

**Tridimensional Acculturation and Mental Health of  
Black Caribbean Immigrants to the U.S.**

by

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A dissertation defense submitted to the Graduate Faculty of  
Auburn University  
in partial fulfillment of the  
requirements for the Degree of  
Counseling Psychology, Doctor of Philosophy

Auburn, Alabama  
August 9<sup>th</sup>, 2025

**Keywords:** tridimensional acculturation, Black, Caribbean, immigrants, psychological distress, life satisfaction, cultural orientation, identity integration, immigrant mental health, acculturation, health, ethnic, disparities

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## Abstract

There are many immigrants to the U.S., notably a large population of Black Caribbean first- or second-generation immigrants. To date, there is little research about the acculturation of this large group. Moving beyond the traditional bidimensional models of acculturation, this study used a tridimensional framework that incorporated Caribbean, European American, and African American cultural orientations. Using both dimensional and categorical approaches to acculturation, the study tested whether cultural affiliations and/or acculturation strategies were associated with psychological well-being. Findings from the dimensional approach revealed that Caribbean cultural orientation was positively associated with life satisfaction, but neither African American nor European American orientations were significantly related to psychological distress or life satisfaction. Findings from the categorical approach showed no significant differences in psychological distress across acculturation strategies. However, significant differences were found in life satisfaction. Overall the findings highlighted the potential benefits to well-being from maintaining a strong connection to Caribbean heritage and underscored the complexity of cultural adaptation in a racially stratified society. Implications for acculturation theory, culturally-sensitive mental health interventions, and future research were discussed.

**Keywords:** tridimensional acculturation, Black Caribbean immigrants, psychological distress, life satisfaction, cultural orientation, identity integration

## Acknowledgments

I would not be sitting here writing this final page without the many sacrifices of my community. The initial sacrifice of migration to this unknown, and at times cruel land, so that I could accomplish something beyond their wildest dreams, was part of the fuel that led me here. It was also the process of unlearning and relearning how to carry the weight that sacrifice can bring that led me here. I was always told that hard work would speak for itself. But this journey taught me that hard work is not enough when you are doing something as radical as pursuing a Ph.D. as a Black Afro-Caribbean working-class woman, especially at a time when diversity itself is being made illegal. It took much more. It took the faith of others around me when my own ran out. It took the financial and emotional sacrifices of my mother, Nicolette Pryce, and my father, Wayne Pryce. It took bonus fathers like Mr. Gregory Jones and spiritual mothers like Taniesha Salmons. It took the extra sisters and brothers I gathered along the way, knowing I would need that support to get back up when I fell down. It took watching the perseverance of my grandmother, who fulfilled the wish of her daughter's success before her last resting breath. I am one of Shirley's girls, and by her strength, I am here today, finally able to be Dr. Shirnelle Micaela Wilks.

## Table of Contents

Abstract .....	2
List of Tables .....	4
List of Figures .....	5
Chapter 1 (Introduction) .....	6
Chapter 2 (Literature Review) .....	9
Chapter 3 (Methods) .....	42
Chapter 4 (Results) .....	50
Chapter 5 (Discussion) .....	55
References .....	72
Appendix A.....	95
Appendix B.....	97
Appendix C.....	98
Appendix D.....	99
Appendix E .....	100
Appendix F.....	101
Appendix G.....	102
Appendix H.....	103

## List of Tables

Table 1 (Participant Characteristics).....	92
Table 2 (Caribbean Nations Representation of Participant and Parents' Heritage).....	94
Table 3 (Acculturation Orientations, Psychological Distress, and Life Satisfaction) .....	95
Table 4 (Eight Acculturation Strategy Groups According to Berry's Model and Ferguson's Tridimensional Framework) .....	96
Table 5 (Estimated Means of Life Satisfaction & Psychological Distress by Acculturation Group) .....	97
Table 6 (Tridimensional Acculturation and Psychological Distress) .....	98
Table 7 (Tridimensional Acculturation and Life Satisfaction).....	99
Table 8 (Pairwise Mean Differences in Life Satisfaction Between Acculturation Strategy Groups) .....	100

## List of Figures

Figure 1 .....	94
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## Chapter 1

### Introduction

Across the world, millions of people make the decision to leave their country of birth to settle in a foreign nation. This process of immigration continues to impact relations across nations. The United States (U.S.) is a unique cultural context because the nation was founded on both voluntary and involuntary migration, creating a diverse nation with a complex history. Despite the complex historical context, people from various racial and ethnic backgrounds continue to migrate to the U.S. and have been for decades. For example, one in ten Black people are foreign-born (Tamir & Anderson, 2022). This number has increased by 3% since 1980 and is projected to double by 2060 (Pew Research Center, 2022). In addition, one in five Black people in the U.S. are immigrants or children of immigrants (Pew Research Center, 2022). While much of the Black immigrant population is from the African continent, Jamaica and Haiti remain the top countries of origin for Black immigrants with the Caribbean region being the largest origin source for Black immigrants.

Acculturation is the process of adapting to a new cultural context for immigrants (Berry 1988; Gordon 1964). Acculturation theory began with the idea of adaption of immigrants to the new or host culture, that is, acculturation meant that immigrants would adopt the cultural norms of the host country and gradually lose their heritage culture (Gordon, 1964). More recently, Berry (1988) showed that acculturation occurred on two dimensions, meaning one could retain their heritage culture and adopt the host culture. This became known as the bidimensional acculturation framework. Berry (1988) noted four strategies that immigrants could utilize when adapting to the host culture norms, including *integration*, *assimilation*, *separation*, and *marginalization*. Even more recently, acculturation has been conceptualized as having three

dimensions. The tridimensional model was proposed by Ferguson (2012) to account for immigrants, specifically Black Caribbean immigrants, who adapt to more than one host culture (e.g., European American and African American), as well as holding their distinctly Caribbean culture.

The impact of acculturation on health has been widely studied in samples of immigrants. This began with the discovery of the Hispanic Paradox, or the pattern that the health of recent Hispanic immigrants were comparable to White populations in the U.S. and better than African American populations, despite their low socioeconomic standing (e.g., Bostean, 2013, 2013; Markides & Coreil, 1986; Palloni & Arias, 2004). However, as the length of stay in the U.S. increased, health worsened (Brown et al., 2015; Cho et al., 2004; J. Jackson et al., 2007; John et al., 2012). After much research and development of this theory, researchers proposed a structural approach to immigration and health outcomes (Alegría et al., 2017; Castañeda et al., 2015). Some of these ideas have begun to be reflected in health research on Black immigrants (Marquez-Velarde et al., 2022; Read & Emerson, 2005). This includes the Racial Context Hypothesis that implicates ethnic/racial hierarchies as a factor in mental health outcomes.

Consistent with these theories, there is data that suggests the rates of psychological distress for Black Caribbean immigrants are increasing with longer stays in the U.S. (Earl et al., 2011). The most current national data on mental health for Black Caribbean immigrants to the U.S. come from the National Survey of American Life (NSAL;(J. S. Jackson et al., 2004). The NSAL is the most comprehensive study that captures the mental health of ethnic and racial minorities. Although the overall population of Black Caribbean immigrants has comparable rates of lifetime mental disorders to African Americans (27% to 31%, respectively), foreign-born

Black Caribbean immigrants have lower rates of mental disorders (19%) than either U.S.-born African Americans (31%) or U.S.-born Black Caribbean immigrants (43%).

The purpose of this study is to add to the scant literature on the acculturation patterns of Black Caribbean Immigrants specifically and analyze the relationship between their acculturation patterns and psychological health. This will allow psychologists to better understand how to treat ethnically diverse Black individuals and take their potential acculturation pattern into account when treating their health. Currently, Black immigrants may be receiving care that is not sensitive to their cultural practices. Literature shows that cultural practices are an important determinant of health for immigrants (Schwartz et al., 2010, 2011). This study will help to understand whether this is also important in the health for Black immigrants. Healthcare professionals will be able to provide more targeted care overall for this population by being equipped with the knowledge gleaned from this study.

The next chapter will review the background of Caribbean history and immigration to North America, including their adaption to U.S. society. Then, the chapter will review acculturation theories, acculturation measures, and tests of the relationships between acculturation and health in Black immigrant samples.

## **Chapter 2**

### **Review of Literature**

#### **Historical Overview of Black Caribbean Immigrants**

The Caribbean, the subregion of North and South America around the Caribbean Sea its islands and nearby coastal areas, was first inhabited by various indigenous groups, such as the Caribs, Tainos, or Kalinagos, who lived in what is now northeastern South America, Trinidad and Tobago, Barbados, the Windward Islands, and Dominica. The Caribbean was first colonized by the Spanish in the 15th century (Lambert, 2017). During the 17th century, the British began to settle in many Caribbean counties, such as Barbados, Montserrat, Antigua, and Jamaica, alongside the Spanish, and eventually other European nationals, as indigenous people were removed from the region. When the agricultural value of the land was discovered, the region became more valuable and European nations fought over its ownership. The proliferation of crops prompted the need for laborers, which gave rise to the forced migration of enslaved Africans through the Transatlantic slave trade.

The Transatlantic slave trade was the largest source of (forced) migration of enslaved people from Africa during the 17th and 18th centuries. Another form of labor was indentured servitude, which is an agreement of labor with the intended outcome of freedom, unlike enslavement (Bilder, 1995). Indentured labor from China and India began in the 19th century, increasing the demographic diversity of the Caribbean. Due to global movements related to colonization across various countries, the inhabitants of the Caribbean increased in ethnic and racial diversity. To retain their African culture, some Africans rebelled and escaped, forming freed Black runaway communities. One example community is the Maroons that are still recognized and represented in Jamaica. In addition, miscegenation occurred across different

ethnic and racial groups, creating racially blended individuals. However, due to the impact of European enslavement and colonialism, there were still racial tensions, especially between those who were of African descent and other groups. Enslaved people continuously rebelled against slavery and over time many Caribbean nations were able to gain their independence from the British and other European nations. These nations slowly developed their own society and way of life, establishing their own cultural norms that were largely influenced by their sociopolitical history. Presently, the Caribbean consists of majority Black nations composed of different racial and ethnic communities which exist within these majority Black nations and claim national heritage (Archives, 2007).

#### *Caribbean Migration to the United States & Canada*

The presence of Black Caribbean immigrants in the U.S. can be traced back to the early 1900s (Thomas, 2012). The first wave of Caribbean migration to the U.S. occurred in the early 20th century during World War I. In addition, the Panama Canal Project influenced a large wave of migration of Caribbean immigrants. However, the Johnson Reed Act (1924) was enacted with the purpose of restricting immigration from nonwhite nations.

Most Caribbean immigrants that migrated settled in major port cities, with New York City being the primary destination along with other areas such as South Florida (Davis, 2013). Many of the immigrants who settled in South Florida were from the Bahamas. While some of them retained their national heritage, many of them also intermixed with African Americans who were descendants of enslaved Africans brought to America during the Transatlantic slave trade. Due to this mixing and the method of record keeping during this time, many Black people of Caribbean heritage who migrated in the early 1900s were considered African Americans. African American is the term commonly used to describe Black people who are descendants of formally

enslaved Africans brought to what is now the U.S. and will be used as such throughout this paper.

Once World War II began, another wave of Caribbean migration occurred to help with labor shortages caused by the war and the economic demand that followed due to the war. The McCarran-Walter Immigration and Nationality Act (1952) assisted with this by abolishing immigration restricted based on race. However, it did not eliminate this trend since eligibility was still determined based on nationality, and preference was still given to European nationals (Davis, 2013).

After World War II, a large population of Caribbean immigrants were invited to the United Kingdom to assist with developing the nation. However, as the need decreased, there was a call for the return of these immigrants by the British. Caribbean governments began to pressure Canadian governments to loosen their policies to allow migration of Caribbean immigrants. As a result, Canada became a receiving destination for many Caribbean immigrants and remains a large host society for this population (Austin, 2007).

The most recent wave of migration to the U.S. was influenced by the Civil Rights Movement of the 1960's. During this time, the Hart-Cellar Act (1965) reduced the racial bias that was present in previous immigration policies, and priority was given to those with family ties in the U.S. In addition to family reunification, poor quality of life in the heritage country was often a motivator for movement, and it continues to be a main drive for voluntary migration for Black Caribbean immigrants (Anbinder, 2013). Furthermore, immigrants from the English-speaking Caribbean make up most of the Black Caribbean immigrant population in the U.S. Most of these immigrants currently reside in New York and Florida, with other Black Caribbean

immigrant communities in New Jersey, Georgia, Connecticut, Maryland, and Massachusetts (Davis, 2013).

As noted in Chapter 1, acculturation is the process of cultural adaptation of immigrants and is theorized to have an influence on many constructs, including health. The next section will cover the conceptual or theoretical literature on acculturation. This will include definitions of widely used terms, the development of the dimensional conceptualization of the acculturation process, and extension to bidimensional and tridimensional acculturation. Once these aspects are reviewed, the next section will cover the empirical literature showing how acculturation has been measured in Black Caribbean Immigrant samples, and then tests of links between acculturation and health in Black Caribbean Immigrant samples.

### **Acculturation Theory**

Acculturation was used to describe the process of adapting to a new cultural context for immigrants to host societies such as the U.S. (Gordon 1964, Berry 1988). Initially, it was thought to exist on one dimension or be unidimensional, with the heritage culture on one end of the spectrum and the host culture on the opposite end (Gordon 1964). These two ends of the spectrum became known as acculturation (adopting host culture) and enculturation (retaining heritage culture) (Kim et al., 2001). Furthermore, the theory suggested that as one adopts the host culture, the heritage culture is not retained. In health research, acculturation was often measured using proxies, such as language use, nativity status, length of stay in the U.S., and/or generational status, representing the idea that immigrants to the U.S. would adopt more U.S. cultural practices the longer they stayed in the U.S., or that greater use of English reflected greater adoption of U.S. cultural practices. Researchers also used unidimensional measures that

assessed acculturation along a single continuum, usually from less adoption of U.S. cultural practices to more adoption of U.S. cultural practices.

Later, Berry (1988) described the process of acculturation in terms of adaptation, and proposed adaptation was better described by acculturation strategies based on two separate dimensions: (1) retaining the heritage culture (*enculturation*) and (2) adopting the host culture (*acculturation*). That is, immigrants could *simultaneously* adopt U.S. cultural practices while also holding on to cultural practices from their nation of origin. He also proposed that acculturating groups may endure conflict during this process of adaptation; this conflict was called acculturative stress. Berry (1988) described acculturative stress as stress specifically related to difficulty in the process of moving along the two dimensions of enculturation and acculturation.

Following these two dimensions, Berry (1988) proposed four strategies for acculturation: integration, separation, assimilation, and marginalization. *Integration* is characterized by high endorsement of both acculturation and enculturation. In this strategy, both the heritage culture and the host culture are seen as valuable to the individual and therefore are retained. Often the literature uses the term *bicultural* to describe those who use this strategy following the descriptions of LaFromboise (1993) of different ways to be bicultural. In *separation*, only the heritage culture is retained. In other words, it is not seen as valuable to take on the customs of the host culture. On the contrary, *assimilation* is characterized by discarding the heritage culture and only retaining the customs of the host culture. Lastly, *marginalization* is when both heritage and host cultures are abandoned. These strategies became foundational for psychological acculturation literature but were not always used in other disciplines.

Recently, the theory of acculturation was expanded by Schwartz and colleagues (2010), to reflect a multidimensional approach. In this case, dimensions relate to different aspects of behaviors, self-evaluations, and values, instead of the dimensions of the heritage and host cultures discussed above. This expansion was in response to concerns that both the unidimensional and bidimensional models are unable to capture some of the nuance and complexity that exists for groups who are voluntarily migrating to new sociocultural contexts. Cultural values, practices, and identifications describe a more relevant depiction of the process of acculturation and capture more of that nuance. *Cultural practices* are related to more behavioral aspects of culture, such as language and traditions. *Cultural values* refer to belief systems that are embedded in a certain culture (e.g., individualism). *Cultural identification* relies on the concept of ethnic identity that was first conceptualized by Phinney (1996) and relates to the extent that people feel connected to their ethnic identity. Retaining these cultural values, practices, and identifications of the heritage culture parallels Berry's (1988) process of enculturation. In contrast, adopting the practices, values, and identifications of the host culture parallels Berry's (1988) process of acculturation (Schwartz et al., 2010).

In addition to multiple dimensions of cultural constructs, a review of the empirical acculturation literature (Flannery et al., 2001) proposed a *tridirectional* model of acculturation to account for the possibility of multiple cultural or ethnic groups with a host nation. That is, they proposed that the process of ethnogenesis or creation of a new culture gives rise to a third destination culture. They placed the host and heritage culture on an axis and noted that a new arrow stemming from the intersection of the host and heritage cultures, represented the third direction where ethnogenesis occurs. For example, the Chicano culture in Los Angeles is an example of ethnogenesis. Chicano is a unique mix of cultures that is not just U.S. or Mexican.

This tridirectional model was used to understand the experiences of Black Jamaican immigrants in the U.S. by Ferguson (2012), who proposed the concept of Tridimensional Acculturation as an extension of Berry's two-dimensional model (one heritage culture, one host culture). Ferguson (2012) proposed that Black Caribbean immigrants are tasked with retaining their heritage culture and adapting to African American culture, due to shared experiences as ethnic minorities and the social meanings attached to their appearances in the U.S. Furthermore, she proposed this is done by simultaneously adapting to *two* host cultures: mainstream European American culture, and African American culture. Specifically, in the Tridimensional Acculturation conceptualization, there are three dimensions: (1) heritage culture, (2) European American culture, and (3) African American culture. *Jamaican culture* refers to the heritage culture that Berry (1984) proposed immigrants may retain upon migration. *European American culture* refers to host culture that they may adapt to upon migration (Berry 1984). *African American culture* refers to the other host culture that Black immigrants may adapt to upon migration, due to shared racial status in the U.S.

Ferguson (2012) used these three dimensions to create groups based on Berry's acculturation strategies. Based on the added dimensions, eight combinations are now created instead of the four that comprised Berry's strategies. This means that the integration and assimilation strategy now have three groups within them. To illustrate, immigrants can have high orientations to all three cultures. More specifically, while retaining the heritage culture (e.g., Jamaican), they may adapt to (a) both European and African American culture, (b) only African American culture, or (c) only European American culture, creating three subordinate groups under integration. Ferguson (2012) used the terms *Tricultural* or *Triculturally integrated* to describe Black Caribbean immigrants with high orientations to all three cultures. Similarly, for

the assimilation strategy, immigrants may not retain their Jamaican culture while adapting to (a) both host cultures, (b) only African American culture, or (c) only European American culture, creating three subordinate groups under the assimilation strategy. The marginalized strategy is still comprised of one group that has a low orientation to all three cultures. The separated strategy is still comprised of one group that only retains Jamaican culture.

To summarize, acculturation theory has advanced over the years to represent the dynamic acculturation processes that occur for immigrants to U.S. society. It began as a unidimensional construct that classified people on a continuum from either high acculturation or low acculturation. Berry's (1988) bidimensional model was a significant contribution due to the ability to understand immigrant's experiences with more nuance and to create acculturation strategies that are commonly examined in the literature. Researchers then began to account for new cultures that arose and proposed a tridirectional model, such as when Ferguson (2012) developed the tridimensional acculturation framework to accommodate two host cultures of Black Caribbean Immigrants. In the tridimensional framework, the third destination is another host culture (e.g., African American culture).

Recent meta-analyses (Yoon et al., 2020) showed that the vast majority of acculturation literature is with samples of Hispanic or Asian immigrants, with relatively few studies with African or Caribbean immigrants (i.e., over 100 studies of Hispanic and Asian samples vs. 12 for African /Caribbean samples at the time of the most recent review). Due to the small number of studies, I reviewed studies with samples of either or both Black Caribbean immigrants and African immigrants. The following sections will review the available empirical studies with Black Caribbean and/or African immigrants to describe 1) methods of acculturation measurement, and 2) the relationships between acculturation and health. To be included in this

review, studies had to include at least one measure of acculturation and at least one measure of mental or physical health in a sample that was either all or predominantly Black Caribbean or African immigrants to the U.S. or Canada. As will be seen, samples sometimes combined foreign- and U.S.-born Black people. The first section is designed to show the variety of ways that acculturation has been assessed with Black immigrant samples, and the second section will show the results of tests of associations between acculturation and health.

### **Acculturation Measures**

As noted above, acculturation measures can include (1) *proxy measures* or indirect measures of acculturation, (2) *unidimensional scales* that classify immigrants on one dimension from low to high acculturation levels, and typically assess adoption of receiving culture practices, (3) *bidimensional scales* that assess acculturation to the host culture on one dimension and enculturation to the heritage culture on a separate dimension, and (4) *tridimensional scales* that assess acculturation on three separate dimensions, two host cultures, e.g., majority or white American and Black American, and the heritage culture.

### ***Proxy Measures of Acculturation***

Proxy measures of acculturation have been used in health research with Black Caribbean or African immigrants. The most common proxy measure is a single item, usually language preference or proficiency. For example, Okafor and colleagues (2013) used English proficiency as a proxy measure for acculturation to the U.S. in a sample of 763 new African adult immigrants. The English proficiency item asked participants to rate how well they spoke English on a 4-point Likert type scale from *1 very well* to *4 not at all*. Scores were then recoded and reversed with responses of *'not well/not at all'* were collapsed into a single group (low acculturation/marginalized or separated); responses of *'well'* were assigned 1 (moderate

acculturation/integrated); responses of 'very well' were assigned 2 (high acculturation/assimilated). Using this recoding in this sample, 44% were assimilated (spoke English very well), 35% integrated (spoke English well), and 20% were marginalized or separated (did not speak English well or not at all). This proxy measurement had a limited match between theoretical descriptors of acculturation strategies (Berry, 1988) because it did not allow consideration of bidimensional, and the integrated strategy is not moderately acculturated or halfway between heritage and host cultures.

Another kind of proxy measure approach combines information from two or more items, for example, a national survey collected between 2010 and 2017 of 1,648 African immigrants by Mukaz and colleagues (2022). This proxy measure combined two items, American citizenship and percent of life spent in the U.S. Participants who spent more than 25% of their lives in the U.S. or had U.S. citizenship were considered *acculturated*, but those with less than 25% of their lives spent in the U.S. and without citizenship were considered *not acculturated*. Most (77%) of the sample were categorized as acculturated. Although this method has two items, the measure does not match theoretical descriptors of acculturation strategies (Berry, 19848) because it only considers the host culture, not the heritage culture, and is more similar to a unidimensional measure.

Still others, such as Bennet and colleagues (2007), used multiple proxies with rules to classify immigrants as acculturated to the U.S. In a sample of Black immigrants and U.S.-born Black people, researchers coded acculturation with three items (participant's first language, preferred reading language, and language spoken at home) based on rules developed with U.S. Latinos (Marin et al., 1987). In this sample of 551 participants, there were only two groups, those (90%) who were native speakers (English) as highly acculturated and the others with moderate to

low acculturation to the U.S. This measurement method generally produces a score similar to a unidimensional measure, although limited by the categorical groupings from coding rules, as well as the emphasis on language for U.S.-born Black or Caribbean people who are often native English-speakers.

### ***Unidimensional Measures of Acculturation***

Other studies assessed acculturation with a singular dimensional scale examining a continuum of one culture. In one example of an assessment of heritage culture orientation, Eshun (2006) created a new 10-item Ghanaian Acculturation Scale with a sample of 81 Ghanaian immigrants aged 18-61 years old. The scale had six behavioral and four psychological questions. Behavioral items inquired about preferences for traditional (i.e., Ghanaian) clothing, food, music and social interactions rated on a 5-point Likert scale from *0 Never* to *4 Almost always*. Psychological items assessed similarities in values and preferences and norms to Ghanaians (2 items) or Americans (2 items) rated on a 7-point Likert scale from *0 Minimal* to *6 A great extent*. These were then combined into a single composite scale with satisfactory internal consistency (Cronbach's  $\alpha = .84$ ), where high scores represented less traditional Ghanaian values (acculturation), and low scores represented more Ghanaian values (enculturation).

Other unidimensional scales place heritage and host at opposite ends of a single dimension. For example, Ebrahim and colleagues (2016) assessed acculturation in a sample of 201 Somali and Ethiopian immigrants with 12 items related to language use and preference, media usage, and peer relations scale, adapted from the Short Acculturation Scale for Hispanics (SASH; Marin et al., 1987). Respondents to the SASH items have a scale with *host culture 5* and *heritage culture 1*, so 5 indicates a high level of acculturation. The scale had good internal

consistency in this sample ( $\alpha = .83$ ), with a moderate mean acculturation score (i.e., about the midpoint of the response scale;  $M = 2.56$ ,  $SD = 0.69$ ).

Another article had a similar acculturation measure, with host and heritage on a single dimension, even though it was adapted from several existing measures. Asare & Sharma (2014) created a scale in an African immigrant population utilizing an expert review process after reviewing literature, three related questionnaires [the bidimensional American International Relations Scale (AIRS) (Sodowsky & Plake, 1991), the Hispanic Bidimensional Acculturation Scale (Marin & Gamba, 1996), and the unidimensional African American Acculturation Scale (Klonoff & Landrine, 1999), and reviews by two experts in instrument theory and two experts on the target population resulting in a final 68-item measure. Initially, authors reduced the pool of 68 items to a 10-item acculturation scale, then later reduced to 8 items after the final review of the entire measure. Sample items include *'Prefer American music, films to that of African'*, *'More comfortable around Americans than Africans'*, *'Seek support from Americans more than Africans'* rated from strongly disagree (1) to strongly agree (5). The scale was unidimensional with the minimum score of 8 indicating enculturation to the heritage culture and the maximum score of 40 indicating acculturation to the host culture. For the sample used to validate the instrument, the range observed was 8-39 with a mean score of 15.95 ( $SD = 5.68$ ). The internal consistency was  $\alpha = .86$  and the test-retest reliability was .77.

Another method combines ethnic identity measures of attitudes toward the host nation and contact with heritage culture into a single measure of acculturation. For example, Oladele and colleagues (2018) adapted the General Ethnicity Questionnaire (Tsai et al., 2000), and the Multigroup Ethnic Identity Measure (Phinney, 1992a) with a sample of Jamaican immigrants. Participants were asked to respond on a scale of *1 strongly disagree to 4 strongly agree to*

demonstrate their agreement to questions about socialization with other Jamaicans, traditional values, celebrations, and upbringing. The composite acculturation measure reflected a unidimensional conceptualization (from high to low) ( $M = 26, SD = 5.7$ ). Although these unidimensional scales appeared to have acceptable psychometric properties for use in research, they are limited because they assumed that as immigrants adopt the host culture, they abandon the heritage culture. Berry (1988) showed that immigrants may actually adopt some host culture while simultaneously retaining heritage culture, which led to the use of bidimensional measures of acculturation.

### ***Bidimensional Measures of Acculturation***

There are at least two methods to assess bidimensional acculturation, one explicitly assigns immigrants to Berry's (1988) four strategies based on responses to each item in a single scale. This method was shown by Akinde (2013), who examined acculturation strategies in 80 young Nigerian immigrants (aged 12-24 years) in Minnesota, by adapting the Acculturation, Habits, and Interests Multicultural Scale for Adolescents (AHIMSA; Unger et al., 2002). There are eight items, e.g., '*My best friends are from...*' with four possible responses: (a) *The United States* corresponding to assimilated; (b) *the country my family is from* corresponding to separated; (c) *Both Countries* corresponding to integrated; and (d) *Neither Country* corresponding to marginalized. Strategies were determined based on the participants' highest score category, for example, participants who rated most of the 8-items with the *Both* response were categorized as integrated. For the adult sample (18 years and older), 58% of the sample were integrated, 21% were separated, 19% of the sample were assimilated, and 1% were marginalized. For the adolescent sample (12-17 years old), the results showed that 57% were integrated, 7% were separated, 34% were assimilated and 2% were marginalized.

With the second method, there are two scales corresponding to dimensions of acculturation (host culture) and enculturation (heritage culture), and each item with the scales is rated on a Likert-type scale. For example, Vander Veen (2015) examined acculturation in a sample of 55 Black African immigrants to the U.S. with the bidimensional Stephenson Multigroup Acculturation (Stephenson, 2000) scale. This scale was developed to measure the strength of practices in one's heritage culture and U.S. culture, originally without a specific ethnic group in mind. This scale has 32 items; 17 items for one's heritage culture and 15 items for U.S. culture. Sample items include: "I eat traditional foods of my native culture" (heritage practice), "I attend social functions with American people" (U.S. practice). The items are rated on a 4-point Likert scale with the response options '*false, partly false, true, partly true*'. High scores on items regarding heritage culture indicate high enculturation and high scores on U.S. culture items indicate high acculturation. In the African immigrant sample (Vander Veen, 2015), the scale had high reliability ( $\alpha = .92$ ).

Several studies used a similar approach by adapting the Psychological Acculturation scale (Tropp et al., 1999), originally a unidimensional measure for Hispanic/Latino vs. Anglo-American culture. In one sample (Commodore-Mensah et al., 2018) adapted a bidimensional scale by changing the questions to be on two dimensions, e.g., "which culture do you feel proud to be a part of?" was changed to "I feel proud to be a part of [*American culture*]," "I feel proud to be a part of [*Ghanian culture*]," and adding additional items to assess cultural identity and practices. All items are rated on a 5-point Likert scale from *1 Strongly Agree* to *5 Strongly Disagree*. The resulting two dimensions on the Modified Psychological Acculturation Scale were: (D1) *enculturation* or relative preference for maintaining the (heritage) Ghanaian/Nigerian ethnocultural group, and (D2) *acculturation* or relative preference for having contact with and

participating in the (host) American culture. For this sample, the internal consistency reliability for enculturation was  $\alpha = .94$  and for acculturation was  $\alpha = .88$ . The dimensions can also be used to categorize responses in Berry's (1988) four strategies by using '3' as a midpoint cutoff score for 'high' and 'low' on each dimension. In the norming sample of 253 Ghanaian- and Nigerian-born immigrants aged 35-74 years, most of the sample were either Traditionalist (32% separated strategy) or Integrationist (66% integration strategy).

Two additional studies have used this Modified Psychological Acculturation Scale (Commodore-Mensah et al., 2018) with samples of Black/African immigrants. Adegboyega and colleagues (2021) sampled 99 Sub-Saharan African women. Internal consistency reliability was also strong in this sample; enculturation  $\alpha = .90$ , acculturation  $\alpha = .88$ . They used the same method to create Berry's (1984) strategy groups and found that women in their sample were either the integrated (68%) or separated (32%). Nmezi (2022) found more variation in acculturation strategies of 317 African immigrants from the cross-sectional African Immigrant Health Study (Ogungbe et al., 2022), that is, 44% were separated, 27% were integrated, 24% were marginalized, and 4% were assimilated. Internal consistency reliability in this sample was also strong; enculturation  $\alpha = .94$ , acculturation  $\alpha = .85$ .

Only one bidimensional scale of acculturation was developed specifically for Black people, including immigrants in the U.S. by Obasi and Leong (2010), who developed the Measurement of Acculturation Scale for People of African Descent (MASPAD). The measure development sample was 130 college students with 73% identifying as African American, 12% Black, 5% African, and the remaining 8% Congolese, Trinidadian, Haitian, Ghanaian, Zimbabwean, or Puerto Rican. The two dimensions assessed by this scale are: enculturation, reflecting preference for one's heritage culture, and acculturation, reflecting preference for

having contact with the host culture. Example items are “*If I have children, I will give them an African naming ceremony*” for heritage culture and “*I prefer to be around people who are not Black*” for host culture. Responses are on a 6-point Likert type scale ranging from 1 *strongly disagree* to 6 *strongly agree*. There are two ways to score this instrument. A total score can be produced for each dimension, and/or respondents may be categorized as either Traditionalist, Integrationist, Assimilationist, or Marginalist based on a combination of low and high scores in each dimension as described in Berry’s (1984) strategies. The two dimensions had adequate reliability in the development sample (D1:  $\alpha = .87$  and D2:  $\alpha = .75$ ). The cutoffs for high and low scores are determined by mean splits (e.g., mean of the enculturation score = 77 and mean of acculturation score = 80.5). In a separate sample (Obasi & Leong 2009) that used the MASPAD, over half of the people of African descent had a separated strategy (55%). The integrated strategy was the second most endorsed in the sample (31%).

Compared to unidimensional measures, bidimensional measures have a superior match to Berry’s (1988) strategies and conceptualization that immigrants can simultaneously adopt their host culture while maintaining their heritage culture—which is the basis for a bicultural identity (e.g., Yoon et al., 2020). However, using measures originally developed for Latinos, or using a similar approach to create a measure for Black or African immigrants, shows the limitations of this approach. That is, as noted above, there is a unique U.S. or Canadian Black culture that differs from majority U.S. or Canadian (i.e., white) culture. The tridimensional measurement approach explicitly addresses the possibility that Black/African immigrants could adopt two host cultures as well as retaining heritage culture.

### ***Tridimensional Measures of Acculturation***

More recently, Ferguson and colleagues (2012) created the Acculturation Rating Scale for Jamaican Americans (ARSJA), the first tridimensional scale of acculturation for immigrants to the U.S. from the African diaspora. This tridimensional scale was developed based on the idea that Black immigrants migrate to the U.S. and may adjust to Black American subculture in addition to White majority culture. The racialized U.S. meant that upon migration they would also be racialized as Black Americans and therefore need to acculturate towards that culture as well. The ARSJA was based on the ARSMA-II (Cuellar et al., 1995) which was originally developed to assess acculturation of Mexican immigrants on *two* dimensions (heritage Mexican Culture/enculturation and host Anglo Culture/acculturation). Ferguson and colleagues (2012) added a third dimension, resulting in a 34-item Acculturation Scale, to assess (1) Jamaican Orientation (JOS; 16 items), (2) European American orientation (EAOS; 9 items), and (3) African American Orientation (AAOS; 9 items). On each of the three dimensions, respondents rate themselves on a Likert scale from 1 *none or not at all* to 5 *very much or always* regarding the likelihood of their attitudes and behaviors being consistent with each of the three cultures. This example illustrates how several items with similar content are within each subscale: “My friends, while I was growing up, were of *Jamaican origin*,” “My friends, while I was growing up, were of *White American/European American origin*,” and “My friends, while I was growing up, were of *African American/Black origin*” (Full scale in Appendix E).

Ferguson and colleagues (2012) validated the ARSJA in a sample of 473 adolescent-mother dyads in the U.S. and Jamaica. Most of the U.S. participants lived in New York or Illinois, and most of the Jamaican islanders lived in Kingston, St. Andrew or St. Catherine. Participants were (a) 38 Jamaican immigrant dyads, (b) 294 Jamaican islander dyads, (c) 78 European American dyads, (d) 36 African American dyads, and (e) 27 other immigrant group

dyads (17% Black and 83% non-Black). Members from these different ethnic/racial groups were used to help validate the instrument by comparing the scores in each group and examining differences in mean levels of each of the three dimensions. That is, evidence for validity was an ethnic/racial group having the highest mean for the group's corresponding dimension, such as Jamaican islanders having the highest mean for the Jamaican Orientation subscale of the ARSJA ( $M = 3.82$ ) compared to the other two subscales (White/European American,  $M = 2.43$ ; Black/African American,  $M = 2.98$ ).

With the ARSJA (Ferguson et al., 2012), a score can be calculated for each subscale, (Jamaican Orientation subscale  $\alpha = .95$ ; European American Subscale  $\alpha = .88$ ; African American Orientation Scale  $\alpha = .85$ ). Categorical strategies can also be created by cross tabulation using midpoint splits as cutoffs (e.g., 3 on a 1-5 response scale) for high or low orientation to each dimension, resulting in eight possible categories which Ferguson and colleagues (2012) aligned with Berry's (1988) four acculturation strategies: *integrated* included those with (a) high Jamaican orientation scale scores, and high European American Orientation Scale scores (b) high Jamaican Orientation Scale scores, high African American Orientation Scale scores and (c) high Jamaican Orientation Scale scores, African American Orientation Scale scores, and European American Orientation Scale scores; *assimilated* with (a) low Jamaican Orientation Scale scores and high European American Orientation Scale scores (b) low Jamaican Orientation Scale scores and high African American Orientation Scale scores or (c) low Jamaican Orientation Scale scores and high European American Orientation Scale scores and African American Orientation Scale scores; *separated* with high Jamaican Orientation Scale scores only; and *marginalized* status with low scores on all three orientation subscales.

In the measure development study (Ferguson et al., 2012), 70% of the Jamaican heritage sample (i.e., all participants of Jamaican descent) fell into the *integration* strategy with 40% high on all three dimensions, 26% high on two Jamaican and African American dimensions, and only 4% high on two Jamaican and European American dimensions (See Figure 1 for sample comparisons). In a separate sample, Ferguson (2014) further assessed the validity of the ARSJA (Ferguson et al., 2012) with 80 first-generation Jamaican immigrants (*Age* = 54 years) in Illinois and Pennsylvania. The results were similar to the first sample, with 46% had high scores on all three dimensions, 26% high on Jamaican and African American dimensions, and 5% high on Jamaican and European American dimensions.

Medina (2016) later adapted the ARSJA (Ferguson et al., 2012) into the Acculturation Scale for Black Canadians (ARSBC) by combining relevant items from the Vancouver Acculturation Index (VAI; Testa et al., 2019), a 20-item bidimensional measure used to assess acculturation in Canadian (host) and heritage cultures with 10-items for each. The resulting scale assesses three dimensions: (a) Black Caribbean Culture ( $\alpha = .90$ ), (b) host European American culture ( $\alpha = .91$ ) and (c) host African American culture ( $\alpha = .93$ ). In a sample of 130 Black Canadians (16 to 30 years old) with African and Caribbean heritage, there were two primary acculturation groups: 51% high on Heritage Culture (corresponds to Jamaican) and Black Culture (corresponds with African American) and a low on White Culture (corresponds with European American), and 47% with moderate to low scores on all three dimensions, or marginalization. No group with high orientations to all three subscales was found in this Black Canadian sample.

In a separate sample of 187 English-speaking first, second, and 1.5 generation Black adolescents aged 16-30 years old of African and/or Caribbean descent, Medina (2019) found

moderate to high orientation towards all three cultural dimensions each of which had high reliability for this sample (Caribbean/Heritage Culture  $\alpha = .90$ , European American culture  $\alpha = .91$ , African American culture  $\alpha = .92$ ). Though they did not report proportions, Medina (2019) noted that in this sample, there was evidence for tridimensional acculturation with participants indicating moderate to high orientation towards all three cultural dimensions.

In summary, the empirical literature shows that acculturation has been measured using proxy, unidimensional, bidimensional, and tridimensional measures for Black immigrants. Various proxy measures were unable to appropriately capture the concept of acculturation described by the current literature. Unidimensional studies are limited because they incorrectly assume that as immigrants adopt the host culture, they abandon the heritage culture. Further, compared to unidimensional measures, a recent meta-analysis showed that bidimensional measures of acculturation, i.e., enculturation and acculturation, are weakly related to one another (Cohen's  $d = .37$ ; Yoon et al., 2020), supporting the notion that these are generally independent constructs. In addition, with bidimensional measures, we can categorize the sample by the theorized acculturation strategies proposed by Berry (1988).

For Black immigrant populations, there is a wide range of bidimensional measures. As shown in the empirical literature with Black immigrants, many researchers adapted acculturation measures created for other racial/ethnic groups. While this may appear less than ideal, these measures appear to have acceptable reliability in Black immigrant samples. For example, the Modified Psychological Acculturation Scale (Tropp et al., 1999) demonstrated high reliability (enculturation  $\alpha s = .90 - .94$ ; acculturation  $\alpha s = .85 - .88$ ) across three Black African immigrant samples (Adegboyega et al., 2021; Commodore-Mensah et al., 2018; Nmezi et al., 2022). Surprisingly, measures designed specifically for Black immigrants can have lower reliability,

although not too low to be used. For example, the Measurement of Acculturation Scale for People of African Descent (MASPAD; Obasi & Leong, 2010) only had internal consistencies in the .75 - .87 range in a Black sample.

Although the bidimensional measures appear to have acceptable psychometric properties in Black immigrant samples, the measures still may miss important parts of the acculturation experience of Black immigrants. Tridimensional measures have been developed that can assess the three dimensions of cultural change of Black immigrants. These measures are feasible, that is they have acceptable psychometric performance ( $\alpha = .85 - .95$ ) and appear to represent varying acculturation strategies across multiple Black immigrant samples in North America (Ferguson et al., 2012, 2014; Medina, 2016; Medina et al., 2019). One limitation of the three studies that used a tridimensional measure of acculturation is that research so far has only sampled Jamaican immigrants in the U.S., although Canadian samples had a wider variety of Black immigrants. The next section will review the literature of studies that tested the connection between acculturation and health outcomes in Black immigrants.

### **Acculturation and Health**

There is a long history of research exploring determinants of health. There have been several ways that public health research has worked to examine the health outcomes of immigrants. For example, the Hispanic Paradox refers to the discovery that Hispanic immigrants' health status was better than native-born Americans, despite their lower socioeconomic status (Markides & Coreil, 1986). There are several potential hypothesized explanations for this phenomenon. These hypotheses included the selective migration hypothesis, and cultural practices. The selective migration hypothesis posits that the decision to migrate is a complex decision-making process, which could lead to those with more education, resiliency, and better

health, being more likely to migrate to other countries. In turn, the sample of immigrants that are present in the host culture, represents the healthiest subset of the heritage country population (Anderson et al., 2004). However, this does not explain why health would deteriorate the longer immigrants are in the U.S. Another explanation for the Hispanic Paradox included cultural practices serving as protective factors for health. This hypothesis derives from another effect of the Paradox; as the immigrant generation or length of stay in the U.S. increased, health outcomes decreased (Acevedo-Garcia & Bates, 2008). This pattern of better health upon migration and worse outcomes as time in the U.S. increases, suggests that the answer could be within the process of adapting to the new host culture or whether they retain the cultural practices of the heritage culture (Chen et al., 2008).

Yoon and colleagues, (2013) also reviewed 325 studies published by the end of 2010, that examined acculturation strategies, enculturation and acculturation in relation to positive and negative health, including anxiety, depression, psychological distress, negative affect, self-esteem, satisfaction with life and positive affect. There were a multitude of ways acculturation was measured within the review including proxy measures. Overall, the meta-analysis provided evidence that marginalization was related to an increase in negative mental health, and that integration appeared most favorable for mental health followed by assimilation and separation. However, few studies with Black immigrants were present in this review. Next, I will review the empirical literature regarding the relationship between health outcomes and acculturation in Black immigrants.

This section will review studies that tested the relationship(s) between acculturation and health indicators in Black immigrant samples in the U.S. and Canada. That is, to be included in the review, studies had to have at least one measure of acculturation and one measure of mental

or physical health or health behavior. Specifically, there are three sections that cover (a) self-reported physical health measures, (b) health behavior, and (c) self-reported psychological health measures. *Physical health* measures include physical health conditions, such as diabetes or obesity, and/or overall physical health ratings. *Health behavior* measures include behaviors linked to either poor health, such as smoking, or better health, such as pap screening. *Psychological health* measures include symptoms of mental disorders such as depression and/or anxiety, or overall well-being or quality of life. Studies that tested the relationship of acculturation to physical health are in the first sub-section, followed by those on health behavior and psychological health. For ease of comparisons, effect sizes are converted into Cohen's *d* equivalents when possible.

### ***Acculturation and Physical Health***

One study tested a relationship between acculturation and diabetes. Mukaz and colleagus (2022) tested whether diabetes was related to acculturation, by combining the proxy measures of American citizenship and percent of life spent in the U.S. Participants who spent more than 25% of their lives in the U.S. or had U.S. citizenship were considered *acculturated*, while those with less than 25% of their lives spent in the U.S. and without citizenship were considered *not acculturated*. Diabetes was assessed by asking whether participants had been diagnosed with diabetes by a doctor, and was coded as 1 *yes* or 2 *no*. Results of logistic regression showed that those who were *acculturated* (spent more than 25% of their lives in the U.S. or had U.S. citizenship) had two-fold higher odds of having diabetes, (OR = 2.10; 95%CI [1.07, 4.12], Cohen's *d* equivalent = .41) than those who were not acculturated.

Two studies examined the link between acculturation and obesity. Bennet and colleagues (2007) tested whether obesity was related to acculturation in a sample of 551 Black immigrants

and U.S.-born Black individuals. Acculturation was measured using the Language Subscale of the Short Acculturation Scale for Hispanics (SASH; Marin et al., 1987). Participants are considered low, moderate, or highly acculturated based on the scores partially reflecting a unidimensional conceptualization. In this study two groups (low/moderate vs. high) were used due to low numbers in the low and moderate group. Two acculturation proxy measures were also used, nativity status (U.S.-born vs. foreign-born) and immigrant generation (1<sup>st</sup> vs. 2<sup>nd</sup> vs. 3<sup>rd</sup> generations). Obesity was measured using Body Mass Index calculated from self-reported height and weight; BMI of >30 was considered obese. Results from a logistic regression controlling for age, gender and occupation indicated that acculturation was related to obesity, specifically the low/moderate language acculturation group were one half as likely to be obese as those in the high acculturation group (OR = 0.45; 95%CI [0.22, 0.80],  $d = .44$ ). In terms of the proxy nativity status, foreign-born participants were over 40% less likely to be obese compared to U.S.-born participants (OR = 0.57, 95%CI [0.38, 0.84],  $d = .31$ ). In terms of immigrant generation, the second generation were one half as likely to be obese compared with the third-generation participants (OR = 0.54, 95%CI [0.37, 0.80],  $d = .34$ ), but there was no difference in obesity between first generation and third generation participants (OR = 0.71; 95% CI [0.37, 1.39],  $d = .19$ )

Vander Veen (2015) used the Stephenson Multigroup acculturation scale (Stephenson, 2000) and two proxy measures, immigrant generational status and nativity status, to test the relationship between acculturation and obesity in a sample of 55 Black African immigrants residing in the northeast and midwestern U.S. (i.e., Washington D.C., Baltimore, Chicago, Boston). Vander Veen (2015) had two outcome variables, an obesity composite that combined three measures, self-reported BMI, waist circumference, and self-reported perceived weight

status, and obesity symptoms was operationalized with the 20-item Weight-Related Symptom Measure (WRSM; Patrick et al., 2004). Controlling for age, the highest level of education, resilience, and nation of origin, regression analysis showed that obesity symptoms were inversely related to the unidimensional acculturation ( $\beta = -.30, p = .043, d = .63$ ), but not to either of the proxies (immigrant generation  $\beta = -.01, p = .934, d = .02$ ; nativity  $\beta = .04, p = .740, d = .08$ ); and that obesity was not related to unidimensional acculturation ( $\beta = -.11, p = .531, d = .22$ ), immigrant generation ( $\beta = -.19, p = .153, d = .39$ ), or nativity ( $\beta = .16, p = .270, d = .32$ ).

One study tested the relationship between acculturation and self-rated physical health. (2014) tested the link between acculturation (assessed using proxy measures) to global self-rated health in a sample of 763 Sub-Saharan African immigrants to the U.S. Health was measured using a single item 5-point Likert scale question rating overall health status from 1 = excellent to 5 = poor. This was dichotomized as 1 = *excellent/very good* (i.e., better health) vs. 0 = *good/fair/poor* (i.e., worse health), based on the distribution of responses in the sample. Proxy acculturation measures were: (a) English language proficiency with responses of 0 *not well/not at all* (low acculturation/marginalized or separated), 1 *well* (moderate acculturation/integrated), and 2 *very well* (high acculturation/assimilated), (b) duration of residence in the U.S., and (c) age at immigration grouped into four categories (<20, 21–30, 31–40 and >41 years). After controlling for pre-migration health and chronic disease in a multivariate logistic regression, there were mixed results for the language, duration in U.S., and age of immigration. Specifically, participants who were assimilated were less likely (OR = 0.28,  $p < .001, d = .70$ ) to have excellent/very good health than those who were marginalized/separated, but there were no difference in self-rated health between integrated and marginalized/separated participants (OR = 0.63,  $p = .085, d = .26$ ); duration in the U.S. was not related to self-rated health (1-4 years OR =

1.63,  $p = .057$ ,  $d = .27$ ; OR = 1.45,  $p = .192$ ,  $d = .21$ ); and although those who immigrated when 20 years old or younger did not have significantly different self-rated health from those who immigrated from 21-30 (OR = 1.98,  $p = .062$ ,  $d = .38$ ) or from 31-40 (OR = 1.75,  $p = .157$ ,  $d = .31$ ), those who immigrated when 41 or older had significantly better self-rated health (OR = 4.39,  $p < .001$ ,  $d = .82$ ).

### ***Acculturation and Health Behavior***

The three studies that examined only health behavior had three outcomes: pap screening for cervical cancer prevention, cigarette smoking, and condom use. Adegboyega and colleagues (2021) examined the relationship between acculturation strategies (i.e., Separation vs. Integration) and pap screening in 99 Sub Saharan African female immigrants to the U.S. Acculturation was measured by the Modified Psychological Acculturation Scale (Commodore-Mensah et al., 2018) two additional items assessing behavioral acculturation and two additional items assessing cultural acculturation. Pap screening was assessed by report and coded as 1 = *yes* vs. 0 = *no* or *don't know*. Logistic regression analysis demonstrated that those endorsing an integration strategy were seven times more likely to have been screened, than those endorsing a traditional strategy (OR = 7.08,  $p = .006$ ,  $d = 1.08$ ).

Bennet and colleagues (2008) tested whether smoking status was related to acculturation in 667 Black participants in the U.S. Similar to the Bennet (2007) study described above, acculturation was assessed in three ways: (a) an unidimensional acculturation measured using the language subscale of the Short Acculturation Scale for Hispanics (Marin et al., 1987) coded as high acculturation vs. low/moderate acculturation; (b) a proxy of nativity status at four levels (Caribbean-born, African-born, and other birthplace vs. U.S.-born), and (c) a proxy of generational status (1<sup>st</sup> generation, 2<sup>nd</sup> generation vs. 3<sup>rd</sup> generation). Smoking status was defined

as the 7-day point-prevalence. Adjusted odds ratio analyses showed mixed results after adjusting for age, sex, and occupation, specifically smoking status was related to unidimensional acculturation (High acculturation OR = 2.62, 95%CI [1.17, 5.85]  $d = .53$ ); to nativity (Caribbean-born OR = 0.16, 95%CI [.08, .34]  $d = 1.01$ ; African-born OR = .23, 95%CI [.08, .73]  $d = .81$ ); and partially to generational status (1<sup>st</sup> generation OR = 0.18, 95%CI [.10, .34]  $d = .95$ ; 2<sup>nd</sup> generation OR = 1.06, 95%CI [0.52, 2.18]  $d = .03$ ).

Ebrahim and colleagues (2016) tested whether condom use of 201 Somali and Ethiopian immigrants in Minnesota was related to acculturation assessed with the Short Acculturation Scale for Hispanics (SASH; Marin et al., 1987). Condom use was measured by: (a) attitude toward male condom use, and (b) behavioral intention to use condoms. *Attitude* toward male condom use was assessed directly by a 3-item scale. An example question and response include: ‘if I have sex, using a condom each time would be’: *good/bad, pleasant/unpleasant, and agreeable/disagreeable*. Average score for these items was obtained after negatively worded items were reversely coded. Scores ranged between 1 and 5; higher scores indicated more positive attitude toward condom use. *Behavioral intention* to use condoms was measured by three items. The items asked if participants *intend/plan/want* to use male condom with their steady partners on a Likert scale. Higher scores indicated a stronger intention to use male condoms. Acculturation was significantly positively related to attitudes towards condom use ( $b = 0.26, p < .05$ ), and behavioral intention to use condoms ( $b = .31, p < .05$ ).

One study had an outcome variable that combined self-reported physical health and health behavior into a single cardiovascular health risk variable. In a sample of 253 Ghanaian- and Nigerian-born immigrants aged 35-74 years, Commodore-Mensah and colleagues (2018) tested whether acculturation strategies (separation vs. integration) assessed with the

Psychological Acculturation Scale (Tropp, 1999) and the proxy measure length of U.S. residence (dichotomized into <10 years living in the U.S. vs. > 10 years living in the U.S.) were related to a composite cardiovascular disease (CVD) risk factor variable. The composite CVD risk score was created by summing the number of self-reported risk factors (hypertension, diabetes, overweight/obesity, smoking, hyperlipidemia, and physical inactivity), then dichotomizing at three of possible six risk factors. Having more than three CVD risk factors has been shown to indicate a tenfold increase in CVD (Garcia et al., 2016; Mensah et al., 2015). Results from a multivariable logistic regression showed mixed results, specifically that each additional year of residence in the U.S. was significantly associated with CVD risk (OR = 1.06, 95CI [-1.03,-1.10],  $d = .03$ ), and those with an integration strategy had lower odds of having >3 CVD risk factors compared to the separation strategy (OR= 0.46, 95% CI [0.24, 0.87],  $d = .43$ ).

### ***Acculturation and Psychological Health***

The three studies that tested relationships between acculturation and psychological health in Black Caribbean immigrants or people of African descent assessed a number of positive and negative outcomes, sometimes both positive and negative outcomes in the same study. The positive outcomes included subjective well-being, life satisfaction, positive affect, and quality of life, and the negative outcomes included psychological distress and negative affect.

Obasi and Leong (2009) explored whether psychological distress was related to acculturation strategies (integration vs. separation) assessed with the bidimensional MAPSAD (Obasi & Leong, 2010) in 130 participants of African descent. Psychological distress was measured by the Brief Symptom Inventory (BSI; Derogatis, 1992), a 53-item self-report rated on a 5-point Likert scale ranging from 4 (*extremely*) to 0 (*not at all*). Acculturation was related to

psychological, specifically those endorsing an integration strategy had higher psychological distress ( $M = 77.54$ ) than those endorsing a separation strategy ( $M = 45.76, p = .003, d = .72$ ).

One study tested whether subjective well-being was related to acculturation assessed with the tridimensional measure, the Acculturation Scale for Black Canadians (ARSBC; Medina, 2016), which was adapted from the ARSJA (Ferguson et al., 2012) as described above. This sample was 120 first and second generation Black African and Caribbean Canadian adolescents and young adults. Subjective well-being was measured with two scales assessing three constructs. First, the Satisfaction with Life Scale (Diener et al., 1985) is a five-item measure that assesses individuals' overall evaluations of their lives, e.g., "In most ways my life is close to my ideal," on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). Higher scores indicate higher satisfaction with life. Second, the Positive and Negative Affect Schedule for Children (PANAS-C; Laurent et al., 1999), with 12 positive adjectives (e.g., "strong", "proud", "happy") and 15 negative adjectives (e.g., "guilty", "scared", "gloomy") that participants were asked to rate from 1 (*very slightly or not at all*) to 5 (*extremely*). For this scale, the mean of the positive affect items was calculated with higher scores indicating greater positive affect, and the mean of the negative affect items was calculated with higher scores indicating greater negative affect. Life satisfaction was related to Jamaican culture ( $\beta = .24, p = .020, d = .49$ ), and European American culture ( $\beta = .25, p = .006, d = .52$ ), but not to African American culture ( $\beta = -.04, p = .715, d = .08$ ). Positive affect was related to Jamaican culture ( $\beta = .28, p = .007, d = .58$ ), but not to European American culture ( $\beta = .08, p = .389, d = .16$ ), or to African American culture ( $\beta = .01, p = .939, d = .02$ ). Negative affect was related to Jamaican culture ( $\beta = -.24, p = .023, d = .49$ ), but not to European American culture ( $\beta = -.12, p = .194, d = .24$ ), or to African American culture ( $\beta = .08, p = .464, d = .16$ ).

Medina (2019) partially replicated the findings above by testing the relationship between acculturation, measured using the tridimensional ARSBC (Medina, 2016), and life satisfaction in an independent sample of 187 1<sup>st</sup> and 2<sup>nd</sup> generation Black immigrants to Canada. Life Satisfaction was measured by the Satisfaction with Life Scale (Diener et al., 1985) as described above. Bivariate correlations showed that life satisfaction was related to Jamaican culture ( $r = .19, p < .05, d = .39$ ), and European American culture ( $r = .26, p < .01, d = .54$ ), but not to African American culture ( $r = .11, p > .05, d = .22$ ).

Ferguson (2014) assessed the relationship between acculturation strategy (tricultural integration, bicultural integration) and psychological health in a sample of 80 first-generation Jamaican immigrants using the tridimensional acculturation measure the ARSJA (Ferguson et al., 2012) to divide the sample into three groups: tricultural/integrated (high on all three cultures, Jamaican, European American, and African American), bicultural/integrated (high on two of the three cultures), and separated/monocultural (high Jamaican only). Psychological health was assessed with two variables: (1) quality-of-life and (2) psychological distress. Quality of life was measured with the Satisfaction with Life Scale (Diener, et al., 1985), a 5-item measure with items rated on a 5-point scale (1= *strongly disagree* to 5 = *strongly agree*), and a scale mean was calculated. Psychological distress was measured with the PHQ-4 (Kroenke et al., 2009), a 4-item measure with items rated on a 4-point scale (1 *not at all* to 4 *nearly every day*). Controlling for age and education, MANCOVA showed that those who endorsed a tricultural/integrated strategy had higher psychological distress ( $M = 2.15, SE = 0.22, p = .013$ ) than those who were separated/monocultural ( $M = 1.22, SE = 0.23$ ), but there was no difference from integrated/bicultural ( $M = 1.60, SE = 0.18$ ). There were no significant differences in Life

Satisfaction between separated/monocultural ( $M = 3.16$ ,  $SE = .22$ ,  $p > .05$ ), bicultural/integrated ( $M = 2.94$ ,  $SE = .18$ ), or tricultural/integrated integration groups ( $M = 3.43$ ,  $SE = 0.21$ ).

In summary, most of the studies of physical health and health behavior with Black immigrants assessed unidimensional acculturation or used proxy measures of acculturation. These studies had mixed findings, for example, obesity was related to more acculturation to the U.S. in one study, and less acculturation to the U.S. in another, and also mixed depending on the acculturation or health measure within studies (e.g., Bennet et al, 2007; Vander Veen, 20015). The four studies of mental health of Black immigrants assessed multiple dimensions of acculturation, that is, bidimensional measures of retaining heritage culture (enculturation) and adopting host culture (acculturation), and even tridimensional acculturation. Several studies also combined the dimensions to create groups according to Berry's (1988) strategies. These studies also had mixed results. For example, life satisfaction was related to Jamaican culture and European American culture but not to African American culture, but positive and negative affect were only related to Jamaican culture (Medina, 2016; Medina et al., 2019). Overall, there are few studies that tested the relationships between acculturation and health of Black Caribbean immigrants to the U.S. or Canada. Findings of these few studies are mixed, which may be due to the variety of measures of acculturation.

This study addressed that gap in research on tridimensional acculturation and psychological health. Specifically, this study used both the dimensional approach to measuring acculturation and Berry's (1988) strategies that combine the dimensions into groups. No studies to my knowledge have examined links between both of these measurement approaches to psychological health. In this study, I had one outcome that assesses psychological distress and one that assesses life satisfaction. Depression was used to assess psychological distress to be

similar to previous research with Black immigrants (e.g., Jackson et al., 2010; Marquez-Velarde et al., 2022; Ferguson et al., 2014). In addition to expanding on knowledge of theoretically expected relationships, these findings may improve the quality of life for Black Caribbean immigrants by informing intervention development or adaptation. The present study aimed to focus on the broader Black Caribbean population in the U.S. to examine whether tridimensional acculturation best describes their acculturation pattern and if so, how does acculturation relate to psychological health?

- *Hypotheses 1: Tri-dimensional acculturation will be related to psychological distress.*
  - o *Hypothesis 1a: Caribbean orientation will be inversely related to psychological distress.*
  - o *Hypothesis 1b: European orientation will be positively related to psychological distress.*
  - o *Hypothesis 1c: African American orientation will be inversely related to psychological distress.*
  
- *Hypotheses 2: Tri-dimensional acculturation will be related to life satisfaction.*
  - o *Hypothesis 2a: Caribbean orientation will be positively related to life satisfaction.*
  - o *Hypothesis 2b: European orientation will be inversely related to life satisfaction.*
  - o *Hypothesis 2c: African American orientation will be positively related to life satisfaction*
  
- *Hypotheses 3: Acculturation strategies will be related to psychological distress.*

- *Hypothesis 3a: Participants in the tricultural integrated strategy will have lower psychological distress than those in each bicultural integrated, each assimilated, separated or marginalized strategy groups.*
- *Hypothesis 3b: Participants with a bicultural integrated strategy will have lower psychological distress than those in the separated, assimilated, or marginalized strategy groups.*
- *Hypothesis 3c: Participants with separated strategies will have lower psychological distress than those in the assimilated, or marginalized strategy groups.*
  
- *Hypotheses 4: Acculturation strategies will be related to life satisfaction.*
  - *Hypothesis 4a: Participants with a tricultural integrated strategy will have greater life satisfaction than those in each bicultural integrated, each assimilated, separated or marginalized strategy groups.*
  - *Hypothesis 4b: Participants with a bicultural integrated strategy will have greater life satisfaction than those in each assimilated, separated or marginalized strategy groups.*
  - *Hypothesis 4c: Participants with separated strategies will have greater life satisfaction than those in the assimilated, or marginalized strategy groups.*

## Chapter 3

### Methods

#### Participants & Procedures

*Eligibility.* This study focused on Black Caribbean immigrants who were 1<sup>st</sup>, 1.5 or 2<sup>nd</sup> generation immigrants. Generational status referred to the age at migration or nativity status. Specifically, first-generation immigrants were those who migrated as adults. One point five generation immigrants migrated before adulthood. Second-generation immigrants were those who were born in the U.S. and have at least one foreign-born parent. Furthermore, Black Caribbean immigrants in this study referred to all immigrant generations from English Speaking Caribbean Countries including Anguilla, Antigua and Barbuda, the Bahamas, Barbados, Belize, the British Virgin Islands, the Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

Participants were eligible for the study if they were adults 18 and over, spoke English fluently, self-identified as Black, and identified as either first generation, one and a half generation, or second-generation Caribbean immigrants to the U.S. Participants were required to report English as their official language, thus, Francophone or Hispanophone Caribbean countries were excluded. This exclusion was based on the tridimensional acculturation measure which was specifically designed for English-speaking Caribbean groups.

Most of the sample (66%) were 2<sup>nd</sup> generation immigrants from Jamaica, and 79% between 18 and 45 years old. The sample was 71% women and 27% men. The highest proportion of the sample held a bachelor's degree and worked full time. Nearly 80% of the sample resided in either the Northeast (~40%) or the Southeastern (~40%) U.S. with the

remaining 20% from other geographic areas of the U.S. Tables 1-3 have additional description of participant characteristics.

*Human Subjects Protection.* All study procedures received IRB approval. Participation in this study had opportunities for compensation including payment via the Prolific platform. Upon clicking the Qualtrics link to participate, interested individual read an Information Letter and proceeded to the survey if they agreed to participate. Participants were able to end their participation early and were not required to answer any questions they did not wish to. There were no anticipated costs associated with completing the survey. After accessing the Qualtrics questionnaire, participants were required to read the consent page and agree to continue.

*Sample Size Determination.* To estimate power for hypotheses 1 and 2, an a priori statistical power analysis was conducted using the GPOWER v2 software program (Faul & Erdfelder, 1992). This analysis estimated the total number of participants needed to achieve a statistical power of .80, with a medium effect size ( $d = .5$ ), and an alpha level of .05 to detect a significant relationship with three predictor variables in multiple linear regression. The result indicated a required sample size of 77 participants. For Hypotheses 3 and 4, another a priori power analysis using G\*Power was conducted to estimate the number of participants needed to detect differences between eight groups using ANOVA. The analysis indicated that 180 participants were required. Thus, the planned sample size for this study was 240 to account for participants with potentially missing data.

*Recruitment & Data Collection.* Participants were recruited using social media flyers posted on Instagram and Facebook, specifically within groups comprising Black Caribbean immigrants or groups related to the African-Caribbean diaspora. A dedicated Facebook page was

created for the study, providing information about the research and the researcher, along with links to the consent forms and Qualtrics questionnaire.

Initially, data collection was conducted via Qualtrics, with participants receiving \$5 compensation by submitting their email address through a separate and secure Google Form. However, both the Qualtrics survey and the Google Form were compromised by bot activity, making it difficult to distinguish between genuine participants and automated entries. As a result, data collection was temporarily paused to address security concerns and protect the integrity of the study. To ensure valid and secure responses, the data collection process was subsequently shifted to Prolific (<https://www.prolific.com>), a research recruitment platform that allowed for direct participant compensation and increased response authenticity. Prolific is a service that allows individuals to participate in compensated research studies. The survey was uploaded to Prolific for eligible participants to complete in exchange for compensation. Due to the need for additional participants and limited funding, a portion of the data was also collected without compensation, using targeted social media recruitment strategies.

From the Prolific platform, 247 surveys were logged. Of these, 64 surveys were removed due to being grossly incomplete (i.e., all or most items left blank), leaving 183 surveys. From Qualtrics (where participants were not compensated), 103 surveys were logged, with 13 removed for gross incompleteness, leaving 90. Merging the two data sets resulted in a total of 273 surveys. An additional 29 surveys were removed because participants indicated they were from, or had parents exclusively from, French or Spanish-speaking Caribbean countries. As stated in the inclusion criteria, only English-speaking Caribbean countries were included regardless of participants' English proficiency. This yielded a final sample of 244 participants.

Listwise deletion was used for handling missing data in all analyses. Of the 244 participants recruited, 235 (96%) had complete data across all variables. Some participants had missing data on at least one of the following measures: life satisfaction, 7 missing cases (3%); psychological distress, 4 missing cases (2%); acculturation variables, 1 to 2 missing cases (<1%). The *N* for each analysis differs slightly based on missingness of variables in the analysis, but none had more than 5% missing data. Based on the recommendation that up to 5-10% missing data can be disregarded without biasing results (Graham, 2009); no additional missing data analyses were conducted.

## **Measures**

*Demographics.* Demographic information, e.g., age, other race identification, education level, education level of parents, and location information was collected using option selections and a text box entry option (e.g., Please enter where you live). For analyses, the following participant characteristics were included as covariates: *Employment* was assessed by participants working full-time vs. those working part-time or not at all; *Income* assessed by whether participants made less or more than \$68,000; *Location* defined by geographic area of the U.S and assessed by whether participants lived in the East Coast or any other part of the continental U.S. ; *Age* assessed as under or over the age of 45 years old; and *Generational Status* has the comparison group as first-generation immigrants, compared to (1) 1.5 generation and (2) 2<sup>nd</sup> generation.

*Tridimensional Acculturation* was measured using a modified version of the Acculturation Rating Scale for Jamaican Americans (ARSJA; Ferguson et al. 2012) that was created by adapting the bidimensional Acculturation Rating Scale for Mexican Americans 2<sup>nd</sup> version (ARMSA; Cuellar et al., 1995) for people with immigrant backgrounds from

Anglophone Caribbean nations. For the purpose of this study, the aspects that corresponded to the Jamaican orientation of Ferguson's ARSJA scale were modified to capture the experience of all Anglophone Caribbean immigrants. This is a 34-item scale that assesses acculturation using 3 subscales: a *Caribbean Orientation Scale* (COS; 16 items), a *European American Orientation Scale* (EAOS; 9 items), and an *African American Orientation Scale* (AAOS; 9 items). On each of these scales, participants were asked to rate themselves on an interval scale from one to five (1 = *none or not at all*; 5 = *very much or always*) regarding the likelihood of their attitudes and behaviors being consistent with each of the three cultures. Examples of the types of the questions asked for each of the three orientations are: "My friends, while I was growing up, were of Caribbean/West Indian origin," "My friends, while I was growing up, were of White American/European American origin," and "My friends, while I was growing up, were of African American/African American origin". In the present study, references on the Jamaican Orientation Scale to Jamaican culture were replaced with the term "Caribbean/heritage culture". One item will be modified to be more generic; for example, "I speak Jamaican Patois" will be changed to "I speak my heritage culture language/dialect (including, English, Patois, etc.). There are two ways to score this scale: three continuous scales or eight acculturation strategy groups.

First, a continuous score was calculated for each subscale corresponding with each of three dimensions, Caribbean (CO), European/White (EAO), and Black/African American (AAO) orientations. These continuous scores are the mean of items in each subscale, with higher scores meaning greater orientation toward that cultural orientation. Subscale scores can be prorated if fewer than 75% of items are missing. For all three scales, internal consistency reliability in this sample was strong, Caribbean orientation scale ( $\alpha = .92$ ), African-American orientation scale ( $\alpha = .90$ ), European American orientation scale (Cronbach's  $\alpha = .86$ ).

Second, acculturation strategies can be created by cross tabulation using midpoint splits as cutoffs (i.e., 3 on a 1-5 response scale) for high or low orientation to each dimension, resulting in eight possible categories which Ferguson and colleagues (2012) aligned with Berry's (1984) four acculturation strategies: *integrated* included those with (1) high Caribbean orientation scale scores, and high European American Orientation Scale scores (2) high Caribbean Orientation Scale scores, high African American Orientation Scale scores and (3) high Caribbean Orientation Scale scores, African American Orientation Scale scores, and European American Orientation Scale scores; *assimilated* with (4) low Caribbean Orientation Scale scores and high European American Orientation Scale scores (5) low Caribbean Orientation Scale scores and high African American Orientation Scale scores or (6) low Caribbean Orientation Scale scores and high European American Orientation Scale scores and African American Orientation Scale scores; *separated* with (7) high Caribbean Orientation Scale scores only; and *marginalized* status with (8) low scores on all three orientation subscales (See Table 4 for corresponding names and descriptives of each strategy group).

*Psychological Distress.* The Center for Epidemiologic Studies Depression Scales (CES-D-10 (González et al., 2017)) is a self-report measure that evaluates common symptoms of depression and is widely used in settings including mental and physical health treatment. The questionnaire was adapted from its original 20 item scale by using item total correlations and removing redundant items. The scale measures frequency of depression symptoms experienced in the past week. Responses are based on a 4-point scale from 0 (*rarely or none of the time*) to 3 (*most or all of the time*) with positively worded items (items 5 and 8) reverse scored, and total scores ranging from 0 to 30 with higher scores meaning greater distress. To create the total score,

all items are summed. In the current sample the scale demonstrated acceptable reliability ( $\alpha = .83$ ).

*Life Satisfaction.* Life satisfaction was measured with the Satisfaction with Life Scale (SLS; Diener et al. 1985), a 5-item measure that assesses an individual's overall perception of their own lives on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*); higher scores signify a greater satisfaction with life, with a potential range from 5 - 35. A sample item is: "In most ways my life is close to my ideal." Items are summed to create a total score. This scale has been used in other Black Caribbean-origin samples. This scale demonstrated strong reliability in the current sample ( $\alpha = .90$ ).

### **Analysis Plan**

*Preliminary Analyses.* The data were analyzed using the statistical software SPSS with statistical significance at alpha level .05. Descriptive statistics including the mean and standard deviation were calculated for continuous variables. Frequency and proportions were calculated for each categorical variable. Descriptive statistics were conducted for the independent and dependent variables in addition to the covariates (See Table 1 and 3).

*Tests of Assumptions.* The key assumptions of linear regression and ANOVA are independence of observations, homogeneity of variances, and normality of the dependent variable (Sawyer, 2009). Examination of residual plots, frequency distributions, skewness and kurtosis was used to identify whether the assumptions of normality and homogeneity of variance were violated. Levene's test was conducted to assess the assumption of homogeneity of variance for the dependent variables across acculturation strategy groups. A non-significant result ( $p > .05$ ) indicates that the assumption of equal variances was met. Skewness values between -2 and +2 and kurtosis values between -7 and +7 are generally considered acceptable indicators of

normality (Hatem et al., 2022) and values beyond those indicated will dictate whether assumptions were met. Independence of observations is difficult to test directly, but given the two methods of data collection, this increases the likelihood of there being independent observations. Multicollinearity is an important assumption of linear regression, so correlations and VIF for the predictors were examined in the regression model.

*Hypothesis Testing.* To test Hypotheses 1 and 2, multiple linear regression was used. In two linear regression models, each of the 3 continuous orientation scores were entered as predictors; psychological distress and life satisfaction were the outcome variables. In step 1, there were five covariates: generational status, employment, location, income, and age. In step 2, the three acculturation orientations were added. To test Hypotheses 3 and 4, ANCOVA was used. In two ANCOVA, the categorical acculturation strategies were the independent variable; generational status, age of immigration, employment, income, and state of residence were the covariates; psychological distress and life satisfaction were the dependent variables. Although length of time in the U.S. was initially planned as a covariate, it was not included in the analysis because U.S.-born participants did not report their length of time in the U.S. Therefore, this data was not available for all participants but when observed, and completely overlapped with the pattern of generational status. If there were significant main effect ANOVA/ANCOVA, post-hoc tests with Bonferroni corrections were used to examine differences between levels of the independent variables, such as each of the eight groups, i.e., differences between participants with different acculturation strategies. Effect sizes were reported for each test, converted to Cohen's (1988) *d* for ease of comparison, using the conventions of .2 small, .5 medium, and .8 large.

## Chapter 4

### Results

#### *Test of Assumptions*

Linear regression and ANOVA are the main statistical analyses being conducted in this study. The key assumptions of linear regression and ANOVA are independence of observations, homogeneity of variances, and normality of the dependent variable (Sawyer, 2009).

Independence of observations cannot be verified but can be assumed based on the two methods of data collection used in this study. Based on the skewness and kurtosis statistics, the independent and dependent variables were appropriately normally distributed (Hattem et al., 2022). Each acculturation orientation had skewness and kurtosis values within the appropriate range indicating normality (EAOS skewness = 0.49 kurtosis = -0.17, COS skewness = -0.62 kurtosis = 0.01, AAOS skewness = -0.47 kurtosis = -0.51). Life satisfaction and psychological distress also met the assumption of normality (SWL; skewness = -0.20 kurtosis = -0.81, PD; skewness = 0.32 kurtosis = -0.64) Therefore assumptions of normality were met for the independent and dependent variables. For ANOVA, homogeneity of variances was tested using Levene's statistic. When psychological distress was the dependent variable Levene's Test was not significant ( $p = .569$ ). When satisfaction with life was the dependent variable Levene's Test was not significant ( $p = .282$ ). This indicated that the assumption of equal variances was met (Emerson, 2022). Furthermore, examination of the correlations and VIF statistics revealed that multicollinearity was not a concern for the independent and dependent variables. EOS and COS have a moderate negative correlation ( $r = -0.33, p < .001$ ), which suggests they are not highly collinear. The correlation between AAOS and COS ( $r = 0.139, p < .031$ ) was weak, so multicollinearity is unlikely to be a concern between these two variables. The correlation

between AAOS and EAOS was weak and not significant ( $r = -.08, p > .199$ ). Additionally, the VIF statistics for the predictor variables are all below the threshold of 5, indicating that multicollinearity was not a concern in the regression models (Richard Tay, 2017). Specifically for Life Satisfaction and Psychological Distress, the VIF for EAOS was 1.13, for AAOS was 1.02, and for COS was 1.14. These values indicate that the independent variables are not highly correlated and determine that multicollinearity does not present an issue for main analyses. Overall, the assumptions for ANOVA and multiple regression were met for the proposed models.

## **Hypothesis Tests**

*Hypotheses 1: Tri-dimensional acculturation will be related to psychological distress.*

*o Hypothesis 1a: Caribbean orientation will be inversely related to psychological distress.*

*o Hypothesis 1b: European orientation will be positively related to psychological distress.*

*o Hypothesis 1c: African American orientation will be inversely related to psychological distress.*

A hierarchical multiple regression was conducted to examine whether acculturation variables significantly predicted psychological distress beyond demographic covariates. In Step 1, the covariates, including generation status (1<sup>st</sup> generation vs. 1.5 and 1<sup>st</sup> vs. 2<sup>nd</sup> generation), employment status (full-time vs. not), location (East vs. other), income (<68,000 vs. >68,000) and age (over 45 vs. under 45 years old), were entered into the model. This step was statistically significant,  $F(6, 230) = 4.70, p < .001$ , and explained approximately 11% of the variance in psychological distress,  $R^2 = .11$ . Only employment was significantly related to psychological distress,  $b = 2.56, SE = 0.88, \beta = .20, p = .004$ .

In Step 2, the acculturation predictors (European American Orientation (EAO), African American Orientation (AAO) and Caribbean Orientation (CO)) were added to the model. This step did not significantly improve the model,  $\Delta R^2 = .009$ ,  $\Delta F(3, 227) = 0.79$ ,  $p = .500$ , indicating that the addition of the acculturation variables did not explain a significant amount of additional variance in psychological distress beyond the covariates. None of the acculturation orientations were significantly related to psychological distress: Caribbean Orientation,  $B = -0.45$ ,  $SE = 0.48$ ,  $\beta = -.07$ ,  $p = .357$ , 95% CI [-1.40, 0.51]; African American Orientation,  $B = 0.01$ ,  $SE = 0.45$ ,  $\beta = .00$ ,  $p = .991$ , 95% CI [-0.89, 0.90]; European American Orientation,  $B = 0.44$ ,  $SE = 0.52$ ,  $\beta = 0.06$ ,  $p = .399$ , 95% CI [-0.59, 1.46].

*Hypotheses 2: Tri-dimensional acculturation will be related to life satisfaction.*

*o Hypothesis 2a: Caribbean orientation will be positively related to life satisfaction.*

*o Hypothesis 2b: European orientation will be inversely related to life satisfaction.*

*o Hypothesis 2c: African American orientation will be positively related to life satisfaction*

A hierarchical multiple regression was conducted to examine whether acculturation variables significantly predicted satisfaction with life beyond demographic covariates. In Step 1, the covariates location, employment status, age, income, and generation status were entered into the model. This step was statistically significant,  $F(6, 227) = 8.05$ ,  $p < .001$ , explaining 18% of the variance in life satisfaction,  $R^2 = .18$ . Only employment,  $b = -3.57.48$ ,  $SE = 1.06$ ,  $\beta = -.22$ ,  $p < .001$ , and income,  $b = 3.64$ ,  $SE = 1.01$ ,  $\beta = .24$ ,  $p < .001$ , were significantly related to life satisfaction.

In Step 2, tridimensional acculturation variables (EAO, AAO, and CO), were added. This addition significantly improved the model,  $\Delta R^2 = .04$ ,  $\Delta F(3, 224) = 3.84$ ,  $p = .010$ , with the final

model accounting for 21.6% of the variance in satisfaction with life ( $R^2 = .216$ , Adjusted  $R^2 = .184$ ). Caribbean orientation had a significant positive relationship to life satisfaction ( $b = 1.44$ ,  $SE = 0.57$ ,  $\beta = .17$ ,  $p = .013$ , 95%CI = [.31, 2.57]), but European orientation ( $b = 0.90$ ,  $SE = 0.61$ ,  $\beta = 0.10$ ,  $p = .142$ , 95% CI = [-0.30, 2.10] ) and African American orientation ( $B = 0.93$ ,  $SE = 0.53$ ,  $\beta = 0.11$ ,  $p = .083$ , 95% CI = [-0.12, 1.98] ) were not significantly related to life satisfaction.

*Hypotheses 3: The eight Acculturation strategy groups will be related to psychological distress.*

*o Hypothesis 3a: Participants in the tricultural integrated strategy will have lower psychological distress than those in each bicultural integrated, each assimilated, separated or marginalized strategy groups.*

*o Hypothesis 3b: Participants with a bicultural integrated strategy will have lower psychological distress than those in the separated, assimilated, or marginalized strategy groups.*

*o Hypothesis 3c: Participants with separated strategies will have lower psychological distress than those in the assimilated, or marginalized strategy groups.*

An ANCOVA was conducted to examine whether psychological distress differed across acculturation strategy groups, while controlling for generational status, employment, income, age, and location. Among the covariates, only employment significantly predicted psychological distress,  $F(1, 224) = 8.57$ ,  $p = .004$ , Cohen's  $d = .039$ . After adjusting for all covariates, there was no significant difference in psychological distress across acculturation strategy groups,  $F(7, 224) = .880$ ,  $p = .523$ .

*Hypotheses 4: The eight acculturation strategy groups will be related to life satisfaction.*

*o Hypothesis 4a: Participants with a tricultural integrated strategy will have greater life satisfaction than those in each bicultural integrated, each assimilated, separated or marginalized strategy groups.*

*o Hypothesis 4b: Participants with a bicultural integrated strategy will have greater life satisfaction than those in each assimilated, separated or marginalized strategy groups.*

*Hypothesis 4c: Participants with separated strategies will have greater life satisfaction than those in the assimilated, or marginalized strategy groups*

There was a significant difference in life satisfaction between acculturation strategy groups ( $F(7, 227) = 6.96, p < .001$ , Cohen's  $d = .94$ ). With respect to covariates, Income significantly predicted life satisfaction,  $F(1, 221) = 11.16, p < .001$ , Cohen's  $d = .45$ , as well as employment,  $F(1, 221) = 6.53, p = .011$ , Cohen's  $d = .35$ .

Post-hoc analyses using the Bonferroni method showed that the Tricultural Integrated group ( $M = 22.70, SD = 6.55$ ) had significantly higher life satisfaction than the Mainstream Assimilated group ( $M = 13.63, SD = 6.64$ ),  $p = .007$ , Cohen's  $d = 1.37$ , and Marginalized group ( $M = 12.72, SD = 6.61$ ),  $p < .001$ , Cohen's  $d = 1.52$ . The African American Bicultural Integrated group ( $M = 21.30, SD = 6.57$ ) had significantly higher life satisfaction than the Mainstream Assimilated group ( $M = 13.63, SD = 6.64$ ),  $p = .031$ , Cohen's  $d = 1.15$  and Marginalized group ( $M = 12.72, SD = 6.61$ ),  $p = .031$ , Cohen's  $d = 1.32$ . The Mainstream Bicultural Integrated group did not have statistically significant differences in life satisfaction in comparison to the Separated, Assimilated, or Marginalized strategy groups. The Separated strategy group ( $M = 22.23, SD = 6.86$ ) had higher life satisfaction than the Mainstream Assimilated group ( $M =$

13.63,  $SD = 6.64$ )  $p = .043$ , Cohen's  $d = 1.29$ , and Marginalized groups ( $M = 12.72$ ,  $SD = 6.61$ ),  $p = .034$ , Cohen's  $d = 1.45$ .

## **Chapter 5**

### **Discussion**

This study tested the relationship between acculturation and mental health and well-being of Black Caribbean immigrants to the U.S. Acculturation was conceptualized using the Tridimensional Acculturation model (Ferguson, 2014), which expands on Berry's (1997) bidimensional acculturation model by adding a third cultural orientation based on an additional host culture. Specifically, for Black Caribbean immigrants, acculturation could be along three cultural orientations or dimensions: heritage culture (Caribbean), and two host cultures in the U.S. (African American and White/European American). This study used two ways to measure and analyze tridimensional acculturation: (1) three separate dimensions represented by continuous variables, and (2) eight acculturation strategies represented by a categorical variable with eight levels. Multiple regression was used to test relationships between the three dimensions and the two outcomes of psychological distress and life satisfaction. ANCOVA was used to test whether the eight acculturation strategies had different levels of the two outcomes. Both sets of analyses tested the main hypotheses about relationships or differences in psychological distress or life satisfaction, controlling for five covariates (generational status employment, location income, and age). By analyzing the influence of acculturation on mental health and well-being in these two ways, this study expanded knowledge about Black Caribbean immigrants' adjustment to the cultural landscape of the U.S. Understanding acculturation patterns for this group could help us better understand the acculturation process for immigrants to the U.S.

The distribution of acculturation strategies in the current sample was generally similar to past research (See Figure 1), although there were some important differences. The first part of the next section will discuss this in more detail. The results of hypothesis testing were mixed. When looking at acculturation from a dimensional perspective, African American cultural orientation and European cultural orientation were not related to psychological distress nor life satisfaction. Caribbean cultural orientation was significantly related to life satisfaction, but not to psychological distress. When looking at acculturation from a categorical perspective with distinct acculturation strategies, there were no significant differences in psychological distress between acculturation strategies, but there were significant differences in life satisfaction. More details about first the dimensional approach, and then the categorical approach will be described in later sections. Additional limitations of the study design, as well as implications of findings will then be discussed.

### **Distribution of Acculturation Strategies**

The largest proportion (43%) of participants identified with the African American (AA) Bicultural Integration strategy meaning high Caribbean heritage cultural orientation, high African American cultural orientation, and low European American cultural orientation. This finding is partially consistent with Ferguson and Bronstein (2014), where the Bicultural Integration group was the second largest group (only 26% of the sample; See Figure). In this sample, there was a smaller proportion (16%) identified with a Tricultural Integration Strategy, in contrast to Ferguson and Bronstein (2014) who found this was the largest proportion (44%) of participants. This sample also had a small (4%) proportion of European American Assimilated, where Ferguson and Bronstein (2014) had none, but most of the other proportions were fairly

similar with less than a 5% difference across samples, e.g., 11% vs. 7% African American Assimilated.

There could be several reasons for the differences in integrated acculturation strategies between samples. One potential reason for the differences between samples could be the large proportion (66%) of 2<sup>nd</sup> generation immigrants in this sample, compared to Ferguson and colleagues, (2014) who only sampled first-generation immigrants. The second-generation participants in this sample were born in the U.S., and therefore may feel more connected to their African-American identity than European American culture (e.g., Benson, 2006). Further, the past study (Ferguson & Bronstein, 2014) only sampled from two states (Pennsylvania and Illinois), but this study included several regions that have large Caribbean ethnic enclaves such as New York City, Southern Florida, and Georgia (e.g., Davis, 2013). In ethnic enclaves in larger metropolitan areas, it may be less important for participants to acculturate to European American culture, or they could have had fewer opportunities to adopt European American culture. Moreover, Black Caribbean immigrants may racialized following U.S. racial structures, unlike in their majority-Black countries of origin (e.g., Forsyth et al., 2015).

### **Acculturation as Dimensions**

#### *Psychological Distress*

Contrary to hypotheses, Caribbean orientation was not significantly protective against psychological distress. It is possible that holding to Caribbean cultural practices may not be as protective as theorized, although it should be noted that enculturation has been shown in prior studies (Medina, 2016; Medina et al., 2019; Obasi & Leong, 2009; Yoon et al., 2012.) to be inversely related to psychological distress. One possible reason for not finding a relationship in

this sample is that protective effects may be limited in contexts where systemic stressors are pervasive. Although measuring stressors was beyond the scope of this dissertation study, stress such as acculturative stress or racial discrimination, could have been occurring for 2<sup>nd</sup> generation Black Caribbean immigrants which dulled the effect of enculturation. Future research should examine how cultural orientation functions in combination with factors like acculturative stress or racial discrimination. Past literature has demonstrated the relationship between perceived discrimination and mental health outcomes for African Americans (e.g., Banks & Kohn-Wood, 2007; Forsyth et al., 2015; Lewis et al., 2018; Wilson, 2017). Given the high percentage of Black Caribbean immigrants adopting African-American orientation in this sample, racial discrimination may have been useful in this study. Specifically, I recommend future studies with Black Caribbean immigrants include measures, such as the Racial Ethnic Microaggression Scale (REMS- 45; Nadal, 2011), the Public and Private Regard subscales of the Multidimensional Inventory of Black Identity (MIBI; Sellers et al., 1997), or the Social Attitudinal Familial Environmental Acculturation Stress Measure (SAFE; Padilla et al., 1985), which could help shed light on the complex factors that may contribute to or mitigate psychological distress of Black Caribbean immigrants.

In addition, European orientation and African American orientation were not significantly related to psychological distress. There could be several reasons why this study did not find a relationship between these variables as hypothesized. First, African American orientation and/or European orientation may not be related to psychological distress as theorized. It is also possible that due to previous exposure to the host culture before migration, the distress of adjusting to a new culture may have been reduced. Furthermore, there could be a weaker

relationship with distress in this current sample that included a larger group of 2<sup>nd</sup> generation immigrants compared to previous studies with mostly or all 1<sup>st</sup> generation participants.

Another possible explanation for this the lack of significant findings with psychological distress and acculturation is that the complexity of the acculturation process may not have been fully captured by the acculturation measure used in this study (ARSJA, 2012 adapted). Specifically, the acculturation measure used in this study primarily assesses behavioral engagement and affiliation with each host culture, but do not capture the quality of those engagements or other possible dimensions of acculturation such as cultural values or ethnic/racial identity. As an example of how future research could expand to understand acculturation from more perspectives, items could ask how much contact participants have had with each subculture or whether this contact had a positive or negative impact. Further, future research could assess a variety of cultural values, such as horizontal and vertical individualism and collectivism (Triandis & Gelfand, 1998) or ethnic identity (e.g., the Multigroup Ethnic Identity Measure; (Phinney, 1992).

Furthermore, psychological distress was measured in this study with the CESD-10 (González et al., 2017), an assessment of depressive symptoms. The CESD-10 can be used as screener for major depressive disorder, with a cutoff score of 10 (e.g., Andresen et al., 1994). The average score in this sample was about 20, suggesting many participants had relatively high levels of depressive symptoms. A sample with a range of depressive symptoms from low to high may have been more likely to find a significant relationship. These high scores are somewhat unusual in a community-based sample, but I did not have any other measures of psychological distress or clinician-rated diagnostic measures for comparison. Future research should include additional measures of depression and evaluate the fitness of the CESD-10 (Gonzalez et al.,

2017) in Black Caribbean samples, even though this measure has been used with this population in the past. There are also other measures of psychological distress that are less focused on depression that could be used in future studies. Constructs such as anxiety or somatic symptoms could be assessed, and there may have been a statistically significant relationship between acculturation and these measures. I recommend future researchers consider including an anxiety measure (e.g., the Beck Anxiety Inventory; Beck, Epstein, Brown, & Steer, 1993) and/or a somatic symptom measure (e.g., the Somatic Symptom Inventory; SSS-8 Gierk et al., 2014) to expand assessment of psychological distress.

### *Life Satisfaction*

As hypothesized, Caribbean orientation had a small to moderate positive association with life satisfaction. This finding is consistent with the idea that retaining one's heritage culture may increase well-being. For Black Caribbean immigrants and their U.S.-born descendants, the ability to maintain cultural values, practices, and community connections in the host country may contribute to greater life satisfaction during the adaptation process. Specifically, there are several potential protective factors associated with cultural heritage retention, such as a sense of belonging, cultural pride, and community, that may enhance overall well-being. Although economic, political, and safety concerns in their heritage country often serve as primary motivators for migration to the U.S., many Black Caribbean immigrants maintain strong pride in their cultural heritage.

Neither European American nor African American orientation was significantly associated with life satisfaction. One possible explanation for this finding is that adopting aspects of the host cultures may not directly enhance or decrease life satisfaction. While adopting the host culture may support functional aspects of adjustment, such as navigating institutions or

achieving stability in the U.S., these benefits may not necessarily translate into greater satisfaction with life. To illustrate, adopting practices of the European/White U.S. host culture has been linked to lower well-being in many immigrant populations likely due to loss of cultural practices that have health benefits (e.g., Acevedo-Garcia & Bates, 2008; Anderson et al., 2004). However, the potential increase in economic stability that could result from this adjustment to both host cultures in the case of this study specifically, could provide a psychological benefit. Furthermore, if Black Caribbean immigrants foster connection with the either U.S. host culture, this could improve their satisfaction with life by increasing interactions and opportunities with members of the host cultures. Adding a measure that captures the connection to cultures such as The Social Connectedness in Mainstream Society and Social Connectedness in the Ethnic Community Scales (Yoon, Jung, et al., 2012) could help add helpful information to expand understanding of these processes. With sampling strategies similar to this study that have a large proportion of 2<sup>nd</sup> generation immigrants, understanding connections to both European/White and African American practices may be particularly useful.

### **Acculturation Strategy**

The second way this study measured acculturation was by dividing the sample into eight groups based on acculturation strategies. Contrary to the hypotheses, there were no significant differences between acculturation strategy groups in psychological distress. However, as hypothesized, there were significant differences in life satisfaction across acculturation strategy groups. It is possible, as described above that acculturation is not related to psychological distress as theorized. Other potential explanations were described above as well, but sample size and power are additional possible explanations for the lack of significant differences in

ANCOVA. Although the overall power analysis showed sufficient power to detect differences between eight groups, it may have been difficult to detect an effect with several small sample sizes of some strategy groups, such as marginalized who were only 3% of the total sample. The results of this study have mixed support for this possibility. As seen in Table 8, in this sample the ANCOVA detected significant differences in life satisfaction, even between smaller Marginalized strategy and relatively larger Tricultural and African American Bicultural strategy groups, but only with rather large effects ( $d > 1$ ).

While traditional acculturation theory (Berry, 1997) emphasizes integration, i.e., high retention of heritage practices and high adoption of host practices, as the most adaptive strategy, this was not supported here in all circumstances. The Mainstream Bicultural integration group, which maintained heritage culture alongside European cultural orientation, did not differ significantly from any other group, suggesting that bicultural identification with the mainstream culture that is typically identified in acculturation measures, does not provide added psychological benefit in this context.

Interestingly, life satisfaction scores for the Tricultural Integration were only significantly higher than the Mainstream Assimilation group and not the AA Assimilation, or Bi-Assimilation group. These results show that the Tricultural Integrated strategy, which involves retaining all three cultures, had the highest level higher life satisfaction, even though not significantly higher than all other groups. By contrast, the separated strategy, which also retains Caribbean culture but does not adopt either host culture, was associated with significantly greater life satisfaction than assimilation and marginalization. Overall, the strategies that had high Caribbean orientation had generally the highest life satisfaction (See Table 5). These findings aligns with the idea that enculturation, or maintaining one's heritage culture, can have psychological benefits for well-

being (Yoon et al., 2016., 2020). This finding is generally consistent with the results of the dimensional findings. That is, for Black Caribbean immigrants, it appears to be generally advantageous to retain their heritage culture.

This observation highlights an important area for future research. Future studies should attempt to understand how Caribbean cultural orientation may contribute to psychological well-being using more comprehensive measures, and larger, more balanced samples. More specifically measures that may capture the quality of interactions and assess racial identity for Black Caribbean immigrants such as the previously mentioned (SCMN and SCETH; (Yoon et al., 2012) and the Multidimensional Inventory of Black Identity (MIBI) may assist in better understanding these relationships. The overall pattern of results aligns with expectations, reinforcing the importance of retaining one's heritage culture.

Finally, as anticipated, and consistent with prior research, not maintaining any cultural ties, i.e., being in the Marginalized strategy group, was associated with the least satisfaction with life. There is little research about marginalized immigrants, and they are often the smallest proportion in studies of immigrants if they are present at all. So it is not clear why people would not adhere to any cultural orientation, or if they adopt another unmeasured fourth acculturation orientation. Future studies with large sample sizes that show some representation of culturally marginalized people could do qualitative follow-up studies to examine their perceptions and experiences around the acculturation process.

Although not the focus of this study, two significant findings with covariates are worth briefly discussing. The only significant predictor of psychological distress in the adjusted model was employment. In this study, employment status was analyzed with a dummy-coded variable, coded as part-time or not employed vs. full-time. This means that those working full-time had

lower psychological distress than those who were not working or working part-time. This finding may show that structural factors such as employment play a more significant role around psychological distress than cultural orientation. One possible explanation for this finding is that structural and economic stressors such as unstable or insufficient employment may outweigh the psychological benefits of cultural identity. Instead, employment particularly full-time, may grant not only financial security but also routine, purpose, and social integration, all of which are known to protect mental health (e.g., Aycan & Berry, n.d.; Veronese et al., 2019). Work is often a central motivator for immigration and a primary site of integration into U.S. society. Black Caribbean immigrants may experience increased fulfillment through their career or through peer relationships at work that may reduce psychological distress. In addition, working full-time may provide access to a community especially given that most of this sample resided in areas with high concentrations of Black Caribbean immigrants.

However, it is important to note that Black Caribbean immigrants may face challenges in acquiring work which can impede their ability to attain the income required to support themselves and their families. Future research may benefit from incorporating more nuanced, qualitative assessments of cultural identity and work experiences to identify how work serves as a protective factor for Black Caribbean immigrants, as well as challenges or struggles with discrimination around work. One possible future study could include qualitative designs to directly inquire about experiences at work, asking questions such as, “How much stress do you experience in your job or career?” or “How much do you feel supported at work based on your racial and racial background?”

Two covariates, income and employment, were significantly related to life satisfaction. Specifically, those working full-time and those with higher income had higher life satisfaction.

There is long standing evidence that higher income is related to positive health (e.g., Adler & Ostrove, 1999; Cutler et al., 2008; Hudson, 2005; Mossakowski, 2008). This is likely due to higher income providing access to better quality of life through various mechanisms such as nutritious food, new experiences, and leisure activities. Full-time employment may also lead to this increased income, in addition to the benefits describe previously, which would account for its positive influence on life satisfaction. Direct qualitative inquiry regarding work experiences and income effects in future research may help to expand on these findings. Overall, this finding suggests the importance assessing work and economic stability for Black Caribbean immigrants in future research.

### **Limitations**

The results of this study should be examined in light of several design limitations. There may have been reduced power for statistical analyses to detect differences between groups with small sample sizes. Future research should further increase the sample size, even beyond the initial power analyses results to account for potentially quite small groupings. More specifically, this study was unable to identify a large proportion of Tricultural or Marginalized strategy participants which limited the ability to draw sufficient conclusions about these groups. In addition, the outcome measure for psychological distress may have failed to accurately capture symptoms in this population. This measure solely focused on symptoms of depression which could present differently in this population. For example, research shows that Black populations tend to report more somatic symptoms or could experience irritability as one of the symptoms of depression (Pederson, 2023). This study was also limited by collecting categorical sociodemographic data. This restricted the range of the data and therefore restricted the type of analyses that were able to be conducted. Future studies should attempt to collect continuous data

such as age or income. This study also relied on self-report measures, which are subject to various forms of bias, including social desirability and recall bias, which may have influenced participants' responses especially on sensitive topics such as psychological distress or cultural identity, even in an anonymous study. Future studies could include measure to capture implicit beliefs about culture to mitigate the biases that can encompass self-reports measures especially regarding cultural affiliation. Additionally, there were no measures to assess differences in mental health history or pre-existing conditions. Future research could include this as a covariate to control for potential influences on differences in mental health measures. Data was collected at a single point in time; cross-sectional designs restrict the ability to draw causal conclusions from the observed relationships, as the data represent a single point in time rather than changes or developments over time.

Furthermore, challenges with recruiting using online methods may have impacted the reliability of the findings. Initially, data collection was intended to be conducted with Qualtrics, with participants compensated via email submission in a separate, secure Google Form. However, this process was compromised by heavy bot activity, making it difficult to determine the authenticity of many survey responses. Future research should consider using methods to ensure human responses, e.g., CAPTCHA (Completely Automated Public Turing test to tell Computers and Humans Apart), or use in-person data collection or verified samples. As a result of these problems, data collection was temporarily paused and later shifted to the Prolific platform, which offers built-in participant verification and compensation. Moreover, due to limited funding and the need to meet power requirements, a portion of the data was collected without compensation. While the changes in recruitment likely improved data integrity and allowed a sample consistent with the study proposal, it also introduced changes in the

recruitment method mid-study, potentially affecting the consistency of the sample and biasing the results with self-selection bias, where individuals with certain characteristics (e.g., higher intrinsic motivation, more flexible time availability) were more likely to participate later in the study.

Another important limitation of this study is the recruitment of only English-speaking Caribbean participants. This may have impacted the generalizability of the results to all Black Caribbean Immigrants. This language was beyond the scope of this study, but future research should include Black immigrant populations that speak other languages and consider language as a potential covariate. Other Black immigrant populations such as Haitians could report potential marginalization due to language barriers creating distance both across cultures and within Caribbean cultures as indicated by early qualitative research (e.g., Portes & Zhou, 1994).

In addition, the requirement for 2<sup>nd</sup> generation status included only one foreign-born parent. This could have impacted the strength of the cultural affiliations of the offspring depending on the relationship with the foreign-born parent. Future research should clarify this and assess for potential differences based whether there are one or two foreign-born parents. A final potential limitation to the recruiting strategy was that the current sample was overrepresented by 2<sup>nd</sup> generation (66%) women (71%). This could limit generalizability of results. Future studies should aim to recruit stratified sample of immigrants based on generational status and a range of gender identities.

### **Clinical Implications**

The findings of this study offer several important insights for clinicians working with Black Caribbean immigrant populations. Although acculturation was not related to psychological distress, there may be important findings that inform clinical practice around life satisfaction.

Most notably, the association between retaining one's Caribbean heritage culture and improved life satisfaction highlights the value of cultural continuity in therapeutic contexts. Clinicians should actively explore and affirm clients' cultural identities, creating space for the incorporation of heritage values, traditions, and community engagement in treatment. To illustrate, clinicians should create culturally sensitive conceptualizations of healing and encourage the client to engage in those strategies. For example, a clinician may reinforce that research shows benefits to retaining heritage cultural practices, even if the larger society may not seem to value heritage practices. Clinicians can encourage the client to engage in a practice that they have observed from their heritage culture that they enjoy and may not have engaged in due to continued participation in activities of the host cultures. This may be particularly important for those who are 2<sup>nd</sup> generation and beyond, who often lose touch with heritage practices over time.

When adapting an existing evidence-based practice for Black Caribbean immigrants of any generation, there are tools available to guide clinicians. One example is the Culturally Informed Intervention Scale (Scharff et al., 2021) which was originally designed for Black/African American clients, but could be easily adjusted for Black Caribbean immigrants. This scale assesses ten techniques for culturally-informed intervention including, focusing the discussion on the client's racial identity, emphasizing the importance of client achieving a sense of belonging to a community, and incorporating non-Western therapy practice (e.g., Afrocentric interventions). To adapt this tool for Black Caribbean immigrants, clinicians should emphasize that people have both racial and ethnic identities which may be salient in understanding and processing their presenting concerns. Clinicians can also draw from Afrocentric or Caribbean healing practices. Further, clinicians should assess the specific process by which Black Caribbean immigrants engage with African American culture and Caribbean. This process may

present its own challenges, including navigating racial stereotypes, historical tensions, and perceived cultural fit. Incorporating an intersectional lens is imperative, as immigrants and Black-identified individuals each contend with unique negative societal messaging that may converge in complex ways for Black Caribbean clients (Espinosa et al., 2018; A. J. Thomas et al., 2010).

Another key treatment implication centers around the workplace. Results showed that full-time employment was associated with lower psychological distress and higher life satisfaction, possibly in part due to higher income in addition to other factors. Clinicians should assess for employment status, including for underemployment in addition to unemployment, and for workplace experiences and career alignment. Clinicians may provide direct referrals to career resources such as job fairs if applicable. Furthermore, clinicians who have sufficient training and credentials could directly offer vocational assessments to Black Caribbean Immigrants to help facilitate appropriate fit into a career that would be fulfilling and match their interests. Others could refer to career counselors, so knowing community agencies that provide these services is important. Additionally, it could be beneficial for clinicians to provide financial resources through organizations that offer tools to improve financial literacy in the U.S. for Black Caribbean immigrants to further assist in their adaptation process.

### **Research Implications**

This study offers several important directions for future research on the psychological well-being of Black Caribbean immigrants. First, the findings suggest the need for more comprehensive and multidimensional measures of acculturation that move beyond assessing cultural practices, such as attitudes, values, or identity. Furthermore, since most measures, including the measure used in this study were derived from Latine and/or Asian populations, it

could be helpful to conduct a qualitative analysis to understand the way to best capture acculturation robustly for Black immigrants to the U.S. Developing a specific measure for Black immigrant populations could help best capture the process and how it could impact health. Future studies should also include measures, such as the Racial Ethnic Microaggression Scale, that capture discrimination experiences. In addition, incorporating validated measures of acculturative stress such as the SAFE (Padilla et al., 1985). This measure has been used longitudinal research and appears to be invariant (e.g., Suh et al., 2016). Future studies should also include measures of bicultural stress, the stress linked with navigating multiple cultural frameworks, in this case the integration of African American, European American, and Caribbean cultures, may itself be a source of psychological strain (e.g., Tikhonov et al., 2019). Given the established connection between racial identity and mental health among African Americans (Wilson, 2017), future studies should incorporate both ethnic and racial identity frameworks to better understand how these intersecting identities shape mental health outcomes for Black Caribbean immigrants.

Mixed-methods approaches may offer deeper insight into how individuals navigate these cultural combinations in their daily lives and how this affects well-being and allow for greater depth in understanding experiences of members of smaller groups. For instance, adding a qualitative question about participants connection to each culture such as, “How would you describe the effect of your interactions with this cultural group?” could add more information regarding participants’ affiliation with each group. Additionally, providing an opportunity to share additional general thoughts about measures, even if limiting it to a few sentences, could also contextualize the quantitative findings. This could help capture any crucial history effects that could be impacting the data. For example, during the COVID-19 pandemic, there was also a

“racial pandemic” following the George Floyd protests (Laurencin & Walker, 2020). For example, in a qualitative study conducted on the socialization of Black African immigrants (Cabirou et al., 2025), many participants cited this as an impetus for their cultural identification or reflection of their identification with African Americans.

Finally, this study faced methodological limitations that inform future research design. Bot infiltration and the subsequent shift in data collection platforms posed a threat to data integrity. These challenges emphasize the importance of digital security in online data collection, participant verification procedures, and adequate funding to ensure consistent compensation and recruitment quality. Additionally, the use of a cross-sectional design limits causal interpretations. More longitudinal research is needed to understand how acculturation and mental health trajectories evolve over time, particularly across immigrant generations. Overall, future research should adopt more culturally attuned, methodologically rigorous, and longitudinal approaches to better capture the complex experiences of Black Caribbean immigrants and their impact on mental health and well-being.

## **Conclusion**

In conclusion, this study expanded on previous literature on tridimensional acculturation theory by assessing acculturation in a sample of Caribbean immigrants from a wider range of national backgrounds and that had greater numbers of 2<sup>nd</sup> generation immigrants. Overall, the ARSJA (Ferguson, 2012) measure worked similarly, i.e., the psychometric properties were acceptable, and the acculturation strategies had similar proportions—except that there were fewer tridimensionally integrated participants in this sample. I did not find a relationship between acculturation and psychological distress, but did find that Caribbean cultural orientation was linked to life satisfaction; this was generally consistent between dimensional and categorical

measurement approaches. Lastly, employment status was the only significant predictor for psychological distress and employment status and income were linked to satisfaction with life. Clinically, these findings highlight the importance of helping Black Caribbean immigrants retain their heritage culture and intervening with vocational assessments and resources to support overall well-being in this population. In terms of research, these findings support the inclusion of additional measures that capture other important psychosocial variables along with qualitative assessments to further contextualize the factors related to psychological well-being in this population.

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Table 1

*Participant Characteristics (N = 244).*

<i>Variable</i>	<i>Category</i>	<i>N</i>	<i>%</i>
Generation Status	First Generation	34	14
	1.5 Generation	49	20
	Second Generation	161	66
Employment Status	Working Full Time	166	68
	Not Working /Working Part-Time	78	32
Location (U.S. Region)	East	194	79
	South/Midwest/West	50	21
Income	Income Below \$68,000	138	57
	Income Above \$68,000	105	43
Age	Age 18-45 years	193	79
	Age 45-85 years	51	21
Gender	Man	65	27
	Woman	173	71
	Other	6	3
Education Level	Some College	27	11
	Current College Freshman (1 <sup>st</sup> Year)	2	<1
	Current College Sophomore (2 <sup>nd</sup> Year)	3	1
	Current College Junior (3 <sup>rd</sup> Year)	1	<1
	Current College Senior (4 <sup>th</sup> Year)	6	3
	Graduate Student	6	3
	Associate Degree	29	12
	Bachelor's Degree	86	35
	Master's Degree	54	22
	Doctorate Degree	10	4
	Other Graduate/Professional Degree	9	4
	High School/GED	6	3
	Vocational/Trade School	5	2.0

Table 2

*Caribbean Nations Representation of Participant and Parents' Heritage (N = 244).*

<i>Country</i>	<i>Participant Identification</i>	<i>Father's Heritage</i>	<i>Mother's Heritage</i>
Antigua and Barbuda	–	5 (3%)	2 (1%)
Bahamas	2 (2%)	4 (3%)	4 (3%)
Barbados	1 (1%)	8 (5%)	12 (8%)
Belize	1 (1%)	4 (2%)	3 (2%)
Bermuda	–	1 (<1%)	–
British Virgin Islands	–	1 (<1%)	–
Cayman Islands	–	1 (<1%)	–
Dominica	2 (2%)	5 (3%)	6 (4%)
Grenada	2 (2%)	3 (2%)	1 (<1%)
Guyana	2 (2%)	3 (2%)	7 (4%)
Jamaica	49 (59%)	76 (47%)	86 (54%)
Montserrat	–	–	1 (<1%)
Saint Kitts and Nevis	–	1 (<1%)	–
Saint Lucia	3 (4%)	1 (<1%)	3 (2%)
Saint Vincent and the Grenadines	2 (2%)	2 (1%)	1 (<1%)
Trinidad and Tobago	13 (16%)	11 (7%)	14 (9%)
Turks and Caicos	2 (2%)	–	–
U.S. Virgin Islands	2 (2%)	7 (4%)	2 (1%)
Other	2 (2%)	28 (17%)	18 (11%)

Note: Only 1 foreign born parent from the Caribbean was required.

Table 3

*Acculturation Orientations, Psychological Distress, and Life Satisfaction.*

<i>Variable</i>	<i>N</i>	<i>M</i>	<i>SD</i>
European American Orientation	243	2.75	0.78
African American Orientation	242	3.8	0.86
Caribbean Orientation	242	3.47	0.88
Psychological Distress	240	10.12	5.98
Life Satisfaction	237	20.34	7.43

Table 4

*Eight Acculturation Strategy Groups According to Berry's Model and Ferguson's**Tridimensional Framework (N = 240)*

<i>Acculturation Strategy</i>	<i>n</i>	<i>%</i>
<i>Integrated</i>		
Tricultural Integration	39	16
African American Bicultural Integration	106	43
Mainstream Bicultural Integration	5	2
<i>Assimilated</i>		
Bi-Assimilated	23	9
Mainstream Assimilation	9	4
African American Assimilation	26	11
<i>Separated</i>	25	10
<i>Marginalized</i>	7	3

Integrated included those with (1) high Caribbean orientation scale scores, and high European American Orientation Scale scores (2) high Caribbean Orientation Scale scores, high African American Orientation Scale scores and (3) high Caribbean Orientation Scale scores, African American Orientation Scale scores, and European American Orientation Scale scores; assimilated with (4) low Caribbean Orientation Scale scores and high European American Orientation Scale scores (5) low Caribbean Orientation Scale scores and high African American Orientation Scale scores or (6) low Caribbean Orientation Scale scores and high European American Orientation Scale scores and African American Orientation Scale score; *separated* with (7) high Caribbean Orientation Scale scores only; and *marginalized* status with (8) low scores on all three orientation subscales

Table 5

Estimated Means of Life Satisfaction &amp; Psychological Distress by

Acculturation Group

<i>Acculturation Strategy</i>	Life Satisfaction		Psychological Distress	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Tricultural Integration	22.70	6.56	9.64	6.85
2. AA Bicultural Integration	21.30	6.57	9.65	5.53
3. Mainstream Bicultural Integration	17.45	6.57	13.20	6.76
4. Bi-Assimilated	19.65	6.62	12.26	5.57
5. Mainstream Assimilation	13.63	6.63	13.00	7.24
6. AA Assimilation	17.45	6.66	10.08	5.18
7. Separated	22.30	6.87	8.63	6.73
8. Marginalized	12.72	6.62	11.14	5.27

Notes. Integrated included those with (1) high Caribbean Orientation Scale scores, African American Orientation Scale scores, and European American Orientation Scale scores (2) high Caribbean Orientation Scale scores, high African American Orientation Scale scores and (3) high Caribbean orientation scale scores, and high European American Orientation Scale scores; assimilated with (4) low Caribbean Orientation Scale scores and high European American Orientation Scale scores and African American Orientation Scale score (5) low Caribbean Orientation Scale scores and high European American Orientation Scale scores (6) low Caribbean Orientation Scale scores and high African American Orientation Scale scores or; separated with (7) high Caribbean Orientation Scale scores only; and marginalized status with (8) low scores on all three orientation subscales

Table 6.

*Tridimensional Acculturation and Psychological Distress (N = 233).*

<i>Predictor</i>	Step 1 $R^2 = .109$				Step 2 $R^2 = .118$			
	<i>b</i>	<i>SE</i>	<i>p</i>	$\beta$	<i>b</i>	<i>SE</i>	<i>p</i>	$\beta$
1.5 Generation	-.47	1.33	.727	-.03	-.69	1.36	.613	-.05
2 <sup>nd</sup> Generation	.54	1.14	.636	.04	.13	1.21	.918	.01
Employment	<b>2.56</b>	<b>.88</b>	<b>.004*</b>	<b>.20</b>	<b>2.48</b>	<b>.88</b>	<b>.005</b>	<b>.19</b>
Location	1.41	.95	.138	.10	1.13	.97	.240	.07
Income	-1.34	.84	.112	-.11	-1.37	.85	.110	-.11
Age	-1.12	.97	.250	-.08	-1.05	.97	.280	-.07
CO	--	--	--	--	-0.45	0.48	.357	-.07
EAO	--	--	--	--	0.44	0.52	.399	.06
AAO	--	--	--	--	-0.01	0.45	.991	.00

*Note.* CO = Caribbean Orientation. EAO = European American Orientation AAO = African American Orientation. Generational status comparison group is 1<sup>st</sup> generation. **Bold** shows significant relationships.

Table 7.

*Tridimensional Acculturation and Life Satisfaction (N = 233).*

<i>Predictor</i>	Step 1 $R^2 = .176$				Step 2 $R^2 = .216$			
	<i>b</i>	<i>SE</i>	<i>p</i>	$\beta$	<i>b</i>	<i>SE</i>	<i>p</i>	$\beta$
1.5 Generation	-1.16	1.60	.467	-.06	-1.74	1.60	.279	-.09
2 <sup>nd</sup> Generation	-1.55	1.38	.262	-.09	-1.60	1.44	.268	-.10
Employment	<b>-3.57</b>	<b>1.06</b>	<b>&lt;.001</b>	<b>-.22</b>	<b>-3.28</b>	<b>1.04</b>	<b>.002</b>	<b>-.20</b>
Location	-1.63	1.16	.159	-.09	-1.33	1.16	.251	-.07
Income	<b>3.64</b>	<b>1.01</b>	<b>&lt;.001</b>	<b>.24</b>	<b>3.36</b>	<b>1.00</b>	<b>&lt;.001</b>	<b>.22</b>
Age	-.08	1.17	.944	-.00	-.11	1.15	.921	-.01
CO					<b>1.44</b>	<b>0.57</b>	<b>.013</b>	<b>.17</b>
EAO					0.90	0.61	.142	.10
AAO					0.93	0.53	.083	.11

*Note.* CO = Caribbean Orientation. EAO = European American Orientation AAO = African

American Orientation. Generational status comparison group is 1<sup>st</sup> generation. **Bold** shows significant relationships.

Table 8

*Pairwise Mean Differences in Life Satisfaction Between Acculturation Strategy Groups*

(N = 234)

<i>Acculturation Strategy</i>	1	2	3	4	5	6	7	8
1. Tricultural	–	.21	.80	.47	<b>1.37</b>	.79	.06	<b>1.52</b>
2. AA Bicultural	1.40	–	.58	.25	<b>1.15</b>	.58	.15	<b>1.32</b>
3. Mainstream Bicultural	5.26	3.85	–	.32	.58	.00	.71	.73
4. Bi-Assimilated	3.06	1.65	-2.20	–	.91	.33	.39	1.05
5. Mainstream Assimilation	<b>-9.08*</b>	<b>7.67*</b>	3.82	-6.02	–	.58	<b>1.29</b>	.14
6. AA Assimilation	5.26	3.86	0.00	-2.20	3.82	–	.71	.72
7. Separated	0.41	-1.00	-4.85	2.65	<b>-8.67*</b>	-4.85	–	<b>1.45</b>
8. Marginalized	<b>9.99*</b>	<b>8.58*</b>	4.73	-6.93	-0.91	4.73	<b>-9.58*</b>	–

Note. AA = African American, Mainstream = European American

\*Bonferroni-adjusted  $p$ -values. Significant comparisons ( $p < .05$ ) are bolded and marked with an asterisk.

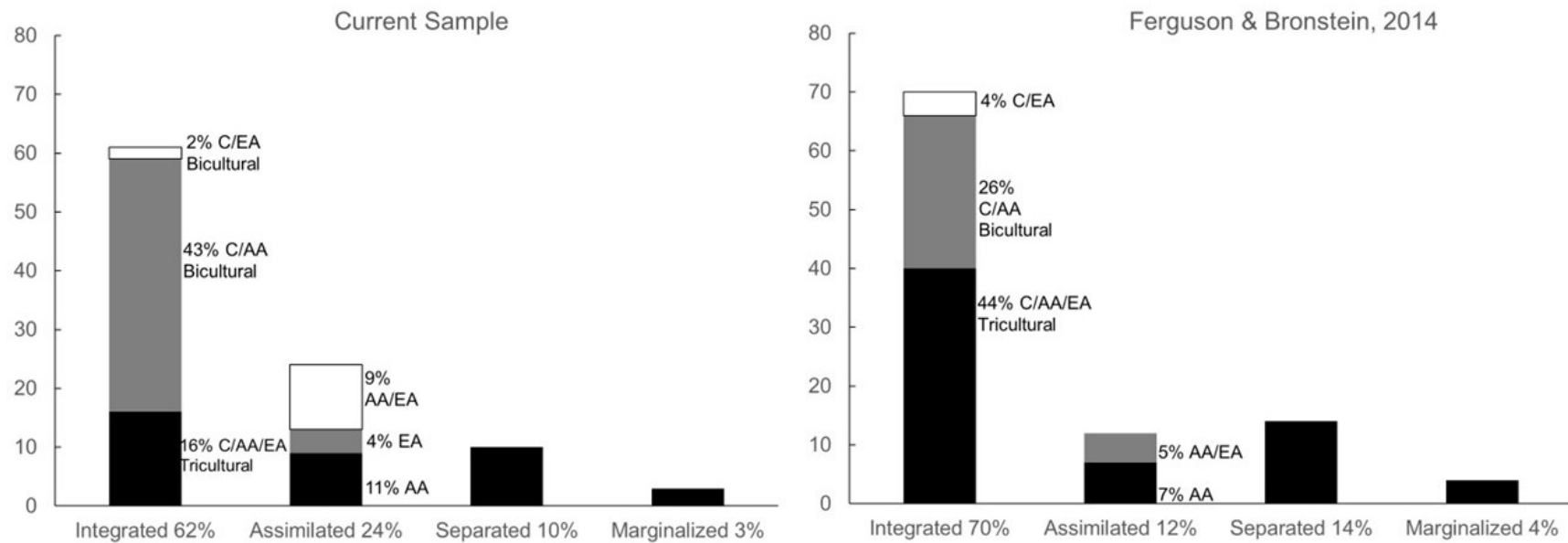


Figure 1.

Proportions of Acculturation Strategy Groups by Sample.

C/AA/EA represent dimensions (C = Caribbean, AA = African American, EA = European/White American) with high scores in each strategy group. Integrated included those (1) high Caribbean Orientation Scale scores, African American Orientation Scale scores, and European American Orientation Scale scores (2) high Caribbean Orientation Scale scores, high African American Orientation Scale scores and (3) high Caribbean orientation scale scores, and high European American Orientation Scale scores; assimilated with (4) low Caribbean Orientation Scale scores and high European American Orientation Scale scores and African American Orientation Scale score (5) low Caribbean Orientation Scale scores and high European American Orientation Scale scores (6) low Caribbean Orientation Scale scores and high African American Orientation Scale scores or; separated with (7) high Caribbean Orientation Scale scores only; and marginalized status with (8) low scores on all three orientation subscales

Appendices are available upon request.