might get HIV in the future | |
| Could use condoms if upset | |
| Could use condoms even if intoxicated | |
| Could talk to partner about safe sex | |
How old were you when you tried marijuana for the first time
- \( \geq 99 \) = 0
- \( 1 \) = 1 or 2 times
- \( 2 \) = 3 to 9 times
- \( 3 \) = 10 to 19 times
- \( 4 \) = 20 to 39 times
- \( 5 \) = 40 or more times

During your life, how many times have you used any form of cocaine, including powder, crack, or freebase?
- \( \geq 99 \) = 0
- \( 1 \) = 1 or 2 times
- \( 2 \) = 3 to 9 times
- \( 3 \) = 10 to 19 times
- \( 4 \) = 20 to 39 times
- \( 5 \) = 40 or more times

During your life, how many times have you used heroin (also called smack, junk, or China White)?

**Generational Status**

Please select one:

1 = I was born in the Caribbean

2 = I was born in the U.S. but my mother was born in the Caribbean

3 = I was born in the U.S. and my mother was born in the U.S., but my grandparents were born in the Caribbean

4 = I was born in the U.S.,
my mother was born in the U.S., my grandparents were born in the U.S, but my great grandparents were born in the Caribbean

5=Other

<table>
<thead>
<tr>
<th>Transnational</th>
<th>My contact with the Caribbean has been</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1=Not at all</td>
</tr>
<tr>
<td></td>
<td>2=Very little</td>
</tr>
<tr>
<td></td>
<td>3=Very often</td>
</tr>
<tr>
<td></td>
<td>4=Extremely often</td>
</tr>
<tr>
<td></td>
<td>-99=missing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enclave</th>
<th>The population of the neighborhood that I grew up in was mostly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1=Caribbean</td>
</tr>
<tr>
<td></td>
<td>0=African-American</td>
</tr>
<tr>
<td></td>
<td>0=African</td>
</tr>
<tr>
<td></td>
<td>0=White</td>
</tr>
<tr>
<td></td>
<td>0=Other</td>
</tr>
</tbody>
</table>
APPENDIX B

May 18, 2015

Dear JUDITH Bermudez:

On 5/18/2015, the IRB reviewed the following submission:

<table>
<thead>
<tr>
<th>Type of Review</th>
<th>Continuing Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Study</td>
<td>Mother-Daughter Communication, Risky Sexual Behaviors and Substance Abuse</td>
</tr>
<tr>
<td>Investigator</td>
<td>JUDITH Bermudez</td>
</tr>
<tr>
<td>IRB ID</td>
<td>MOD00001538</td>
</tr>
<tr>
<td>Funding</td>
<td>None</td>
</tr>
<tr>
<td>Grant ID</td>
<td>None</td>
</tr>
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The IRB approved the protocol from 5/18/2015 to 5/17/2016 inclusive. Before 5/17/2016 or within 30 days of study closure, whichever is earlier, you are to submit a continuing review with required explanations. You can submit a continuing review by navigating to the active study and clicking Create Modification / CR.

** Please note lapse in approval from 4/16/2015 to 5/18/2015.

If continuing review approval is not granted before the expiration date of 5/17/2016, approval of this study expires on that date.

To document consent, use the consent documents that were approved and stamped by the IRB. Go to the Documents tab to download them.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103).

Sincerely,

Larry Nackerud, Ph.D.
University of Georgia
Institutional Review Board Chairperson

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Figure B1. Internal Review Board Approval